On-Road Evaluation of Intelligent Speed Adaptation, Following Distance Warning and Seatbelt Reminder Systems: Final Results of the TAC SafeCar Project

Volume 2: Appendices

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**Phase 1.**


**Phase 2.**


**Phase 3.**

Regan, M. A., Triggs, T. J., & Mitsopoulos, E. (2002). *TAC SafeCar project phases 3 and 4 – options for reducing the duration of the on-road study and recommendations for refining the design of the on-road study.* Prepared by the Monash University Accident Research Centre for the Transport Accident Commission.


**Phase 4.**

Phases 1 to 4 Conference Papers

Phase 1.


Phase 2.


Phase 3.


**Phase 4.**


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TAC SAFECAR PROJECT: PHASE 3

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INTRODUCTION

In 1999, the Transport Accident Commission of Victoria (TAC) commissioned the Monash University Accident Research Centre (MUARC) to undertake what has become known as the “TAC SafeCar” project. The ultimate aim of the project is to stimulate demand, initially by Victorian corporate fleet car owners and, in the longer term, by car drivers in the general community, for in-vehicle Intelligent Transport System (ITS) technologies that are estimated to have high safety potential. The project is a five-phase research and demonstration project involving as key partners, the TAC, MUARC, and the Ford Motor Company of Australia (Ford).

Phase 1 of the project culminated in the selection of several in-vehicle ITS technologies that are estimated to have significant potential to reduce road trauma in Victoria. In Phases 2 and 3, functional and Human-Machine Interface (HMI) specifications for these systems were developed, the systems were developed and two demonstration vehicles were equipped with the technologies. In Phase 3, 15 roadworthy passenger cars were equipped with a sub-set of these ITS technologies. In Phase 4, the technologies were evaluated in an on-road field study. The purpose of the Phase 4 study was to assess the technical operation of the chosen technologies, to assess driver attitudes to and acceptance of them, and to evaluate the effects of the technologies on driving performance and safety, both during and after exposure to them.

This report documents the final specifications for the SafeCar systems that were equipped to the 15 SafeCar vehicles that were deployed in Phase 4 of the study. The final specifications, documented here, are slightly different from the original specifications developed for the systems. For various reasons, it was not possible to build the SafeCars completely to the original specifications.
1 INTELLIGENT SPEED ADAPTATION (ISA)

1.1 Functional Purpose

The purpose of this system is to warn the driver when the vehicle that he/she is operating is exceeding the posted speed limit by 2 kilometres per hour.

1.2 Warning Sequence

Two variants of the ISA system shall be implemented – the Informative (ISA-I) and Actively Supporting (ISA-A) systems. Each of these modes can be independently enabled and disabled by use of the iButton (see Section 6 for iButton specifications).

The specifications for the warning sequences for each variant of the ISA system are as follows.

1.2.1 ISA Informative System

The ISA-I system shall be implemented as a two-stage warning system. Each stage comprises both visual and auditory warnings.

1.2.1.1 Stage 1

- Immediately after the posted speed limit has been exceeded by 2 kilometres (the warning speed threshold) per hour or more, a static visual icon will appear on the ITS Visual Display Screen (see Figure 1). This takes the form of a scaled down version of a conventional speed limit sign. The design, location and dimensions of this icon are specified in Section 1.3.1 below.
- Each time the static visual icon is displayed, it shall be accompanied by a single short duration auditory tone. (Refer to sound file “bong.wav”)
- The static visual icon shall remain displayed until the vehicle speed drops below the warning speed threshold or until it is replaced by a Stage 2 warning (see below).

1.2.1.2 Stage 2

- If the driver ignores the Stage 1 warning and continues to exceed the posted speed limit by 2 kilometres per hour or more for 2 seconds or more, the Stage 2 warning is presented. The Stage 2 warning is presented 5 seconds after the onset of the Stage 1 warning (see Figure 1).
- The Stage 2 visual warning is identical to the Stage 1 visual warning. However, in Stage 2 the circle surrounding the posted speed limit shall flash repeatedly (see Figure 1). The flash rate shall be 3 Hz, with equal on and off times.
- Each time the Stage 2 flashing visual icon is displayed, it shall be accompanied by an auditory tone. (Refer to sound file “5beeps.wav”). This tone shall be repeated at 0.56Hz (once every 1.8 seconds).

1.2.1.3 Associated Messages

- If the ISA-I system detects that the vehicle has been driven for 30 seconds in a location outside the confines of the digital map database, the system will default to a speed limit of 110 km/h and the driver will be warned that the vehicle is being driven outside the confines of the digital map database. In this case, the following text message shall be displayed to the driver: “Outside digital map zone”
• If the ISA-I system temporarily loses a GPS signal, it shall default to a speed limit of 110 km/h and will warn the driver that the GPS reception has been lost. In this case, the following text message shall be displayed to the driver: “No GPS signal”.
• Specifications for the above text messages are provided in Section 1.35 below.

1.2.2 ISA Actively Supporting System

The ISA-A system shall be implemented as a two-stage warning system as follows.

1.2.2.1 Stage 1
• The Stage 1 warning for the ISA-A system shall be the same as the Stage 1 warning for the ISA-I system (see Figure 2).

1.2.2.2 Stage 2
• If the driver ignores the Stage 1 warning and continues to exceed the posted speed limit by 2 kilometres per hour or more for 2 seconds or more, the Stage 2 warning is presented. The Stage 2 warning is presented 2 seconds after the onset of the Stage 1 warning (see Figure 2).
• The Stage 2 visual warning for the ISA-A system is identical to the Stage 2 visual warning for the ISA-I system (see Figure 2).
• Each time the Stage 2 flashing visual icon is displayed, it shall be accompanied by upward pressure applied to the accelerator pedal (the “haptic feedback system”). There is no auditory tone associated with Stage 2 warnings in the ISA-A system.
• Full upward pressure on the accelerator pedal shall be felt by the driver at the onset of the Stage 2 warning. The haptic feedback system needs 3 seconds to deliver full upward pressure. Therefore, the process of building up the accelerator pressure shall be initiated immediately after the onset of the Stage 1 warning.
• It must be possible for drivers to momentarily override the upward resistance in the accelerator pedal if, for some reason, it is necessary for them to accelerate when they are over the posted speed limit.

1.2.2.3 Associated Messages
• These shall be identical to those for the ISA-I system.

1.2.2.4 Other issues (Cruise Control)
• If the ISA system activates the haptic feedback system at a time when the cruise control system is also engaged, then activation of the haptic feedback system shall disengage the cruise control system.

1.3 HMI Design Specifications

The following are specifications for the design, location and dimensions of the warnings and messages associated with the ISA-I and ISA-A systems.

1.3.1 Stage 1 static visual icon
• This has the appearance of a miniature speed limit sign.
• It consists of a red circle with a white fill. Inside the circle is a black number depicting the detected speed limit.
• This icon is presented on the left side of the ITS Visual Display Screen, as shown in Figure 3.
• The dimensions of the static visual icon are as shown in Figure 3.

1.3.2 Stage 1 auditory tone
• Refer to sound file “bong.wav”.
This sound has the following frequency characteristics:
  o It consists of a two tone sound (736Hz and 1120 Hz) with a single repetition at a slow rate of presentation.
  o It should be possible to hear the tone under all driving conditions at a level that will not startle the driver. The signal will be heard against background noise if its volume exceeds the ambient noise by 15dB.
  o Volume should be adjustable between 60dB(A) and 90dB(A).

1.3.3 Stage 2 flashing visual icon
  • This is identical to the static visual icon.
  • The red circle flashes. The flash rate shall be 3Hz, with equal on and off times.
  • This icon is presented in the same location as the static visual icon (see Figure 3).
  • The dimensions of the flashing visual icon are the same as those for the static visual icon (see Figure 3).

1.3.4 Stage 2 auditory tone
  • This tone consists of a repeated “5beeps.wav” sound.
  • This sound will be repeated at 0.56Hz (once every 1.8 s).
  • The tone has the following frequency characteristics:
    o It is a complex tone with a fundamental frequency of 600 Hz and odd harmonics, with five repetitions at a fast rate of presentation.
  • It should be possible to hear the tone under all driving conditions at a level that will not startle the driver. The signal will be heard against background noise if its volume exceeds the ambient noise by 15dB.
  • Volume should be adjustable between 65dB(A) and 90dB(A).

1.3.5 Associated Warnings - Text
  • Text messages shall:
    o be black in colour
    o be presented in sentence case (i.e. combination of upper and lower case)
    o be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.
    o the ratio between the stroke width and character height should be between 1:12.5 and 1:6.25
    o the relation between the width and height of the character should be between 0.5: 1 and 1:1
    o the space between characters should be a minimum of one stroke width
    o the font type should be clear and simple. Sans serif fonts are recommended (eg Arial, Helvetica – not Times)
    o there should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.
Figure 1: ISA-I Warning Sequence

- **t=0 seconds**
  - Static icon + Audio “bong.wav”

- **t=2 seconds**
  - Outer circle Flashing at 3Hz rate
  - Sound “5beeps.wav” played every 1.8 sec

Figure 2: ISA-A Warning Sequence

- **t=0 seconds**
  - Static icon + Audio “bong.wav”

- **t=2 seconds**
  - Outer circle Flashing at 3Hz rate
  - Full Haptic Accelerator Pressure
Figure 3: Location and Dimensions of the Visual Icon

Speed Limit Font: Arial, Height 18 mm, Height to Width ratio 7:5
2 FOLLOWING DISTANCE WARNING

2.1 Functional Purpose

The purpose of this system is to warn the driver when the vehicle he/she is operating is following a vehicle in front too closely. The intensity of warnings issued by the system shall increase with a decrease in time headway between the host vehicle and the vehicle being followed.

2.2 Warning Sequence

2.2.1 Levels of warning

There shall be 6 levels of warning (see Figure 4). Each of these levels shall be triggered by the current time headway.

- Level 1 - is displayed when the time headway drops below 2 seconds.
- Level 2 - is displayed when the time headway drops below 1.7 seconds.
- Level 3 - is displayed when the time headway drops below 1.5 seconds.
- Level 4 - is displayed when the time headway drops below 1.3 seconds.
- Level 5 - is displayed when the time headway drops below 1.2 seconds.
- Level 6 - is displayed when the time headway drops below 1.1 seconds.

2.2.2 Measures to minimise nuisance warnings

The FDW warnings will be suppressed in the following cases in order to minimise false alarms:

- Speed drops below 20 km/h
- Speed drops below 25 km/h while braking

2.3 HMI Design Specifications

2.3.1 Visual Display

The FDW visual display resembles a ladder which is thinner at the top than at the bottom (see Figure 4 below). The six spaces in between the 7 “rungs” of the ladder are used to convey the six levels of warning described above. These six spaces are henceforth referred to as the six “bars”.

The FDW display ladder is located at the right side of the ITS Visual Display Screen (see Figure 5).

When the time headway between the host vehicle and the vehicle in front is 2 seconds or more, only a black outline of the ladder is visible.
When time headway drops below 2 seconds, the bars between the rungs of the ladder shall start to be coloured as follows depending on the level of warning. The top bar is referred to henceforth as the “first” bar for reference purposes:

- Level 1 - the first bar is coloured yellow.
- Level 2 - the first and the second bars are coloured yellow.
- Level 3 - the first, second and third bars are coloured yellow.
- Level 4 – the first, second and third bars are coloured yellow and the fourth bar is coloured red. The whole ladder, including the coloured bars, flash at a rate of 3 Hz.
- Level 5 – the first, second and third bars are coloured yellow and the fourth and fifth bars are coloured red. The whole ladder, including the coloured bars, flash at a rate of 3 Hz.
- Level 6. The top three bars are coloured yellow and the bottom three bars are coloured red. The whole ladder, including the coloured bars, flash at a rate of 3 Hz.

The colours used in the display are defined by their red, green and blue (RGB) components:

- Yellow – R: 255 G: 233 B: 0 (this combination provides deeper hue than pure yellow)
- Red - R: 255 G: 0 B: 0
- White – R: 255 G: 255 B: 255
- Black – R: 0 G: 0 B: 0

The displayed information must be clear and visible under all light conditions, especially the yellow bars.

2.3.2 Audio Warning

- The audio warning is presented at the onset of the sixth level of warning.
- The audio warning is formed by alternating 110ms pulses of sound followed by 110 ms of silence. Each pulse consists of simultaneous 2500 Hz and a 2650 Hz continuous sinus signals (refer to audio file “CAMP.wav”).
- The specification for this audio warning is identical to that deriving from the US Department of Transport’s Collision Avoidance Metric Program (CAMP; NHTSA Technical Report, 1998).
- The volume of the FDW audio warning must be presented at least 15 dB above the background noise level but at a level that will not startle the driver.
- This warning should have the highest urgency of all of the sounds presented by the ITS technologies in the TAC SafeCar (Assessment of Audio Warnings for TAC SafeCar, S. Parker 2001).
- Along with other audible warnings, volume should be adjustable between 65dB(A) and 90dB(A).

The FDW display warning sequence is shown schematically in Figure 4. The physical location of the FDW display on the ITS Visual Display Screen and the dimensions of the FDW display are shown in Figure 5.
Figure 4: Following Distance Warning Display
Figure 5: Location and Dimensions of FDW Visual Display
SEATBELT REMINDER SYSTEM

3.1 Functional Purpose

The purpose of this system is to detect any occupant that fails to wear a seat belt and, if so detected, to warn the occupant to fasten their seat belt. The intensity of the warning will increase with an increase in vehicle velocity.

3.2 Warning Sequence

There are four levels of warning issued if any occupant of the vehicle is unrestrained. These are dependent on the speed of the vehicle.

- Level 1 – warning is issued when the vehicle speed is between 0km/h and 10km/h. It consists of a flashing visual icon (see Figure 6) and, below it, a static legend (i.e. “FASTEN SEATBELT”). The visual icon flash rate is 3 Hz.
- Level 2 – warning is issued when the vehicle speed is between 10 km/h and 25km/h. It consists of a flashing visual icon and, below it, a static legend. The visual display is accompanied by the seat belt warning sound (see section 3.3.3 below). The visual icon flash rate is 3 Hz. The warning sound shall be repeated every two seconds.
- Level 3 – warning is issued when the vehicle speed is between 25km/h and 50km/h. It consists of a flashing visual icon and, below it, a static legend. The visual display is accompanied by the seat belt warning sound (see section 3.3.3 below). The visual icon flash rate is 3 Hz. The warning sound shall be repeated every second.
- Level 4 – warning is issued when the vehicle speed is 50km/h or faster. It consists of a flashing visual icon and, below it, a static legend. The visual display is accompanied by the seat belt warning sound (see section 3.3.3 below). The visual icon flash rate is 3 Hz. The warning sound shall be repeated at the fastest rate possible (ideally 2Hz if possible).

These levels of warning are summarised in Table below.

Table 1: Seat Belt Reminder System Warning Levels - Summary

<table>
<thead>
<tr>
<th>Speed</th>
<th>Visual warning</th>
<th>Audio warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 10km/h</td>
<td>Seatbelt icon flashing at 3 Hz. Legend “FASTEN SEATBELT” (static)</td>
<td>None</td>
</tr>
<tr>
<td>10 – 25km/h</td>
<td>Seatbelt icon flashing at 3 Hz. Legend “FASTEN SEATBELT” (static)</td>
<td>Seatbelt audio warning played every 2 seconds.</td>
</tr>
<tr>
<td>25 – 50km/h</td>
<td>Seatbelt icon flashing at 3 Hz. Legend “FASTEN SEATBELT” (static)</td>
<td>Seatbelt audio warning played once a second.</td>
</tr>
<tr>
<td>&gt; 50km/h</td>
<td>Seatbelt icon flashing at 3 Hz. Legend “FASTEN SEATBELT” (static)</td>
<td>Seatbelt audio warning played at fastest possible rate (ideally, twice a second).</td>
</tr>
</tbody>
</table>

3.3 HMI Design Specifications
3.3.1 Visual Icon
- The icon shall be an enlarged scaled version of the Ford seat belt warning symbol used in the Fairmont model (see Figure 6).
- The icon shall be coloured red and is presented on the white background. The red will be defined by the following red green and blue (RGB) components:
  - Red - R: 255 G: 0 B: 0
- The icon is located on the left side of the ITS Visual Display Screen (see Figure 7)
- The maximum dimensions of the icon are as specified in Figure 7.

3.3.2 Visual Legend
- The “FASTEN SEATBELT” legend is located immediately below the seat belt icon.
- The legend characters are black.
- The background is white.
- The legend shall be large enough to be read in the moving vehicle. The minimum character height shall be 5mm.
- The text characters shall have a height to width ratio of 7 to 5.
- The legend shall be written in uppercase text.
- The font used should be clear and simple. Sans serif fonts are recommended (e.g. Arial, Helvetica – not Times).

Figure 6: Seat Belt Reminder System Visual Icon and Text Message

3.3.3 Audio Warning
- This sound is a collection of complex tones with components beginning as low as 200Hz and extending as high as 5000Hz and beyond, but with the highest amplitude components grouped around 800Hz.
- This sound is contained in the “chimes1.wav” audio file.
- It shall be possible to hear the warning under all driving conditions at a level that will not startle the driver. The signal will be heard against background noise if its volume exceeds the ambient noise by 15dB.
- Volume should be adjustable between 60dB(A) and 90dB(A).
3.4 General Specifications

- With the exception of the driver (given that the vehicle cannot be operated without the driver already being seated), the SBR system shall be able to detect any occupant weighing 15kg or greater seated normally in any position.
- The reminder system shall be able to detect whether any seated occupant is unbuckled.
- Improper disconnection of the reminder system (eg. by dismantling the connectors and cables, breaking sensor circuits, etc) shall be made difficult.
- It shall be difficult to circumvent the SBR system, for example by first fastening the seat belt and then sitting down on the seat, inserting an unattached latch plate into the buckle, and inserting the latch plate of the seat belt for one seat into buckle of another seat. (Note. At this stage there is no reliable seat belt extraction system available to prevent circumvention of the first kind for the vehicles to be employed in the trial).
4  LOG IN

4.1  Functional Purpose

The purpose of the Log In system is to ensure that, when the vehicle ignition is turned on, the appropriate on-board systems are activated.

To log into the system, the driver is required to insert an iButton into a reader unit. The iButton contains stored information that is specific to each of the designated fleet car drivers. During the log in process, information stored in the iButton is transmitted to the relevant on-board systems immediately following system initialisation.

4.2  Warning Sequence

• If the iButton is inserted before the vehicle ignition is turned on, normal system initialisation shall occur and the following text message will be displayed continuously whilst the system boots up: “SafeCar safety system is starting up – please wait”
• If the Master Pushbutton is not depressed following system initialisation (See Section 7: Master Pushbutton), and if the iButton has not been inserted into the reader unit up to the point in time that the decision not to press the Master Pushbutton has been registered by the system, the following message will occur: ”Please insert iButton to log in”.
• The warning message shall be repeated for 30 seconds or until the iButton is inserted.
• The warning message shall be issued as both a text and voice message (see Sections 4.3.1 and 4.3.2).
• If the iButton is not inserted within 30 seconds of the onset of the warning message:
  o all system warnings (but not the system sensors) shall be disabled and the ITS Visual Display Screen shall be turned off;
  o the fact that the iButton has not been inserted shall be recorded by the data logging system (see Section 11: Data Logging System);
  o data logging will continue; and
  o the following message shall be issued as both a text and voice message: “iButton not detected – all warnings will be disabled”

4.3  HMI Design Specifications

The warning consists of text and voice messages.

4.3.1  Text Messages

• The text messages shall be displayed on the left side of the screen (see Figure 8) and shall adhere to the following:
  o be static;
  o be black in colour ;
  o be presented in sentence case (i.e. combination of upper and lower case);
  o be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a
normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.
  o the ratio between the stroke width and character height should be between 1:12.5 and 1: 6.25
  o the relation between the width and height of the character should be between 0.5: 1 and 1:1
  o the space between characters should be a minimum of one stroke width
  o the font type should be clear and simple. Sans serif fonts are recommended (eg Arial, Helvetica – not Times)
  o there should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.

4.3.2 Voice Messages
  • The voice messages shall have the following design features:
    o a female voice is preferred
    o an Australian accent is preferred
    o a signal to noise ratio of around 5dB(A) should be sufficient to ensure audibility of speech messages
  • The gap between the end of a voice message and the start of a new voice message shall be 3 seconds.

Figure 8: Location and Maximum Dimensions of the Text Messages
5 LOG OUT

5.1 Functional Purpose

The purpose of the Log Out system is to record the occurrence of the end of a driving session and to update on the iButton the number of kilometres travelled during a driving session.

5.2 Warning Sequence

- To log out of the system, the iButton must be inserted into a reader unit. In this case, the following text message is displayed on the ITS Visual Display Screen continuously whilst the shut down process is being completed: “SafeCar safety system is shutting down”
- If the iButton is not detected in the reader unit after engine shutdown, the following warning message shall be issued: “Please insert log in button to complete shutdown process”.
- The warning shall be repeated 30 times or until the iButton is inserted.
- The warning shall be issued as both a text and a voice message (see Sections 5.3.1 and 5.3.2 below)
- If the iButton is not inserted after 30 repetitions of the warning message, system shut down will commence. However, the number of kilometres accrued during the driving session will not be updated on the iButton.
- If the iButton is removed from the reader unit during a driving session, the existing setting on the iButton must be preserved even though the new number of kilometres is not saved.

5.3 HMI Design Specifications

The warning consists of text and voice messages.

5.3.1 Text Messages

- The text message shall be displayed on the left side of the screen (see Figure 8) and shall adhere to the following:
  - be static
  - be black in colour
  - be presented in sentence case (i.e. combination of upper and lower case)
  - be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.
  - the ratio between the stroke width and character height should be between 1:12.5 and 1:6.25
  - the relation between the width and height of the character should be between 0.5: 1 and 1:1
  - the space between characters should be a minimum of one stroke width
  - the font type should be clear and simple. Sans serif fonts are recommended (eg Arial, Helvetica – not Times)
  - there should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.
5.3.2 Voice Message

- The voice message shall have the following design features:
  - a female voice is preferred
  - an Australian accent is preferred
  - a signal to noise ratio of around 5dB(A) should be sufficient to ensure audibility of speech messages

- The gap between the end of the message and the start of the new message shall be 3 seconds
6. **IBUTTON**

6.1 *Functional Purpose*

- To serve as a storage device for the following information relating to individual designated drivers:
  - Driver identification (ID); and
  - Number of kilometres travelled.

- To systematically enable and disable the warnings issued by relevant systems (specified below) based on the number of kilometres travelled by the designated driver.

6.2 *Warning Sequence*

Warnings associated with the iButton are described in sections 4 (Log In) and 5 (Log Out).

6.3 *HMI Design Specifications*

Each iButton shall:

- Contain the specific ID number for each of the participants in the trial
- Store the current cumulative number of kilometres travelled by the designated driver
- Be programmable and able to accept at least 10 different settings that define the systems to be enabled and disabled based on kilometres travelled.
  - Each kilometre threshold shall be associated with a set of stored parameters.
  - Once the number of kilometres travelled exceeds the next programmed kilometre threshold, the new parameters shall replace the old ones.
- Be able to independently enable and disable warnings for the following systems:
  - Intelligent Speed Adaptation – Informative
  - Intelligent Speed Adaptation – Actively Supporting
  - Following Distance Warning
  - Seat Belt Reminder
- Initiate text and voice messages to notify drivers of changes in the onset and offset of the systems in the TAC SafeCars. Table 2 below contains the text and voice messages that shall be issued according to the number of kilometres travelled by the designated driver and the TAC SafeCar system to be activated. These reminder messages shall be presented at the time of the first shutdown sequence that occurs after each of the above thresholds has been exceeded.

The reminder messages in Table 2 shall be presented as simultaneous voice and text messages. The text messages will appear on the ITS Visual Display Screen.

The iButton Reader Unit shall be located in a position within the vehicle that will minimize the possibility that the unit is knocked by the driver during normal operations.

The plastic handle attached to the iButton will be removed to minimize the possibility of the button being inadvertently removed from the Reader Unit during the fleet trial.
<table>
<thead>
<tr>
<th>Kilometre Threshold</th>
<th>System(s) to be Activated</th>
<th>Voice Message Content</th>
<th>Text Message Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>3200 km</td>
<td>• ISA-A or</td>
<td>“Next time you start the car the active speed warning system will be turned on. Please refer to the refresher training materials for this system.”</td>
<td>“Next system on - active speed warning”</td>
</tr>
<tr>
<td></td>
<td>• ISA-I or</td>
<td>“Next time you start the car the speed warning system will be turned on. Please refer to the refresher training materials for this system.”</td>
<td>“Next system on - informative speed warning”</td>
</tr>
<tr>
<td></td>
<td>• FDW or</td>
<td>“Next time you start the car the following distance warning system will be turned on. Please refer to the refresher training materials for this system.”</td>
<td>“Next system on: - following distance warning”</td>
</tr>
<tr>
<td></td>
<td>• ISA (A or I) + FDW</td>
<td>“Next time you start the car the speed warning and following distance warning systems will both be turned on. Please refer to the refresher training materials for these systems”</td>
<td>“Next systems on: - active speed warning - following distance warning” or “Next systems on: - informative speed warning - following distance warning”</td>
</tr>
<tr>
<td>6200</td>
<td>• No ISA or FDW.</td>
<td>“Next time you start the car, there will be no speed or following distance warnings.”</td>
<td>“Next - no speed or following distance warnings.”</td>
</tr>
<tr>
<td>7700</td>
<td>• ISA-A or</td>
<td>“Next time you start the car the active speed warning system will be turned on. Please refer to the refresher training materials for this system.”</td>
<td>“Next system on - active speed warning”</td>
</tr>
<tr>
<td></td>
<td>• ISA-I or</td>
<td>“Next time you start the car the speed warning system will be turned on. Please refer to the refresher training materials for this system.”</td>
<td>“Next system on: - informative speed warning”</td>
</tr>
<tr>
<td>10,700</td>
<td><strong>No ISA or FDW.</strong></td>
<td><em>“Next time you start the car, there will be no speed or following distance warnings.”</em></td>
<td><em>“Next - no speed or following distance warnings.”</em></td>
</tr>
<tr>
<td>12,200</td>
<td><strong>ISA-A or ISA-I or FDW or ISA (A or I) + FDW</strong></td>
<td><em>“Next time you start the car the following distance warning system will be turned on. Please refer to the refresher training materials for this system.”</em></td>
<td><em>“Next system on following distance warning”</em></td>
</tr>
<tr>
<td></td>
<td><em>“Next time you start the car the speed warning and following distance warning systems will both be turned on. Please refer to the refresher training materials for these systems”</em></td>
<td><em>“Next system on: active speed warning following distance warning”</em> or <em>“Next systems on: informative speed warning following distance warning”</em></td>
<td></td>
</tr>
</tbody>
</table>
6.3.1 Text Messages
- The text message shall be displayed on the ITS Visual Display (see Figure 10) and shall adhere to the following:
  - be static
  - be black in colour
  - be presented in sentence case (i.e. combination of upper and lower case)
  - be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.
  - the ratio between the stroke width and character height should be between 1:12.5 and 1:6.25
  - the relation between the width and height of the character should be between 0.5:1 and 1:1
  - the space between characters should be a minimum of one stroke width
  - the font type should be clear and simple. Sans serif fonts are recommended (eg Arial, Helvetica – not Times)
  - there should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.

6.3.2 Voice Message
- The voice message shall have the following design features:
  - a female voice is preferred
  - an Australian accent is preferred
  - a signal to noise ratio of around 5dB(A) should be sufficient to ensure audibility of speech messages
7. **MASTER PUSHBUTTON**

7.1 **Functional Purpose**

The function of the Master Pushbutton is to allow non-designated drivers to drive the SafeCar as a normal vehicle, that is, without being exposed to the on-board visual and auditory warnings. Pressing this pushbutton will result in the shutdown of all Intelligent Transport Systems in the car, excluding the RCW and Daytime Running Lights (the latter two shall operate as independent systems).

7.2 **Warning Sequence**

- Immediately following initialisation of the TAC SafeCar operating system, the following message shall be displayed to the driver: “If you are not the designated driver (of this vehicle), please press the flashing button”.
- The message shall be presented as both a text message (on the ITS Visual Display Screen) and as a voice message. Specifications for the design of the text and voice messages are contained in Sections 7.3.2 and 7.3.3 below.
- The message shall be presented once only.
- If the Master pushbutton is pressed, the following will occur in sequence:
  - the data logging system shall record this instance;
  - the data logging shall stop; and
  - all of the Intelligent Transport systems shall shut down.
- If the Master Pushbutton is not pressed for 5 seconds after the message presentation has finished:
  - the system shall assume that the designated driver is using the car
  - the system will proceed with the normal Log In sequence (see Section 4)

7.3 **HMI Design Specifications**

7.3.1 **Pushbutton**

The Master Pushbutton shall:
- be located as shown on the ITS Control Panel (see Figure 9)
- shall be a minimum of 2.5cm from the centre of other pushbuttons on the ITS Control Panel
- shall have the minimum dimensions prescribed in Table 3
- be easy to reach from the normal driving position
- be usable without inadvertently activating another control
- be perpendicular to the driver’s line of sight
- have momentary action
- provide tactile feedback of activation (eg “click”)
- be able to flash
- illuminate in red when flashing
- be able to stop flashing
- be labelled SYSTEM OVERRIDE
7.3.2 Text Messages
- The text message shall be displayed on the ITS Visual Display (see Figure 10) and shall adhere to the following:
  - be static
  - be black in colour;
  - be presented in sentence case (i.e. combination of upper and lower case)
  - be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.
  - the ratio between the stroke width and character height should be between 1:12.5 and 1: 6.25
  - the relation between the width and height of the character should be between 0.5: 1 and 1:1
  - the space between characters should be a minimum of one stroke width
  - the font type should be clear and simple. Sans serif fonts are recommended (eg Arial, Helvetica – not Times)
  - there should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.

7.3.3 Voice Message
- The voice message shall have the following design features:
  - a female voice is preferred
  - an Australian accent is preferred
  - a signal to noise ratio of around 5dB(A) should be sufficient to ensure audibility of speech messages

Table 3: Minimum Dimensions for Finger-Operated Pushbuttons

<table>
<thead>
<tr>
<th>Type</th>
<th>Operation force</th>
<th>Dimension</th>
<th>Contact Surface Area</th>
<th>Clearance (centre-to-centre) Gloved Hand</th>
<th>Clearance (centre-to-centre) Bare Hand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pushbutton</td>
<td>1 to 8 N</td>
<td>8mm</td>
<td>80 mm²</td>
<td>25 mm</td>
<td>15mm</td>
</tr>
</tbody>
</table>
Note 1. Pushbuttons may be all square or all circular. Square buttons are preferred.

Note 2. It is understood that space and other constraints may prevent the implementation of the layout specified here.

Note 3. The locations of the pushbuttons are justified on ergonomic grounds as follows:

- The Speed request Button, being the button most likely to be operated on a regular basis, should be located closest to the driver, as high as possible, and close to the ITS Visual Display to which it is functionally related.
- The system override button must be easily seen and located and must not be inadvertently activated. This button also functions as the Master Pushbutton.
- The Master Pushbutton is located in a position where inadvertent activation of other controls is unlikely, but flashes to attract attention.
- The Master Volume Control, given that it is likely to be used regularly, is located in a position that is close to the driver and is unlikely to result in inadvertent activation of other controls.
Figure 10: Location and the maximum dimensions of the text message
8. SPEED REQUEST BUTTON

8.1 Functional Purpose

The function of Speed request button is to allow drivers of the TAC SafeCar to display the current posted speed limit in any location which is covered by the digital map containing speed zone data.

8.2 Message Sequence

8.2.1 Visual Icon

- Immediately after the Speed request button has been pressed, a static visual icon shall appear on the ITS Visual Display Screen. This takes the form of a scaled down version of a conventional speed limit sign. The design, location and dimensions of this icon are specified in Section 8.3.2.
- Each time the static visual icon is displayed, it shall be accompanied by a single short duration auditory tone. (Refer to sound file “bong.wav”, to be provided).
- The static visual icon shall remain displayed for 3 seconds, and then disappear.

8.2.2 Associated Messages

- If, at the time a driver presses the Speed request Button, the ISA system detects that the vehicle is being driven in a location outside the confines of the digital map database, the following text message shall be displayed to the driver: “Outside digital map zone”
- If, at the time a driver presses the Speed request Button the ISA-I system temporarily loses a GPS signal, the following text message shall be displayed to the driver: “No GPS signal”.

8.3 HMI Design Specifications

8.3.1 Pushbutton

Speed Request Button shall:

- be located as shown on the ITS Control Panel (see Figure 11)
- shall be a minimum of 2.5cm from the centre of other pushbuttons on the ITS Control Panel
- shall have the minimum dimensions prescribed in Table 3
- be easy to reach from the normal driving position
- be usable without inadvertently activating another control
- be perpendicular to the driver’s line of sight
- have a momentary action
- provide tactile feedback of activation (eg “click”)
- be illuminated blue to enable it to be seen at night
- be illuminated at a low level to avoid driver visual discomfort at night
- be labelled SPEED REQUEST
8.3.2 **Static visual icon**

- This has the appearance of a miniature speed limit sign.
- It consists of a red circle with a white fill. Inside the circle is a black number depicting the detected speed limit.
- This icon is presented on the left side of the ITS Visual Display Screen, as shown in Figure 12.
- The dimensions of the static visual icon are as shown in Figure 12.

8.3.3 **Auditory tone**

- Refer to sound file “bong.wav” (to be provided).
- This sound has the following frequency characteristics:
  - It consists of a two tone sound (736Hz and 1120 Hz) with a single repetition at a slow rate of presentation.
- It should be possible to hear the tone under all driving conditions at a level that will not startle the driver. The signal will be heard against background noise if its volume exceeds the ambient noise by 15dB.
- Volume should be adjustable between 50dB(A) and 90dB(A).

8.3.4 **Text Messages**

- The text message shall be displayed on the ITS Visual Display (see Figure 13) and shall adhere to the following:
  - be static
  - be black in colour
  - be presented in sentence case (i.e. combination of upper and lower case)
  - be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.
  - the ratio between the stroke width and character height should be between 1:12.5 and 1:6.25
  - the relation between the width and height of the character should be between 0.5:1 and 1:1
  - the space between characters should be a minimum of one stroke width
  - the font type should be clear and simple. Sans serif fonts are recommended (eg Arial, Helvetica – not Times)
  - there should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.
Note 1. Pushbuttons may be all square or all circular. Square buttons are preferred.

Note 2. System Reset Button (not shown in figure 11) shall be located away from the ITS Control Panel to prevent inadvertent operation.

Note 3. It is understood that space and other constraints may prevent the implementation of the layout specified here.

Note 4. The locations of the pushbuttons are justified on ergonomic grounds as follows:

- The Speed request Button, being the button most likely to be operated on a regular basis, should be located closest to the driver, as high as possible, and close to the ITS Visual Display to which it is functionally related.
- The system override button must be easily seen and located and must not be inadvertently activated. This button also functions as the Master Pushbutton.
- The Master Pushbutton is located in a position where inadvertent activation of other controls is unlikely, but flashes to attract attention.
- The Master Volume Control, given that it is likely to be used regularly, is located in a position that is close to the driver and is unlikely to result in inadvertent activation of other controls.
Figure 12: Location and Dimensions of the Visual Icon
Figure 13: Location and Maximum Dimensions of the Text Message
9. **SYSTEM OVERRIDE BUTTON**

9.1 **Functional Purpose**

The function of System Override Button is to allow drivers of the TAC SafeCar to temporarily disable all of the ITS warnings (including Haptic accelerator feedback).

9.2 **Warning Sequence**

- Immediately after the System Override Button has been pressed:
  - all visual information currently displayed on the ITS Visual Display Screen shall disappear, including the uncoloured FDW ladder
  - all current visual, audio and voice warnings and messages shall stop
  - haptic accelerator feedback, if already activated, shall stop
  - the ITS Visual Display Screen shall display the following text message: “System override activated”
  - the Data Logging System should continue logging data.
- This state shall last for 60 seconds
- During this period no additional warning in any form shall be displayed
- After expiration of 60 seconds normal function shall resume

9.3 **HMI Design Specifications**

9.3.1 **Button**

System Override Button shall:
- be located as shown on the ITS Control Panel (see Figure 14)
- be a minimum of 2.5cm from the centre of other pushbuttons on the ITS Control Panel
- have the minimum dimensions prescribed in Table 3
- be easy to reach from the normal driving position
- be usable without inadvertently activating another control
- be perpendicular to the driver’s line of sight
- have a momentary action
- provide tactile feedback of activation (eg “click”)
- be illuminated red to enable it to be seen at night
- be illuminated at a acceptable level to avoid driver visual discomfort at night
- be labelled SYSTEM OVERRIDE
9.3.2 Text Message

- The text message shall be displayed on the ITS Visual Display (see Figure 13) and shall adhere to the following:
  - be static
  - be black in colour;
  - be presented in sentence case (i.e. combination of upper and lower case)
  - be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.
  - the ratio between the stroke width and character height should be between 1:12.5 and 1:6.25
  - the relation between the width and height of the character should be between 0.5:1 and 1:1
  - the space between characters should be a minimum of one stroke width
  - the font type should be clear and simple. Sans serif fonts are recommended (eg Arial, Helvetica – not Times)
  - there should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.

![Figure 14: ITS Control Panel Layout – System Override Button](image-url)
Note 1. Pushbuttons may be all square or all circular. Square buttons are preferred.

Note 2. It is understood that space and other constraints may prevent the implementation of the layout specified here.

Note 3. The locations of the pushbuttons are justified on ergonomic grounds as follows:

- The Speed request Button, being the button most likely to be operated on a regular basis, should be located closest to the driver, as high as possible, and close to the ITS Visual Display to which it is functionally related.
- The system override button must be easily seen and located and must not be inadvertently activated. This button also functions as the Master Pushbutton.
- The Master Pushbutton is located in a position where inadvertent activation of other controls is unlikely, but flashes to attract attention.
- The Master Volume Control, given that it is likely to be used regularly, is located in a position that is close to the driver and is unlikely to result in inadvertent activation of other controls.
10. **MASTER VOLUME CONTROL**

10.1 *Functional Purpose*

The function of Master Volume Control is to allow drivers of the TAC SafeCar to adjust the volume at which all audio warnings and voice messages are played.

10.2 *Message Sequence*

Not applicable.

10.3 *HMI Design Specifications*

- The Master Volume Control shall:
  - be a rotary control or two pushbutton (different shape from other pushbuttons) control
  - shall be located on the ITS Control panel, ideally in the location shown in Figure 15
  - be easy to reach from the normal driving position
  - be usable without inadvertently activating another control
  - be silver grey or black
  - be labelled VOLUME
- The Master Volume control shall control the volume of all auditory ITS warnings and messages issued by the TAC SafeCar.
- Volume should be adjustable between 60dB(A) and 90dB(A).
- Volume cannot be reduced below 60dB(A).
Figure 15: ITS Control Panel Layout – Master Volume Control

Note 1. Volume control pushbuttons may be of a different shape (triangular) than other pushbuttons.

Note 2. It is understood that space and other constraints may prevent the implementation of the layout specified here.

Note 3. The locations of the pushbuttons are justified on ergonomic grounds as follows:

- The Speed request Button, being the button most likely to be operated on a regular basis, should be located closest to the driver, as high as possible, and close to the ITS Visual Display to which it is functionally related.
- The system override button must be easily seen and located and must not be inadvertently activated. This button also functions as the Master Pushbutton.
- The Master Pushbutton is located in a position where inadvertent activation of other controls is unlikely, but flashes to attract attention.
- The Master Volume Control, given that it is likely to be used regularly, is located in a position that is close to the driver and is unlikely to result in inadvertent activation of other controls.
## 11. Data Logging

### 11.1 Functional Purpose

The purpose of this system is to collect data that are required for analysis of the effect of the Intelligent Transport Systems on the driver’s performance.

The recorded data shall be stored onto a Memory Flash Card.

The list of parameters that shall be recorded is presented in Table 4 below. The column labeled Description contains recommendations for the formats of the data to be contained in a spreadsheet after being processed by the De-Logger software. These recommended formats are provided to facilitate data analysis by the MUARC research team.

### Table 4: List of Data Logging Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Date</td>
<td>Date, presented in the following format: dd/mm/yy</td>
</tr>
<tr>
<td>2 Time</td>
<td>0 – 24 hours, presented in the following format: hh:mm:ss</td>
</tr>
<tr>
<td>3 Milliseconds Since Startup</td>
<td>Indicates time lapsed in milliseconds since start of the engine</td>
</tr>
<tr>
<td>4 Login</td>
<td>ID number (unique for each participant – as stored on iButton). If the iButton is not detected, a default ID number shall be recorded. For example: 000.</td>
</tr>
<tr>
<td>System State</td>
<td>Indicates what state the system is in:</td>
</tr>
<tr>
<td></td>
<td>• 0: Loading</td>
</tr>
<tr>
<td></td>
<td>• 1: Waiting for master push button</td>
</tr>
<tr>
<td></td>
<td>• 2: Waiting for iButton log in</td>
</tr>
<tr>
<td></td>
<td>• 3: Normal logged in operation</td>
</tr>
<tr>
<td></td>
<td>• 4: System override state</td>
</tr>
<tr>
<td></td>
<td>• 5: Limbo with message displayed: “iButton not detected”</td>
</tr>
<tr>
<td></td>
<td>• 6: Limbo (ie logging with no logged in driver)</td>
</tr>
<tr>
<td></td>
<td>• 7: Waiting for iButton to logout</td>
</tr>
<tr>
<td></td>
<td>• 8: informing user of next configuration set</td>
</tr>
<tr>
<td>5 Configuration</td>
<td>Contains information on which of the SafeCar Systems are currently enabled to issue warnings For Example:</td>
</tr>
<tr>
<td></td>
<td>• 0 when no system warnings enabled</td>
</tr>
<tr>
<td></td>
<td>• 1 when only SBR enabled</td>
</tr>
<tr>
<td></td>
<td>• 2 when FDW + SBR enabled</td>
</tr>
<tr>
<td></td>
<td>• 3 when ISA-I + SBR enabled</td>
</tr>
<tr>
<td></td>
<td>• 4 when ISA-A + SBR enabled</td>
</tr>
<tr>
<td></td>
<td>• 5 when ISA-I + FDW + SBR enabled</td>
</tr>
<tr>
<td></td>
<td>• 6 when ISA-A + FDW + SBR enabled</td>
</tr>
<tr>
<td>6 Number of km travelled</td>
<td>Number of km travelled. This parameter shall be coordinated with the information stored on the iButton.</td>
</tr>
<tr>
<td>User ID</td>
<td>ID number (unique for each participant – as stored on iButton). If the iButton is not detected, a default ID number shall be recorded.</td>
</tr>
<tr>
<td>7 GPS latitude</td>
<td>From GPS receiver. Presented in degrees with a good level of precision (6 decimal places)</td>
</tr>
<tr>
<td>8 GPS longitude</td>
<td>From GPS receiver. Presented in degrees with a good level of precision (6 decimal places)</td>
</tr>
<tr>
<td></td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
</tr>
<tr>
<td>9</td>
<td>GPS speed</td>
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<tr>
<td>10</td>
<td>Speed</td>
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<tr>
<td>11</td>
<td>Braking Status</td>
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<td>12</td>
<td>Wipers Status</td>
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<td>13</td>
<td>Headlights Status</td>
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<td>14</td>
<td>Current Speed Limit</td>
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<td>15</td>
<td>Speed Warning Status</td>
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<td>16</td>
<td>Speed Request Button Status</td>
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<td>17</td>
<td>Time Headway</td>
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<td>18</td>
<td>Following Distance Warning Status</td>
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<td>19</td>
<td>Seatbelts Warning status</td>
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<td>20</td>
<td>System Override Button Status</td>
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<tr>
<td>21</td>
<td>Reverse Collision Warning</td>
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<tr>
<td>22</td>
<td>System Shutdown Status</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>23</td>
<td>Turn Indicator Status</td>
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</tr>
</tbody>
</table>
The sampling rate shall be 5Hz for the following parameters:

- Speed (from speedometer)
- Braking Status
- Time Headway
- Following Distance Warning Status

The minimum sampling rate for the remaining parameters shall be 1Hz.

All data logging parameters specified in Table 4 will be logged at all times unless otherwise specified.

### 11.2 Warning Sequence

- The following message shall be played to remind the designated driver to return the Flash Card to MUARC when the Flash Card exceeds 90% of its capacity: “Please return full memory card to Monash University and insert new one immediately.”
- The message shall be presented as both a text message (on the ITS Visual Display Screen) and as a voice message. Specifications for the design of the text and voice messages are contained in Sections 11.3.1 and 11.3.2 below.
- This message shall be played once after every Log Out sequence until the Flash Card has been replaced with the empty one.

### 11.3 HMI Design Specifications

#### 11.3.1 Text Messages

- The text message shall be displayed on the ITS Visual Display (see Figure 10) and shall adhere to the following:
  - be static
  - be black in colour
  - be presented in sentence case (i.e. combination of upper and lower case)
  - be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.
  - the ratio between the stroke width and character height should be between 1:12.5 and 1:6.25
  - the relation between the width and height of the character should be between 0.5:1 and 1:1
  - the space between characters should be a minimum of one stroke width
  - the font type should be clear and simple. Sans serif fonts are recommended (eg Arial, Helvetica – not Times)
  - there should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.

#### 11.3.2 Voice Message

- The voice message shall have the following design features:
  - a female voice is preferred
  - an Australian accent is preferred
  - a signal to noise ratio of around 5dB(A) should be sufficient to ensure audibility of speech messages
11.3.3 Flash Card
The Flash Card shall:
- have 64Mb storage capacity
- be located in the boot of the SafeCar
- be easily accessible
- be protected from potential mechanical damage caused by any loose articles sitting in the boot.
12. **Reverse Collision Warning**

12.1 **Functional Purpose**

This is a commercially available system known as the “Park Pilot”, manufactured by Bosch. The function of the Reverse Collision Warning System is to prevent collisions with primarily stationary, but also moving objects, when reversing. This system serves primarily as a parking aid. The system has been modified to exclude redundant visual warnings. Other than that, it functions as an off-the-shelf system.

12.2 **Message Sequence**

12.2.1 **Warnings**

There are five levels of auditory warning. Each level of warning is based on the closest distance between the 4 ultrasonic sensors, mounted in the rear vehicle bumper, and the detected object.

- Level 1 – is played when the distance between the sensors and the detected object is between 80 cm and 100 cm
- Level 2 – is played when the distance between the sensors and the detected object is between 60 cm and 80 cm
- Level 3 – is played when the distance between the sensors and the detected object is between 40 cm and 60 cm
- Level 4 – is played when the distance between the sensors and the detected object is between 30 cm and 40 cm
- Level 5 – is played when the distance between the sensors and the detected object is less than 30 cm

12.2.2 **Other Sounds**

- Turning the system on: The system is automatically activated when the engine is running and the gear is positioned in reverse. The change of the gear into reverse is accompanied by a single 1200 Hz “ready” tone for 0.5 s.
- Errors: If the system is turned on and an error is detected the system will play a continuous 600 Hz “error” tone. The same tone will be played in the case of hardware error.
- Turning the system off: The system will be automatically turned off when the gear is not in reverse.

12.3 **HMI Design Specifications**

This system issues audio warnings only. Each level of warning is associated with the following audio warnings:

- Level 1 - repeating 1200 Hz tone, with on interval of 75 ms and off interval of 300 ms
- Level 2 - repeating 1200 Hz tone, with on interval of 75 ms and off interval of 225 ms
- Level 3 - repeating 1200 Hz tone, with on interval of 75 ms and off interval of 150 ms
- Level 4 - repeating 1200 Hz tone, with on interval of 75 ms and off interval of 75 ms
- Level 5 - Continuous 600 Hz tone
• The driver shall be able to control the volume of Rear Collision Warnings using the Master Volume Control (see Section 10).
• Volume should be adjustable between 50dB(A) and 90dB(A).
• Volume cannot be reduced below 50dB(A).

Table 5 below summarises warnings produced by this system in relation to the distance of the object from the rear of the vehicle.

Table 5: Summary of the Reverse Collision Warnings

<table>
<thead>
<tr>
<th>Distance to the rear of the vehicle</th>
<th>Audio Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 100 cm</td>
<td>None</td>
</tr>
<tr>
<td>80 – 100 cm</td>
<td>Repeating 1200 Hz tone, on 75 ms and off 300 ms</td>
</tr>
<tr>
<td>60 – 80 cm</td>
<td>Repeating 1200 Hz tone, on 75 ms and off 225 ms</td>
</tr>
<tr>
<td>40 – 60 cm</td>
<td>Repeating 1200 Hz tone, on 75 ms and off 150 ms</td>
</tr>
<tr>
<td>30 – 40 cm</td>
<td>Repeating 1200 Hz tone, on 75 ms and off 75 ms</td>
</tr>
<tr>
<td>&lt; 30cm</td>
<td>Continuous 600 Hz tone</td>
</tr>
</tbody>
</table>
13. **DAYTIME RUNNING LIGHTS**

13.1 **Functional Purpose**

The function of the Daytime Running Lights is to increase the conspicuity of the SafeCar on the road during daylight conditions.

13.2 **Message Sequence**

Not applicable.

13.3 **HMI Design Specifications**

- The car headlights will turn on automatically (in DRL mode: on low beam, at 80% of their normal luminance to conserve power) when the engine is started. They will turn off automatically when the engine is turned off.
- In DRL mode, interior lights, which normally illuminate when the headlights are turned on, will not be turned on to conserve power.
- In DRL mode, the vehicle taillights shall be illuminated to 80% of normal intensity. This is to ensure that the vehicle can be seen from the rear at night in the event that the driver fails to manually switch on the headlights.
14. ITS VISUAL DISPLAY

14.1 Functional Purpose

The function of the ITS Visual Display is to display to the driver visual messages and warnings issued by the SafeCar systems.

14.2 Message Sequence

Refer to individual system specifications.

14.3 HMI Design Specifications

14.3.1 Display Type

- The ITS Visual Display shall consist of a 3.8" Liquid Crystal Display (LCD).
- Ideally, the display should be able to operate within the expected temperature range expected for the duration of the fleet trial. (Note. In high temperatures, the ITS Visual Display in the prototype vehicles does not function properly.)

14.3.2 Location

- Ideally, the ITS Visual Display Screen shall be located within 15° of the driver’s vertical viewing position and 15° horizontally, with a maximum separation of 30°. It is preferable that the display be located to the left, rather than right, of the driver’s normal line of sight.
- The driver, regardless of height, shall have a clear and unobstructed view of the display.
- The location of the display shall not interfere with the operation of other vehicle controls.

14.3.3 Brightness

- The display shall contain a brightness control to ensure that the display is legible in all ambient light conditions.
- The brightness control must be easy to reach and operate.

14.3.4 Contrast

- The contrast ratio (see formula below) describes the relation between the luminance of the foreground and the background. This should be a minimum of 3:1, whilst a ratio of 5:1 is recommended. Too high contrast can cause problems of glare, whilst too low contrast slows down the reading process.
- The ratio of area average luminance of the display and of the surrounding (luminance balance) should not exceed 10:1 (ISO 15008 integrated, 2000).

\[
\text{Contrast} = \frac{L_{\text{Foreground}} - L_{\text{Background}}}{L_{\text{Background}}}
\]

\(L_{\text{Foreground}}\) = Luminance of the foreground

\(L_{\text{Background}}\) = Luminance of the background
14.3.5 Resolution

- The resolution of the display should be high enough to show the driver solid images of information via symbol or text.
- The recommended resolution of a 3.8” LCD is 320 by 240 (240 by 320) pixels.

14.3.6 Reflections and Glare

- The ITS Visual display shall:
  - be free from reflections and glare under all ambient lighting conditions; and
  - not cause reflections and/or glare on the windscreen and windows.

14.3.7 Characters, Spacing and Fonts

- Refer to specifications for individual systems.

14.3.8 Screen Image Stability

- The ITS Visual Display Screen shall not vibrate or flicker to an extent that information becomes blurred, which may increase reading time and therefore increase task completion time and visual distraction from the driving task.

14.3.9 Safety

- The ITS Visual Display shall be mounted in the vehicle in a manner which ensures that it will not injure the vehicle occupant in the event of a crash.
15. ITS AUDIO SYSTEM

15.1 Functional Purpose

The function of the ITS Audio System is to present to the driver auditory messages and warnings issued by the SafeCar systems.

15.2 Message Sequence

Refer to specifications for individual systems.

15.3 HMI Design Specifications

- The audio system must be able to deliver warnings and messages at levels adjustable between 50dB(A) and 90dB(A).
- Other audio sources in the vehicle will not be muted by the ITS warnings/messages, as this is likely to annoy drivers and be unacceptable to them.
16. **MESSAGE PRIORITY PROTOCOL**

16.1 *Functional Purpose*

The function of the Message Priority Protocol is to ensure that, if two or more ITS warnings in the SafeCar are simultaneously initiated, only the most critical warning is presented to the driver. This ensures that the driver is neither confused nor overloaded by multiple competing ITS warnings.

16.2 *Warning Sequence*

Specifications for the message priority protocol are presented in Table 6 below. The message priority scheme does not pertain to messages and warnings issues by non-SafeCar systems and adheres to the following general principles:

- FDW headway warnings which reach critical status (i.e. which correspond to three red bars, a flashing headway ladder and simultaneous auditory alerts) suppress all other warnings;
- ISA warnings at any level of criticality suppress seat belt warnings. However if, after 5 seconds, ISA warnings are still being issued because the driver has not slowed down sufficiently, alternation of the Seat Belt and ISA warnings occurs in 5 second cycles; and
- FDW headway warnings which do not reach critical status are always displayed, but they do not suppress other warnings.

Table 6: Message Priority Protocol

<table>
<thead>
<tr>
<th>COMPETING WARNINGS</th>
<th>MESSAGE PRIORITY PROTOCOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle speed 0 km/h to less than 20 km/h</td>
<td>Within this vehicle speed range, only Seat Belt Reminder warnings will be issued, as:</td>
</tr>
<tr>
<td></td>
<td>• Following Distance Warnings are not issued at speeds below 20 km/hr (see Section 2.2.2).</td>
</tr>
<tr>
<td></td>
<td>• There will be no posted speed limits in the digital database of 50 km/hr or less.</td>
</tr>
<tr>
<td></td>
<td>Hence, there will be no competing warnings within this speed range.</td>
</tr>
<tr>
<td>Vehicle Speed 20 km/h to less than 50 km/h</td>
<td>Within this vehicle speed range, only Seat Belt Reminder and FDW warnings will be issued as there will be no posted speed limits in the digital database of 50 km/hr or less. Hence, only SBR and FDW warnings can compete within this speed range in the two scenarios shown below.</td>
</tr>
<tr>
<td>1. Seat Belt Warning on - then FDW</td>
<td>• If FDW warnings are non-critical (at Level 5 or less; see Section 2.3.1), the FDW ladder bars are displayed and Seat Belt visual and auditory warnings remain displayed.</td>
</tr>
<tr>
<td></td>
<td>• If FDW warnings are critical (at Level 6; see Section 2.3.1), they immediately suppress the Seat Belt visual and auditory warnings until time headway is increased to a non-critical level.</td>
</tr>
<tr>
<td>2. FDW on - then Seat Belt Reminder</td>
<td>• If existing FDW warnings are critical, they suppress other warnings. When they become non-critical, the Seat Belt visual and auditory warnings are displayed alongside the FDW ladder bars.</td>
</tr>
<tr>
<td></td>
<td>• If existing FDW warnings are non-critical, Seat Belt visual and auditory warnings are displayed alongside the FDW display.</td>
</tr>
</tbody>
</table>
Vehicle Speed
50 km/hr and above.

In this speed range, there is potential conflict between warnings issued by the FDW, SBR and ISA systems. This gives rise to 9 different scenarios in which potential conflicts between warnings can occur. Message priority protocols for each of these nine scenarios are specified below.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Priority Protocol</th>
</tr>
</thead>
</table>
| 1. Seat Belt Reminder Warning then FDW | • If FDW warnings are non-critical, the FDW ladder bars are displayed and Seat Belt visual and auditory warnings are displayed.  
• If FDW warnings are critical, they replace the Seat Belt visual and auditory warnings until such time that headway is increased to a non-critical level. |
| 2. Seat Belt Reminder Warning then ISA warning | • For both ISA systems (ISA-I and ISA-A), ISA warnings will initially suppress SBR warnings until such time as the driver reduces speed to the pre-ISA warning speed. Then the Seat Belt Reminder warnings will resume.  
• If speed is not reduced to the pre-ISA warning speed within 5 seconds, then the SBR warnings will resume for 5 seconds, followed by the ISA warnings for 5 seconds, followed by the SBR warnings for 5 seconds, and so on, in an alternating fashion. The alternating warnings will continue until the driver reduces speed to the pre-ISA warning speed or the seat belt is buckled. |
| 3. Seat Belt Warning on-them ISA + FDW | • If FDW warnings are critical, they suppress the SBR warnings and prevent ISA warnings from being displayed until such time that headway is increased to a non-critical level.  
• If the FDW warnings are non-critical, the ISA warnings will initially suppress the SBR warnings until such time as the driver reduces speed to the pre-ISA warning speed. Then the Seat Belt warnings will resume. However, if speed is not reduced to the pre-ISA warning speed within 5 seconds, the SBR warnings will resume for 5 seconds, followed by the ISA warnings for 5 seconds, followed by the Seat Belt warnings for 5 seconds, and so on, in an alternating fashion. The alternating warnings will continue until the driver reduces speed to the pre-ISA warning speed or the seat belt is buckled. |
| 4. FDW on then Seat Belt Reminder Warning | See priority scheme for vehicle speed of 15 km/h to less than 50 km/h, No. 2, above. |
| 5. FDW on – then ISA | • If existing FDW warnings are critical, they remain displayed and suppress the ISA warnings. When the FDW warnings become non-critical, the ISA warnings are displayed with the FDW warnings.  
• If the existing FDW warnings are non-critical, ISA warnings are displayed with the FDW warnings. |

Note. When an ISA warning initially suppresses the SBR warning, the ISA warning will be presented immediately as a Stage 2 warning (see Section 1.2) rather than as a Stage 1 warning.
6. FDW on-then ISA warning + Seat Belt Reminder Warning

- If existing FDW warnings are critical, they remain displayed and suppress all other warnings. When the FDW warnings become non-critical, the ISA warnings are displayed (immediately as Stage 2 ISA warnings) with the non-critical FDW warnings until such time as the driver reduces speed to the pre-ISA warning speed. If speed is not reduced to the pre-ISA warning speed within 5 seconds, then the SBR warnings will replace the ISA warnings for 5 seconds, followed by the ISA warnings for 5 seconds, followed by the SBR warnings for 5 seconds, and so on in an alternating fashion. The alternating warnings will continue until the driver reduces speed to the pre-ISA warning speed or the seat belt is buckled.

- If the existing FDW warnings are non-critical, ISA warnings (initially at the Stage 2 level) are displayed alongside the non-critical FDW display until such time as the driver reduces speed to the pre-ISA warning speed. If speed is not reduced to the pre-ISA warning speed within 5 seconds, then the SBR warnings will replace the ISA warnings for 5 seconds, followed by the ISA warnings for 5 seconds, followed by the SBR warnings for 5 seconds, and so on in an alternating fashion. The alternating warnings will continue until the driver reduces speed to the pre-ISA warning speed or the seat belt is buckled.

7. ISA on-then Seat Belt Reminder Warning

- ISA suppresses seat belt warnings until such time as the driver reduces speed to the pre-ISA warning speed. If speed is not reduced to the pre-ISA warning speed within 5 seconds, then the Seat Belt warnings will be displayed for 5 seconds, followed by the ISA warnings for 5 seconds, followed by the Seat Belt warnings for 5 seconds, and so on in an alternating fashion. The alternating warnings will continue until the driver reduces speed to the pre-ISA warning speed or the seat belt is buckled.

8. ISA on – then FDW

- Following distance warnings which are critical will suppress existing ISA warnings.

- Following distance warnings which are non-critical will be displayed alongside existing ISA warnings.

9. ISA on – then FDW + Seat Belt Warning

- Following distance warnings which are critical will suppress ISA and Seat Belt warnings.

- Following distance warnings which are non-critical can be displayed alongside existing ISA warnings without suppressing ISA or seat belt warnings. ISA warnings will initially suppress the seat belt warnings until such time as the driver reduces speed to the pre-ISA warning speed. Then the Seat Belt warnings will commence. If speed is not reduced to the pre-ISA warning speed within 5 seconds, then the Seat Belt warnings will resume for 5 seconds, followed by the ISA warnings for 5 seconds, followed by the Seat Belt warnings for 5 seconds, and so on in an alternating fashion. The alternating warnings will continue until the driver reduces speed to the pre-ISA warning speed or the seat belt is buckled.

16.3 HMI Design Specifications

Refer to the HMI specifications for individual systems.
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TAC SAFECAR PROJECT: PHASE 3

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INTRODUCTION

In 1999, the Transport Accident Commission of Victoria (TAC) commissioned the Monash University Accident Research Centre (MUARC) to undertake what has become known as the “TAC SafeCar” project. The ultimate aim of the project is to stimulate demand, initially by Victorian corporate car fleet owners and, in the longer term, by car drivers in the general community, for in-vehicle Intelligent Transport System (ITS) technologies that are estimated to have high safety potential. The project is a five-phase research and demonstration project involving, as key partners, the TAC, MUARC, and the Ford Motor Company of Australia (Ford).

Phase 1 of the project culminated in the selection of several in-vehicle ITS technologies that are estimated to have the potential to significantly reduce road trauma in Victoria. In Phases 2 and 3, functional and Human-Machine Interface (HMI) specifications for these systems were developed by the project team. The final version of these specifications is documented in Appendix C of Volume 2 of the final report on the TAC SafeCar project.

This report documents the outcomes of the Acceptance Testing process. This process involved the development of a series of scenarios (or protocols) for testing whether each of the SafeCar systems developed in Phase 3 of the SafeCar project adhered to the original functional and HMI specifications developed in Phases 1 and 2. The report is structured in accordance with the original functional and HMI specifications for the SafeCar systems. For each system, the report documents whether the SafeCar system tested was fully implemented, partially implemented or not implemented with reference to the original specifications. Where the system was partially implemented or not implemented, evidence for this is documented. The test scenarios for determining the extent to which a SafeCar system was implemented with reference to the original specifications is also described. The equipment and facilities used to conduct each test are described.

This report does not document changes which were made to the SafeCar systems following the acceptance testing process. Those changes which were made are documented in emails and other project correspondence retained by MUARC and the Transport Accident Commission. The functional and HMI specifications documented in Appendix C of Volume 2 of the final report on the TAC SafeCar project incorporate the various changes that were made. Those changes that could not be made, for technical or other reasons, are described in Chapter 8 of Volume 1 of the final report on the TAC SafeCar project.

As noted above, the acceptance testing process was conducted with reference to the original functional and HMI specifications developed for the SafeCar systems that was provided to the system developers (Version 2.1, dated 4 December 2001). Hence, it is possible, by comparing the specifications in this document with those contained in Appendix C of Volume 2 of the final report on the TAC SafeCar project, to determine in what way the final specification for the SafeCars differed from the original specification contained here.

We believe that the test protocols reported here will be useful for the development of comparable systems in future production vehicles.
1. **INTelligent SPEED ADAPTATION (ISA)**

1.1 **Functional Purpose**

The purpose of this system is to warn the driver when the vehicle that he/she is operating is exceeding the posted speed limit by 3 kilometres per hour.

1.2 **Warning Sequence**

a) One variant of the ISA system shall be implemented – the Actively Supporting (ISA-A) system.

<table>
<thead>
<tr>
<th>FullyImplemented</th>
<th>Partially Implemented</th>
<th>Both ISA systems are implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario | Program iButton to enable/disable the system. Stimulate the warnings by exceeding speed limit under controlled conditions.

Equipment/Facilities | Test track

The specifications for the warning sequences for each variant of the ISA system are as follows.

1.2.1 **ISA Actively Supporting System**

The ISA-A system shall be implemented as a two-stage warning system as follows.

1.2.1.1 **Stage 1**

a) Immediately after the posted speed limit has been exceeded by 2 kilometres (the warning speed threshold) per hour or more, a static visual icon will appear on the ITS Visual Display Screen (see Figure 1). This takes the form of a scaled down version of a conventional speed limit sign. The design, location and dimensions of this icon are specified in Section 1.3.1 of the Functional and HMI Specifications for On-board Intelligent Transport Systems.

<table>
<thead>
<tr>
<th>FullyImplemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario | Initiate warning by exceeding speed limit threshold. Record speedometer and display in the frame.

Equipment/Facilities | Test track, DV

b) Each time the static visual icon is displayed, it shall be accompanied by a single short duration auditory tone. (Refer to sound file “bong.wav”).

<table>
<thead>
<tr>
<th>FullyImplemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario | Initiate warning by exceeding speed limit threshold. Record speedometer and display in the frame. Ensure that sound is recorded. Compare sound with a reference.

Equipment/Facilities | Test track, DV
c) The static visual icon shall remain displayed until the vehicle speed drops below the warning speed threshold or until it is replaced by a Stage 2 warning (see section 1.2.1.2 in the Specifications).

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<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
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</tbody>
</table>

Test Scenario: Initiate warning by exceeding speed limit threshold. Record speedometer and display in the frame for the whole duration of the warning.

Equipment/Facilities: Test track, DV

1.2.1.2 Stage 2

a) If the driver ignores the Stage 1 warning and continues to exceed the posted speed limit by 2 kilometres per hour or more for 2 seconds or more, the Stage 2 warning is presented. The Stage 2 warning is presented 2 seconds after the onset of the Stage 1 warning (see Figure 1).

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<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
<td>✔</td>
<td></td>
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</tbody>
</table>

Test Scenario: Initiate warning by exceeding speed limit threshold. Record speedometer and display in the frame for the whole duration of the stage 2 warning. Measure duration using the video record.

Equipment/Facilities: Test track, DV

b) The Stage 2 visual warning is identical to the Stage 1 visual warning. However, in Stage 2 the circle surrounding the posted speed limit shall flash repeatedly (see Figure 1). The flash rate shall be 3 Hz, with equal on and off times.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td>Only the red circle should flash. The number should be static</td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Initiate warning by exceeding speed limit threshold. Record speedometer and display in the frame for the whole duration of the stage 2 warning. Measure flash rate using the video record.

Equipment/Facilities: Test track, DV

c) Each time the Stage 2 flashing visual icon is displayed, it shall be accompanied by upward pressure applied to the accelerator pedal (the “haptic feedback system”). There is no auditory tone associated with Stage 2 warnings in the ISA-A system.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>It is not possible to have ISA-A without sounds. There are some issues associated with the feel of the haptic feedback</td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Initiate warning by exceeding speed limit threshold. Record speedometer and display in the frame for the whole duration of the stage 2 warning. Indicate verbally the instance of haptic pressure being felt. Measure repetition rate using the video record. Analyse timing.

Equipment/Facilities: Test track, DV

d) Full upward pressure on the accelerator pedal shall be felt by the driver at the onset of the Stage 2 warning. The haptic feedback system needs 3 seconds to deliver full upward pressure. Therefore, the process of building up the accelerator pressure shall be initiated approximately 2 seconds after the onset of the Stage 1 warning.
### Test Scenario
Initiate warning by exceeding speed limit threshold. Record speedometer and display in the frame for the whole duration of the stage 2 warning. Indicate verbally the instance of different phases of haptic pressure. Measure times.

**Equipment/Facilities**
Test track, DV

The feel of the feedback is still to be assessed

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tr>
<td>✔</td>
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</table>

#### 1.2.1.3 Associated Messages

a) If the ISA-I system detects that the vehicle has been driven for 30 seconds in a location outside the confines of the digital map database, the system will default to a speed limit of 110 km/h and the driver will be warned that the vehicle is being driven outside the confines of the digital map database. In this case, the following text message shall be displayed to the driver: “Outside digital map zone”

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario
Drive outside map covered area. Record message.

**Equipment/Facilities**
DV

The general idea behind this message is to tell driver that the area is not being covered by the VicRoads map – not individual streets.

b) If the ISA-I system temporarily loses a GPS signal, it shall default to a speed limit of 110 km/h and will warn the driver that the GPS reception has been lost. In this case, the following text message shall be displayed to the driver: “No GPS signal”.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
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<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario
Drive under metal roof carport or garage. Wait for > 30 seconds. Record message.

**Equipment/Facilities**
DV

c) Specifications for the above text messages are provided in Section 1.3.5 below.
1.2.2.3 Other issues (Cruise Control)

- If the ISA system activates the haptic feedback system at a time when the cruise control system is also engaged, then activation of the haptic feedback system shall disengage the cruise control system.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>N/A</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Set CC above the speed limit. Monitor speed after haptic feedback has been engaged.

Equipment/Facilities: Test track

1.3 HMI Design Specifications

The following are specifications for the design, location and dimensions of the warnings and messages associated with the ISA-I and ISA-A systems.

1.3.1 Stage 1 static visual icon

a) This has the appearance of a miniature speed limit sign.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
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<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Compare recording to the specifications

Equipment/Facilities: DV

b) It consists of a red circle with a white fill. Inside the circle is a black number depicting the detected speed limit.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
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<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
</table>

Test Scenario: Compare recording to the specifications

Equipment/Facilities: DV

c) This icon is presented on the left side of the ITS Visual Display Screen, as shown in Figure 2.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
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<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
</table>

Test Scenario: Compare recording to the Figure 2.

Equipment/Facilities: DV

d) The dimensions of the static visual icon are as shown in Figure 2.

<table>
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<tr>
<th>Fully Implemented</th>
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<th>Partially Implemented</th>
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</table>

Test Scenario: Compare recording to the Figure 2.

Equipment/Facilities: DV
1.3.2 Stage 1 auditory tone

a) Refer to sound file “bong.wav” (to be provided).

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</table>

Test Scenario: Record sound. Compare recording to the above sound file.

Equipment/Facilities: Test track, DV

This sound has the following frequency characteristics:

b) It consists of a two-tone sound (736 Hz and 1120 Hz) with a single repetition at a slow rate of presentation.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
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<th>Not Implemented</th>
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</thead>
</table>

Test Scenario: Copy sound from the DV recording. Perform spectral analysis.

Equipment/Facilities: DV, PC, PASS software

c) It should be possible to hear the tone under all driving conditions at a level that will not startle the driver. The signal will be heard against background noise if its volume exceeds the ambient noise by 15 dB.

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<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</table>

Test Scenario: Copy sound from the DV recording. Perform SPL measurements.

Equipment/Facilities: DV, PC, PASS software

d) Volume should be adjustable between 50 dB(A) and 90 dB(A).

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<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
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</table>

Test Scenario: Initiate warnings. Measure minimum peak SPL and maximum peak SPL with sound level meter.

Equipment/Facilities: Test track, Sound Level Meter

1.3.3 Stage 2 flashing visual icon

a) This is identical to the static visual icon.

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<th>Fully Implemented</th>
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</table>

Test Scenario: Compare recording to the specifications.

Equipment/Facilities: DV

b) The red circle flashes. The flash rate shall be 3 Hz, with equal on and off times.
1.3.4 Stage 2 auditory tone

a) This tone consists of a repeated “5beeps.wav” sound (to be provided).

Test Scenario | Compare recording to the Figure 2.  
Equipment/Facilities | DV

b) This sound will be repeated at 0.56Hz (once every 1.8 s).

Test Scenario | Measure repetition rate of the stage 2 auditory tone using the video record.  
Equipment/Facilities | DV

The tone has the following frequency characteristics:

c) It is a complex tone with a fundamental frequency of 600 Hz and odd harmonics, with five repetitions at a fast rate of presentation.

Test Scenario | Copy sound from the DV recording. Perform spectral analysis.  
Equipment/Facilities | DV, PC, PASS software
d) It should be possible to hear the tone under all driving conditions at a level that will not startle the driver. The signal will be heard against background noise if its volume exceeds the ambient noise by 15dB.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
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<tbody>
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</tbody>
</table>

Test Scenario: Copy sound from the DV recording. Perform SPL measurement.
Equipment/Facilities: DV, PC, PASS software

e) Volume should be adjustable between 50dB(A) and 90dB(A).

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<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
<td>✔</td>
<td>63.5dB – 88dB</td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Measure minimum peak SPL and maximum peak SPL with sound level meter.
Equipment/Facilities: Test track, Sound Level Meter

1.3.5 Associated Warnings – Text

- Text messages shall:
  a) Be black in colour

<table>
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<tr>
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</tbody>
</table>

  b) Be presented in sentence case (i.e. combination of upper and lower case)

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<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
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</tbody>
</table>

c) Be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.

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<thead>
<tr>
<th>Fully Implemented</th>
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<th>Not Implemented</th>
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<tbody>
<tr>
<td>✔</td>
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</tbody>
</table>

  d) The ratio between the stroke width and character height should be between 1:12.5 and 1:6.25

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<tr>
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<th>Not Implemented</th>
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<tr>
<td>✔</td>
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</table>

  e) The relation between the width and height of the character should be between 0.5:1 and 1:1

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<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
<td>✔</td>
<td></td>
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</table>

  f) The space between characters should be a minimum of one stroke width
The font type should be clear and simple. Sans serif fonts are recommended (e.g., Arial, Helvetica – not Times).

There should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.

### 1.4 Test Scenarios

For each of the following scenarios press the Speed Request Button and test whether the correct speed limit is detected. Give the system enough time to update itself (i.e., 5 seconds).

Correct speed limit should be detected when driving:

a) On highway

Acceptable ✔  Partially Acceptable  Not Acceptable

b) On residential road

Acceptable ✔  Partially Acceptable  Not Acceptable

c) On freeway

Acceptable ✔  Partially Acceptable  Not Acceptable

d) On service road

Acceptable ✔  Partially Acceptable  Not Acceptable

e) From freeway onto residential road

Acceptable ✔  Partially Acceptable  Not Acceptable

f) From highway onto freeway

Acceptable ✔  Partially Acceptable  Not Acceptable
<table>
<thead>
<tr>
<th></th>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>g) From highway onto residential road</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) From residential road onto freeway</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) From residential road onto highway</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>j) On the road which intersects road with lower speed limit</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>k) On the road which intersects road with higher speed limit</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>l) Across bridge</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>m) Into tunnel</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n) Outside database range</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o) On intersection - on ramp</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p) On intersection - off ramp</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q) Beside service road</td>
<td>Acceptable ✔</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------</td>
<td>----------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>r) On road crossing freeway</td>
<td>Acceptable ✔</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>s) On bridge over freeway</td>
<td>Acceptable ✔</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>t) On bridge under freeway</td>
<td>Acceptable ✔</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>u) In areas that have speed limit less than 50 km/h (Monash University, Chadstone, MCG car park)</td>
<td>Acceptable ✔</td>
<td>Partially Acceptable</td>
<td>When contained in the digital map</td>
</tr>
<tr>
<td>v) Under service station canopies</td>
<td>Acceptable ✔</td>
<td>Partially Acceptable</td>
<td>Temporary loss of signal</td>
</tr>
<tr>
<td>w) Under bus shelter</td>
<td>Acceptable ✔</td>
<td>Partially Acceptable</td>
<td>Temporary loss of signal</td>
</tr>
<tr>
<td>x) Near tram lines; safety zones</td>
<td>Acceptable ✔</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>y) Through sound tube near Bolte bridge</td>
<td>Acceptable ✔</td>
<td>Partially Acceptable</td>
<td>Temporary loss of signal</td>
</tr>
<tr>
<td>z) Under carport with metal roof</td>
<td>Acceptable ✔</td>
<td>Partially Acceptable</td>
<td>No GPS signal</td>
</tr>
<tr>
<td>Condition</td>
<td>Acceptable</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------------</td>
<td>----------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>aa) In shadow of mountain</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bb) In valley</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cc) On large bridge</td>
<td>✓</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dd) In shadow of tall buildings</td>
<td>✓</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>ee) During the night/day</td>
<td>✓</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ff) Near mobile phone towers</td>
<td>✓</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gg) Near airport</td>
<td>✓</td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hh) Under train /tram lines</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii) Under overhead power lines</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
jj) In rain

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>✔</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>

kk) In fog

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>✔</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>
**Figure 1. ISA-A Warning Sequence**

- **t=0 seconds**
  - Static icon + Audio “bong.wav”
  - Haptic Accelerator
  - Pressure starts building up

- **t=2 seconds**
  - Outer circle Flashing at 3Hz rate
  - Full Haptic Accelerator Pressure
Figure 2. Location and Dimensions of the Visual Icon

Speed Limit Font: Arial, Height 18 mm, Height to Width ratio 7:5
2. Following Distance Warning

2.1 Functional Purpose

The purpose of this system is to warn the driver when the vehicle he/she is operating is following a vehicle in front too closely. The intensity of warnings issued by the system shall increase with a decrease in time headway between the host vehicle and the vehicle being followed.

2.2 Warning Sequence

2.2.1 Levels of warning

There shall be 6 levels of warning (see Figure 3). Each of these levels shall be triggered by the current time headway. [Measure on freeway with a range finder]

a) Level 1 - is displayed when the time headway drops below 2 seconds.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Record distance and speed during level 1. Repeat 5 times.
Equipment/Facilities: Test track/freeway with light traffic, Range finder, Lead car, 4 testers needed

b) Level 2 - is displayed when the time headway drops below 1.7 seconds.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
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<td></td>
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</tbody>
</table>

Test Scenario: Record distance and speed during level 2. Repeat 5 times.
Equipment/Facilities: Test track/freeway with light traffic, Range finder, Lead car, 4 testers needed

c) Level 3 - is displayed when the time headway drops below 1.5 seconds.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
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</tr>
</tbody>
</table>

Test Scenario: Record distance and speed during level 3. Repeat 5 times.
Equipment/Facilities: Test track/freeway with light traffic, Range finder, Lead car, 4 testers needed

d) Level 4 - is displayed when the time headway drops below 1.3 seconds.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
<td>✔</td>
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</tbody>
</table>

Test Scenario: Record distance and speed during level 4. Repeat 5 times.
Equipment/Facilities: Test track/freeway with light traffic, Range finder, Lead car, 4 testers needed
e) Level 5 - is displayed when the time headway drops below 1.2 seconds.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
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</tbody>
</table>

Test Scenario: Record distance and speed during level 5. Repeat 5 times.

Equipment/Facilities: Test track/freeway with light traffic, Range finder, Lead car, 4 testers needed.

f) Level 6 - is displayed when the time headway drops below 1.1 seconds.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
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</tbody>
</table>

Test Scenario: Record distance and speed during level 6. Repeat 5 times.

Equipment/Facilities: Test track/freeway with light traffic, Range finder, Lead car, 4 testers needed.

2.2.2 Measures to minimise nuisance warnings

The FDW warnings will be suppressed in the following cases in order to minimise false alarms:

a) Speed drops below 20 km/h

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
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</tbody>
</table>

Test Scenario: Mount a long stick with a target that continuously stimulates radar at the end of it. Drive below/above 20 km/h.

Equipment/Facilities: Test track/empty road/car park, stick/mounting hardware, radar beam reflective object.

b) Speed drops below 25 km/h while braking

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
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<tr>
<td>✔</td>
<td></td>
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</tbody>
</table>

Test Scenario: Mount a long stick with a target that continuously stimulates radar at the end of it. Drive below/above 25 km/h.

Equipment/Facilities: Test track/empty road/car park, stick/mounting hardware, radar beam reflective object.

2.3 HMI Design Specifications

2.3.1 Visual Display

a) The FDW visual display resembles a ladder that is thinner at the top than at the bottom (see Figure 3 below). The six spaces in between the 7 “rungs” of the ladder are used to convey the six levels of warning described above. These six spaces are henceforth referred to as the six “bars”.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
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</table>

Test Scenario: Compare display with Figure 3.

Equipment/Facilities: DV.
b) The FDW display ladder is located at the right side of the ITS Visual Display Screen (see Figure 4).

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
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</tbody>
</table>

- **Test Scenario**: Compare display with Figure 4.
- **Equipment/Facilities**: DV


c) When the time headway between the host vehicle and the vehicle in front is 2 seconds or more, only a black outline of the ladder is visible.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
<td>✔</td>
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</tbody>
</table>

- **Test Scenario**: Compare display with Figure 3
- **Equipment/Facilities**: DV

When time headway drops below 2 seconds, the bars between the rungs of the ladder shall start to be coloured as follows depending on the level of warning. The top bar is referred to henceforth as the “first” bar for reference purposes:

d) Level 1 - the first bar is coloured yellow.

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<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
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</tbody>
</table>

- **Test Scenario**: Compare display with Figure 3.
- **Equipment/Facilities**: DV recording

e) Level 2 - the first and the second bars are coloured yellow.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
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</tbody>
</table>

- **Test Scenario**: Compare display with Figure 3.
- **Equipment/Facilities**: DV recording

f) Level 3 - the first, second and third bars are coloured yellow.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
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</tbody>
</table>

- **Test Scenario**: Compare display with Figure 3.
- **Equipment/Facilities**: DV recording

g) Level 4 – the first, second and third bars are coloured yellow and the fourth bar is coloured red. The whole ladder, including the coloured bars, flash at a rate of 3 Hz.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
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</tbody>
</table>

- **Test Scenario**: Compare display with Figure 3.
- **Equipment/Facilities**: DV recording
h) Level 5 – the first, second and third bars are coloured yellow and the fourth and fifth bars are coloured red. The whole ladder, including the coloured bars, flash at a rate of 3 Hz.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
</table>

Test Scenario | Compare display with Figure 3.  
Equipment/Facilities | DV recording

i) Level 6. The top three bars are coloured yellow and the bottom three bars are coloured red. The whole ladder, including the coloured bars, flash at a rate of 3 Hz.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
</table>

Test Scenario | Compare display with Figure 3.  
Equipment/Facilities | DV recording

j) The colours used in the display are defined by their red, green and blue (RGB) components:  
- Yellow – R: 255 G: 233 B: 0 (this combination provides deeper hue than pure yellow)  
- Red - R: 255 G: 0 B: 0  
- White – R: 255 G: 255 B: 255  
- Black – R: 0 G: 0 B: 0

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
</table>

Test Scenario | Compare colours with sample colours generated on laptop (if in the car).  
Equipment/Facilities | DV, laptop

k) The displayed information must be clear and visible under all light conditions, especially the yellow bars.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
</table>

Test Scenario | Driving during the sunny day, at different times, in all directions. Repeat this at night and dusk.  
Equipment/Facilities | Fleet car

2.3.2 Audio Warning

a) The audio warning is presented at the onset of the sixth level of warning.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
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<th>Not Implemented</th>
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</thead>
</table>

Test Scenario | Record display and compare the sequence with Figure 3.  
Equipment/Facilities | DV recording
b) The audio warning is formed by alternating 110ms pulses of sound followed by 110 ms of silence. Each pulse consists of simultaneous 2500 Hz and a 2650 Hz continuous sinus signals (refer to audio file “CAMP.wav”).

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<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
<td>✓</td>
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<td></td>
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</tbody>
</table>

Test Scenario: Compare recorded sound with file “CAMP.wav”. Spectral analysis.
Equipment/Facilities: DV recording, PC, PASS software.

c) The specification for this audio warning is identical to that deriving from the US Department of Transport’s Collision Avoidance Metric Program (CAMP; NHTSA Technical Report, 1998).

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
<td>✓</td>
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</tbody>
</table>

Test Scenario: Compare recorded sound with file “CAMP.wav”. Spectral analysis.
Equipment/Facilities: DV recording, PC, PASS software.

d) The volume of the FDW audio warning must be presented at least 15 dB above the background noise level but at a level that will not startle the driver.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✓</td>
<td></td>
<td></td>
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</tbody>
</table>

Test Scenario: Copy sound from the DV recording. Perform SPL measurements using PASS Software.
Equipment/Facilities: DV, PC, PASS software.

e) This warning should have the highest urgency of all of the sounds presented by the ITS technologies in the TAC SafeCar (Assessment of Audio Warnings for TAC SafeCar, S. Parker 2001). [Subjective evaluation]

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
<td>✓</td>
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</tbody>
</table>

f) Along with other audible warnings, volume should be adjustable between 50dB(A) and 90dB(A).

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<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✓</td>
<td>66.5dB – 92.3dB</td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Measure SPL while volume settings are set on maximum and audio warning is being issued. Repeat measurements with volume settings on minimum.
Equipment/Facilities: Test Track/freeway, SLM.

g) The FDW display warning sequence is shown schematically in Figure 4. The physical location of the FDW display on the ITS Visual Display Screen and the dimensions of the FDW display are shown in Figure 4.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
<td>✓</td>
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</tbody>
</table>

Test Scenario: Record whole sequence. Compare recordings with Figures 3 and 4.
### Test Scenarios

The FDW system shall issue appropriate warnings with minimal number of false warnings in the following situations (dry bitumen road conditions – unless specified otherwise):

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Speed</th>
<th>Distance to Initiate Visual Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>100km/h</td>
<td>For a passenger car</td>
</tr>
<tr>
<td>b)</td>
<td>60km/h</td>
<td>For a passenger car</td>
</tr>
<tr>
<td>c)</td>
<td>100km/h</td>
<td>For a motorcycle</td>
</tr>
<tr>
<td>d)</td>
<td>60km/h</td>
<td>For a motorcycle</td>
</tr>
<tr>
<td>e)</td>
<td>100km/h</td>
<td>For a truck</td>
</tr>
<tr>
<td>f)</td>
<td>60km/h</td>
<td>For a truck</td>
</tr>
<tr>
<td>g)</td>
<td></td>
<td>For a curve</td>
</tr>
</tbody>
</table>

- **a)** Travelling at approximately 100km/h, following a passenger car at the distance that should initiate visual warning.
  - Acceptable ✔
  - Partially Acceptable
  - Not Acceptable

- **b)** Travelling at approximately 60km/h, following a passenger car at the distance that should initiate visual warning.
  - Acceptable ✔
  - Partially Acceptable
  - Not Acceptable

- **c)** Travelling at approximately 100km/h, following a motorcycle at the distance that should initiate visual warning.
  - Acceptable ✔
  - Partially Acceptable
  - Not Acceptable

- **d)** Travelling at approximately 60km/h, following a motorcycle at the distance that should initiate visual warning.
  - Acceptable ✔
  - Partially Acceptable
  - Not Acceptable

- **e)** Travelling at approximately 100km/h, following a truck at the distance that should initiate visual warning.
  - Acceptable ✔
  - Partially Acceptable
  - Not Acceptable

- **f)** Travelling at approximately 60km/h, following a truck at the distance that should initiate visual warning.
  - Acceptable ✔
  - Partially Acceptable
  - Not Acceptable

- **g)** Travelling on a **curvy** road, following a vehicle at the distance that should initiate visual warning.
  - Acceptable ✔
  - Partially Acceptable
  - Not Acceptable
h) Travelling on a bumpy road, following a vehicle at the distance that should initiate visual warning

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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</table>

i) Travelling on a gravel road, following a vehicle at the distance that should initiate visual warning

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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</table>

j) Travelling in the tunnel, following a vehicle at the distance that should initiate visual warning.

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<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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</table>

k) Travelling in the tunnel, following a vehicle at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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</table>

l) Travelling on wet road, following a passenger car at approximately 100km/h at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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</table>

m) Travelling on wet road, following a passenger car at approximately 60km/h at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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</table>

n) Travelling the wet road, following a truck car at approximately 100km/h at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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</table>

o) Travelling on wet road, following a truck car at approximately 60km/h at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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</thead>
</table>
p) Travelling on wet road, following a motorcycle at approximately 100km/h at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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</thead>
<tbody>
<tr>
<td>✔️</td>
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</table>

q) Travelling on wet road, following a motorcycle at approximately 60km/h at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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<tbody>
<tr>
<td>✔️</td>
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</table>

r) Travelling in the fog, following a vehicle at the distance that should initiate visual warning.

| Acceptable | Partially Acceptable | Not Tested     | Not Acceptable |
|------------|----------------------|----------------|
|            |                      |                |                |

s) Travelling in light rain, following a vehicle at the distance that should initiate visual warning.

| Acceptable | Partially Acceptable | Acceptable     | Not Acceptable |
|------------|----------------------|----------------|
| ✔️         |                      | Mostly work well|                |

t) Travelling in medium heavy rain, following a vehicle at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Works intermittently – known problem</td>
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</table>

u) Travelling in heavy rain, following a vehicle at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Known problem</td>
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</tbody>
</table>

v) Travelling on the road uphill, following a vehicle at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td></td>
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</tbody>
</table>

w) Travelling on the road downhill, following a vehicle at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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</thead>
<tbody>
<tr>
<td>✔️</td>
<td></td>
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</table>
x) Travelling on the road, at approximately 100km/h, with passengers on the back seat (increased load at the back of the owncab), following a passenger car at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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<tbody>
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<td>✔</td>
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</table>

y) Travelling on the road, at approximately 60km/h, with passengers on the back seat (increased load at the back of the owncab), following a passenger car at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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<tbody>
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<td>✔</td>
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</table>

z) Travelling on the road, at approximately 100km/h, with passengers on the back seat (increased load at the back of the owncab), following a truck at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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<tbody>
<tr>
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</table>

aa) Travelling on the road, at approximately 60km/h, with passengers on the back seat (increased load at the back of the owncab), following a truck at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
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</table>

bb) Travelling on the road, at approximately 100km/h, with passengers on the back seat (increased load at the back of the owncab), following a motorcycle at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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<tbody>
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<td>✔</td>
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</table>

cc) Travelling on the road, at approximately 60km/h, with passengers on the back seat (increased load at the back of the owncab), following a motorcycle at the distance that should initiate visual warning.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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<tbody>
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</table>

dd) Travelling on a road with a camber, following a vehicle at the distance that should initiate visual warning

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
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<tbody>
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</tbody>
</table>

The following scenarios should cause none or minimum number of false warnings:

ee) Overhead sign at crest of hill

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ff) Road surface objects on flat roads

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

gg) Grating at bottom of hill

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

hh) Guard-rails and concrete barriers along curve entrance

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ii) Roadside objects along straight and curved roads (dry and wet pavement)

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

jj) U-turn with sign directly ahead

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

kk) Slow cars in adjacent lane, in transition to curve

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ll) Travelling on freeway between two slower trucks in both adjacent lanes

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

mm) Travelling on freeway between two slower passenger cars in both adjacent lanes

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

nn) Slow cars in adjacent lane at a curve (poor lane markings)

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

oo) Stationary vehicles in adjacent lane
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptable</td>
<td>✔</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>pp) Entering tunnel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptable</td>
<td>✔</td>
<td>Partially Acceptable</td>
<td>Occasional single audio warnings</td>
</tr>
<tr>
<td>qq) Travelling through tunnel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptable</td>
<td>✔</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>rr) Driving through strip shopping centre</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptable</td>
<td>✔</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>ss) Driving on parking lot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptable</td>
<td>✔</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>tt) Approaching speed hump</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptable</td>
<td>✔</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>uu) Driving over speed hump</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptable</td>
<td>✔</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>vv) Approaching roundabout on residential road</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptable</td>
<td>✔</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>ww) Driving around roundabout on residential road</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptable</td>
<td>✔</td>
<td>Partially Acceptable</td>
<td>Not Acceptable</td>
</tr>
<tr>
<td>xx) Driving under low bridge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptable</td>
<td>✔️</td>
<td>Partially Acceptable</td>
<td>Rare single audio warnings</td>
</tr>
</tbody>
</table>

yy) Driving under high bridge

| Acceptable | ✔️ | Partially Acceptable | Not Acceptable | |


Figure 3. Following Distance Warning Display

<table>
<thead>
<tr>
<th>BAR COLOUR</th>
<th>TIME HEADWAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>2.0 s</td>
</tr>
<tr>
<td>Yellow</td>
<td>1.7 s</td>
</tr>
<tr>
<td>Yellow</td>
<td>1.5 s</td>
</tr>
<tr>
<td>Red</td>
<td>1.3 s + flashing</td>
</tr>
<tr>
<td>Red</td>
<td>1.2 s + flashing</td>
</tr>
<tr>
<td>Red</td>
<td>1.1 s + flashing + audio</td>
</tr>
</tbody>
</table>
Figure 4. Location and Dimensions of FDW Visual Display
3. **Seatbelt Reminder System**

3.1 **Functional Purpose**

The purpose of this system is to detect any occupant that fails to wear a seat belt and, if so detected, to warn the occupant to fasten their seat belt. The intensity of the warning will increase with an increase in vehicle velocity.

3.2 **Warning Sequence**

There are four levels of warning issued if any occupant of the vehicle is unrestrained. These are dependent on the speed of the vehicle.

a) Level 1 – warning is issued when the vehicle speed is between 0km/h and 10km/h. It consists of a flashing visual icon (see Figure 5) and, below it, a static legend (i.e. “FASTEN SEATBELT”). The visual icon flash rate is 3 Hz.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>The icon is not flashing</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Scenario</td>
<td>Record warning and speedometer on DV while car is stationary and while driving below 10km/h with weight detector being activated without buckled seat belt. Measure flashing rate from the DV recording. Monitor speedometer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment/Facilities</td>
<td>DV</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b) Level 2 – warning is issued when the vehicle speed is between 10 km/h and 25km/h. It consists of a flashing visual icon and, below it, a static legend. The visual display is accompanied by the seat belt warning sound (see section 3.3.3 below). The visual icon flash rate is 3 Hz. The warning sound shall be repeated every two seconds.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>The sound repetition rate is erratic</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Scenario</td>
<td>Record warning and speedometer on DV while car is stationary and while driving between 10km/h and 25km/h. Measure flashing rate from the recording. Measure repetition rate of the warning sound. Monitor speedometer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment/Facilities</td>
<td>DV</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

c) Level 3 – warning is issued when the vehicle speed is between 25km/h and 50km/h. It consists of a flashing visual icon and, below it, a static legend. The visual display is accompanied by the seat belt warning sound (see section 3.3.3 below). The visual icon flash rate is 3 Hz. The warning sound shall be repeated every second.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>The sound repetition rate is erratic</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Scenario</td>
<td>Record warning and speedometer on DV while car is stationary and while driving between 25km/h and 50km/h. Measure flashing rate from the recording. Measure repetition rate of the warning sound. Monitor speedometer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment/Facilities</td>
<td>DV</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
d) Level 4 – warning is issued when the vehicle speed is 50km/h or faster. It consists of a flashing visual icon and, below it, a static legend. The visual display is accompanied by the seat belt warning sound (see section 3.3.3 below). The visual icon flash rate is 3 Hz. The warning sound shall be repeated at the fastest rate possible (ideally 2Hz if possible).

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>The sound repetition rate is erratic</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Record warning and speedometer on DV while car is stationary and while driving faster than 50km/h. Measure flashing rate from the recording. Measure repetition rate of the warning sound. Monitor speedometer.

Equipment/Facilities: DV

These levels of warning are summarised in Table below.

### Table 1: Seat Belt Reminder System Warning Levels - Summary

<table>
<thead>
<tr>
<th>Speed</th>
<th>Visual warning</th>
<th>Audio warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 10km/h</td>
<td>Seatbelt icon flashing at 3 Hz. Legend “FASTEN SEATBELT” (static)</td>
<td>None</td>
</tr>
<tr>
<td>10 – 25km/h</td>
<td>Seatbelt icon flashing at 3 Hz. Legend “FASTEN SEATBELT” (static)</td>
<td>Seatbelt audio warning played every 2 seconds.</td>
</tr>
<tr>
<td>25 – 50km/h</td>
<td>Seatbelt icon flashing at 3 Hz. Legend “FASTEN SEATBELT” (static)</td>
<td>Seatbelt audio warning played once a second.</td>
</tr>
<tr>
<td>&gt; 50km/h</td>
<td>Seatbelt icon flashing at 3 Hz. Legend “FASTEN SEATBELT” (static)</td>
<td>Seatbelt audio warning played at fastest possible rate (ideally, twice a second).</td>
</tr>
</tbody>
</table>

### 3.3 HMI Design Specifications

#### 3.3.1 Visual Icon

a) The icon shall be an enlarged scaled version of the Ford seat belt warning symbol used in the Fairmont model (see Figure 5).

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Compare recording to the Figure 5.

Equipment/Facilities: DV

b) The icon shall be coloured red and is presented on the white background. The red will be defined by the following red green and blue (RGB) components:

- Red: R: 255 G: 0 B: 0

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Compare recording to the Figure 5.

Equipment/Facilities: DV
c) The icon is located on the left side of the ITS Visual Display Screen (see Figure 6)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Compare recording to the Figure 6.
Equipment/Facilities: DV

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

d) The maximum dimensions of the icon are as specified in Figure 6.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Compare recording to the Figure 6.
Equipment/Facilities: DV

3.3.2 Visual Legend

a) The “FASTEN SEATBELT” legend is located immediately below the seat belt icon.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

b) The legend characters are black.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

c) The background is white.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

d) The legend shall be large enough to be read in the moving vehicle. The minimum character height shall be 5mm.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

e) The text characters shall have a height to width ratio of 7 to 5.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

f) The legend shall be written in uppercase text.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>
g) The font used should be clear and simple. Sans serif fonts are recommended (e.g. Arial, Helvetica – not Times).

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 5. Seat Belt Reminder System Visual Icon and Text Message

3.3.3 Audio Warning

a) This sound is a collection of complex tones with components beginning as low as 200Hz and extending as high as 5000Hz and beyond, but with the highest amplitude components grouped around 800Hz.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Copy sound from the DV recording. Perform spectral analysis.
Equipment/Facilities: DV, PC, PASS software

b) This sound is contained in the “chimes1.wav” audio file.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Record sound. Compare recording to the above sound file.
Equipment/Facilities: DV, PC
c) It shall be possible to hear the warning under all driving conditions at a level that will not startle the driver. The signal will be heard against background noise if its volume exceeds the ambient noise by 15dB.

<table>
<thead>
<tr>
<th>Test Scenario</th>
<th>Copy sound from the DV recording. Perform SPL measurements.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment/Facilities</td>
<td>DV, PC, PASS software</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>✔</th>
<th>Partially Implemented</th>
<th>62.5 – 87.5 dB</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

d) Volume should be adjustable between 50dB(A) and 90dB(A).

<table>
<thead>
<tr>
<th>Test Scenario</th>
<th>Initiate warnings. Measure minimum peak SPL and maximum peak SPL with sound level meter.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment/Facilities</td>
<td>Test track, Sound Level Meter</td>
</tr>
</tbody>
</table>

Figure 6. Location and Maximum dimensions of the SBR System Visual Icon and Legend
3.4 General Specifications

a) With the exception of the driver (given that the vehicle cannot be operated without the driver already being seated), the SBR system shall be able to detect any occupant weighing 15kg or greater seated normally in any position.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Place weights on the passenger's seat while car is stationary. The weight distribution should resemble human body shape. Monitor display.

Equipment/Facilities: Weights (15kg)

b) The reminder system shall be able to detect whether any seated occupant is unbuckled.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: While car is stationary and engine running, try to initiate SB warnings at each sitting position except driver. Driver must be already seated and buckled up. The procedure involves sitting in the seat, buckling and unbuckling seat belt.

Equipment/Facilities: None

c) Improper disconnection of the reminder system (eg. by dismantling the connectors and cables, breaking sensor circuits, etc) shall be made difficult.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Try to disable reminder system. Remove fuse, disconnect weight sensor out of the electrical circuit, etc.

Equipment/Facilities: Various tools

d) It shall be difficult to circumvent the SBR system, for example by first fastening the seat belt and then sitting down on the seat, inserting an unattached latch plate into the buckle, and inserting the latch plate of the seat belt for one seat into buckle of another seat. (Note. At this stage there is no reliable seat belt extraction system available to prevent circumvention of the first kind for the vehicles to be employed in the trial).

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Try to circumvent reminder system. Attempt this while car is stationary or driving below 20km/h. Fasten seat belt first and then sit down on the seat. Insert unattached latch into the buckle. Try other methods.

Equipment/Facilities: Spare, unattached latch fitting into a Ford buckle.
3.5 Test Scenarios

a) Initiating SB warning from front passenger seat

Acceptable ✔️ Partially Acceptable Not Acceptable

b) Initiating SB warning from driver's seat

Acceptable ✔️ Partially Acceptable Not Acceptable

c) Initiating SB warning from both front seats simultaneously

Acceptable ✔️ Partially Acceptable Not Acceptable

d) Initiating SB warning with thin person in the seat

Acceptable ✔️ Partially Acceptable Not Acceptable

e) Initiating SB warning with fat person in the seat

Acceptable ✔️ Partially Acceptable Not Acceptable

f) Initiating SB warning with short person in the seat

Acceptable ✔️ Partially Acceptable Not Acceptable

g) Initiating SB warning with tall person in the seat

Acceptable ✔️ Partially Acceptable Not Acceptable

h) Initiating SB warning with child (min. legal age) in the front seat

Acceptable ✔️ Partially Acceptable Not Acceptable

i) Functionality of SB reminder system with booster seat mounted on back seat

Acceptable ✔️ Partially Acceptable Not Acceptable
j) Functionality of SB reminder system with *baby capsule* mounted

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

k) Functionality of SB reminder system with *different weights* placed on seat

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

l) Initiating SB warning with person sitting in *partly backwards* reclined seat

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

m) Initiating SB warning with person sitting in *fully backwards* reclined seat

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n) Initiating SB warning with person sitting in *forwards* reclined seat

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

o) Initiating SB warning with person sitting on the *front edge* of the seat

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

p) Initiating SB warning with person sitting on the *left side* of the seat

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

q) Initiating SB warning with person sitting on the *right side* of the seat

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

r) Initiating SB warning with person sitting in *slouching* position

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

s) Initiating SB warning with person *slumped* in the seat

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
t) Initiating SB warning with person *lying down* in the seat

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>✔️</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>

u) Functionality of SB reminder system with *vibration present* (e.g., speed humps)

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>✔️</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>
4. LOG IN

4.1 Functional Purpose

The purpose of the Log In system is to ensure that, when the vehicle ignition is turned on, the appropriate on-board systems are activated.

To log into the system, the driver is required to insert an iButton into a reader unit. The iButton contains stored information that is specific to each of the designated fleet car drivers. During the log in process, information stored in the iButton is transmitted to the relevant on-board systems immediately following system initialisation.

4.2 Warning Sequence

a) If the iButton is inserted before the vehicle ignition is turned on, normal system initialisation shall occur and the following text message will be displayed continuously whilst the system boots up: “SafeCar safety system is starting up – please wait”

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Start the car with iButton already inserted. Record the message.
Equipment/Facilities: DV

b) If the Master Pushbutton is not depressed following system initialisation (See Section 7: Master Pushbutton), and if the iButton has not been inserted into the reader unit up to the point in time that the decision not to press the Master Pushbutton has been registered by the system, the following message will occur: “Please insert log in button”.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Start the car without iButton being inserted. Record the message.
Equipment/Facilities: DV

c) The warning message shall be repeated for 30 seconds or until the iButton is inserted.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Start the car without iButton being inserted. Wait for the warning message being repeated 30s. Record the message. Repeat this procedure but insert iButton before 30 seconds expire. Record procedure on DV.
Equipment/Facilities: DV

d) The warning message shall be issued as both a text and voice message (see Sections 4.3.1 and 4.3.2).

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Analyse DV recording from the section 4.2.g.
Equipment/Facilities: DV
If the iButton is not inserted within 30 seconds of the onset of the warning message:

e) All system warnings (but not the system sensors) shall be disabled and the ITS Visual Display Screen shall be turned off;

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Test Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start the car without iButton being inserted. Wait for the warning message being repeated 30s. Attempt to initiate warnings from all systems (ISA, FDW, SB, RCW). Record procedure on DV.</td>
</tr>
<tr>
<td>Equipment/Facilities</td>
</tr>
<tr>
<td>Test track, DV</td>
</tr>
</tbody>
</table>

f) The fact that the iButton has not been inserted shall be recorded by the data logging system (see Section 11: Data Logging System);

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Test Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start the car without iButton being inserted. Wait for the warning message being repeated 30s. After short time shut down the car. Download the log file. Find the record of this event being logged.</td>
</tr>
<tr>
<td>Equipment/Facilities</td>
</tr>
<tr>
<td>Data downloading system, PC</td>
</tr>
</tbody>
</table>

g) Data logging will continue; and

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Test Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start the car without iButton being inserted. Wait for the warning message being repeated 30s. Do not insert iButton. After short time (5 minutes of driving) shut down the car. Download the log file. Determine if data logging continued.</td>
</tr>
<tr>
<td>Equipment/Facilities</td>
</tr>
<tr>
<td>Data downloading system, PC</td>
</tr>
</tbody>
</table>

h) The following message shall be issued as both a text and voice message: “iButton not detected – all warnings will be disabled” [DV]

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Test Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyse DV recording from the section 4.2 g.</td>
</tr>
<tr>
<td>Equipment/Facilities</td>
</tr>
<tr>
<td>DV</td>
</tr>
</tbody>
</table>
4.3 **HMI Design Specifications**

The warning consists of text and voice messages.

4.3.1 **Text Messages**
- The text messages shall be displayed on the left side of the screen (see Figure 7) and shall adhere to the following:
  
  a) Be static;

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  Test Scenario: Analyse DV recording from the section 4.2.g. Compare recorded message to Figure 7.
  Equipment/Facilities: DV

  b) Be black in colour;

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  c) Be presented in sentence case (i.e. combination of upper and lower case);

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  d) Be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  e) The ratio between the stroke width and character height should be between 1:12.5 and 1:6.25

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  f) The relation between the width and height of the character should be between 0.5: 1 and 1:1

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  g) The space between characters should be a minimum of one stroke width

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
h) The font type should be clear and simple. Sans serif fonts are recommended (e.g. Arial, Helvetica – not Times)

<table>
<thead>
<tr>
<th>Function</th>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

i) There should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.

<table>
<thead>
<tr>
<th>Function</th>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

4.3.2 Voice Messages

- The voice messages shall have the following design features:

  a) A female voice is preferred

<table>
<thead>
<tr>
<th>Function</th>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>
  Test Scenario | Record message on DV. |
  Equipment/Facilities | DV |

  b) An Australian accent is preferred

<table>
<thead>
<tr>
<th>Function</th>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>
  Test Scenario | Record message on DV. |
  Equipment/Facilities | DV |

  c) A signal to noise ratio of around 5dB(A) should be sufficient to ensure audibility of speech messages

<table>
<thead>
<tr>
<th>Function</th>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>
  Test Scenario | Record message on DV. |
  Equipment/Facilities | DV |

  d) The gap between the end of a voice message and the start of a new voice message shall be 3 seconds.

<table>
<thead>
<tr>
<th>Function</th>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>
  Test Scenario | Record message on DV. Measure the gap between messages. |
  Equipment/Facilities | DV |
Figure 7. Location and Maximum Dimensions of the Text Messages
5. **Log Out**

5.1 **Functional Purpose**

The purpose of the Log Out system is to record the occurrence of the end of a driving session and to update on the iButton the number of kilometres travelled during a driving session.

5.2 **Warning Sequence**

a) To log out of the system, the iButton must be inserted into a reader unit. In this case, the following text message is displayed on the ITS Visual Display Screen continuously whilst the shut down process is being completed: “SafeCar safety system is shutting down ”

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>No message but the shutdown is almost instant</strong></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario Shut down the car with iButton already inserted. Record the message on DV.

Equipment/Facilities DV

b) If the iButton is not detected in the reader unit after engine shutdown, the following warning message shall be issued: “Please insert log in button to complete shutdown process”.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td><strong>This message was very briefly displayed during normal shutdown &lt;10 ms</strong></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario While the engine is still running remove iButton. Shut down the car with iButton already inserted. Record the message on DV.

Equipment/Facilities DV

c) The warning shall be repeated 30 times or until the iButton is inserted.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Repeated 4 times, shutdown after 60 s. See “Significant Departures from TAC SafeCar Project … “ from 15/11/02: The specifications were modified.</strong></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario Count number of repeated messages. Start the system again. Repeat steps from 5.3.b. After the message has been repeated 20 times insert iButton again. Record the whole procedure on DV.

Equipment/Facilities DV
d) The warning shall be issued as both a text and a voice message (see Sections 5.3.1 and 5.3.2 below)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Compare DV recording of the warning with the specifications from sections 5.3.1 and 5.3.2.

e) If the iButton is not inserted after 30 repetitions of the warning message, system shutdown will commence. However, the number of kilometres accrued during the driving session will not be updated on the iButton.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Check number of kilometres travelled before and after test. The car needs to be driven for 5 km.
Equipment/Facilities: iButton, PC with iButton reader, DV

f) If the iButton is removed from the reader unit during a driving session, the existing setting on the iButton must be preserved even though the new number of kilometres is not saved.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Record number of kilometres travelled before drive. Remove iButton during the drive and shut down the engine without returning it back to the holder. Check the configuration of the iButton.
Equipment/Facilities: iButton, PC with iButton reader

5.3 HMI Design Specifications

The warning consists of text and voice messages.

5.3.1 Text Messages
- The text messages shall be displayed on the left side of the screen (see Figure 7) and shall adhere to the following:
  a) Be static;

<table>
<thead>
<tr>
<th>Fully Implemented</th>
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</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Analyse DV recording from the section 4.2.g. Compare recorded message to Figure 7.
Equipment/Facilities: DV

  b) Be black in colour;

<table>
<thead>
<tr>
<th>Fully Implemented</th>
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</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

c) Be presented in sentence case (i.e. combination of upper and lower case);

<table>
<thead>
<tr>
<th>Fully Implemented</th>
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<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
d) Be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

e) The ratio between the stroke width and character height should be between 1:12.5 and 1:6.25

<table>
<thead>
<tr>
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<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

f) The relation between the width and height of the character should be between 0.5:1 and 1:1

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

g) The space between characters should be a minimum of one stroke width

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

h) The font type should be clear and simple. Sans serif fonts are recommended (e.g., Arial, Helvetica – not Times)

<table>
<thead>
<tr>
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<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
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<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

i) There should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.3.2 Voice Message

- The voice messages shall have the following design features:
  a) A female voice is preferred

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Record message on DV.

Equipment/Facilities: DV

b) An Australian accent is preferred

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Record message on DV.
c) A signal to noise ratio of around 5dB(A) should be sufficient to ensure audibility of speech messages

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Test Scenario**  Record message on DV.

**Equipment/Facilities**  DV

---

d) The gap between the end of a voice message and the start of a new voice message shall be 3 seconds.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The gap duration is erratic</td>
<td></td>
</tr>
</tbody>
</table>

**Test Scenario**  Record message on DV. Measure the gap between messages.

**Equipment/Facilities**  DV
6. **iButton**

6.1 **Functional Purpose**
- To serve as a storage device for the following information relating to individual designated drivers:
  - Driver identification (ID); and
  - Number of kilometres travelled.
- To systematically enable and disable the warnings issued by relevant systems (specified below) based on the number of kilometres travelled by the designated driver.

6.2 **Warning Sequence**
Warnings associated with the iButton are described in sections 4 (Log In) and 5 (Log Out).

6.3 **HMI Design Specifications**
Each iButton shall:

<table>
<thead>
<tr>
<th>a)</th>
<th>Contain the specific ID number for each of the participants in the trial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Implemented</td>
<td>✔</td>
</tr>
<tr>
<td>Test Scenario</td>
<td>Program ID number on iButton</td>
</tr>
<tr>
<td>Equipment/Facilities</td>
<td>PC, Configuration software</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b)</th>
<th>Store the current cumulative number of kilometres travelled by the designated driver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Implemented</td>
<td>✔</td>
</tr>
<tr>
<td>Test Scenario</td>
<td>Check number of kilometres travelled. Reset daily odometer in the car. Drive between 5 and 10 km. Remove iButton from the car and read new number of kilometres travelled using configuration software. Repeat this procedure for another short drive.</td>
</tr>
<tr>
<td>Equipment/Facilities</td>
<td>PC, Configuration software, iButton</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c)</th>
<th>Be programmable and able to accept at least 10 different settings that define the systems to be enabled and disabled based on kilometres travelled.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Implemented</td>
<td>✔</td>
</tr>
<tr>
<td>Test Scenario</td>
<td>Program 10 different settings on iButton. Remove iButton. Load default settings. Re-insert iButton and read stored settings.</td>
</tr>
<tr>
<td>Equipment/Facilities</td>
<td>PC, Configuration software, iButton</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>d)</th>
<th>Each kilometre threshold shall be associated with a set of stored parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Implemented</td>
<td>✔</td>
</tr>
<tr>
<td>Test Scenario</td>
<td>Program 10 settings on iButton associated with different thresholds. Remove iButton. Load default settings. Re-insert iButton and read stored settings.</td>
</tr>
<tr>
<td>Equipment/Facilities</td>
<td>PC, Configuration software, iButton</td>
</tr>
</tbody>
</table>
e) Once the number of kilometres travelled exceeds the next programmed kilometre threshold, the new parameters shall replace the old ones. [Create very short trial, monitor change in configuration, DV]

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario | Program 10 settings on iButton with new threshold every 2 km. After exceeding threshold shut down the car and start again. Observe new system settings. Record visual and audio messages. |

Equipment/Facilities | PC, Configuration software, iButton, DV |

f) Be able to independently enable and disable warnings for the following systems:
- Intelligent Speed Adaptation – Informative
- Intelligent Speed Adaptation – Actively Supporting
- Following Distance Warning
- Seat Belt Reminder [Program a number of buttons with individual systems enabled]

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario | Program iButton to independently enable the following systems: ISA-I, ISA-A, FDW and SBR, with new threshold every 2 km. After exceeding threshold shut down the car and start again. Observe new system settings. Record visual and audio messages. |

Equipment/Facilities | PC, Configuration software, iButton, DV |

- It is not possible to enable ISA-A without audio warning being played |

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario | Program 10 settings on iButton with new threshold every 2 km. After exceeding threshold shut down the car and start again. Observe new system settings. Record visual and audio messages. Compare played messages with programmed settings and Table 2. |

Equipment/Facilities | PC, Configuration software, iButton, DV |

g) Initiate text and voice messages to notify drivers of changes in the onset and offset of the systems in the TAC SafeCars. Table 2 below contains the text and voice messages that shall be issued according to the number of kilometres travelled by the designated driver and the TAC SafeCar system to be activated.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario | Program 10 settings on iButton with new threshold every 2 km. After exceeding threshold shut down the car and start again. Observe new system settings. Record visual and audio messages. Compare played messages with programmed settings and Table 2. |

Equipment/Facilities | PC, Configuration software, iButton, DV |

- Only the first threshold produced message consistently |

h) These reminder messages shall be presented at the time of the first shutdown sequence that occurs after each of the above thresholds has been exceeded.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario | Program 10 settings on iButton with new threshold every 2 km. After exceeding threshold shut down the car and start again. Observe new system settings and odometer. Record visual and audio messages. |

Equipment/Facilities | PC, Configuration software, iButton, DV |

- Worked only for the first threshold |
i) The reminder messages in Table 2 shall be presented as simultaneous voice and text messages. The text messages will appear on the ITS Visual Display Screen.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>There are problems with the system. See Interim Report 2, 20/11/02</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Scenario</th>
<th>Observe recorded visual and audio messages from 6.3.e.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment/Facilities</td>
<td>DV</td>
</tr>
</tbody>
</table>

j) The iButton Reader Unit shall be located in a position within the vehicle that will minimize the possibility that the driver knocks the unit during normal operations. The cigarette lighter socket is an acceptable location.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Scenario</th>
<th>Attempt to knock it out from the holder simulation real-life situation using knee and hand.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment/Facilities</td>
<td>iButton</td>
</tr>
</tbody>
</table>

k) The plastic handle attached to the iButton will be removed to minimize the possibility of the button being inadvertently removed from the Reader Unit during the fleet trial.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Scenario</th>
<th>Inspect iButton in the car.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment/Facilities</td>
<td>iButton</td>
</tr>
</tbody>
</table>

Table 2: Messages Notifying Drivers of System Changes

<table>
<thead>
<tr>
<th>Kilometre Threshold</th>
<th>System(s) to be Activated</th>
<th>Voice Message Content</th>
<th>Text Message Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>3200 km</td>
<td>ISA-A or ISA-I or FDW</td>
<td>“Next time you start the car the active speed warning system will be turned on. Please refer to the refresher training materials for this system.”</td>
<td>“Next system on active speed warning”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Next time you start the car the speed warning system will be turned on. Please refer to the refresher training materials for this system”</td>
<td>“Next system on informative speed warning”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Next time you start the car the following distance warning system will be turned on. Please refer to the refresher training materials for this system”</td>
<td>“Next system on: following distance warning”</td>
</tr>
<tr>
<td>ISA (A or I) + FDW</td>
<td>“Next time you start the car the speed warning and following distance warning systems will both be turned on. Please refer to the refresher training materials for these systems”</td>
<td>“Next systems on: - active speed warning - following distance warning” or “Next systems on: - informative speed warning - following distance warning”</td>
<td></td>
</tr>
<tr>
<td>6200</td>
<td>No ISA or FDW.</td>
<td>“Next time you start the car, there will be no speed or following distance warnings.”</td>
<td>“Next - no speed or following distance warnings.”</td>
</tr>
<tr>
<td>7700</td>
<td>ISA-A or ISA-I or FDW or ISA (A or I) + FDW</td>
<td>“Next time you start the car the speed warning system will be turned on. Please refer to the refresher training materials for this system.” “Next time you start the car the active speed warning system will be turned on. Please refer to the refresher training materials for this system.” “Next time you start the car the following distance warning system will be turned on. Please refer to the refresher training materials for this system” “Next time you start the car the speed warning and following distance warning systems will both be turned on. Please refer to the refresher training materials for these systems”</td>
<td>“Next system on - active speed warning” “Next system on: - informative speed warning” “Next system on: - following distance warning” “Next systems on: - active speed warning - following distance warning” or “Next systems on: - informative speed warning - following distance warning”</td>
</tr>
<tr>
<td>10,700</td>
<td>No ISA or FDW.</td>
<td>“Next time you start the car, there will be no speed or following distance warnings.”</td>
<td>“Next - no speed or following distance warnings.”</td>
</tr>
</tbody>
</table>
### 6.3.1 Text Messages

- The text messages shall be displayed on the left side of the screen (see Figure 7) and shall adhere to the following:

  a) Be static;

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  b) Be black in colour;

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
c) Be presented in sentence case (i.e. combination of upper and lower case);

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

d) Be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

e) The ratio between the stroke width and character height should be between 1:12.5 and 1: 6.25

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

f) The relation between the width and height of the character should be between 0.5: 1 and 1:1

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

g) The space between characters should be a minimum of one stroke width

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

h) The font type should be clear and simple. Sans serif fonts are recommended (eg Arial, Helvetica – not Times)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

i) There should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.3.2 *Voice Message*

- The voice messages shall have the following design features:

a) A female voice is preferred

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Scenario</th>
<th>Record messages on DV. Listen the voice.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment/Facilities</td>
<td>DV</td>
</tr>
</tbody>
</table>
b) An Australian accent is preferred

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Record messages on DV. Detect the accent.
Equipment/Facilities: DV

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Record messages on DV. Measure S/N ratio.
Equipment/Facilities: DV

c) A signal to noise ratio of around 5dB(A) should be sufficient to ensure audibility of speech messages

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Record messages on DV. Measure S/N ratio.
Equipment/Facilities: DV

6.4 **Test Scenarios**

The iButton shall be programmed to enable/disable the following systems based on number of kilometres travelled as follows:

a) At the 0km threshold no system shall be enabled. No warning is issued. The only active systems shall be RCW and DTRL.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>

b) After 2km threshold RCW is enabled. After the threshold is exceeded and the system is rebooted the SBR system will start issuing warnings. No text and audio message will notify the driver of this. The new settings shall become active after the next following log in.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>

c) After 4km threshold an ISA-Actively Supporting system is enabled. After the threshold is exceeded, during the first shutdown of the system the appropriate voice and text message notifying the driver of system changes (see Table 2) shall be played. The new settings shall become active after the next log in.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Correct systems activated but message not played</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>

d) After 6km threshold an ISA-Actively Supporting system is disabled. After the threshold is exceeded, during the first shutdown of the system the appropriate voice and text message notifying the driver of system changes (see Table 2) shall be played. The new settings shall become active after the next log in.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Correct systems activated but message not played</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>
e) After 8km threshold a FDW system is enabled. After the threshold is exceeded, during the first shutdown of the system the appropriate voice and text message notifying the driver of system changes (see Table 2) shall be played. The new settings shall become active after the next log in.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Correct systems activated but message not played</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>

f) After 10km threshold a FDW system is disabled. After the threshold is exceeded, during the first shutdown of the system the appropriate voice and text message notifying the driver of system changes (see Table 2) shall be played. The new settings shall become active after the next log in.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Correct systems activated but message not played</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>

g) After 12km threshold ISA-Actively Supporting and FDW systems are enabled. After the threshold is exceeded, during the first shutdown of the system the appropriate voice and text message notifying the driver of system changes (see Table 2) shall be played. The new settings shall become active after the next log in.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Correct systems activated but message not played</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>

h) After 14km threshold ISA-Actively Supporting and FDW systems are disabled. After the threshold is exceeded, during the first shutdown of the system the appropriate voice and text message notifying the driver of system changes (see Table 2) shall be played. The new settings shall become active after the next log in.

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Partially Acceptable</th>
<th>Correct systems activated but message not played</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>

[These tests to be done in correlation with earlier iButton tests. DV to be used before shutdown.]
# 7. **Master Pushbutton**

## 7.1 Functional Purpose

The function of the Master Pushbutton is to allow non-designated drivers to drive the SafeCar as a normal vehicle, that is, without being exposed to the on-board visual and auditory warnings. Pressing this pushbutton will result in the shutdown of all Intelligent Transport Systems in the car, excluding the RCW and Daytime Running Lights (the latter two shall operate as independent systems).

## 7.2 Warning Sequence

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Immediately following initialisation of the TAC SafeCar operating system, the following message shall be displayed to the driver: “If you are not the designated driver, please press the flashing button”.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fully Implemented</td>
<td>✔</td>
<td>Partially Implemented</td>
</tr>
<tr>
<td>Test Scenario</td>
<td>Start the car with iButton inserted. Record message on DV.</td>
<td></td>
</tr>
<tr>
<td>Equipment/Facilities</td>
<td>DV</td>
<td></td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>b)</td>
<td>The message shall be presented as both a text message (on the ITS Visual Display Screen) and as a voice message. Specifications for the design of the text and voice messages are contained in Sections 7.3.2 and 7.3.3 below.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fully Implemented</td>
<td>✔</td>
<td>Partially Implemented</td>
</tr>
<tr>
<td>Test Scenario</td>
<td>Record message on DV. Compare recordings with the specifications.</td>
<td></td>
</tr>
<tr>
<td>Equipment/Facilities</td>
<td>DV</td>
<td></td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>c)</td>
<td>The message shall be presented once only.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fully Implemented</td>
<td>✔</td>
<td>Partially Implemented</td>
</tr>
<tr>
<td>Test Scenario</td>
<td>Record message on DV making sure that it is recorded complete. Confirm that it is played only once.</td>
<td></td>
</tr>
<tr>
<td>Equipment/Facilities</td>
<td>DV</td>
<td></td>
</tr>
</tbody>
</table>
d) If the Master pushbutton is pressed, the following will occur in sequence:
   - The data logging system shall record this instance;
   - The data logging shall stop; and
   - All of the Intelligent Transport systems shall shut down.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Test Scenario**

Record message and all the relevant actions after the message on DV. After the message has been played press the Master push button. Wait 5 minutes to confirm that all ITS shut down – stimulate them. Shut down the car. Start the car again. This time press the master pushbutton before the message is completed. Check log file for the record of Master pushbutton being pressed. Use the time stamp on the DV recording to identify the correct time. Repeat this for the second test. Confirm that data logging stopped after the Master pushbutton has been pressed.

**Equipment/Facilities**

DV, PC, Delogger software, Data downloading facility

---

e) If the Master Pushbutton is not pressed for 5 seconds after the message presentation has finished:
   - The system shall assume that the designated driver is using the car [Record on DV]
   - The system will proceed with the normal Log In sequence (see Section 4)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Test Scenario**

Record message and all the relevant actions after the message on DV. After the message has been played wait 5 – 10 seconds and then press the Master push button. Stimulate ITS warnings in the car. Shut down the car. Download log file. Check log file for the record of Master pushbutton being pressed. Use the time stamp on the DV recording to identify the correct time. Confirm that data logging did not stop after the Master pushbutton has been pressed.

**Equipment/Facilities**

DV, PC, Delogger software, Data downloading facility

---

### 7.3 HMI Design Specifications

#### 7.3.1 Pushbutton

The Master Pushbutton shall:

a) Be located as shown on the ITS Control Panel (see Figure 8)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b) Shall be a minimum of 2.5cm from the centre of other pushbuttons on the ITS Control Panel

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Test Scenario**

Measure the distance between buttons with a ruler.

**Equipment/Facilities**

Ruler
c) Shall have the minimum dimensions prescribed in Table 3

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Measure dimensions of the button with a ruler.
Equipment/Facilities: Ruler


d) Be easy to reach from the normal driving position

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Attempt reaching it. Repeat this with different people.
Equipment/Facilities:


e) Be usable without inadvertently activating another control

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Try to press the button in a hurry, or without looking, while doing other things (mobile phone etc.). Repeat this with different people.
Equipment/Facilities:


f) Be perpendicular to the driver’s line of sight

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

g) Have momentary action

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>


h) Provide tactile feedback of activation (eg “click”)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>


i) Be able to flash

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>


j) Illuminate in red when flashing

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>
k) Be able to stop flashing

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

l) Be labelled SYSTEM OVERRIDE

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

- The label shall adhere to the following specifications:

m) Be oriented horizontally

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

n) Be located immediately below the pushbutton/volume control

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

o) Should not be obscured by controls

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

p) Should have high contrast, and be wear-resistant such that they remain legible for the duration of the fleet trial

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

q) Legend colour shall contrast with the equipment background

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

r) Be in uppercase text only

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

s) Be between 3mm and 4mm in height

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>
7.3.2 Text Messages

- The text messages shall be displayed on the left side of the screen (see Figure 9) and shall adhere to the following:
  - a) Be static;
  - b) Be black in colour;
  - c) Be presented in sentence case (i.e. combination of upper and lower case);
  - d) Be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.
  - e) The ratio between the stroke width and character height should be between 1:12.5 and 1:6.25
  - f) The relation between the width and height of the character should be between 0.5: 1 and 1:1
  - g) The space between characters should be a minimum of one stroke width
h) The font type should be clear and simple. Sans serif fonts are recommended (eg Arial, Helvetica – not Times)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

i) There should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

7.3.3 Voice Message
- The voice messages shall have the following design features:

  a) A female voice is preferred

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

  Test Scenario: Record message on DV.
  Equipment/Facilities: DV

  b) An Australian accent is preferred

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

  Test Scenario: Record message on DV.
  Equipment/Facilities: DV

  c) A signal to noise ratio of around 5dB(A) should be sufficient to ensure audibility of speech messages

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

  Test Scenario: Record message on DV.
  Equipment/Facilities: DV

Table 3: Minimum Dimensions for Finger-Operated Pushbuttons

<table>
<thead>
<tr>
<th>Type</th>
<th>Operation Force</th>
<th>Dimension</th>
<th>Contact Surface Area</th>
<th>Clearance (centre-to-centre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pushbutton</td>
<td>1 to 8 N</td>
<td>8mm</td>
<td>80 mm²</td>
<td>25 mm Gloved Hand</td>
</tr>
</tbody>
</table>
<pre><code>                   |                 |           |                      | 15mm Bare Hand               |
</code></pre>
Figure 8. ITS Control Panel Layout – Master Pushbutton

Note 1. Pushbuttons may be all square or all circular. Square buttons are preferred.

Note 2. It is understood that space and other constraints may prevent the implementation of the layout specified here.

Note 3. The locations of the pushbuttons are justified on ergonomic grounds as follows:

- The Speed request Button, being the button most likely to be operated on a regular basis, should be located closest to the driver, as high as possible, and close to the ITS Visual Display to which it is functionally related.
- The system override button must be easily seen and located and must not be inadvertently activated. This button also functions as the Master Pushbutton.
- The Master Pushbutton is located in a position where inadvertent activation of other controls is unlikely, but flashes to attract attention.
- The Master Volume Control, given that it is likely to be used regularly, is located in a position that is close to the driver and is unlikely to result in inadvertent activation of other controls.

| Acceptable | ✔ | Partially Acceptable | Not Acceptable |
Figure 9. Location and the maximum dimensions of the text message
8. **SPEED REQUEST BUTTON**

8.1 *Functional Purpose*

The function of Speed request button is to allow drivers of the TAC SafeCar to display the current posted speed limit in any location which is covered by the digital map containing speed zone data.

8.2 *Message Sequence*

8.2.1 *Visual Icon*

a) Immediately after the Speed request button has been pressed, a static visual icon shall appear on the ITS Visual Display Screen. This takes the form of a scaled down version of a conventional speed limit sign. The design, location and dimensions of this icon are specified in Section 8.3.2.

```
<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

Test Scenario: While the system fully booted up press the speed request button. Record message on DV. Compare with the specifications.

Equipment/Facilities: DV

b) Each time the static visual icon is displayed, it shall be accompanied by a single short duration auditory tone. (Refer to sound file “bong.wav”).

```
<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>✗</td>
</tr>
</tbody>
</table>
```

Test Scenario: While the system fully booted up press the speed request button. Record message on DV. Compare with the specifications in section 1.

Equipment/Facilities: DV

c) The static visual icon shall remain displayed for 3 seconds, and then disappear.

```
<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Occasionally displayed longer</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

Test Scenario: While the system fully booted up press the speed request button. Record message on DV. Measure the duration of the message.

Equipment/Facilities: DV

8.2.2 *Associated Messages*

a) If, at the time a driver presses the Speed request Button, the ISA system detects that the vehicle is being driven in a location outside the confines of the digital map database, the following text message shall be displayed to the driver: “Outside digital map zone”

```
<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

Test Scenario: Drive outside map covered area. Press speed request button. Record message.

Equipment/Facilities: DV
b) If, at the time a driver presses the Speed request Button the ISA-I system temporarily loses a GPS signal, the following text message shall be displayed to the driver: “No GPS signal”.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Drive under metal roof carport or garage. Press the speed request button. Record message.

Equipment/Facilities: DV

### 8.3 HMI Design Specifications

#### 8.3.1 Pushbutton

Speed Request Button shall:

a) Be located as shown on the ITS Control Panel (see Figure 10)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Measure the distance between buttons with a ruler.

Equipment/Facilities: Ruler

b) Shall be a minimum of 2.5cm from the centre of other pushbuttons on the ITS Control Panel

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Measure dimensions of the button with a ruler.

Equipment/Facilities: Ruler

c) Shall have the minimum dimensions prescribed in Table 3

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Measure dimensions of the button with a ruler.

Equipment/Facilities: Ruler

d) Be easy to reach from the normal driving position

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Attempt reaching it. Repeat this with different people.

Equipment/Facilities

e) Be usable without inadvertently activating another control

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Try to press the button in a hurry, or without looking, while doing other things (mobile phone etc.). Repeat this with different people.

Equipment/Facilities
f) Be perpendicular to the driver’s line of sight

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
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</tbody>
</table>

g) Have a momentary action

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

h) Provide tactile feedback of activation (eg “click”)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

i) Be illuminated blue to enable it to be seen at night

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

j) Be illuminated at a low level to avoid driver visual discomfort at night

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

k) Be labelled SPEED REQUEST

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- The label shall adhere to the following specifications:
  l) Be oriented horizontally

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

m) Be located immediately below the pushbutton/volume control

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n) Should not be obscured by controls

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

o) Should have high contrast, and be wear-resistant such that they remain legible for the duration of the fleet trial
8.3.2 Static visual icon

a) This has the appearance of a miniature speed limit sign.

b) It consists of a red circle with a white fill. Inside the circle is a black number depicting the detected speed limit.

c) This icon is presented on the left side of the ITS Visual Display Screen, as shown in Figure 11.

d) The dimensions of the static visual icon are as shown in Figure 11.

8.3.3 Auditory tone

a) Refer to sound file “bong.wav”.

p) Legend colour shall contrast with the equipment background

q) Be in uppercase text only

r) Be between 3mm and 4mm in height

s) Consist of a Sans Serif font type (eg Arial, Helvetica)
This sound has the following frequency characteristics:

b) It consists of a two-tone sound (736Hz and 1120 Hz) with a single repetition at a slow rate of presentation.

c) It should be possible to hear the tone under all driving conditions at a level that will not startle the driver. The signal will be heard against background noise if its volume exceeds the ambient noise by 15dB.

d) Volume should be adjustable between 50dB(A) and 90dB(A).

8.3.4 Text Messages

- The text message shall be displayed on the ITS Visual Display (see Figure 12) and shall adhere to the following:
  
a) Be static;
  
  b) Be black in colour;
  
c) Be presented in sentence case (i.e. combination of upper and lower case);
<table>
<thead>
<tr>
<th></th>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>d)</td>
<td>Be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>e)</td>
<td>The ratio between the stroke width and character height should be between 1:12.5 and 1:6.25</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>f)</td>
<td>The relation between the width and height of the character should be between 0.5:1 and 1:1</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>g)</td>
<td>The space between characters should be a minimum of one stroke width</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>h)</td>
<td>The font type should be clear and simple. Sans serif fonts are recommended (eg Arial, Helvetica – not Times)</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>i)</td>
<td>There should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>
Note 1. Pushbuttons may be all square or all circular. Square buttons are preferred.

Note 2. System Reset Button (not shown in figure 10) shall be located away from the ITS Control Panel to prevent inadvertent operation.

Note 3. It is understood that space and other constraints may prevent the implementation of the layout specified here.

Note 4. The locations of the pushbuttons are justified on ergonomic grounds as follows:

- The Speed request Button, being the button most likely to be operated on a regular basis, should be located closest to the driver, as high as possible, and close to the ITS Visual Display to which it is functionally related.
- The system override button must be easily seen and located and must not be inadvertently activated. This button also functions as the Master Pushbutton.
- The Master Pushbutton is located in a position where inadvertent activation of other controls is unlikely, but flashes to attract attention.
- The Master Volume Control, given that it is likely to be used regularly, is located in a position that is close to the driver and is unlikely to result in inadvertent activation of other controls.

| Acceptable | ✔ | Partially Acceptable | | Not Acceptable | |
Figure 11. Location and Dimensions of the Visual Icon
Figure 12. Location and Maximum Dimensions of the Text Message
9. **SYSTEM OVERRIDE BUTTON**

9.1 **Functional Purpose**

The function of System Override Button is to allow drivers of the TAC SafeCar to temporarily disable all of the ITS warnings (including Haptic accelerator feedback).

9.2 **Warning Sequence**

Immediately after the System Override Button has been pressed:

a) All visual information currently displayed on the ITS Visual Display Screen shall disappear, including the uncoloured FDW ladder.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Test Scenario**: While the system fully booted up and driving initiate different warnings including combinations of warnings. Press the system override button. Record message on DV. Compare with the specifications.
- **Equipment/Facilities**: Test track, DV

b) All current visual, audio and voice warnings and messages shall stop

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Test Scenario**: While the system fully booted up and driving initiate different warnings including combinations of warnings. Press the system override button. Record message on DV. Compare with the specifications.
- **Equipment/Facilities**: Test track, DV

c) Haptic accelerator feedback, if already activated, shall stop

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Test Scenario**: While the system fully booted up and driving initiate haptic feedback response by driving 3km/h over preset speed limit. Press the system override button. Observe haptic feedback pressure.
- **Equipment/Facilities**: Test track

d) The ITS Visual Display Screen shall display the following text message: “System override activated”

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>☒</td>
</tr>
</tbody>
</table>

- **Test Scenario**: While the system fully booted up and driving initiate different warnings including combinations of warnings. Press the system override button. Record message on DV. Compare with the specifications.
- **Equipment/Facilities**: Test track, DV
e) The Data Logging System should continue logging data.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not possible to test</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

- **Test Scenario**
  While the system fully booted up and driving initiate different warnings including combinations of warnings. Press the system override button. Record message on DV. Stop driving after 5 min. Download log file. De-log the file and search for the record on the system override button being pressed.

- **Equipment/Facilities**
  Test track, DV, PC, downloading facility, De-Logger software

f) This state shall last for 60 seconds

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

- **Test Scenario**
  While the system fully booted up and driving initiate different warnings including combinations of warnings. Press the system override button. Record message on DV. Stop driving after 5 min. Download log file. De-log the file and search for the record on the system override button being pressed. Measure time using DV recording.

- **Equipment/Facilities**
  Test track, DV, PC, downloading facility, De-Logger software

g) During this period no additional warning in any form shall be displayed

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

- **Test Scenario**
  While the system override button is activated, attempt to initiate warnings and messages, including combinations of warnings.

- **Equipment/Facilities**
  Test track, DV

h) After expiration of 60 seconds normal function shall resume

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

- **Test Scenario**
  While the system fully booted up and driving initiate different warnings including combinations of warnings. Press the system override button. Record message on DV. Try to initiate new warning at/before the expiration of 60 seconds (SB would be the easiest).

- **Equipment/Facilities**
  Test track, DV

### 9.3 HMI Design Specifications

#### 9.3.1 Button

System Override Button shall:

- **a)** Be located as shown on the ITS Control Panel (see Figure 13)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>
b) Be a minimum of 2.5cm from the centre of other pushbuttons on the ITS Control Panel

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


c) Have the minimum dimensions prescribed in Table 3

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

d) Be easy to reach from the normal driving position

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

e) Be usable without inadvertently activating another control

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

f) Be perpendicular to the driver’s line of sight

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

g) Have a momentary action

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

h) Provide tactile feedback of activation (eg “click”)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

i) Be illuminated red to enable it to be seen at night

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

j) Be illuminated at a acceptable level to avoid driver visual discomfort at night

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

k) Be labelled SYSTEM OVERRIDE

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• The label shall adhere to the following specifications:

  l) Be oriented horizontally

  Fully Implemented ✔ Partially Implemented Not Implemented

  m) Be located immediately below the pushbutton/volume control

  Fully Implemented ✔ Partially Implemented Not Implemented

  n) Should not be obscured by controls

  Fully Implemented ✔ Partially Implemented Not Implemented

  o) Should have high contrast, and be wear-resistant such that they remain legible for the duration of the fleet trial

  Fully Implemented ✔ Partially Implemented Not Implemented

  p) Legend colour shall contrast with the equipment background

  Fully Implemented ✔ Partially Implemented Not Implemented

  q) Be in uppercase text only

  Fully Implemented ✔ Partially Implemented Not Implemented

  r) Be between 3mm and 4mm in height

  Fully Implemented ✔ Partially Implemented Not Implemented

  s) Consist of a Sans Serif font type (eg Arial, Helvetica)

  Fully Implemented ✔ Partially Implemented Not Implemented
9.3.2 Text Message
- The text message shall be displayed on the ITS Visual Display (see Figure 12) and shall adhere to the following:

a) Be static;

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b) Be black in colour;

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

c) Be presented in sentence case (i.e. combination of upper and lower case);

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

d) Be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

e) The ratio between the stroke width and character height should be between 1:12.5 and 1:6.25

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

f) The relation between the width and height of the character should be between 0.5:1 and 1:1

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

g) The space between characters should be a minimum of one stroke width

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

h) The font type should be clear and simple. Sans serif fonts are recommended (eg Arial, Helvetica – not Times)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
i) There should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.
Note 1. Pushbuttons may be all square or all circular. Square buttons are preferred.

Note 2. It is understood that space and other constraints may prevent the implementation of the layout specified here.

Note 3. The locations of the pushbuttons are justified on ergonomic grounds as follows:

- The Speed request Button, being the button most likely to be operated on a regular basis, should be located closest to the driver, as high as possible, and close to the ITS Visual Display to which it is functionally related.
- The system override button must be easily seen and located and must not be inadvertently activated. This button also functions as the Master Pushbutton.
- The Master Pushbutton is located in a position where inadvertent activation of other controls is unlikely, but flashes to attract attention.
- The Master Volume Control, given that it is likely to be used regularly, is located in a position that is close to the driver and is unlikely to result in inadvertent activation of other controls.
**MASTER VOLUME CONTROL**

**9.4 Functional Purpose**

The function of Master Volume Control is to allow drivers of the TAC SafeCar to adjust the volume at which all audio warnings and voice messages are played.

**9.5 Message Sequence**

Not applicable.

**9.6 HMI Design Specifications**

- The Master Volume Control shall:
  
a) Be a rotary control

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>N/A</th>
<th>Partially Implemented</th>
<th>The control is digital</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

  b) Shall be located on the ITS Control panel, ideally in the location shown in Figure 14

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

  c) Be easy to reach from the normal driving position

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

  d) Be usable without inadvertently activating another control

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

  e) Be silver grey or black

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

  f) Be labelled VOLUME

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

  - The label shall adhere to the following specifications:
    
g) Be oriented horizontally

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>
**h)** Be located immediately below the pushbutton/volume control

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**i)** Should not be obscured by controls

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**j)** Should have high contrast, and be wear-resistant such that they remain legible for the duration of the fleet trial

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**k)** Legend colour shall contrast with the equipment background

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**l)** Be in uppercase text only

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**m)** Be between 3mm and 4mm in height

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**n)** Consist of a Sans Serif font type (e.g., Arial, Helvetica)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**o)** The Master Volume control shall control the volume of all auditory ITS warnings and messages issued by the TAC SafeCar.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not RCW</td>
<td></td>
</tr>
</tbody>
</table>

**p)** Volume should be adjustable between 50dB(A) and 90dB(A).

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td>The volume range depends on individual sounds</td>
<td></td>
</tr>
</tbody>
</table>

**Test Scenario**
Initiate warnings Measure minimum peak SPL and maximum peak SPL with sound level meter.

**Equipment/Facilities**
Sound Level Meter
q) Volume cannot be reduced below 50dB(A).

<table>
<thead>
<tr>
<th>Test Scenario</th>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiate warnings. Attempt to reduce volume below 50 dB (by placing a hand over the speaker or similar). Measure minimum peak SPL with sound level meter.</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment/Facilities</td>
<td>Sound Level Meter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Note 1. Pushbuttons may be all square or all circular. Square buttons are preferred.

Note 2. It is understood that space and other constraints may prevent the implementation of the layout specified here.

Note 3. The locations of the pushbuttons are justified on ergonomic grounds as follows:

- The Speed request Button, being the button most likely to be operated on a regular basis, should be located closest to the driver, as high as possible, and close to the ITS Visual Display to which it is functionally related.
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- The Master Pushbutton is located in a position where inadvertent activation of other controls is unlikely, but flashes to attract attention.
- The Master Volume Control, given that it is likely to be used regularly, is located in a position that is close to the driver and is unlikely to result in inadvertent activation of other controls.
10. DATA LOGGING

10.1 Functional Purpose

The purpose of this system is to collect data that are required for analysis of the effect of the Intelligent Transport Systems on the driver’s performance.

The recorded data shall be stored onto a Memory Flash Card.

The list of parameters that shall be recorded is presented in Table 4 below. The column labeled Description contains recommendations for the formats of the data to be contained in a spreadsheet after being processed by the De-Logger software. These recommended formats are provided to facilitate data analysis by the MUARC research team.

Table 4: List of Data Logging Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Fully Impl.</th>
<th>Partially Implemented</th>
<th>Not Impl.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Date</td>
<td>Date, presented in the following format: dd/mm/yy</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2  Time</td>
<td>0 – 24 hours, presented in the following format: hh:mm:ss</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3  Master Pushbutton Status</td>
<td>Indicates instances of Master Pushbutton being pressed. For example: • 0 for inactive • 1 for being pressed.</td>
<td></td>
<td>Parameter present, needs explanation</td>
<td></td>
</tr>
<tr>
<td>4  Login</td>
<td>ID number (unique for each participant – as stored on iButton). If the iButton is not detected, a default ID number shall be recorded. For example: 000.</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5  Configuration</td>
<td>Contains information on which of the SafeCar Systems are currently enabled to issue warnings. For example: • 0 when no system warnings enabled • 1 when only SBR enabled • 2 when FDW + SBR enabled • 3 when ISA-I + SBR enabled • 4 when ISA-A + SBR enabled • 5 when ISA-I + FDW + SBR enabled • 6 when ISA-A + FDW + SBR enabled</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6  Number of km travelled</td>
<td>Number of km travelled. This parameter shall be coordinated with the information stored on the iButton.</td>
<td></td>
<td></td>
<td>☒</td>
</tr>
<tr>
<td>No.</td>
<td>Parameter</td>
<td>Description</td>
<td>Status</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>GPS latitude</td>
<td>From GPS receiver. Presented in degrees with a good level of precision (6 decimal places)</td>
<td>Present but not working properly</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>GPS longitude</td>
<td>From GPS receiver. Presented in degrees with a good level of precision (6 decimal places)</td>
<td>Present but not working properly</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>GPS speed</td>
<td>From GPS receiver. In km/h.</td>
<td>Present but not working properly</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Speed</td>
<td>From speedometer. In km/h.</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Braking Status</td>
<td>Indicates use of brakes. For example:</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 when brakes inactive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 when braking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Wipers Status</td>
<td>Indicates wet road conditions through the use of wipers.</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 for off</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 for first level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 for second level etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Headlights Status</td>
<td>Indicates use of headlights. For example:</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 for off</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 for parking lights</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 for low beam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 for high beam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Current Speed Limit</td>
<td>Displays current speed limit based on VicRoads database and GPS coordinates</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Speed Warning Status</td>
<td>Indicates which ISA warning is being issued.</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 for no warning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 for Stage 1 ISA warning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(both modes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 for Stage 2 ISA-I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 for Stage 2 ISA-A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Speed Request Button Status</td>
<td>Records instances of the Speed Request Button being pressed.</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 when not pressed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 when pressed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Time Headway</td>
<td>Directly taken from EATON Vorad system. Presented as integer 0 – 255.</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Following Distance Warning Status</td>
<td>Contains information of the current level of warning. For example:</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 for no warning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 for the first level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 for the second level etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Seatbelts Warning status</td>
<td>Contains information of the current level of warning. For example:</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 for off</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 for first level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 for second level etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 20 | System Override Button Status | Records instances of the System Override Button being pressed. For example:  
- 0 when not pressed,  
- 1 when pressed. | ✔ |  
| 21 | Reverse Collision Warning | Contains information of the current level of warning. For example:  
- 0 for no warning,  
- 1 for the first level,  
- 2 for the second level etc. | ✔ | Only 0 values present.  
| 22 | System Shutdown Status | Records status of system shutdown process. For example:  
- 0 for system active  
- 1 for system shutdown started | |  
| 23 | Turn Indicator Status | Records the status of the Turn Indicators. For example:  
- 0 for not activated  
- 1 for indicating to turn left  
- 2 for indicating to turn right | | 

The sampling rate shall be 5Hz for the following parameters:

a) Speed (from speedometer)

| Fully Implemented | ✔ | Partially Implemented | The rate appears to be slightly lower | Not Implemented |
|--------------------|-----|-----------------------|-------------------------------------|----------------
| Test Scenario      | Analyse De-Loged data files. Compare dynamic data with time stamp. Do values change within a second? |
| Equipment/Facilities | PC, De-Logger, Data |

b) Braking Status

| Fully Implemented | ✔ | Partially Implemented | Rate slightly lower | Not Implemented |
|--------------------|-----|-----------------------|---------------------|----------------
| Test Scenario      | Analyse De-Loged data files. Compare dynamic data with time stamp. Do values change within a second? |
| Equipment/Facilities | PC, De-Logger, Data |

c) Time Headway

| Fully Implemented | ✔ | Partially Implemented | Rate slightly lower | Not Implemented |
|--------------------|-----|-----------------------|---------------------|----------------
| Test Scenario      | Analyse De-Loged data files. Compare dynamic data with time stamp. Do values change within a second? |
| Equipment/Facilities | PC, De-Logger, Data |
d) Following Distance Warning Status

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Analyse De-Logged data files. Compare dynamic data with time stamp. Do values change within a second?

Equipment/Facilities: PC, De-Logger, Data

---

e) The minimum sampling rate for the remaining parameters shall be 1Hz.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Analyse De-Logged data files. Check time stamp.

Equipment/Facilities: PC, De-Logger, Data

---

f) All data logging parameters specified in Table 4 will be logged at all times unless otherwise specified.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Analyse De-Logged data files. Observe records after Master Pushbutton being pressed.

Equipment/Facilities: PC, De-Logger, Data

---

## 10.2 Warning Sequence

a) The following message shall be played to remind the designated driver to return the Flash Card to MUARC when the Flash Card exceeds 90% of its capacity: “Please return full memory card to Monash University and insert new one immediately.” [Load flash card to a 90% of its capacity and insert it into a car, boot the system fully, shut down the system and record the message with DV]

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Load flash card to a 90% of its capacity and insert it into a car, boot the system fully, shut down the system and record the message with DV

Equipment/Facilities: DV

---

b) The message shall be presented as both a text message (on the ITS Visual Display Screen) and as a voice message. Specifications for the design of the text and voice messages are contained in Sections 11.3.1 and 11.3.2 below.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Compare recorded message with the specifications from sections 11.3.1 and 11.3.2.

Equipment/Facilities: DV
c) This message shall be played once after every Log Out sequence until the Flash Card has been replaced with the empty one.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>N/A</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario: Load flash card to 90% of its capacity and insert it into a car, boot the system fully, shut down the system and record the message with DV. Shut down the engine. After 30 s start the engine wait until fully booted. Then shut down the engine. Record the message.

Equipment/Facilities: DV

10.3 **HMI Design Specifications**

10.3.1 **Text Messages**
- The text message shall be displayed on the ITS Visual Display (see Figure 12) and shall adhere to the following:
  a) Be static;

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>N/A</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

b) Be black in colour;

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>N/A</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

c) Be presented in sentence case (i.e. combination of upper and lower case);

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>N/A</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

d) Be large enough to be read in a moving vehicle. The minimum required character height should be a visual angle of 24 minutes of arc. With a visual angle of 20 minutes at a normal reading distance in a vehicle (700mm) the minimum character height would be 4 mm.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>N/A</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

e) The ratio between the stroke width and character height should be between 1:12.5 and 1:6.25

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>N/A</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

f) The relation between the width and height of the character should be between 0.5:1 and 1:1

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>N/A</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>
The space between characters should be a minimum of one stroke width

- Fully Implemented
- N/A
- Partially Implemented
- Not Implemented

The font type should be clear and simple. Sans serif fonts are recommended (eg Arial, Helvetica – not Times)

- Fully Implemented
- N/A
- Partially Implemented
- Not Implemented

There should be sufficient “white space” around text blocks to give a balanced appearance. At least 50% white space is recommended.

- Fully Implemented
- N/A
- Partially Implemented
- Not Implemented

10.3.2 Voice Message

- The voice message shall have the following design features:
  
a) A female voice is preferred

- Fully Implemented
- N/A
- Partially Implemented
- Not Implemented

b) An Australian accent is preferred

- Fully Implemented
- Partially Implemented
- Location has changed

- Not Implemented

c) A signal to noise ratio of around 5dB(A) should be sufficient to ensure audibility of speech messages

- Fully Implemented
- N/A
- Partially Implemented
- Not Implemented

10.3.3 Flash Card

The Flash Card shall:

a) Have 64Mb storage capacity (*expected 128MB)

- Fully Implemented
- ✔
- Partially Implemented
- Not Implemented

b) Be located in the boot of the SafeCar.

- Fully Implemented
- ✔
- Partially Implemented
- Location has changed
- Not Implemented

c) Be easily accessible

- Fully Implemented
- ✔
- Partially Implemented
- Not Implemented
d) Be protected from potential mechanical damage caused by any loose articles sitting in the boot.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>✔️</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>
11. **Reverse Collision Warning**

11.1 **Functional Purpose**

This is a commercially available system known as the “Park Pilot”, manufactured by Bosch. The function of the Reverse Collision Warning System is to prevent collisions with primarily stationary, but also moving objects, when reversing. This system serves primarily as a parking aid. The system has been modified to exclude redundant visual warnings. Other than that, it functions as an off-the-shelf system.

11.2 **Message Sequence**

11.2.1 **Warnings**

There are five levels of auditory warning. Each level of warning is based on the closest distance between the 4 ultrasonic sensors, mounted in the rear vehicle bumper, and the detected object.

- a) Level 1 – is played when the distance between the sensors and the detected object is between 80 cm and 100 cm
  
<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  **Test Scenario**
  Place an empty carton box behind the stationary car while in reverse. The distance between the box and the car shell be between 80 and 100 cm. Observe the warning.

  **Equipment/Facilities**
  Carton box, tape measure.

- b) Level 2 – is played when the distance between the sensors and the detected object is between 60 cm and 80 cm
  
<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  **Test Scenario**
  Place an empty carton box behind the stationary car while in reverse. The distance between the box and the car shell be between 60 and 80 cm. Observe the warning.

  **Equipment/Facilities**
  Carton box, tape measure.

- c) Level 3 – is played when the distance between the sensors and the detected object is between 40 cm and 60 cm
  
<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  **Test Scenario**
  Place an empty carton box behind the stationary car while in reverse. The distance between the box and the car shell be between 40 and 60 cm. Observe the warning.

  **Equipment/Facilities**
  Carton box, tape measure.

- d) Level 4 – is played when the distance between the sensors and the detected object is between 30 cm and 40 cm
  
<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  **Test Scenario**
  Place an empty carton box behind the stationary car while in reverse. The distance between the box and the car shell be between 30 and 40 cm. Observe the warning.

  **Equipment/Facilities**
  Carton box, tape measure.
e) Level 5 – is played when the distance between the sensors and the detected object is less than 30 cm

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

Test Scenario
Place an empty carton box behind the stationary car while in reverse. The distance between the box and the car shell be below 30 cm. Observe the warning.

Equipment/Facilities
Carton box, tape measure.

11.2.2 Other Sounds

a) Turning the system on: The system is automatically activated when the engine is running and the gear is positioned in reverse. The change of the gear into reverse is accompanied by a single 1200 Hz “ready” tone for 0.5 s.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

b) Errors: If the system is turned on and an error is detected the system will play a continuous 600 Hz “error” tone. The same tone will be played in the case of hardware error.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

c) Turning the system off: The system will be automatically turned off when the gear is not in reverse.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

11.3 HMI Design Specifications

a) This system issues audio warnings only. Each level of warning is associated with the following audio warnings:
   - Level 1 - repeating 1200 Hz tone, with on interval of 75 ms and off interval of 300 ms
   - Level 2 - repeating 1200 Hz tone, with on interval of 75 ms and off interval of 225 ms
   - Level 3 - repeating 1200 Hz tone, with on interval of 75 ms and off interval of 150 ms
   - Level 4 - repeating 1200 Hz tone, with on interval of 75 ms and off interval of 75 ms
   - Level 5 - Continuous 600 Hz tone

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

b) The driver shall be able to control the volume of Rear Collision Warnings using the Master Volume Control (see Section 10).

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>
c) Volume should be adjustable between 50dB(A) and 90dB(A).

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Fixed 63.5dB</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Scenario: Initiate warnings. Measure minimum peak SPL and maximum peak SPL with sound level meter.

Equipment/Facilities: Sound Level Meter

Table 5 below summarises warnings produced by this system in relation to the distance of the object from the rear of the vehicle.

Table 5: Summary of the Reverse Collision Warnings

<table>
<thead>
<tr>
<th>Distance to the rear of the vehicle</th>
<th>Audio Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 100 cm</td>
<td>None</td>
</tr>
<tr>
<td>80 – 100 cm</td>
<td>Repeating 1200 Hz tone, on 75 ms and off 300 ms</td>
</tr>
<tr>
<td>60 – 80 cm</td>
<td>Repeating 1200 Hz tone, on 75 ms and off 225 ms</td>
</tr>
<tr>
<td>40 – 60 cm</td>
<td>Repeating 1200 Hz tone, on 75 ms and off 150 ms</td>
</tr>
<tr>
<td>30 – 40 cm</td>
<td>Repeating 1200 Hz tone, on 75 ms and off 75 ms</td>
</tr>
<tr>
<td>&lt; 30cm</td>
<td>Continuous 600 Hz tone</td>
</tr>
</tbody>
</table>

11.4 Test Scenarios

a) Slow moving object appears behind reversing vehicle

Acceptable ✔ | Partially Acceptable | Not Acceptable |

b) Pedestrian walks in the path of reversing vehicle

Acceptable ✔ | Partially Acceptable | Not Acceptable |

c) Slow moving car drives across the path of reversing vehicle

Acceptable ✔ | Partially Acceptable | Not Acceptable |
d) Fast moving car drives across the path of reversing vehicle (90 degree parking on a road).

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>✔</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>

\[\text{Acceptable} \quad \checkmark \quad \text{Partially Acceptable} \quad \text{Not Acceptable}\]

e) Small fast moving object (basketball) appears behind reversing vehicle

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>✔</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>

\[\text{Acceptable} \quad \checkmark \quad \text{Partially Acceptable} \quad \text{Not Acceptable}\]

\[\text{Acceptable} \quad \checkmark \quad \text{Partially Acceptable} \quad \text{Not Acceptable}\]

\[\text{Acceptable} \quad \checkmark \quad \text{Partially Acceptable} \quad \text{Not Acceptable}\]

\[\text{Acceptable} \quad \checkmark \quad \text{Partially Acceptable} \quad \text{Not Acceptable}\]

\[\text{Acceptable} \quad \checkmark \quad \text{Partially Acceptable} \quad \text{Not Acceptable}\]

\[\text{Acceptable} \quad \checkmark \quad \text{Partially Acceptable} \quad \text{Not Acceptable}\]

h) Static wooden object placed behind reversing car

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>✔</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>

\[\text{Acceptable} \quad \checkmark \quad \text{Partially Acceptable} \quad \text{Not Acceptable}\]

\[\text{Acceptable} \quad \checkmark \quad \text{Partially Acceptable} \quad \text{Not Acceptable}\]

\[\text{Acceptable} \quad \checkmark \quad \text{Partially Acceptable} \quad \text{Not Acceptable}\]

\[\text{Acceptable} \quad \checkmark \quad \text{Partially Acceptable} \quad \text{Not Acceptable}\]

\[\text{Acceptable} \quad \checkmark \quad \text{Partially Acceptable} \quad \text{Not Acceptable}\]

i) Static piece of paper placed behind reversing car at the transducer level

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>✔</th>
<th>Partially Acceptable</th>
<th>Not Acceptable</th>
</tr>
</thead>
</table>

\[\text{Acceptable} \quad \checkmark \quad \text{Partially Acceptable} \quad \text{Not Acceptable}\]
12. **Daytime Running Lights**

12.1 *Functional Purpose*

The function of the Daytime Running Lights is to increase the conspicuity of the SafeCar on the road during daylight conditions.

12.2 *Message Sequence*

Not applicable.

12.3 *HMI Design Specifications*

a) The car headlights will turn on automatically (in DRL mode: on low beam, at 80% of their normal luminance to conserve power) when the engine is started. They will turn off automatically when the engine is turned off.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
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</tbody>
</table>

b) In DRL mode, interior lights, which normally illuminate when the headlights are turned on, will not be turned on to conserve power.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
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<tbody>
<tr>
<td>✔</td>
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</tbody>
</table>

c) In DRL mode, the vehicle taillights shall be illuminated to 80% of normal intensity. This is to ensure that the vehicle can be seen from the rear at night in the event that the driver fails to manually switch on the headlights.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>❌</td>
</tr>
</tbody>
</table>
13. **ITS VISUAL DISPLAY**

13.1 **Functional Purpose**

The function of the ITS Visual Display is to display to the driver visual messages and warnings issued by the SafeCar systems.

13.2 **Message Sequence**

Refer to individual system specifications.

13.3 **HMI Design Specifications**

13.3.1 **Display Type**

   a) The ITS Visual Display shall consist of a 3.8” Liquid Crystal Display (LCD), [Whichever is selected]

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Smaller but readable</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

   b) Ideally, the display should be able to operate within the expected temperature range expected for the duration of the fleet trial. (Note. In high temperatures, the ITS Visual Display in the prototype vehicles does not function properly.)

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
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</tbody>
</table>

   Test Scenario
   If feasible, leave car in the strong sun. Allow display to heat up. Start the car and observe the display. Alternatively, use hair dryer to heat up (50 degrees) the display, Monitor temperature with a thermocouple (multimeter).

   **Equipment/Facilities**
   Multimeter with thermocouple

13.3.2 **Location**

   a) Ideally, the ITS Visual Display Screen shall be located within 15 degrees of the driver’s vertical viewing position and 15 degrees horizontally, with a maximum separation of 30 degrees. It is preferable that the display be located to the left, rather than right, of the driver’s normal line of sight. [Measure angle manually]

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
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</tbody>
</table>

   b) The driver, regardless of height, shall have a clear and unobstructed view of the display.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
c) The location of the display shall not interfere with the operation of other vehicle controls.

13.3.3 Brightness

a) The display shall contain a brightness control to ensure that the display is legible in all ambient light conditions.

b) The brightness control must be easy to reach and operate.

13.3.4 Contrast

a) The contrast ratio (see formula below) describes the relation between the luminance of the foreground and the background. This should be a minimum of 3:1, whilst a ratio of 5:1 is recommended. Too high contrast can cause problems of glare, whilst too low contrast slows down the reading process.

b) The ratio of area average luminance of the display and of the surrounding (luminance balance) should not exceed 10:1 (ISO 15008 integrated, 2000).

\[
\text{Contrast} = \frac{L_{\text{Foreground}} - L_{\text{Background}}}{L_{\text{Background}}}
\]

\(L_{\text{Foreground}} = \text{Luminance of the foreground}\)

\(L_{\text{Background}} = \text{Luminance of the background}\)

13.3.5 Resolution

a) The resolution of the display should be high enough to show the driver solid images of information via symbol or text.
b) The recommended resolution of a 3.8” LCD is 320 by 240 (240 by 320) pixels

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>The display is smaller but acceptable</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

13.3.6 Reflections and Glare

- The ITS Visual display shall:
  a) Be free from reflections and glare under all ambient lighting conditions; and

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Can be adjusted</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

  b) Not cause reflections and/or glare on the windscreen and windows. [Drive car during different times and in different directions in respect to the sun, other light sources at night]

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Can be adjusted</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

13.3.7 Characters, Spacing and Fonts

- Refer to specifications for individual systems.

13.3.8 Screen Image Stability

- The ITS Visual Display Screen shall not vibrate or flicker to an extent that information becomes blurred, which may increase reading time and therefore increase task completion time and visual distraction from the driving task.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>

13.3.9 Safety

- The ITS Visual Display shall be mounted in the vehicle in a manner which ensures that it will not injure the vehicle occupant in the event of a crash.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
</table>
14. **ITS Audio System**

14.1 *Functional Purpose*

The function of the ITS Audio System is to present to the driver auditory messages and warnings issued by the SafeCar systems.

14.2 *Message Sequence*

Refer to specifications for individual systems.

15.3 *HMI Design Specifications*

**a)** The audio system must be able to deliver warnings and messages at levels adjustable between 50dB(A) and 90dB(A).

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All warning and message levels except for RCW are adjustable. The individual warning levels vary.</td>
<td></td>
</tr>
</tbody>
</table>

**b)** Other audio sources in the vehicle will not be muted by the ITS warnings/messages, as this is likely to annoy drivers and be unacceptable to them.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
15. **MESSAGE PRIORITY PROTOCOL**

15.1 *Functional Purpose*

The function of the Message Priority Protocol is to ensure that, if two or more ITS warnings in the SafeCar are simultaneously initiated, only the most critical warning is presented to the driver. This ensures that the driver is neither confused nor overloaded by multiple competing warnings.

15.2 *Warning Sequence*

Specifications for the message priority protocol are presented in Table 6 below. The message priority scheme adheres to the following general principles:

a) FDW headway warnings which reach critical status (i.e. which correspond to three red bars, a flashing headway ladder and simultaneous auditory alerts) suppress all other warnings;

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
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</tbody>
</table>

Test Scenario: Driving on the test track. Speeding over the speed limit, having seat belt warning activated by applying pressure on empty back seat (by back seat passenger). Slowly approach the lead vehicle until all of the bars have been displayed (three yellow and three red). Observe display. Record message on DV.

Equipment/Facilities: Test track, Lead vehicle, DV, three people minimum

b) ISA warnings at any level of criticality suppress seat belt warnings. However, if, after 5 seconds, ISA warnings are still being issued because the driver has not slowed down sufficiently, alternation of the Seat Belt and ISA warnings occurs in 5 second cycles; and

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<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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<tbody>
<tr>
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</tbody>
</table>

Test Scenario: Driving on the test track. Seat belt warning activated by applying pressure on empty back seat (by back seat passenger - controls the camera). Increase the speed over the speed limit. Observe display. Record message on DV. Maintain this conditions for one minute if possible.

Equipment/Facilities: Test track, DV, Two persons

c) FDW headway warnings which do not reach critical status are always displayed, but they do not suppress other warnings.

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</tbody>
</table>

Test Scenario: Driving on the test track. Following the lead vehicle at approximately constant, non-critical time headway. Maintaining this headway, increase the speed of both vehicles to above the speed limit. Record the display. While speeding, activate seat belt reminder warning. Record the display. Slow down to below the speed limit while maintaining time headway. Record the display. Release the pressure from the rear seat. After 10 seconds re-apply the pressure. Record the display.

Equipment/Facilities: Test track, Lead vehicle, DV, Three people
### Table 6: Message Priority Protocol

<table>
<thead>
<tr>
<th>COMPETING WARNINGS</th>
<th>MESSAGE PRIORITY PROTOCOL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vehicle speed 0 km/h to less than 20 km/h</strong></td>
<td>Within this vehicle speed range, only Seat Belt Reminder warnings will be issued, as:</td>
</tr>
<tr>
<td></td>
<td>• Following Distance Warnings are not issued at speeds below 20 km/hr (see Section 2.2).</td>
</tr>
<tr>
<td></td>
<td>• There will be no posted speed limits in the digital database of 50 km/hr or less.</td>
</tr>
<tr>
<td></td>
<td>Hence, there will be no competing warnings within this speed range.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>✔</td>
</tr>
<tr>
<td><strong>Vehicle speed 20 km/h to less than 50 km/h</strong></td>
<td>Within this vehicle speed range, only Seat Belt Reminder and FDW warnings will be issued as there will be no posted speed limits in the digital database of 50 km/hr or less. Hence, only SBR and FDW warnings can compete within this speed range in the two scenarios shown below.</td>
</tr>
<tr>
<td>1. Seat Belt Warning on - then FDW</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• If FDW warnings are non-critical (at Level 5 or less; see Section 2.3.1), the FDW ladder bars are displayed and Seat Belt visual and auditory warnings remain displayed.</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• If FDW warnings are critical (at Level 6; see Section 2.3.1), they immediately suppress the Seat Belt visual and auditory warnings until time headway is increased to a non-critical level.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>2. FDW on - then Seat Belt Reminder</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• If existing FDW warnings are critical, they suppress other warnings. When they become non-critical, the Seat Belt visual and auditory warnings are displayed alongside the FDW ladder bars.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• If existing FDW warnings are non-critical, Seat Belt visual and auditory warnings are displayed alongside the FDW display.</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
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</tr>
</tbody>
</table>
Vehicle Speed 50 km/hr and above. *In this speed range, there is potential conflict between warnings issued by the FDW, SBR and ISA systems. This gives rise to 9 different scenarios in which potential conflicts between warnings can occur. Message priority protocols for each of these nine scenarios are specified below.*

<table>
<thead>
<tr>
<th>Scenario Description</th>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Seat Belt Reminder Warning then FDW</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- If FDW warnings are non-critical, the FDW ladder bars are displayed and Seat Belt visual and auditory warnings are displayed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- If FDW warnings are critical, they replace the Seat Belt visual and auditory warnings until such time that headway is increased to a non-critical level.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Seat Belt Reminder Warning then ISA warning</td>
<td>✔</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>- For both ISA systems (ISA-I and ISA-A), ISA warnings will initially suppress SBR warnings until such time as the driver reduces speed to the pre-ISA warning speed. Then the Seat Belt Reminder warnings will resume.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- If speed is not reduced to the pre-ISA warning speed within 5 seconds, then the SBR warnings will resume for 5 seconds, followed by the ISA warnings for 5 seconds, followed by the SBR warnings for 5 seconds, and so on, in an alternating fashion. The alternating warnings will continue until the driver reduces speed to the pre-ISA warning speed or the seat belt is buckled.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. When an ISA warning initially suppresses the SBR warning, the ISA warning will be presented immediately as a Stage 2 warning (see Section 1.2) rather than as a Stage 1 warning.
### 3. Seat Belt Warning on-then ISA + FDW

- If FDW warnings are critical, they suppress the SBR warnings and prevent ISA warnings from being displayed until such time that headway is increased to a non-critical level.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td>Not tested on haptic feedback</td>
<td></td>
</tr>
</tbody>
</table>

- If the FDW warnings are non-critical, the ISA warnings will initially suppress the SBR warnings until such time as the driver reduces speed to the pre-ISA warning speed. Then the Seat Belt warnings will resume. However, if speed is not reduced to the pre-ISA warning speed within 5 seconds, the SBR warnings will resume for 5 seconds, followed by the ISA warnings for 5 seconds, followed by the Seat Belt warnings for 5 seconds, and so on in an alternating fashion. The alternating warnings will continue until the driver reduces speed to the pre-ISA warning speed or the seat belt is buckled.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td>✗</td>
</tr>
</tbody>
</table>

Note. When an ISA warning initially suppresses the SBR warning, the ISA warning will be presented immediately as a Stage 2 warning *(see Section 1.2)* rather than as a Stage 1 warning.

### 4. FDW on then Seat Belt Reminder Warning

See priority scheme for vehicle speed of 15 km/h to less than 50 km/h, No. 2, above.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
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<td></td>
</tr>
</tbody>
</table>

### 5. FDW on – then ISA

- If existing FDW warnings are critical, they remain displayed and suppress the ISA warnings. When the FDW warnings become non-critical, the ISA warnings are displayed with the FDW warnings.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
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</tbody>
</table>

- If the existing FDW warnings are non-critical, ISA warnings are displayed with the FDW warnings.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. **FDW on-then ISA warning + Seat Belt Reminder Warning**

- If existing FDW warnings are critical, they remain displayed and suppress all other warnings. When the FDW warnings become non-critical, the ISA warnings are displayed (immediately as Stage 2 ISA warnings) with the non-critical FDW warnings until such time as the driver reduces speed to the pre-ISA warning speed. If speed is not reduced to the pre-ISA warning speed within 5 seconds, then the SBR warnings will replace the ISA warnings for 5 seconds, followed by the ISA warnings for 5 seconds, followed by the SBR warnings for 5 seconds, and so on in an alternating fashion. The alternating warnings will continue until the driver reduces speed to the pre-ISA warning speed or the seat belt is buckled.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
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</tr>
</tbody>
</table>

- If the existing FDW warnings are non-critical, ISA warnings (initially at the Stage 2 level) are displayed alongside the non-critical FDW display until such time as the driver reduces speed to the pre-ISA warning speed. If speed is not reduced to the pre-ISA warning speed within 5 seconds, then the SBR warnings will replace the ISA warnings for 5 seconds, followed by the ISA warnings for 5 seconds, followed by the SBR warnings for 5 seconds, and so on in an alternating fashion. The alternating warnings will continue until the driver reduces speed to the pre-ISA warning speed or the seat belt is buckled.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

7. **ISA on-then Seat Belt Reminder Warning**

- ISA suppresses seat belt warnings until such time as the driver reduces speed to the pre-ISA warning speed. If speed is not reduced to the pre-ISA warning speed within 5 seconds, then the Seat Belt warnings will be displayed for 5 seconds, followed by the ISA warnings for 5 seconds, followed by the Seat Belt warnings for 5 seconds, and so on in an alternating fashion. The alternating warnings will continue until the driver reduces speed to the pre-ISA warning speed or the seat belt is buckled.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

8. **ISA on-then FDW**

- Following distance warnings which are critical will suppress existing ISA warnings.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
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</table>

- Following distance warnings which are non-critical will be displayed alongside existing ISA warnings.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. ISA on – then FDW + Seat Belt Warning

- Following distance warnings which are critical will suppress ISA and Seat Belt warnings.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
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</tbody>
</table>

- Following distance warnings which are non-critical can be displayed alongside existing ISA warnings without suppressing ISA or seat belt warnings. ISA warnings will initially suppress the seat belt warnings until such time as the driver reduces speed to the pre-ISA warning speed. Then the Seat Belt warnings will commence. If speed is not reduced to the pre-ISA warning speed within 5 seconds, then the Seat Belt warnings will resume for 5 seconds, followed by the ISA warnings for 5 seconds, followed by the Seat Belt warnings for 5 seconds, and so on in an alternating fashion. The alternating warnings will continue until the driver reduces speed to the pre-ISA warning speed or the seat belt is buckled.

<table>
<thead>
<tr>
<th>Fully Implemented</th>
<th>Partially Implemented</th>
<th>Not Implemented</th>
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</table>

### 16.3 HMI Design Specifications

Refer to the HMI specifications for individual systems.
Appendix E  Information for Company Fleets
Background

Victoria has made strong gains in reducing road trauma over the past decade through a cooperative approach by its lead road safety agencies and a focus on driver behaviour, enforcement and infrastructure.

One of those agencies is the Transport Accident Commission (TAC), Victoria’s compulsory third party insurer. The TAC believes that new vehicle safety technologies, which are about to enter the market, known as Intelligent Transport Systems (ITS), will provide a new wave of road safety benefits. These technologies are described overleaf.

Ford Motor Company’s vision is to become the world’s leading consumer company for automotive products and services. Achieving this vision requires total commitment to pushing the limits of technology and design, having a passion for new ideas and being committed to bettering the community.

The SafeCar project involves the participation of TAC, Ford and the Monash University Accident Research Centre (MUARC). The project is aimed at improving safety on the roads by demonstrating the benefits of emerging vehicle safety technologies to manufacturers, company fleets, and motorists.

Project Aim

The aim of the SafeCar project is to stimulate demand, initially by company car fleets and in the longer term by motorists, for in-car ITS technologies with high potential to make driving safer, reduce fuel costs and minimise damage to the environment.

A collection of ITS technologies, which are described overleaf, has been combined by the SafeCar project team into 15 test vehicles (“SafeCars”). Research by MUARC indicates that these technologies have the potential to reduce the risk of death on the road by around 30% or more. Preliminary testing of two prototype SafeCars has been completed. In the next stage of the project, selected company fleets from within Victoria will be invited to participate in an “on-road” study. The study is designed to assess how effective the technologies in the 15 test SafeCars are in assisting and promoting safe driving, what drivers think of the technologies, and how reliably the technologies operate in the real world.

On-Road Study

Fifteen Ford passenger cars have been equipped with the collection of ITS technologies described overleaf. These SafeCars will be driven in and around Melbourne, greater Melbourne, and most parts of Geelong, Bendigo and Ballarat by selected drivers from corporate fleets within Victoria. The following are the key features of the on-road study:

- 4 or 5 government and private company fleets;
- a total of 30 drivers across fleets;
- each SafeCar driven by a dedicated driver for about 16,700 kilometres over about 5 months; and
- driving performance data recorded automatically by an on-board data logger during the trial.

The ITS Technologies

The following safety technologies will be fitted to each of the 15 SafeCars.
Speed Warning – automatically warns the driver if he/she is travelling 3 kilometres per hour or more over the legal speed limit.

Following Distance Warning – warns the driver if he/she is travelling too close to the car in front.

Seat Belt Reminder – lets the driver know if he/she or anyone else in the SafeCar is unrestrained.

Reverse Collision Warning – warns the driver if he/she is about to reverse into a stationary or slow moving object.

Daytime Running Lights – the SafeCar headlights turn on automatically during the day at 80% of normal brightness to make the SafeCar more easily seen by other motorists.

What are the Company Fleet Requirements?

To be eligible to participate in the on-road study, your company must be able to meet or comply with the following criteria:

- drivers must be available to have dedicated use of a SafeCar for both business and recreational purposes for 16,700 km, during a 5 month period;
- fleet owners must be willing to hand over SafeCars to a new driver after this 16,700km/5 month period;
- 2 drivers, each in turn, must be available to drive each SafeCar allocated to the fleet;
- to meet Monash University Ethics requirements, drivers must not be coerced by their company to participate - it is imperative that drivers volunteer;
- SafeCars must be driven predominantly in the Greater Melbourne, Metropolitan Melbourne, and/or most parts of Geelong, Bendigo and/or Ballarat areas;
- the SafeCars are not to be used by participating fleets for demonstrating and showcasing the ITS technologies, as this will compromise the integrity of the data being collected by the on-board logger - other showcasing arrangements can be made in consultation with the TAC;
- if possible, collect and provide fuel purchase information for the SafeCars in the company’s fleet to enable the calculation of fuel consumption;
- in the event that an infringement notice is issued for a traffic offence in a SafeCar, the fleet owner shall identify the offending driver and issue that infringement; and
- take appropriate action in the event that a driver from the company is reported as having engaged in sustained dangerous driving.

To satisfy Monash University Ethics requirements for conducting research, all data collected during the trial, subject to a couple of conditions (see below), will be confidential and fleet managers and others will not be given access to data derived from individual drivers. Aggregate data, however, will be provided to all participating fleets following completion of the study.

What are the Driver Requirements?

To be eligible to participate in the study, drivers must meet the following criteria:

- provide written consent to participate in the study;
- have a vehicle usage rate of at least 40,000 kilometres per year;
- hold a current and full Victorian car driver licence;
- be aged between 25 and 64 years;
- have normal hearing and vision (glasses and contact lenses may be worn); and
- have no known problems with substance abuse.

Drivers who take part will be asked to:

- drive a SafeCar for 16,700 kilometres in approximately 5 months;
- drive the SafeCar as they would any other fleet vehicle;
have data on their driving performance (e.g. speed, car following distance and GPS location) automatically logged during the trial by an on-board data logger. These data will be downloaded into a confidential research database located at MUARC (Note. Fleet managers will not have access to this individual data);

when prompted by MUARC, replace the memory card containing the logged data and send the old card and the vehicle odometer reading to MUARC in a pre-paid envelope;

undertake a 2 hour briefing and training session prior to driving the SafeCar and review refresher training notes on either one or two occasions during the course of the study. Revisions will take around 5 minutes on each occasion;

complete up to 7 phone interviews of no more than 15 minutes each during the trial about their impressions of the ITS technologies in the SafeCars;

every 2 or 3 weeks accept a phone call from a member of the project team, enabling the project team to monitor the number of kilometres the drivers have accrued (where possible, this will coincide with the phone interviews);

report by telephone any general issues relating to the systems, and any technical problems if they arise;

maintain their SafeCar as they would any other vehicle;

as best as possible maintain the tyres at the correct operating pressure, since under-inflated tyres will affect the accuracy of the speedometer, which will affect the operation of the Speed Warning System;

make sure that the SafeCar is locked when unattended, and that the SafeCar is parked off the street where possible;

fit the sun-shades provided to the SafeCar when it is parked outside to prevent the SafeCar interior visual display from over-heating;

accept that data about their fuel purchases for the SafeCar that they are driving may be collected and provided by their fleet manager to enable calculation of SafeCar fuel consumption;

as far as possible, purchase fuel using only their fuel card (if applicable), and when it is not possible to use their fuel card, to endeavour, on every such occasion, to record the SafeCar odometer reading, the date of the fuel purchase, and the number of litres of fuel purchased;

accept that, in the event that they crash their SafeCar, the logged data from that SafeCar could be subpoenaed for use as evidence in a court of law;

accept that, in the event that they drive their SafeCar in a sustained dangerous manner, which is determined from their logged driving data, MUARC is obliged to report such instances to the TAC, who will in turn notify their fleet manager;

accept responsibility for ensuring that no one else, including another study participant, drives their SafeCar while the system warnings are enabled (Note that other drivers can operate the SafeCar but must disable the warnings by pressing a special button in the SafeCar);

not drive a SafeCar other than the one that they have been issued while the systems in the other car are enabled; and

accept that their participation in the trial may be terminated if: they drive their SafeCar in a sustained dangerous manner; if they fail to maintain and secure the SafeCar as prescribed; if they fail to adhere to study requirements; and if they wilfully damage the SafeCar.

Participants should also note that:

unless they are found to drive in a sustained dangerous manner or crash their SafeCar, any information that they provide will be kept confidential and secure and that no information that could lead to the identification of individuals will be disclosed to fleet managers, to any other party, or in any project reports;
their participation in the study is voluntary;

in some SafeCars, the Cruise Control function has been disabled, so that this system cannot have an effect on the data collected in this study;

they should not use the Manual Speed Alert function, which is separate from the safety systems in the SafeCars - this is important because it is not known whether use of the Manual Speed Alert will have an effect on the data collected in this study; and

some of the SafeCar systems are not designed to work outside Victoria and, so, each time they start their SafeCar while on an interstate trip, participants must press a special button in the SafeCar to disable all SafeCar system warnings.

Study Design – In brief

Drivers who agree to take part in the study will be asked to drive a SafeCar for approximately 5 months. During this time different ITS systems in the SafeCar will automatically turn on and off in predetermined orders.

The study is divided into several “periods” known as the “Before”, “During”, and “After” periods. (See diagram on page 5.)

The “Before” period is further divided into “Before 1” and “Before 2”. During the “Before 1” period, the only ITS system that will be turned on in the SafeCars will be the Daytime Running Lights. In the “Before 2” period, the Reverse Collision Warning and Seat Belt Reminder Systems will also turn on.

The “During” period is divided into “During 1”, “During 2” and “During 3” periods. The “During 1” period occurs immediately after the “Before” period. In each of the “During” periods, the Speed Warning system, the Following Distance Warning system or both systems will turn on. The system that switches on in each “During” period will differ between drivers. One driver, for example, might receive warnings from the Speed Warning system in the “During 1” period while another driver might receive Following Distance Warnings during this same period or warnings from both Speed Warning and Following Distance Warning systems.

Each “During” period is followed by an “After” period in which the ITS system that was turned on in the previous “During” period (e.g. Speed Warning system) is switched off.

Drivers will be assigned either to a “control” group or a “treatment” group. Only drivers in the treatment group will receive warnings from the Speed Warning and the Following Distance Warning systems. For both control and treatment drivers, the Daytime Running Lights are on for the entire trial, while the Reverse Collision Warning and Seat Belt Reminder Systems are on from the “Before 2” period onwards. All companies will receive at least one “treatment” car.

All visual warning messages are displayed on a miniature TV screen attached to an adjustable arm on the dashboard. Special buttons exist to enable the driver to turn off system warnings temporarily, to control the volume of auditory warnings, and for all other drivers to disable ITS-related warnings when they drive the SafeCar.

It should be noted that the design principles of the SafeCars are such that at no time does the car take control away from the driver - and if the driver operates the car legally and safely, the ITS systems remain silent.

Want to know more?

Please contact:

Paul Tierney
Senior Projects Officer
Transport Accident Commission
222 Exhibition Street
MELBOURNE VIC 3000
Phone: (03) 9664 6954
Email: paul_tierney@tac.vic.gov.au
## On-Road Study Design

<table>
<thead>
<tr>
<th>Distance (km)</th>
<th>Daytime Running Lights ON</th>
<th>Seat Belt Reminder ON</th>
<th>Reverse Collision Warning ON</th>
<th>Speed Warning ON or Following Distance Warning ON or Both ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Before 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>Before 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,700</td>
<td>During 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3,200</td>
<td>After</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6,200</td>
<td>During 2</td>
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<td>10,700</td>
<td>During 3</td>
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<td></td>
</tr>
<tr>
<td>12,200</td>
<td>After</td>
<td></td>
<td></td>
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</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>16,700</td>
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</tbody>
</table>

**Familiarisation**

**Distance travelled (km)**
Appendix F  Explanatory Statement
On-Road Study into the Effects on Driving of In-vehicle Intelligent Transport Systems

A number of factors contribute to the high road toll in Victoria. Some of the more critical causal factors are speeding, following cars too closely, not wearing seat belts and failure to see other vehicles. Property damage crashes are also of concern to many owners of car fleets. Reverse collisions account for a large proportion of property damage crashes.

New technologies are becoming available that, when fitted to vehicles, have the potential to dramatically reduce the incidence and severity of crashes attributable to these factors. These technologies are known as Intelligent Transport Systems (ITS). A selection of such systems has been fitted to 15 Ford passenger vehicles in Victoria as part of the Transport Accident Commission's (TAC) SafeCar project. This study involves the TAC, the Ford Motor Company of Australia and the Monash University Accident Research Centre (MUARC).

The technologies fitted to the vehicles are designed to:

- warn you if you are travelling 3 or more kilometres per hour over the posted speed limit;
- warn you if you are travelling too close to the vehicle in front;
- warn you if you or anyone else in the car is not wearing a seat belt;
- warn you if you are about to reverse into an object; and
- automatically turn on the headlights during the day to make the vehicle easier to see by other road users.

MUARC has been engaged by TAC to conduct research, as part of the SafeCar project, to:

- assess the technical operation of the ITS technologies that have been fitted to the 15 Ford vehicles;
- assess driver attitudes towards and driver acceptance of these technologies; and
- evaluate the effectiveness of these technologies in encouraging safe driving behaviours.

This research is important, because it will tell us whether the technologies are doing what they are designed to do, that is, to enhance safety, and whether consumers would be comfortable having the technologies in their cars.

The 15 ITS-equipped 'SafeCars' have been circulated among several car fleets located in and around Melbourne. Your company is one of the fleets that has volunteered to participate.

To take part in this project you must:

- hold a valid and full Victorian car driver's licence,
- drive at least 40,000 kilometres per year (accumulated in one vehicle);
• be aged between 25 and 64 years;
• have normal hearing and vision (glasses and contact lenses may be worn); and
• not have any known problems with substance abuse (alcohol, drugs, etc).

If you agree to take part in the project, you will be asked to drive a SafeCar for at least 16,700 kilometres. This is expected to take you about 5 months based on the kilometres you drive in one year. You will be required to drive the SafeCar in the same manner as you would drive any other fleet vehicle provided to you by your company. While you drive the SafeCar, different systems in the vehicle will automatically turn on and off every few thousand kilometres in predetermined orders, which you will be told about beforehand. Some participants will be assigned to a 'Treatment Group' which means that these Participants will be exposed to all the technologies under study. Other Participants will be assigned to a 'Control Group'. Participants in the Control Group will only be exposed to some of the technologies under study.

A data logger equipped to each car will record certain driving data such as speed, following distance information, and your approximate location on the road network, using satellite tracking. The data logger stores information on a small memory card located in the console between the two front seats. You will be required to remove the card, replace it with an empty card, and return the used card to MUARC in a pre-stamped addressed envelope. This will occur on a monthly basis - five times in total. The data from the cards will be downloaded into a confidential database located at MUARC.

As part of the study, you will also be asked to complete a telephone interview up to seven times during the course of the trial (at intervals of 2 to 6 weeks), so that we can gather some information on your impressions of the ITS technologies in the SafeCar. On each occasion the interview will take about 15 minutes of your time. If using the telephone is not convenient for you, a face to face meeting can be arranged. Whatever the method, a time during the day, which is convenient to you, will be scheduled.

We are also interested in examining whether exposure to the ITS technologies in the SafeCars affects fuel consumption. To measure fuel consumption reliably we need access to the fuel purchase data for the SafeCar that you will be driving. Consequently, data about your fuel purchases may be collected and provided by your fleet manager. If this is the case, then it would greatly benefit the study if you would attempt as far as possible to purchase fuel only using your company's fuel card. When it is not possible to use your fuel card, it would be greatly appreciated if, on every such occasion, you could record your SafeCar odometer reading, the date of the fuel purchase, and the number of litres of fuel purchased.

Prior to driving the vehicle, you must attend a Participant Briefing and Training session. This will be held at a time and location that is convenient to both yourself and the MUARC session leader. This session will last for 2 hours. At this session you will be further briefed on the purpose of the study and on what your participation will involve. You will be asked to complete a couple of brief questionnaires so that we can gather some background information on you (e.g. age, driving experience); and, you will be asked to undertake training that will provide you with skills to operate the technologies installed in the SafeCars. Some participants will also be asked to review refresher notes on either one or two occasions during the course of the study. The review notes are designed to refresh your memory on how certain systems operate. Revision of the notes should take no more than about 5 minutes, and can be done individually and in your own time.
No findings that could identify any individual participant will be published. No names will be put into any written records of the study, with all names replaced with codes. All other data from this study will be kept at MUARC. You may access your personal information held by MUARC in accordance with the provisions of the Information Privacy Act 2000. Only members of the MUARC project team will have access to the data, which must be stored for five years under university regulations, without any identifying information. That is, there will be no information which identifies a particular participant or their personal details stored.

However, in the event of a crash, any logged data collected from your vehicle during the study, that are relevant to the crash, may be subpoenaed and if so must be released by MUARC. It is recognised that, from time to time, you may inadvertently exceed the speed limit, follow cars in front too closely, or forget to fasten your seat belt. However, if it is found from analysing the data logged by your vehicle that you have driven over time in a sustained and repeatedly dangerous manner, MUARC is required under its duty of care obligations to report such driving behaviour to the TAC, who will in turn notify your fleet manager. Sustained Dangerous Driving has been defined for the purposes of the Study where the data collected indicates the following behaviour:

- **Non use of seat belts** - On more than three days in any week, a SafeCar occupant is detected not wearing a seat belt at any time during two or more trips on each of those days. This only applies when the SafeCar is travelling at a speed of 20 kilometres per hour or more.

- **Speed** - On more than two days in any week, a Participant drives at speeds 15 kilometres an hour or more above speed limits for 10 percent or more of the time spent driving in a day.

- **Following distance** - On more than two days in any week, a Participant is within Sixth Bar Time Headway\(^1\) for 15 percent or more of the time spent driving in a day while a vehicle is detected in front of the SafeCar. This only applies when the vehicle is travelling at a speed of 30 kilometres per hour or more.

Please note that neither the TAC nor MUARC endorse driving behaviour or practices which involve breaches of the *Road Safety Act 1986 (Vic)* or the road rules.

If a traffic infringement notice is issued for your vehicle, your fleet manager will be notified and will pass the notice onto you.

If you elect to participate in the study, it will be on the understanding that no one but you drives your SafeCar while the ITS systems are turned on. This is important for two reasons. Firstly, it would affect the results of the study, since the data collected for your vehicle would not relate solely to your driving behaviour. Secondly, only drivers participating in the study will be properly trained to use and operate the system in the SafeCar. If someone not properly trained to use the systems is exposed to the system warnings, his/her safety might be compromised. Please note that undertaking the training yourself will not qualify you to train others in the use of the SafeCar systems. Of course, other people can still drive your car; however, on each occasion they will be required to press a special button on the dashboard. Pressing this button will deactivate the system warnings. It is also important to emphasise that, even though you will have undertaken the training, you must not drive a SafeCar other than your own SafeCar when the safety systems in that car are active. Similarly, no other study participants must drive your

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\(^1\) Sixth Bar Time Headway means the distance at which the SafeCar audio warning bell is set to activate when a vehicle is in front of the SafeCar, whether or not the audio warning bell is turned on.
SafeCar while the systems are enabled. Doing so may affect the data in a way which would be detrimental to the study.

It is also important to note that, under some circumstances, your participation in this project may be terminated. However, this will only happen if:

- your logged data show that you have been repeatedly driving the SafeCar in a sustained dangerous manner;
- you do not take reasonable steps to properly maintain and secure your SafeCar;
- you wilfully damage the SafeCar; or
- you purposely do not adhere to the study requirements (e.g. if you allow someone else to drive your SafeCar while the ITS system warnings are active).

To help the study run as smoothly as possible, we would like to contact you every two or three weeks (where possible this will coincide with your phone interview) so that we can monitor where you are up to in the study, and to address any queries that you might have. In addition, there are three telephone numbers which are available for you to use should you need assistance or require information.

- For mechanical problems of breakdown of the vehicle - Your SafeCar comes with 24-hour Roadside Assistance. This service is provided by Ford Assist and the number is 1800 133 673. This number can also be found in the User Manual in the glove box.
- For technical problems with the ITS safety systems please contact the TAC. The telephone number dedicated to SafeCar issues is (03) 9664 6767.
- To provide informal feedback on what you think of the systems in the SafeCar and to discuss any issues regarding the study procedures, please contact Kristie Young at MUARC on (03) 9905 1258.

Participation in this study is entirely voluntary, and you are free to withdraw at any time and for any reason. The TAC, MUARC and your employer recognise that employees might feel compelled to participate. Your participation in this project is based on the understanding that you have volunteered to participate and that you have not been forced, or felt pressured, by your company to do so. If you are happy to participate in this study you will be required to read and sign a consent form at your Participating Briefing and Training session.

If you have any queries or would like to be informed of the aggregate study findings, please contact Dr. Michael Regan, MUARC Research Director of the TAC SafeCar Project, on telephone (03) 9905 1838, fax (03) 9905 4363 or email michael.regan@general.monash.edu.au.

Should you have any complaint concerning the manner in which this research (project number: 2001/404) is conducted, please do not hesitate to contact The Standing Committee on Ethics in Research Involving Humans at the following address:

The Secretary
The Standing Committee on Ethics in Research Involving Humans
Building 3A
MONASH UNIVERSITY VIC 3800
Telephone: (03) 9905 2052; Fax: (03) 9905 1420
Email: SCERH@adm.monash.edu.au
Appendix G  Participant Consent Form
Consent Form
On-Road Study into the Effects on Driving of
In-vehicle Intelligent Transport Systems

I acknowledge to my employer that I will participate in the SafeCar Study ('Study') on the terms and conditions set out below. I have had the terms of the Study explained to me, and I have read and understood the Explanatory Statement, a copy of which has been provided to me.

I agree:

- to drive a SafeCar equipped with several ITS technologies for at least 16,700 kilometres, in the same manner as I would drive any other ordinary fleet vehicle allocated to me;
- to have data on my driving performance automatically logged and downloaded into a research database located at Monash University Accident Research Centre (MUARC);
- to complete phone interviews conducted by MUARC to gather information on my comments on the ITS technologies;
- to attend a briefing session on the ITS technologies and the Study, and to undergo the necessary training to operate the SafeCar;
- to inform the TAC, as soon as possible, of any technical problems with the ITS technologies of which I become aware;
- to replace on a monthly basis the flash memory card containing my logged data, and return the used card to MUARC;
- that data about my fuel purchases for the SafeCar that I am driving may be collected and provided by my fleet administrator;
- to, as far as possible, purchase fuel using only my fuel card (if applicable) and, when it is not possible to use my fuel card, I will endeavour, on every such occasion, to record the SafeCar odometer reading, the date of the fuel purchase, and the number of litres of fuel purchased;
- that, in the event of a collision of the SafeCar that I am driving, the logged data from my SafeCar may be subpoenaed for use as evidence in a court of law;
- that, in the event that I drive in a Sustained Dangerous Driving manner (as defined in the Explanatory Statement), which is demonstrated in my logged driving data, MUARC is obliged to report such instances to the TAC, who will in turn inform my fleet administrator;
- that, if a traffic infringement notice is issued for the SafeCar that I am driving, my fleet administrator will be notified and will pass the infringement notice onto me;
- to ensure that no one else, including another Participant in the Study, drives the SafeCar that I am issued while the ITS systems are active;
- that, under no circumstances, am I to drive a SafeCar other than the one that I have been issued while the ITS systems are active; and
- that my participation in the Study will be terminated if:
  - I am found to drive in a Sustained Dangerous Driving manner;
  - I fail to properly maintain and secure the SafeCar;
  - I wilfully damage the SafeCar; or
  - I do not adhere to the Study requirements.

I understand that, unless I am found to drive in a Sustained Dangerous Driving manner or crash my SafeCar, any information I provide is confidential and that no information that could lead to my
identification will be disclosed in any reports on the Study or to any other party, including my employer or my fleet administrator.

I agree that my participation in this Study is voluntary, and that I have not been coerced by my employer or any other person to participate.

I also understand that I can choose not to participate in part or all of the Study, and that I can withdraw at any stage of the Study without being penalised or disadvantaged in any way by notifying my employer or my fleet administrator in writing.

Name: …………………………………………………………………… (Please print)
Signature: …………………………………………………………………
Date: ………………………
Appendix H  Technical Problems
H.1. TECHNICAL PROBLEMS – INTRODUCTION

This appendix lists the technical problems with the SafeCar ITS systems that were experienced by drivers throughout the on-road trial. Information regarding these technical problems were obtained through the Participant Feedback Hotline, the questionnaires and the participant debriefing interviews. Table H.1 lists all of the technical problems experienced with the SafeCar systems. This table includes, for each SafeCar system, a description of the problem experienced, the number of participants who experienced the problem, the source from which information about the problem was obtained (e.g., feedback line) and the actions taken to resolve the problem.

Table H.1. Technical problems with the SafeCar system that were experienced by participants and the steps taken to resolve each problem.

<table>
<thead>
<tr>
<th>Problem Definition</th>
<th>No. of participants who experienced problem</th>
<th>Source</th>
<th>Action(s) Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intelligent Speed Adaptation</strong></td>
<td>10 treatment participants</td>
<td>Participant feedback hotline; questionnaires; exit interviews</td>
<td>MUARC informed the TAC of the roads on which inconsistencies in the digital map had been reported. TAC then forwarded this information to VicRoads who updated the digital map database. The digital map database was updated for all consecutive flashcards sent to the drivers.</td>
</tr>
<tr>
<td>On-board digital map displaying speed limits that are not consistent with the posted speed limit on the actual road network. This problem occurred particularly in outer suburbs of Melbourne and in Geelong.</td>
<td></td>
<td></td>
<td>No action taken. This is one of the limitations of the GPS system.</td>
</tr>
<tr>
<td>The ISA system detects the speed limit of intersecting side streets or service roads and issues a temporary speed warning.</td>
<td>1 Treatment participant</td>
<td>Questionnaires</td>
<td></td>
</tr>
<tr>
<td>Problem Definition</td>
<td>No. of participants who experienced problem</td>
<td>Source</td>
<td>Action(s) Taken</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>--------------------------------------------</td>
<td>------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Following Distance Warning</strong></td>
<td></td>
<td></td>
<td>No action taken. Participants were informed in their training session that the system may issue false warnings in these circumstances. Participants were informed to press the system override button if the warnings became distracting or annoying.</td>
</tr>
<tr>
<td>The FDW system issues a lot of false warnings because it detects stationary objects such as parked cars, traffic signs, bridges and overpasses and the walls and roof of tunnels.</td>
<td>7 treatment participants</td>
<td>Questionnaires and participant feedback hotline</td>
<td>MUARC informed the TAC of these incidents. Participants were advised to explain to the Police that the vehicle was equipped with a FDW radar as part of the study.</td>
</tr>
<tr>
<td>The FDW distance radar was set on a similar frequency as the Police radars in NSW. Two participants were pulled over by Police when travelling in NSW because they detected that the SafeCar was fitted with a radar detection device.</td>
<td>2 control participants</td>
<td>Participant feedback hotline</td>
<td>MUARC informed the TAC of these incidents. Participants were advised to explain to the Police that the vehicle was equipped with a FDW radar as part of the study.</td>
</tr>
<tr>
<td><strong>Seatbelt Reminder System</strong></td>
<td></td>
<td></td>
<td>MUARC informed the TAC of this problem. The TAC replaced the seatbelt warning trigger switches in the passenger seats.</td>
</tr>
<tr>
<td>The SBR system was issuing seatbelt warnings when there was no weight on any of the passenger seats.</td>
<td>2 control participants</td>
<td>Participant feedback hotline</td>
<td>MUARC informed the TAC of this problem. The TAC replaced the seatbelt warning trigger switches in the passenger seats.</td>
</tr>
<tr>
<td><strong>Reverse Collision Warnings</strong></td>
<td></td>
<td></td>
<td>No action taken. Participants were informed in the training session that the system might issue false warnings in these circumstances.</td>
</tr>
<tr>
<td>The RCW system issued false warnings when a trailer or bike rack was connected to the SafeCar or when reversing past brushes or shrubs.</td>
<td>3 treatment and 1 control participant</td>
<td>Participant feedback hotline; questionnaires; exit interviews</td>
<td>No action taken. Participants were informed in the training session that the system might issue false warnings in these circumstances.</td>
</tr>
<tr>
<td>Problem Definition</td>
<td>No. of participants who experienced problem</td>
<td>Source</td>
<td>Action(s) Taken</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------------------------</td>
<td>--------</td>
<td>----------------</td>
</tr>
<tr>
<td><strong>iButton</strong></td>
<td>6 treatment and 2 control participants</td>
<td>Participant feedback hotline</td>
<td>The participants were instructed to unplug and re-plug in the power cord to the computer to reset the computer. Participants were also sent a replacement flashcard and told to press the system override button if the message was issued again. These steps resolved the problem for five participants. For three participants however, these steps did not resolve the problem and the computers in their cars were replaced. This replacement resolved the problem.</td>
</tr>
<tr>
<td></td>
<td>2 treatment participants</td>
<td>Participant feedback hotline</td>
<td>For one participant, the iButton had been programmed incorrectly so that each trial period was one tenth of the intended duration. This participant was issued with a new iButton. The second participant’s microprocessor in their car was replaced, which resolved the problem.</td>
</tr>
<tr>
<td><strong>Log in/Log out System</strong></td>
<td>4 treatment participants</td>
<td>Participant feedback hotline</td>
<td>Participants were asked to remove and reinsert the flashcard and to unplug and then re-plug the power to the computer to re-boot the system. If this failed participants were sent a replacement flashcard.</td>
</tr>
</tbody>
</table>

When driving, participants would receive a message to “insert iButton to log out”. This message would repeat approximately six times and the computer would then freeze, the visual display would turn blue and the system would not shutdown when the vehicle’s ignition was turned off.
<table>
<thead>
<tr>
<th>Problem Definition</th>
<th>No. of participants who experienced problem</th>
<th>Source</th>
<th>Action(s) Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System Failure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No SafeCar systems were active, except for the RCW and DRL systems, and the start-up message to non-designated drivers was not being issued.</td>
<td>1 treatment participant</td>
<td>Participant feedback hotline</td>
<td>This problem was caused by a flash memory card failure. The participant was sent a replacement flash memory card.</td>
</tr>
<tr>
<td><strong>Visual Warning Display</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual display too bright at night.</td>
<td>1 treatment participant</td>
<td>Participant feedback hotline</td>
<td>MUARC adjusted the brightness of the display to the lowest setting. The participant still felt it was too bright so MUARC attached some anti-glare film to the display screen.</td>
</tr>
<tr>
<td>Visual warning display not lighting up when vehicle turned on.</td>
<td>1 treatment participant</td>
<td>Participant feedback hotline</td>
<td>This problem was caused by a backlight failure. The visual display was replaced.</td>
</tr>
<tr>
<td><strong>Messaging System</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When a system was due to turn on, participants received a message regarding what system would not be active rather than what system would become active the next time they drove the car.</td>
<td>All participants</td>
<td>Participant feedback hotline</td>
<td>This problem was due to an error in the iButton software. All participants were informed of this inconsistent message during their training session.</td>
</tr>
</tbody>
</table>
Appendix I  Data Logging Parameters
**Table** Data logging parameters and their associated meanings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Presented in the format: dd/mm/yy</td>
</tr>
<tr>
<td>Time</td>
<td>0 – 24 hours, presented in the format: hh:mm:ss</td>
</tr>
<tr>
<td>Time since start-up</td>
<td>Recorded in milliseconds</td>
</tr>
<tr>
<td>System state</td>
<td>Records the status of SafeCar System activity. For example:</td>
</tr>
<tr>
<td></td>
<td>⇒ 0 for when the System is loading</td>
</tr>
<tr>
<td></td>
<td>⇒ 1 for when the System is waiting for Master pushbutton</td>
</tr>
<tr>
<td></td>
<td>⇒ 2 for when waiting for iButton to log in</td>
</tr>
<tr>
<td></td>
<td>⇒ 3 for normal operation</td>
</tr>
<tr>
<td></td>
<td>⇒ 4 for when System Override is active, etc.</td>
</tr>
<tr>
<td>Master Pushbutton Status</td>
<td>Records the status of Master Pushbutton activity. For example:</td>
</tr>
<tr>
<td></td>
<td>⇒ 0 for when the Master Pushbutton has not been pressed</td>
</tr>
<tr>
<td></td>
<td>⇒ 1 for when the Master Pushbutton has been pressed</td>
</tr>
<tr>
<td>User ID</td>
<td>Participant ID number (unique for each participant – as stored on the iButton).</td>
</tr>
<tr>
<td></td>
<td>If the iButton is not detected, a default ID number is recorded. For example:</td>
</tr>
<tr>
<td></td>
<td>000.</td>
</tr>
<tr>
<td>iButton</td>
<td>Records the detection status of iButton. For example:</td>
</tr>
<tr>
<td></td>
<td>⇒ 0 when iButton not detected</td>
</tr>
<tr>
<td></td>
<td>⇒ 4 when iButton detected</td>
</tr>
<tr>
<td>ISA Request</td>
<td>Records instances of the Speed Request Button being pressed. For example:</td>
</tr>
<tr>
<td></td>
<td>⇒ 0 for when the Speed Request Button has not been pressed</td>
</tr>
<tr>
<td></td>
<td>⇒ 2 for when the Speed Request Button has been pressed</td>
</tr>
<tr>
<td>Kms travelled</td>
<td>Number of km travelled. This parameter is coordinated with the information stored on the iButton.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CfgISAA</td>
<td>Records whether the ISA actively supporting system is enabled to issue</td>
</tr>
<tr>
<td></td>
<td>warnings. For example:</td>
</tr>
<tr>
<td></td>
<td>⇒ 0 for when ISA actively supporting is not enabled</td>
</tr>
<tr>
<td></td>
<td>⇒ 1 for when ISA actively supporting is enabled</td>
</tr>
<tr>
<td>CfgISAI</td>
<td>Records whether the ISA informative system is enabled to issue warnings.</td>
</tr>
<tr>
<td></td>
<td>For example:</td>
</tr>
<tr>
<td></td>
<td>⇒ 0 for when ISA informative is not enabled</td>
</tr>
<tr>
<td></td>
<td>⇒ 2 for when ISA informative is enabled</td>
</tr>
<tr>
<td></td>
<td>Note: ISA informative not being studied in on-road trial. Therefore, status</td>
</tr>
<tr>
<td></td>
<td>should always be 0.</td>
</tr>
<tr>
<td>CfgSeatbelt</td>
<td>Records whether the Seat Belt Reminder system is enabled to issue warnings.</td>
</tr>
<tr>
<td></td>
<td>For example:</td>
</tr>
<tr>
<td></td>
<td>⇒ 0 for when Seat Belt Reminder is not enabled</td>
</tr>
<tr>
<td></td>
<td>⇒ 4 for when Seat Belt Reminder is enabled</td>
</tr>
<tr>
<td>CfgFDW</td>
<td>Records whether the Following Distance Warning system is enabled to issue</td>
</tr>
<tr>
<td></td>
<td>warnings. For example:</td>
</tr>
<tr>
<td></td>
<td>⇒ 0 for when Following Distance Warning is not enabled</td>
</tr>
<tr>
<td></td>
<td>⇒ 8 for when Following Distance Warning is enabled</td>
</tr>
<tr>
<td>CfgError</td>
<td>Indicates Configuration Error</td>
</tr>
<tr>
<td>CfgBosch</td>
<td>Records whether the Reverse Collision Warning system is enabled to issue</td>
</tr>
<tr>
<td></td>
<td>warnings. For example:</td>
</tr>
<tr>
<td></td>
<td>⇒ 0 for when Reverse Collision Warning is not enabled</td>
</tr>
<tr>
<td></td>
<td>⇒ 32 for when Reverse Collision Warning is enabled</td>
</tr>
<tr>
<td>Speed</td>
<td>From speedometer.</td>
</tr>
<tr>
<td></td>
<td>Recorded in km/h</td>
</tr>
<tr>
<td>BlinkerL</td>
<td>Records the status of the Left indicator. For example:</td>
</tr>
<tr>
<td></td>
<td>⇒ 0 for when the Left indicator is turned off</td>
</tr>
<tr>
<td></td>
<td>⇒ 32 for when the Left indicator is turned on</td>
</tr>
</tbody>
</table>
Table (cont.) Data logging parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| BlinkerR   | Records the status of the Right indicator. For example: 
  ⇒ 0 for when the Right indicator is turned off 
  ⇒ 64 for when the Right indicator is turned on |
| WipersLo   | Records the status of the Low wiper setting. For example: 
  ⇒ 0 for when the Low wiper setting is turned off 
  ⇒ 2 for when the Low wiper setting is turned on (indicative of wet road conditions) |
| WipersHi   | Records the status of the High wiper setting. For example: 
  ⇒ 0 for when the High wiper setting is turned off 
  ⇒ 4 for when the High wiper setting is turned on (indicative of wet road conditions) |
| GPS latitude | From GPS receiver. Presented in degrees with a good level of precision (6 decimal places) |
| GPS longitude | From GPS receiver. Presented in degrees with a good level of precision (6 decimal places) |
| GPS speed  | From GPS receiver. In km/h. |
| Parkers    | Records whether the parking lights are turned on. For example: 
  ⇒ 0 for when the parking lights are turned off 
  ⇒ 256 for when the parking lights have been turned on |
| Headlights | Records status of headlights (excluding parking lights). For example: 
  ⇒ 0 for when the headlights are turned off 
  ⇒ 8 for when the low/high beam is on |
| Engine     | Indicates status of the engine. For example: 
  ⇒ 0 for when the engine is shut down 
  ⇒ 512 when engine is running |
| Brake      | Records use of brakes. For example: 
  ⇒ 0 for when the brakes are inactive 
  ⇒ 1 for when the brakes are being applied. |
Table (cont.) Data logging parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lat</td>
<td>Latitude recorded from the GPS receiver. Recorded in degrees.</td>
</tr>
<tr>
<td>Long</td>
<td>Longitude recorded from the GPS receiver. Recorded in degrees.</td>
</tr>
<tr>
<td>GPSSpeed</td>
<td>Speed recorded from the GPS receiver. Recorded in km/h.</td>
</tr>
<tr>
<td>Speed Limit</td>
<td>Displays current speed limit based on VicRoads database and GPS coordinates. Recorded in km/h.</td>
</tr>
</tbody>
</table>
| ISAState    | Records state of ISA. For example:  
  - 0 for when ISA issue no alarm  
  - 1 for when ISA issues stage 1 warning, etc..                                                                 |
| ISAAAlarmState | Records level of ISA warning. For example:  
  - 0 for no warning  
  - 1 for level1 warning, etc..                                                                 |
| SeatbeltState | Records status of Seatbelt reminder system. For example:  
  - 0 for when all occupants are buckled  
  - 32 for when one or more occupants are unbuckled                                                                 |
| SeatbeltAlarmState | Records level of Seatbelt reminder system warning. For example:  
  - 0 for when there is no warning  
  - 1 for level 1 warning, etc.                                                                 |
| FDWDistance | Time headway recorded directly from the EATON Vorad system. Recorded as an integer 0 – 255.                                               |
| FDWAlarmState | Records level of warning issued by the FDW system. For example:  
  - 0 for when no warning is played  
  - 1 for level1 warning is displayed, etc.                                                                 |
| RCWLevel    | Not functional.                                                                                                                             |
Table (cont.) Data logging parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SoundPlayed</td>
<td>Records instances of all audio warnings and messages played. For example:</td>
</tr>
<tr>
<td></td>
<td>⇒ 0 for no sound</td>
</tr>
<tr>
<td></td>
<td>⇒ 1 for “If you are not designated driver ... ”, etc</td>
</tr>
</tbody>
</table>
Appendix J  Facilitator Protocol for the Preparation of the Participant Briefing and Training Sessions
Facilitator Protocol for the Preparation of the Participant Briefing and Training Sessions

Basics

Each participant in the SafeCar on-road study is required to undertake a briefing and training session. In general, the briefing and training is identical across participants, regardless of whether participants have been assigned to the treatment or control group. There are only two differences. The first difference is in the second part of the briefing. Participants in the control group only hear about the study design sequence for the control group, while participants in the treatment group only hear about the study design sequence for the treatment group.

The second difference is in the Transfer of Training Drive. The protocol for the treatment participants includes two additional activities, which are designed to assess participants understanding of the Speed Request facility. In addition, participants in the treatment group receive Refresher Training materials (notes and audio CD) and a personalised schematic of their trial sequence.

The facilitator of the sessions (Participant Liaison Officer) is the person responsible for contacting the participants and organising session times. Where possible, sessions will be held in groups of 2 or 3 participants. However, because of the difference in session content for the second part of the briefing, a group cannot comprise both control and treatment participants.

Time Required for each Session

It is envisaged that each Participant Training and Briefing Session will take 2 hours. However, it is recommended that participants be asked to allocate 2.5 hours of their time to a session to allow for any extra questions that they may wish to ask.

Session Time

As a general rule, sessions can be scheduled for any time of day, including weekends. However, it is likely that most sessions will be held on weekdays between the hours of 9am and 5pm.

When a call is made to a participant to arrange a session time, make sure that, in the first instance, the participant is asked what day and time would suit him/her. You may like to suggest a few times if the participant seems indecisive or indifferent as to what time of the day to run his/her session. You may like to send the participant a letter confirming the
date and time of the session, the session location (see below) and listing your contact details.

Number of Participants per Session

The Participant Briefing and Training Session can be undertaken in groups or individually. However, as noted above, a group cannot comprise both control and treatment participants. The Practice Module of the Training and the Transfer of Training Drive must be undertaken with each participant separately. It is advisable, therefore, that, if a session is to involve more than one participant, the group comprise no more than two participants. The Practice Module of the Training only takes five minutes to complete and so, it would not be too unreasonable to ask a participant to leave the room for a few minutes while another participant undertakes the Practice Module. However, in the case of the Transfer of Training Drive, participants who do not undertake the drive first in their group will be required to wait an additional 15 to 20 minutes per participant before they can undertake their drive and thereafter, be dismissed. If there are only two participants in any one group, then the second participant to undertake the Transfer of Training Drive will have to wait an additional 15 to 20 minutes while the first participant undertakes his/her drive. Since this may be a problem for some fleet drivers it is important that, when participants are contacted to arrange a session time, participants be given the choice of carrying out their Participant Briefing and Training Session on their own or in a group. If a participant requests a group session, it is recommended that the participant be advised that he/she may have to wait while their counterpart does his/her guided practice drive. This provides the participant with the opportunity to organise an individual session if having to spend additional time at the session is likely to pose a problem.

Session Location

This is to be organised at the time of booking participants in for their session. The ideal situation is that all sessions be undertaken at MUARC. However, this may not be convenient for some participants. If a participant cannot come to MUARC for a session, then an alternative location must be arranged. It may be possible, for example, for the session to be held at the participant’s offices.

For sessions to be held at MUARC, book room G11, a data projector, and organise a familiarisation drive route with building 70 as the start and finish points. The reversing manoeuvre can be undertaken in the car park adjacent to building 70. You may like to send the participant a map of the Monash Clayton campus, along with the session confirmation letter. In addition, you will need to organise a yellow parking permit for the day of the session.

For sessions to be held somewhere other than MUARC (i.e. the participant’s offices), ask the participant to organise a small meeting room. Ask the participant for the address of
his/her offices and organise a meeting place. Include these details in your session confirmation letter to the participant. Prior to the session, ensure that you have determined a familiarisation drive route and have located a suitable car park for undertaking the reversing manoeuvre. In addition, book the data projector.

If Melbourne city is a convenient location for a participant, then the session can be held at the TAC offices on Exhibition Street. Contact Paul Tierney to make arrangements.

**Familiarisation Period**

When contact details for a given participant are provided to MUARC, the participant will have taken delivery of his/her SafeCar. It is imperative that, prior to their Briefing and Training session, all participants have carried out the Familiarisation period of the study design. Consequently, at the time of booking participants in for their session, ask them if they have driven at least 200 kilometres in their new vehicle since they started driving it. If a participant has driven at least 200 kilometres, the session can be arranged for two to three days time. This time frame allows for the confirmatory letter and other materials (see below) to be sent to the participant and to reach the participant in time for his/her session. If a participant has not yet driven 200 kilometres, the session will need to be held in more than two to three days time to give the participant sufficient time to accrue the required number of kilometres.

**Explanatory Statement and Consent Form**

All participants should have received an explanatory statement from their employer/fleet administrator prior to undertaking their Briefing and Training session. Nevertheless, at the time of booking participants in for their session, ask them if they have received a copy of the explanatory statement and whether they have read it. Also advise participants that, prior to their Briefing and Training session, they will be sent through the mail a consent form, which they must read and sign in order to participate in the study. Ask participants to bring the signed consent form with them to their Briefing and Training session. Send an explanatory statement and consent form to participants with their session confirmation letter.

**Administration of Preliminary Questionnaires Times 1 and 2**

Prior to their Briefing and Training session, all participants, treatment and control, must complete Preliminary Questionnaire Time 1. At the time of booking participants in for their session, ask them if they wouldn’t mind completing a questionnaire before their session. Advise participants that the questionnaire will take about 25 to 30 minutes to complete, but it doesn’t matter if it takes them longer. Ask participants to bring their completed questionnaire with them to their session. Send the Preliminary Questionnaire Time 1 to participants with their session confirmation letter.
Preliminary Questionnaire Time 2 must be completed by all participants, treatment and control, within five days of their Briefing and Training Session. At the end of the session, ask participants whether they would be happy to complete a second questionnaire in their own time and return it to MUARC within five days. Provide the participant with a copy of the questionnaire and a pre-paid envelope addressed to MUARC.

Allocation of Participants to the Treatment and Control Groups

Background

All participants must be allocated to either the control or treatment group prior to their Briefing and Training Session. Five criteria have been developed to guide allocation of participants to the control and treatment groups. The criteria are listed in order from highest to lowest priority. The extent to which these criteria can be strictly applied will depend on the characteristics of the participants (with respect to age, gender, and so on) who are eligible to participate and who have volunteered to participate.

It is desirable that all criteria are taken into account when allocating participants to the control and treatment groups. However, for practical reasons, this may not always be possible. Where this is the case, make sure that criteria with a higher priority are satisfied ahead of criteria with a lower priority. For example, do not satisfy criterion 5 at the expense of criterion 3 if only one, but not both criteria, can be satisfied.

Criterion 1 – Fleet

At the time of company recruitment, the TAC will determine where a fleet sits with respect to Criterion 1.

Once the sub-lease agreement between TAC and a given company is executed and the participants from that company determined for a given wave, TAC will forward the name(s) of these participants to MUARC. At this time TAC will also provide MUARC with information on the total number of cars that the company will take. It is then MUARC’s responsibility to contact the participants in order to schedule a Briefing and Training Session and, to ask some questions, the answers to which will assist MUARC in allocating participants to the control and treatment groups.

Where a company takes one car only, the two participants who drive that car, each in turn, should be assigned to the treatment group.

Where a company takes two cars, one car will serve as a treatment car to be driven by two participants, each in turn, and the other car will serve as a control car, which is also to be driven by two participants, each in turn.

Where a company takes three cars, the third car will serve as either a control or treatment vehicle depending on whether treatment or control participants are still
required. Alternatively, the third vehicle may serve as a control vehicle in the first wave and a treatment vehicle in the second wave, or vice versa.

Some flexibility in application of criterion 1 may be necessary, as strict application may not provide us with the required number of participants in each of the treatment and control groups. Strict application of criterion 1 will depend on how many fleets are involved and how many cars are assigned to each of those fleets. Nevertheless, it is imperative that there are at least two treatment participants in every fleet (one in each wave of testing). At the time this document was prepared, it was understood that the distribution of cars to fleets was as follows:

- **Telstra:**
  - 2 cars
  → 2 treatment participants
  → 2 control participants
- **Australia Post:**
  - 2 cars
  → 2 treatment participants
  → 2 control participants
- **City of Casey:**
  - 1 car
  → 2 treatment participants
- **Sigma Pharmaceuticals:**
  - 1 car
  → 2 treatment participants
- **RACV:**
  - 2 cars
  → 2 treatment participants
  → 2 control participants
- **VicRoads:**
  - 2 cars
  → 2 treatment participants
  → 2 control participants

Of the 10 cars that have been allocated to fleets to date, application of criterion 1 (without consideration of any of the other criteria) gives 8 control participants and 12 treatment participants.

**Criterion 2 – Driving Domain Profile**

Criterion 2 states that, within both the treatment and control groups, a range of driving domains should be represented (i.e. metropolitan, rural).

However, it is likely that none of the participants, if any, will drive mainly in rural areas, since a criterion for inclusion in the study is that companies and participants drive predominantly in areas covered by the digital map database.
Consequently, criterion 2 also states that participants should be selected, for both treatment and control groups, who spend at least 80 percent of their driving time in areas, whether they be metro and/or rural, that are covered by the digital map. In order to ensure that this criterion has been satisfied, the following two questions can be asked.

1. *What proportion of your driving time would you spend driving in metropolitan and greater metropolitan Melbourne?*

2. *What proportion of your driving time would you spend driving in Geelong, Bendigo and Ballarat?*

If the proportion of time spent driving in metropolitan and greater Melbourne and the proportion of time spent driving in Geelong, Bendigo and Ballarat does not add up to at least 80 percent, seek advice from other members of the MUARC project team.

**Criterion 3 – Age**

Criterion 3 states that the age composition of the treatment and control groups should match the distribution shown in Table 1.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Treatment (n)</th>
<th>Control (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 to 34</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>35 to 44</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>45 to 54</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>55 to 64</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>20</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

While it is desirable that this age distribution be met, the overriding goal in terms of age is that the mean age between treatment and control groups not differ by more than 10 years.

At the time of the initial phone call to schedule the Briefing and Training Session ask the participant the following question:

*Can you please tell me your age in years?*

**Criterion 4 – Gender**

Criterion 4 states that at least 20 percent of participants in each of the control and treatment groups, but not all, should be female and, that the ratio of males to females should be similar across groups.

The gender of the participant should be quite easy to ascertain on the basis of the participant’s name and/or his/her voice at the time of the initial phone call to schedule the Briefing and Training Session.
**Criterion 5 – Occupational Status**

Criterion 5 states that there should be representatives from both white- and blue-collar occupations in both the treatment and control groups. This could be easily determined from the participant’s occupation or position title. Either of the following two questions can be asked at the time of the initial phone call to schedule the Briefing and Training Session.

*What is your role at your company?*

*OR*

*What type of work do you do?*

**Summary of Questions to ask at the Time of Booking the Briefing and Training Session with a Participant**

All participants should be asked the following questions at the time of booking their Briefing and Training Session:

1. What proportion of your driving time would you spend driving in metropolitan and greater metropolitan Melbourne?

2. What proportion of your driving time would you spend driving in Geelong, Bendigo and Ballarat?

3. Can you please tell me your age in years?

4. What is your role at your company?

   *OR*

   What type of work do you do?

**Participantallocation.xls**

The MS Excel spreadsheet “Participantallocation.xls” has been set up to aid the process of allocating participants to the treatment and control groups. A separate sheet in the spreadsheet workbook should be used for each company. Sheet 1 has already been set up for Telstra and Sheet 2 has been set up for the City of Casey. Some entries still need to be made in the City of Casey spreadsheet.

Under criterion 1, specify the number of cars, which that company has agreed to take. For example, 1, 2 or 3.
Under criterion 2, indicate where each participant falls with respect to the proportion of the participant’s driving time spent driving in metro and greater metro Melbourne (question 1) and also, Geelong, Bendigo and Ballarat (question 2). For each of questions 1 and 2, write the actual percentage in parentheses in the appropriate cell in addition to the number of participants that fall into that category (see the Telstra sheet under criterion 3 – age for an example). Also answer question 3, by deducting from 100 the responses to questions 1 plus 2. If the sum of the proportions for questions 1 and 2 does not equal at least 80 percent, consult the MUARC project team. Specify, in the appropriate cell, the number of participants whose responses to questions 1 and 2 add up to 80% or more and, in a separate cell, the number of participants whose responses to questions 1 and 2 add up to less than 80%.

Under criterion 3, indicate to which age group each participant belongs. As in the Telstra example, write the actual percentage in parentheses in the appropriate cell in addition to the number of participants that fall into that age group.

Under criterion 4, specify, in the appropriate cell, the number of participants that are male and the number that are female.

Under criterion 5, specify, in the appropriate cell, the number of participants that have a blue collar occupation and the number that have a white collar occupation.

**Summary of the Procedure for Booking Participants in for their Briefing and Training Session and Preparing for the Session**

1. Once you have received the contact information for a given participant, telephone the participant to arrange his/her session.

2. Tell the participant your name, where you are from, and that you are working on the TAC SafeCar project. Confirm that the participant has taken delivery of his/her SafeCar and that the participant understands that, in order to get the study underway, he/she is required to undertake a Briefing and Training session. Inform the participant that the reason for your call is so that you can organise his/her Briefing and Training session.

3. Inform the participant that before the session can be held he/she must have done at least 200 kilometres in his/her new vehicle. Advise the participant that this is just so he/she can get used to driving a different car from the one he/she drove previously.

4. Organise a suitable and appropriate session time and location. Advise the participant to allow about two and a half hours for the session. (If the session is being held at MUARC or anywhere other than the participant’s offices, this does not include travel time to and from the session location.) If the session is being held at the participant’s offices, ask the participant to book a small meeting room and to give you the address details.
5. Check that the participant has received a copy of the Explanatory Statement and that he/she has read it. Inform the participant that you will be sending him/her in the mail a consent form, which he/she must read and sign in order to participate in the study. Ask the participant to bring the signed consent form with him/her to the session.

6. Also ask the participant whether he/she can complete a questionnaire before the session. Ask the participant to bring the completed questionnaire with him/her to the session.

7. Ask the participant for his/her postal address details so that you can send the relevant materials to him/her along with a letter confirming the date, time and location of the session. If the session is being held at MUARC, tell the participant that you will also send a map of Monash Clayton campus with directions to the Centre.

8. Ask the participant if he/she wouldn’t mind answering a few simple demographic and driving exposure questions. The questions are:
   
   a) What proportion of your driving time would you spend driving in metropolitan and greater metropolitan Melbourne?
   
   b) What proportion of your driving time would you spend driving in Geelong, Bendigo and Ballarat?
   
   c) Can you please tell me your age in years?
   
   d) What is your role at your company? OR What type of work do you do?

   Enter responses into the “participantallocation.xls” spreadsheet.

9. To finish, give the participant your telephone number in case he/she would like to contact you prior to the session. Inform the participant that you will be conducting the session and that you will see him/her at x time on y date.

10. Prepare the session confirmatory letter. Send it to the participant along with the following materials: preliminary questionnaire time 1, explanatory statement, consent form, and map of Monash Clayton campus (if necessary).

11. Allocate the participant to the control or treatment group. Allocate an ID number to the participant using the list of predetermined codes.

12. Ask Nebojsa to provide you with an iButton and empty flash memory card. Inform Nebojsa of the participant’s ID, whether the participant is in the control or treatment group and, if the participant is in the treatment group, the order in which the participant will receive the treatments (i.e. ISA, FDW, ISA+FDW).
13. Compile experimenter resources and undertake any other tasks that need to be done in preparation for the session (e.g. book room, organise Familiarisation drive route).

In addition, ensure that all preparatory tasks set on page 1 of the Transfer of Training Drive Protocol are undertaken prior to each Participant Briefing and Training Session.
Appendix K  Participant Briefing and Training Session - Facilitator’s Manual
SAFECar Project
On-Road Study
Participant Briefing
and Training Session
Facilitator’s Manual
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FACILITATOR RESOURCES FOR THE PARTICIPANT BRIEFING AND TRAINING SESSION

The following resources are required for each Participant Briefing and Training Session. See the Participant Briefing and Training Session Facilitator’s Manual for further information.

Participant Briefing and Training Session Facilitator’s Manual (includes Session Guide for Briefing part 1 and Briefing part 2 (control) and Briefing part 2 (treatment) and the Training Instructional Guide (module 1 - introduction and module 2 - practice)

- Briefing power point slides – parts 1, 2 (treatment) and 2 (control)
- Training power point slides (includes Module 1 – Introduction and Module 2 – Practice)
- Laptop
- Data projector (if available)
- Light refreshments
- Explanatory statement (facilitator’s copy)
- SafeCar User Manual (facilitator’s copy)
- Demonstration iButton (facilitator to show iButton to participants when reference is made to it in the training)
- Demonstration Flash memory card (facilitator to show flash memory card to participants when reference is made to it in the briefing
- Sun-shades
- SafeCar Fuel Purchase Log Book (facilitator’s copy)
- SafeCar Refresher Notes – TREATMENT PARTICIPANTS ONLY (facilitator’s copy)
- SafeCar Refresher CD – TREATMENT PARTICIPANTS ONLY (facilitator’s copy)
- Personalised schematic of trial sequence (orders 1 to 6) – TREATMENT PARTICIPANTS ONLY (issue appropriate schematic to treatment participants at the appropriate time during the briefing)
- Participant Contact Details Form
- Preliminary Questionnaire Time 2 and pre paid envelope addressed to MUARC
- Complimentary t-shirt
- **Transfer of Training Drive protocol** - control or treatment group

- **Transfer of Training Drive iButton** (enables all systems except for Following Distance Warning and ISA)

- **Transfer of Training Drive Flash Memory Card**

- **Memory card replacement form** (for the Transfer of Training Drive)

- **Flash memory card replacement log book** (facilitator to record SafeCar odometer reading and flash memory card number in this log book at the end of the Transfer of Training Drive; this book is to be kept at MUARC)

- **Participant iButton** (programmed to enable the systems in the appropriate order for the participant undertaking the session)

- **Participant Flash Memory Card**

- **SafeCar User Manual** (participant’s copy)

- **SafeCar Fuel Purchase Log Book** (participant’s copy)

- **SafeCar Refresher Notes** – TREATMENT PARTICIPANTS ONLY (participant’s copy)

- **SafeCar Refresher CD** – TREATMENT PARTICIPANTS ONLY (participant’s copy)
PARTICIPANT BRIEFING AND TRAINING SESSION STRUCTURE

Each session follows the structure set out below.

1. Collect completed consent form and Preliminary Questionnaire Time 1

2. Briefing part 1 (Refer Facilitator’s Manual and Briefing slides part 1)

3. Training (Refer Facilitator’s Manual and Training slides introduction and practice)

4. Break

5. Briefing part 2 (Refer Facilitator’s Manual and Briefing slides part 2 treatment OR control)

6. Demonstration in the SafeCar of how to replace the flash memory card

7. Transfer of Training Drive (Refer Transfer of Training Drive Protocol treatment OR control)
BRIEFING PART 1

[REFER PART 1 SLIDES]

INTRODUCTION/OVERVIEW

⇒ [SLIDE 1.1] The SafeCar project is a research project involving the Transport Accident Commission (TAC), the Ford Motor Company of Australia and the Monash University Accident Research Centre. MUARC is conducting certain aspects of the research for the TAC.
⇒ [SLIDE 1.2] Today’s session is designed to give you important background information, knowledge and skills for participating in the SafeCar study.
⇒ [SLIDE 1.3] : We will cover the following topics:
  ⇒ what is the SafeCar study all about;
  ⇒ what does the SafeCar study involve;
  ⇒ what are the eligibility requirements for participating in the SafeCar study;
  ⇒ what are the obligations on your part, our part, and your company’s part;
  ⇒ training in how to use the SafeCar systems;
  ⇒ what is the design of the SafeCar study; and
  ⇒ taking care of your SafeCar and some management issues.
⇒ [SLIDE 1.4] After all that, we will go outside and have a look at the SafeCar so that I can demonstrate some of the features to you. We will also go for a short drive. During this drive, I will guide you through some activities so that we can test your understanding of some of the information covered in the training.
⇒ Please feel free to ask questions at any time.
⇒ We will take a break about half way through the session.
⇒ Most of the information that we will cover is in your explanatory statement and your SafeCar User Manual, which I will give you at the end of today’s session. [Show the SafeCar User Manual.] After this session we recommend that you review your explanatory statement and that you read your User Manual.

STUDY AIMS – What is the SafeCar Study all about?

⇒ [SLIDE 1.5] In this project we have equipped several advanced safety technologies to 15 cars – “SafeCars”.
⇒ In the motoring world, these safety technologies are called Intelligent Transport Systems - or ITS for short. Some of these are already commercially available in vehicles, although, in general, the ITS technologies in the SafeCars are not yet commercially available.
⇒ The ITS systems in the SafeCars are designed to alert you if they detect that you are driving in an unsafe or illegal manner. They are alerting systems – they do not take control away from you as the driver.
⇒ [SLIDE 1.6] The ITS technologies fitted to each of the SafeCars are:
  ⇒ Speed Warning;
  ⇒ Following Distance Warning ;
  ⇒ Seat Belt Reminder;
  ⇒ Reverse Collision Warning; and
Daytime Running Lights.

[SLIDE 1.7] Basically, the purpose of the study is to find out what effects these systems have on your driving style and what you think about the look and feel of them.

STUDY OVERVIEW – What does the SafeCar Study involve?

[SLIDE 1.8] The 15 SafeCars have been circulated among several car fleets located in and around Melbourne.

Your company is one of the fleets that has volunteered to participate.

Across the fleets, 30 drivers will be involved in the study.

Each driver will be given one of the 15 SafeCars and will drive it for business and private purposes for at least 16,700 kilometres –about 5 months of driving.

[SLIDE 1.9] A data logger in the SafeCar will record how the SafeCar is being driven during the study – for example how fast you drive and whether you have your belt buckled up. There are no video or audio recorders in the car.

In general, neither your fleet manager nor anyone else will have access to any of the logged data from individual drivers.

[SLIDE 1.10] We are also interested in hearing what you think about the look and feel of the systems. So, at several times during the study, we will ask you to complete a phone interview to gather information on your impressions of the SafeCar systems.

[SLIDE 1.11] We are also interested in finding out whether exposure to the ITS systems affects how much fuel the SafeCars use up. To do this, we need access to your fuel purchase data. I’ll talk more about this later.

It would also help us a lot if you can report to us by telephone any technical problems if they arise and your comments on what you think of the systems. I’ll give you the relevant phone numbers later in this session.

In a nutshell, that’s what the study is about - although we’ll talk more about the details of the study in a moment.

DRIVER ELIGIBILITY REQUIREMENTS – What are the eligibility requirements for participating in the SafeCar Study?

[SLIDE 1.12] As you know, not just anyone can participate in this study. As you can see on the slide, to be eligible to participate in the study you need to meet certain requirements (do not read criteria)

We assume that since you are here that you meet all of these requirements.

OBLIGATIONS

All research conducted by Monash University personnel must be conducted in an ethical manner. To be allowed to undertake this project, we had to get approval from the Monash University Ethics committee.

In order to be able to undertake the study, there are several ethical and legal obligations and requirements that must be met by us, by you and by your employer.

[SLIDE 1.13] Your participation in this study must be voluntary. You must not have been forced against your will by your company to participate. We assume you have volunteered to participate. You should be aware that your company has signed a
document stating that you have in no way been forced to participate in this study against your wishes or from fear of being disadvantaged.

- We have to keep confidential any information that you provide us. No findings that could identify any individual participant will be published. Only members of the MUARC project team will have access to the data. In general, these data will not be disclosed to fleet managers or to any other party.

- But, if your logged data show that you are driving your SafeCar in a sustained dangerous manner, MUARC is obliged to report such instances to the TAC, who will notify your fleet manager. It is then up to your fleet manager to decide what to do. But to be regarded as driving dangerously, you’d have to be driving pretty recklessly and you would probably be noticed by the Police long before we saw anything in our logged data. What counts as sustained dangerous driving is set out in the explanatory statement.

- [SLIDE 1.14] In the event you are involved in a crash while driving one of the SafeCars, the logged data from your SafeCar could be subpoenaed for use as evidence in a court of law. We are obliged legally to hand over the logged data relating to a crash if we are served a subpoena.

- If a traffic infringement notice is issued for your SafeCar, then your fleet manager will be sent the notice, which he/she will then issue to you.

- We may be required to stop your participation in the study if you:
  - drive in a sustained dangerous manner, as defined in the explanatory statement;
  - if you don’t properly maintain and secure your SafeCar;
  - if you purposely don’t adhere to the study requirements; and
  - if you wilfully damage the SafeCar.

- [SLIDE 1.15] No one except you should drive your SafeCar while the system warnings are turned on. This is really important for two reasons:
  1. First, it would affect the results of the study, since the data collected for your SafeCar would not relate to your driving, and
  2. Secondly, only drivers participating in the study will be properly trained to use and operate the systems in the SafeCar. If someone not properly trained by us to use the systems is exposed to the system warnings, his/her safety might be compromised.

- Undertaking the training yourself does not qualify you to train others in the use of the SafeCar systems.

- Of course, other people can still drive your SafeCar - but if they do, they will be required to press a button on the dashboard that flashes when you turn on the ignition. Pressing this button will deactivate the SafeCar systems. I’ll talk more about this in the training.

- [SLIDE 1.16] Also note that, even though you will have undertaken the training, you must not drive a SafeCar other than your own when the safety systems in that SafeCar are active. Similarly, no other study participants must drive your SafeCar while the systems are active. Doing so may affect the data collected.

- Although it has some special features, you should regard the SafeCar as being no different from any other car. Drive it as you would any other fleet vehicle in your organisation.
After you have logged at least 16,700 kilometres in your SafeCar, you’ll need to return it to your fleet manager.
**Training Instructional Guide**

**Module 1: Introduction to SafeCar Systems**

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<thead>
<tr>
<th>Topic</th>
<th>Script</th>
<th>Corresponding Slide Number and Slide Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td><em>(click for first slide)</em></td>
<td><strong>S1 – SafeCar Training</strong></td>
</tr>
<tr>
<td></td>
<td><em>(click for next slide)</em> The purpose of the training is to provide you with important information about the safe and effective operation of the SafeCar systems. Since some warnings indicate immediate danger, it is important for you to be familiar with them before hearing or seeing them for the first time while driving.</td>
<td><strong>S2 – What is this training about?</strong></td>
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<td><em>(click for next slide)</em> The training will cover the following topics:</td>
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<td><em>(click)</em> General system operation;</td>
<td><em>Provide you with information about the safe and effective operation of the SafeCar systems</em></td>
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<td></td>
<td><em>(click)</em> Daytime Running Lights;</td>
<td><em>Answer your questions about the SafeCar systems</em></td>
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<td><em>(click)</em> Seat Belt Reminder System;</td>
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<td></td>
<td><em>(click)</em> Reverse Collision Warning System;</td>
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<td><em>(click)</em> Following Distance Warning System;</td>
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<td><em>(click)</em> Speed Warning System;</td>
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<td></td>
<td><em>(click)</em> and then there will be some time for review and practice.</td>
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<td><strong>S3 – What does the training cover?</strong></td>
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<td><em>General system operation</em></td>
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<td><em>Daytime Running Lights</em></td>
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<td></td>
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<td><em>Seat Belt Reminder System</em></td>
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<td><em>Reverse Collision Warning System</em></td>
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<td></td>
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<td><em>Following Distance Warning System</em></td>
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<td></td>
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<td><em>Speed Warning System</em></td>
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<td></td>
<td></td>
<td><em>Review and practice</em></td>
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</table>
When I talk about each of these systems, the focus will be on system operation and warning signals.

### General System Operation

**General System Operation**

* (click for next slide) There are some general system operating procedures that we need to go over first before we can talk about how each of the ITS safety systems in the SafeCars operate.

Basically, each SafeCar is fitted with a set of ITS technologies. An onboard computer gathers information from sensors built into the SafeCar and then presents warnings and messages to the driver.

* (click) Any visual warnings and messages are presented to the driver via this Visual Warning Display. For your safety, be sure not to take your eyes off the road more than momentarily when reading information on the Visual Warning Display.

* (click) The audio warnings in the SafeCar cannot be turned off. But, you can adjust the volume of almost all of the SafeCar audio warnings and messages by using the Master Volume Control. To increase the volume you press the button on the right. To decrease the volume you press the button on the left. The volume should be adjusted so that the audio warnings can be heard at all times. But, it is important that, for your safety, you do not adjust the volume of the audio warnings and messages while you are driving and the SafeCar is in motion.

* (click) To be able to access the SafeCar systems you need to log in. Before you drive your SafeCar for the first time you need to insert a device called an iButton into a holder, but I’ll talk more about that in a moment.
Then I'll talk to you about how to shut down the systems at the end of each of your drives.

(click) And then I'll talk about how you can override the systems if you need to.

Reveal System Override label

Visual Warning Display

(click for next slide) But first, as I mentioned just a moment ago, all of the SafeCar visual warnings and messages appear on the Visual Warning Display. You can adjust the brightness of the display using the brightness control. You may need to adjust the brightness of the display for night driving. This is located on top of the Visual Warning Display. All you have to do is turn the thumb wheel clockwise to increase the brightness and anti-clockwise to make the screen less bright.

You can also adjust the orientation of the display to suit your individual requirements. You would adjust it the way you would adjust your rear-vision mirror. It involves the same mechanism. That is, it is on a stalk and you can move it left or right, up or down.

For your safety, you should never adjust the Visual Warning Display orientation or brightness while you are driving and the SafeCar is in motion.

Log In

(click for next slide) To be able to access the SafeCar systems you need to log in.

All you need to do for a successful log in is to make sure that your iButton is plugged into its holder BEFORE you start the SafeCar. The iButton holder is actually the cigarette lighter socket.

S5 – Visual Warning Display

S6 – Successful Log In
The very first time you log in, you need to insert the iButton into the holder yourself. After that, the iButton should remain in the holder at all times in order for the SafeCar systems to work properly. Your iButton must remain in the holder for the duration of the study, even when the ignition is switched off. DO NOT REMOVE THE IBUTTON AT ANY TIME.

If the iButton is inserted properly, you should see the message on the Visual Warning Display - “SafeCar safety system is starting up – please wait”.

(click for next slide) Provided you leave your iButton in the holder ALL OF THE TIME, you should never experience a log in failure. But, just in case, a failure to log in properly will result in messages and warnings not being available. This would happen if the iButton were not inserted properly in its holder. You will be advised of log in failure by both visual and voice messages. Inserting the iButton will fix the problem.

(click for next slide) If the iButton is not inserted within 30 seconds, all system warnings will be disabled and the Visual Warning Display will turn off. When this happens you will see and hear the message “iButton not detected – all warnings will be disabled”. If this happens you should turn off the engine, insert the iButton into the holder and restart the engine.

(click for next slide) It is important that warnings from the safety systems are presented only to designated drivers, that is, to yourselves. As the next step in the log in procedure, you will hear and see the message: “If you are
not the designated driver of this vehicle please press the flashing button”.

As the designated driver, you should ignore this message. That is, DO NOT PRESS THE FLASHING BUTTON.

(click for next slide) All other people are non-designated drivers and they should press the flashing button when instructed to by the SafeCar messaging system. Pressing the flashing button will disable all of the warnings in the SafeCar.

It is your responsibility to advise all potential non-designated drivers of your SafeCar of this requirement.

(click for next slide) To summarise, designated drivers do not press the flashing button, while non-designated drivers press the flashing button.

But, there is an exception to this rule. The only time you will be required to press the flashing button in your SafeCar is when you are on an interstate trip. Some of the SafeCar systems are not designed to work outside Victoria. So, it is really important that each time you start your SafeCar while on an interstate trip you press the flashing button as if you were a non-designated driver of your SafeCar. If you do this, remember that you will not receive any warnings from any SafeCar system.

**Shutting Down**

(click for next slide) The SafeCar system automatically logs you out when you turn off the ignition. For this to work the iButton must be in the holder.

At the end of your drive, turn off the engine but DO
<table>
<thead>
<tr>
<th><strong>NOT</strong> remove the iButton. The Visual Warning Display will switch off automatically. <strong>DO NOT</strong> remove the iButton. The iButton should remain in the holder for the duration of the trial, even when the ignition is switched off.</th>
</tr>
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<tbody>
<tr>
<td><strong>(click for next slide)</strong> But, if the iButton is not detected before the system shuts down, you will hear and see a message instructing you to reinsert the iButton to complete the shutdown process.</td>
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<tr>
<td>It is really important for our data collection that you log out properly at the end of each of your trips in the SafeCar. Provided your iButton remains in the holder at all times you shouldn’t experience any logging in or shutting down problems.</td>
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<table>
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<tr>
<th><strong>Overriding</strong></th>
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<tr>
<td><strong>(click for next slide)</strong> If necessary, you can temporarily stop all of the SafeCar warnings by pressing the System Override Button.</td>
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<tr>
<td>Pressing the System Override Button will stop all warnings for around one minute - sometimes a little longer (up to two minutes).</td>
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<tr>
<td><strong>(click for next slide)</strong> During this time, you will see on the Visual Warning Display the message “System override activated”.</td>
</tr>
<tr>
<td>When the time is up, the system warnings will come back on again automatically.</td>
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<tr>
<td>For your safety, be sure not to take your eyes off the road more than momentarily when pressing the System Override Button.</td>
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</table>

**S13 – Shutting Down**

**S14 – System Override**

**S15 – System Override**
Override Button.

(click for next slide) Only use the System Override Button if you feel that you really need to.

(Click twice to reveal reasons to override) It would be okay to override SafeCar warnings if you suspected the systems were not working properly or, for some reason, you feel overloaded with the messages and warnings.

A message priority system is in place to ensure that you don’t get warnings from all systems all at once, but even so, if you do feel that you can’t cope with the warnings of a single system you can still press the System Override Button.

S16 - When to override SafeCar systems?
- When a system malfunctions
- If you feel overloaded with the messages and warnings

(click for next slide) To summarise the main points regarding general system operation:

(click) All visual warnings and messages appear on the Visual Warning Display, which must be adjusted for brightness and orientation.

(click) You should adjust the volume of the SafeCar audio warnings so that they can be heard at all times.

(click) Your iButton must be inserted for log in.

(click) Only non-designated drivers are to press the flashing button during log in. You should press it only if you are on an interstate trip.

(click) You can override warnings, but only if you feel you really need to.

S17 – General System Operation Summary
- All visual warnings and messages appear on the Visual Warning Display, which must be adjusted for brightness and orientation
- You should adjust the volume of the SafeCar audio warnings so that they can be heard at all times
- Your iButton must be inserted for log in
- Only non-designated drivers are to press the flashing button during log in. You should press it only if you are on an interstate trip
- You can override warnings, but only if you feel you really need to
| **Daytime Running Lights** | Log out is automatic, but requires that your iButton is inserted properly in the holder.  
Always leave the iButton in the holder, even when the ignition is switched off. |
|---------------------------|-----------------------------------------------------------------------------------------------------------------|
| **Daytime Running Lights** | Now we are ready to move on to talk about our first system: Daytime Running Lights  
(click for next slide) The SafeCar headlights will turn on automatically when the engine is started and turn off automatically when the engine is stopped. These are called Daytime Running Lights.  
(click) Daytime Running Lights operate at 80% of normal low-beam brightness.  
(click) The reduced headlight brightness and a lack of tail light and dashboard lighting mean that Daytime Running Lights are not adequate for night driving. So it is really important that you manually turn your lights on when driving at night. |
| **Seat Belt Reminder System** | Lets the driver know if anyone in the SafeCar, including the driver, is not wearing a seat belt.  
S18 – What are Daytime Running Lights? |
| **Seat Belt Reminder System** | If you are travelling at less than 10km/h and any one in the SafeCar is not wearing a seat belt, an image of a person wearing his/her seat belt will appear on the Visual Warning Display. This image will be flashing. The text FASTEN SEATBELT will be displayed under the image. This warning is shown in the video (Play)  
S19 – What is the Seat Belt Reminder System?  
S20 – Seat Belt Reminder System |
I should point out to you that the video footage for this system and for other systems that we will talk about shortly, was taken in a prototype SafeCar, in which the Visual Warning Display sat on top of the dashboard. Don’t worry about that though, the actual warning is exactly the same as the warning you will see in the SafeCar that you will be driving.

(Click for next slide) If the system recognises that a SafeCar occupant is unrestrained and you are travelling above 10 km/h you will see the same flashing visual warning but you will also hear an audio warning. Watch this video. (Play video 2)

The higher your speed, the more frequently the audio warning will sound.

(Click for next slide) The Seat Belt Reminder warnings are triggered when an object weighing greater than around 10 to 15 kg is on a seat and the seat belt is not fastened. This may lead to a false alarm if a heavy object (other than a human) is placed on a seat.

(Click for next slide) More importantly, small children weighing less than 10 to 15 kg may not trigger the system warnings, especially if they are in a baby capsule or children’s car seat. When small children are in the SafeCar, be sure to check that they are properly restrained.

If warnings are issued when it appears that every one in the SafeCar has their seat belts on, this is probably due to rear occupants not having their belts inserted into the
correct belt buckles. Alternatively, this could be because a rear occupant has shifted his/her weight to another seat from the one he/she is buckled into.

<table>
<thead>
<tr>
<th>Reverse Collision Warning</th>
<th>(click for next slide)</th>
<th>S24 – What is the Reverse Collision Warning System?</th>
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<tbody>
<tr>
<td></td>
<td>(click) The Reverse Collision Warning System warns you when cars and other objects are too close to the rear of the SafeCar while the SafeCar is reversing. It does this by issuing repetitive audio warnings, which become more frequent the closer the SafeCar gets to the car or object behind it.</td>
<td>• Warns drivers when cars and other objects are too close to the rear of the SafeCar when reversing.</td>
</tr>
<tr>
<td></td>
<td>(click) The Reverse Collision Warning System only issues audio warnings if the SafeCar is in reverse gear.</td>
<td>• Only issues audio warnings when the SafeCar is in reverse gear</td>
</tr>
<tr>
<td></td>
<td>(click) You cannot adjust the volume of the Reverse Collision Warning System audio warnings.</td>
<td>• You cannot adjust the volume of the Reverse Collision Warning System audio warnings</td>
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</table>

|                            | (click for next slide) When you put the gear into reverse you will hear a single audio tone lasting about half a second. | S25 – Reverse Collision Warning System |
|                            | If you continue to reverse, repetitive audio warnings will start to sound once the distance between the rear of the SafeCar and the object behind you is less than one metre. These warnings will become more frequent as you continue to decrease the distance between the rear of your SafeCar and the object behind you. | |
|                            | The warnings take the form of a continuous, unbroken, auditory tone when the distance between the rear of your | |
| SafeCar and the object behind you is 30 cm or less.  
Watch the video for a demonstration.  | The Reverse Collision Warning System is primarily a parking aid and as such is only capable of detecting stationary objects within a metre or so behind the reversing SafeCar.  
(click twice for next slide) For this reason, you cannot rely on the system to warn you of moving objects such as pedestrians, cyclists, or other vehicles moving behind you. Always maintain your own lookout.  
(click for next slide) You should also know that false warnings can occur in certain situations, such as when you are backing down a steep or narrow driveway – this is because the system thinks that the road at the end of the driveway or shrubs/plants on the side of the driveway are obstacles to be avoided. (click)  
So, while the Reverse Collision Warning System can help to avoid colliding with stationary rear objects while reversing, it does not replace your own lookout.  |
|---|---|
| S26 – Reverse Collision Warning System | **S27 – Reverse Collision Warning System**  
Summarising the main issues for the systems that we have just covered:  
(click) Daytime Running Lights operate at 80% normal low-beam brightness, and are not adequate for night driving.  
(click) Seat Belt Reminder System issues warnings to inform the driver if anyone in the SafeCar is unrestrained, but it may not  |
| **S28 – Summary**  
- Daytime running lights operate at 80% normal low-beam brightness, and are not adequate for night driving  
- Seat Belt Reminder System issues warnings to let the driver know that someone in the SafeCar is unrestrained, but it may not
but it may not activate when loads are light, eg baby capsule

(click) Reverse Collision Warning System is a reverse parking aid, but it does not replace your own lookout.

- Reverse Collision Warning System is a reverse parking aid, but it does not replace your own lookout

| **Following Distance Warning System** | **(click for next slide)** It is widely accepted that at least a two second gap should be maintained between vehicles. Two seconds should be enough time to react to unexpected and dangerous braking by the car ahead.  

(click) As our speed increases, the actual distance between our car and the one immediately ahead must also increase in order to maintain a two second gap.  

Following distance can be difficult to monitor at times and the Following Distance Warning System is designed to warn you when the following distance of your SafeCar to the car in front is two seconds or less for the current speed of the vehicle.  

It is important to understand that the Following Distance Warning System only applies to vehicles we are following. The system will not warn you if you are getting too close to stationary objects, such as parked cars when you are parking, or a car broken down in your lane of travel.  

**(click for next slide)** Visual warnings of the Following Distance Warning System are displayed using the ladder shown here.  

As soon as your SafeCar is two seconds from the car ahead the bars in between the steps of the ladder start to fill with colour. Firstly, you will see the top bar fill with | **S29 – What is the Following Distance Warning System?** | **S30 – Following Distance Warning System** |
yellow. As you get closer to the car ahead the next two bars will also turn yellow, one after the other. If you get even closer, the next bar that appears is coloured red. At this time the ladder starts to flash. If you drive even closer to the car ahead, the final two bars will also turn red, one after the other. The ladder will continue to flash. If you decrease following distance further the final bar fills with red. The ladder display continues to flash and, in addition, an audio warning starts to sound and this indicates that you are dangerously too close to the car ahead.

(click for next slide) Watch this video for a demonstration.

(Play video) If it is safe to do so, you should increase following distance as soon as the first yellow bar appears. Don’t wait for the audio warning – the audio warning is a last resort warning.

(click for next slide) The two second rule is based on good driving conditions. That is, when the road is dry and the road surface is good.

(click) Wet weather and poor road conditions require a following distance greater than two seconds. The Following Distance Warning System does not take account of such conditions.

Also, the Following Distance Warning System does not work well in wet conditions. So in such situations it is best not to rely on the Following Distance Warning system.

(click for next slide) False warnings from the Following Distance Warning System

S31 – Following Distance Warning System

S32 – Following Distance Warning System Limitations

S33 – Following Distance Warning System
Distance Warning System may arise from the system detecting objects close to the road such as bridges or overpasses. These may trigger the warnings, but only briefly.

Limitations

S34 – Following Distance Warning System is advisory and only an aid.

- It will NOT warn you if you are getting too close to stationary objects, such as parked cars when you are parking, or a car broken down in your lane of travel;
- It is NOT a parking aid;
- It is NOT a collision avoidance system and will not warn you if you are about to collide with a car or object in front; and
- It has some limitations so don’t rely on it when it is raining or difficult to see cars ahead e.g. fog.

The first sign of yellow in the ladder is warning the driver that following distance should be increased. The situation is very dangerous by the time the audio warning is heard. So don’t wait for the audio warning before you slow down to increase following distance.

You still need to monitor following distance for yourself at all times and not rely solely on the system.

S35 – Following Distance Warning System

- Don’t wait for the audio warning before you slow down to increase following distance
- You still need to monitor following distance for yourself at all times and not rely solely on the system.
<table>
<thead>
<tr>
<th>(click for next slide) Here are three videos showing the Following Distance Warning System in action.</th>
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<tbody>
<tr>
<td><strong>Play Video 1</strong> What should we do now? We should have slowed as soon as yellow appeared in the ladder.</td>
</tr>
<tr>
<td><strong>Play Video 2</strong> What does this warning indicate? We have come too close to the car ahead and need to increase our following distance.</td>
</tr>
<tr>
<td><strong>Play Video 3</strong> What does this warning indicate? We are dangerously close to the car ahead and must slow immediately.</td>
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</tbody>
</table>

S36 – Following Distance Warning System in Dry Conditions
**S37 – Following Distance Warning System in Wet Conditions**

*Watch the following video and consider when we should increase our following distance in wet road conditions.*

*We should always have an increased following distance in wet weather conditions. If a warning appears then we are way too close to the car ahead.*

---

**S38 – Following Distance Warning System Summary**

- Yellow is the first sign that we are getting too close to the car in front.
- Warnings become more urgent the closer you get to the car in front.
- Don’t rely solely on the warnings for your safety, as the system has some limitations.
- The system will not warn you if you are about to collide with a stationary vehicle or object in front.
- Don’t wait for the audio warning to increase following distance.
- Continuously monitor following distance for yourself.

---

**Table:**

<table>
<thead>
<tr>
<th>(click for next slide)</th>
<th>Watch the following video and consider when we should increase our following distance in wet road conditions.</th>
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<tbody>
<tr>
<td><strong>(Play video)</strong></td>
<td>We should always have an increased following distance in wet weather conditions. If a warning appears then we are way too close to the car ahead.</td>
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<th>(click for next slide)</th>
<th>That completes the section on the Following Distance Warning System. The main points were:</th>
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<tbody>
<tr>
<td>(click)</td>
<td>Yellow is the first sign that we are getting too close to the car in front.</td>
</tr>
<tr>
<td>(click)</td>
<td>Warnings become more urgent the closer you get to the car in front.</td>
</tr>
<tr>
<td>(click)</td>
<td>Don’t rely solely on the warnings for your safety, as the system has some limitations.</td>
</tr>
<tr>
<td>(click)</td>
<td>The system will not warn you if you are about to collide with a stationary vehicle or object in front.</td>
</tr>
<tr>
<td>(click)</td>
<td>Don’t wait for the audio warning to increase following distance.</td>
</tr>
<tr>
<td>(click)</td>
<td>Continuously monitor following distance for yourself.</td>
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</tbody>
</table>
The Speed Warning System in the SafeCar is designed to warn you if you are travelling 3 km/h or more over the posted speed limit.

S39 – What is the Speed Warning System?
Warns you if you are travelling 3 km/h or more over the posted speed limit.

S40 – How does the Speed Warning System work?

S41 – Speed Warning System

This is what we would expect to see

S42 - Speed Warning System Limitations

Intelligent Speed Adaptation

(click for next slide) The system first determines the location of your SafeCar from GPS satellite information. The system then looks up an on-board electronic map of local speed zones to find the one for your SafeCar’s current location. If your travel speed is 3 kilometres per hour over the posted speed limit, the posted speed limit is displayed on the Visual Warning Display. At the same time a single chime sounds. This is the first warning that you are travelling too fast and should slow down.

If speed is not reduced within 2 seconds, the speed limit display begins to flash and you will feel upward pressure on the accelerator pedal until you reduce your speed to less than 3 kilometres per hour over the speed limit.

(click for next slide) Watch this video for a demonstration. You should be able to distinguish between both stages of warning (Play video).

As I said the pressure on the accelerator will continue until you slow down. If necessary, you can overcome this pressure by pressing down harder on the accelerator pedal.

Most of the time the system works properly, but as with all the SafeCar systems, the Speed Warning System has some limitations that we need to know about.

(click for next slide) This is what we would expect to see
while travelling just under the speed limit in a 70 km/h zone, that is, no warning.

Sometimes, when you enter a new speed zone, the new speed limit will not be immediately detected by the Speed Warning System. If this happens, it may take a few seconds for a speed warning to be issued if you are exceeding the speed limit in the new speed zone.

(click) Eventually, the new speed limit will be detected and a speed warning will be issued.

Conversely, it may take a few seconds for a speed warning to cease if your speed is not above the limit in the new speed zone.

(click for next slide) The system has some other limitations.

(click) The Speed Warning System on-board electronic map does not have programmed into it speed zones where the limit is less than 50 km/h. So if you are driving 3 km/h or more over the speed limit in a 20km/h zone, for example, you will not experience any warnings.

(click) Also, only permanent speed limits are programmed into the system. Therefore, the system does not know what the speed limit is on roads where the speed limit changes with the time of day. So, if the speed limit near a school is normally 60 km/h, but is reduced to 30 km/h during school hours, you will not experience any warnings unless you are travelling at 63 km/h or more. Similarly, the system is not programmed to know what the speed limit is on sections of roads where variable message
signs are used to temporarily lower the speed limit, such as near road works and in City Link tunnels.  

(Click for next slide) Not all speed limits in Victoria are programmed into the Speed Warning System electronic map, although, you will receive warnings virtually everywhere in Melbourne, greater Melbourne, most parts of Geelong, Bendigo and Ballarat, and on the highways between Melbourne and each of Geelong, Bendigo and Ballarat. If you drive outside the confines of the electronic map database or drive off-road, you will see on the Visual Warning Display the message “outside digital map zone”. In this case, you will not receive any warnings if you exceed the speed limit.

<table>
<thead>
<tr>
<th></th>
<th>S44 – Speed Warning System Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Even though speed limits in the Melbourne CBD are programmed into the Speed Warning System map database, tall buildings may cause a temporary loss of accuracy in the GPS signal. If this occurs you will see on the Visual Warning Display the message “outside digital map zone”. This message is very brief and will disappear once the accuracy of the GPS link is re-established.</td>
</tr>
</tbody>
</table>

(Click for next slide) The system will not issue speed warnings if the GPS satellites providing SafeCar location information are out of range or cannot be “seen” by the system, because they are blocked by tall buildings, mountains or some other large structure. If this occurs, you will see on the Visual Warning Display the message “no GPS signal” and you will not receive warnings if you exceed the speed limit.

<table>
<thead>
<tr>
<th></th>
<th>S45 – Speed Warning System Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Click for next slide) Sometimes, the Speed Warning System may detect the speed limit of an intersecting side street and issue you with a brief warning if your speed</td>
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<table>
<thead>
<tr>
<th></th>
<th>S46 – Speed Warning System Limitations</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>(Click for next slide) Sometimes, the Speed Warning System may detect the speed limit of an intersecting side street and issue you with a brief warning if your speed</td>
</tr>
</tbody>
</table>
exceeds the speed limit of the side street (i.e. 50 km/h). If this happens, the warning should cease within a few seconds.

(click for next slide) Another limitation we have already come across is that some systems don’t take into account poor weather and road conditions. The Speed Warning System is no different. Poor weather and road conditions may make a chosen speed unsafe, even if it is below the legal speed limit and no warnings are issued.

(click for next slide) There is one more limitation that I need to tell you about. For some roads the speed limit programmed into the Speed Warning System may not be an exact match with the posted speed limit. So, even if you are not exceeding the posted speed limit, you may be issued with a speed warning if you are exceeding the speed limit programmed into the Speed Warning System. Conversely, you may not be issued with a speed warning if your speed exceeds the posted speed limit, but does not exceed the speed limit programmed into the Speed Warning System. While such instances are expected to be rare, it would be very helpful if you could report them directly to MUARC by calling me. But, please only report such instances if they occur at least two or three times on the same stretch of road.

Please note that service roads, for the most part, are programmed into the Speed Warning System as having the same speed limit as the neighbouring main through road.

In summary, the Speed Warning System has some limitations that you need to know about. Ultimately, it is your responsibility to monitor speed limit signs and to take account of local weather and road conditions in
choosing appropriate travel speeds.

<table>
<thead>
<tr>
<th>The Speed Warning System is simply an advisory system. It is your responsibility to monitor changes in the speed limit. Don’t drive faster than you think it is safe to drive just because you are not receiving any warnings.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t drive faster than you think it is safe to drive just because you are not receiving any warnings</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Watch this video and consider what the warning is telling us. (Play Video 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our speed has increased to 3 kilometres per hour over the posted speed limit, we should slow down.</td>
</tr>
<tr>
<td>Now, watch this video and consider what the warning is telling us. (Play Video 2)</td>
</tr>
<tr>
<td>The display is flashing and the driver is experiencing upward pressure on the accelerator. This is because our speed has remained over the speed limit for 2 seconds; we should slow down immediately.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>In summary,</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Speed Warning System warns you if you are travelling 3 km/h or more over the posted speed limit.</td>
</tr>
<tr>
<td>There are two warning stages – a static visual warning followed by a flashing visual warning and upward pressure on the accelerator pedal.</td>
</tr>
<tr>
<td>You can override the accelerator pressure if necessary.</td>
</tr>
</tbody>
</table>

<table>
<thead>
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<tbody>
<tr>
<td>There are two warning stages – a static visual warning followed by a flashing visual warning and upward pressure on the accelerator pedal</td>
</tr>
<tr>
<td>You can override the accelerator pressure if necessary</td>
</tr>
</tbody>
</table>
The Speed Warning System has some limitations, so always rely on your own judgement in choosing appropriate driving speeds.

Speed Request Button

Although the Speed Warning System will automatically warn you if you are driving above the speed limit by 3 km/h or more, you can manually check the current speed limit by pressing the Speed Request Button.

When you press the button, you will see the same speed limit icon that you see on the Visual Warning Display when you exceed the speed limit by 3 km/h or more. You will also hear a single audio chime, which usually precedes the visual image. The image will stay on the Visual Warning Display for about 3 seconds and then disappear.

For your safety, only use the Speed Request Button when it is safe to do so, and be sure NOT to take your eyes off the road more than momentarily while pressing the button and reading the display.

While the system is easy to operate, it has the same limitations as the ones identified for the Speed Warning System.
<table>
<thead>
<tr>
<th>Summary</th>
<th></th>
<th>S53 - Any Questions?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(click for next slide) You now have an opportunity to complete a very short exercise to check your understanding of the SafeCar system warnings. Before we do that, are there any questions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Topic</td>
<td>Script</td>
<td>Resources/Slides</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>PRACTICE</td>
<td>(Start the presentation for the participant then let him/her control the mouse)</td>
<td>S1</td>
</tr>
<tr>
<td></td>
<td>This is an opportunity for you to practice the procedures just covered. It’s very brief, and only takes about 5 minutes to complete.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Click the mouse anywhere on the screen to start.</td>
<td></td>
</tr>
<tr>
<td>TASK 1</td>
<td>In this first task I will ask you to use the mouse to click on items in the picture. After you have clicked, the item will be identified by a label.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Click anywhere to begin the task.</td>
<td></td>
</tr>
<tr>
<td>Log In/Log Out</td>
<td>Click on the iButton and its holder</td>
<td>S2 – Task 1</td>
</tr>
<tr>
<td>Overriding</td>
<td>Click on the System Override Button.</td>
<td></td>
</tr>
<tr>
<td>Visual Warning Display</td>
<td>Click on the Visual Warning Display</td>
<td></td>
</tr>
<tr>
<td>Speed Request</td>
<td>Click on the Speed Request Button.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(After click) Good, that's the first task done. Click anywhere to go to the next task</td>
<td></td>
</tr>
<tr>
<td>TASK 2</td>
<td>In this task you will hear some of the audio warning tones associated with some of the SafeCar systems. After each tone, click on the warning associated with the tone.</td>
<td>S3 – Task 2</td>
</tr>
<tr>
<td></td>
<td>Click anywhere to begin the task and wait for the first</td>
<td></td>
</tr>
<tr>
<td>Following Distance Warning</td>
<td>(If necessary) Click on the warning associated with this tone.</td>
<td></td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>ISA (“bong”)</td>
<td>(If necessary) Click on the warning associated with this tone.</td>
<td></td>
</tr>
<tr>
<td>Seat Belt Reminder</td>
<td>(If necessary) Click on the warning associated with this tone.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(After click) Good, now click anywhere to go to Task 3.</td>
<td></td>
</tr>
</tbody>
</table>

**TASK 3**
Here are several shots of the Following Distance Warning display.

**Follow Task 4**
A car is travelling past two speed signs at 65km/hr. Click anywhere on the screen to see what happens as the car passes the second speed sign.

Respond to the statement by clicking on Yes or No.

(After click) The SafeCar speed warning was delayed as the car entered the new speed zone. In this case you should have decreased your speed even though you were not issued a warning to do so.
| TASK 5 | In Task 5 you will see a few typed statements on each screen, but only one of these statements will be true. The task is to select the true statement on each screen. After you have made your selection the correct statement will be highlighted.

Click on the True statement here for a demonstration.

(After click) Now click anywhere to begin the task. | S6 – Task 5 |
| --- | --- |
| Seat Belt Reminder System | Which of these statements is true?

(After click) Click anywhere for the next question. | S7 – Task 5 continued |
| Over-Reliance | Which of these statements is true?

(After click) Click anywhere for the next question. | S8 – Task 5 continued |
| Limitations | Which of these statements is true?

(After click) While designed to help drivers, SafeCar systems might not detect some hazards and are subject to limitations.

Click anywhere to complete this session. | S9 – Task 5 continued |
| Conclusion | Good, that’s all. Do you have any questions? |
BRIEFING PART 2 - CONTROL GROUP

[REFER PART 2 SLIDES]

DESIGN OF THE ON-ROAD STUDY

Do you have any questions about what we have covered so far?

Now I’m going to talk to you about the design of the study.

[SLIDE 2.1] As I said before, as part of this study you will drive a SafeCar for at least 16,700 kilometres. This is expected to take you about 5 months. But you won’t be exposed to all of the SafeCar systems for the entire 5 months. During this time different SafeCar systems will automatically turn on and off in pre-determined orders.

System order depends, in part, on whether you are in the “control” group or in the “treatment” group. Some drivers have been assigned to what we call a “control” group and the rest have been assigned to what we call a “treatment” group.

Control Group (What is the control group design?):

[SLIDE 2.2] You have been assigned to the Control group. The study for control drivers is divided into three periods known as the “Familiarisation”, the “Control 1” and the “Control 2” periods.

The Familiarisation period is designed to get you used to driving a different car from the one you usually drive. Other than the Daytime Running Lights, no SafeCar systems are on during the Familiarisation period. The Daytime Running Lights stay on for the rest of the study. The Familiarisation period lasts for at least 200 kilometres. Because you have been driving your car for a few days already, you have already had your Familiarisation period.

Next is the Control 1 period. The Control 1 period is the same as the Familiarisation period in that the Daytime Running Lights are the only SafeCar system that are switched on. Also, Control 1 lasts for 1,500 kilometres, and it is when the data logger is first switched on. The data logger then stays on for the rest of the study.

The Control 1 period is followed by the Control 2 period. Control 2 lasts for the rest of the study, that is, for the remaining 15,000 kilometres. During this period the Seat Belt Reminder System and the Reverse Collision Warning System are also on.

[SLIDE 2.3] So, because you are in the control group you will never have to interact with the Speed Warning and Following Distance Warning systems. Also, you will not be able to manually request the current speed limit using the Speed Request Button, because this is only available when the Speed Warning System is on training.
Administration Of Questionnaires During the Trial:

I mentioned earlier that in this study we are also interested in finding out what you think about the systems – whether they are easy to use, are useful to you, and so on. So, at various points during the study, we will ask you to complete an interview.

[SLIDE 2.4] – How many interviews do you need to do?

Because you are in the CONTROL group we will call you for an interview about 3 weeks into the trial, then another 3 times at intervals of about 6 weeks, and once more at the end of the trial – within about one week of finishing – 5 times in total.

Each interview will take about 15 minutes. If using the telephone is not convenient for you, we can arrange a face to face meeting. But, whatever the method, we will arrange to conduct the interview at a time that is convenient for you.

MANAGEMENT ISSUES

To finish with, we have to go over a few management issues.

Are there any questions before we begin?

SafeCar Maintenance:

[SLIDE 2.5] Please maintain your SafeCar as you would any other fleet vehicle. Make sure that the SafeCar is locked when it is unattended, that you park the SafeCar off the street where possible, and that you maintain the tyres at their correct operating pressure. The correct tyre pressures are shown on the Tyre Label on the inside of the driver’s door. It is important that you maintain the tyres at the correct operating pressure because under-inflated tyres will affect the accuracy of the speedometer.

Contact Numbers (Who do you call?):

[SLIDE 2.6]

In the event of a mechanical breakdown you should contact Ford Assist, which is Ford’s 24-hour roadside assistance.

If there are any technical problems with the ITS safety technologies in the SafeCar, please call the Transport Accident Commission. A special number has been set up for this purpose.

A second telephone line has also been set up so you can call me (Kristie) at MUARC to report any comments you might have about the look and feel of the systems and to talk about any issues to do with the study itself.
In the event that you are involved in a collision and someone is hurt, contact emergency services directly. Organise towing as per your company’s fleet policy.

You can find all of these numbers in your SafeCar User Manual. You might like to keep the SafeCar User Manual in the glove box of your car for safe keeping.

**Care of the Visual Warning Display in Hot Weather:**

[SLIDE 2.7] The quality of the images that appear on the Visual Warning Display could be affected if the display over heats. The visual image may fade or disappear. These effects are likely to occur on hot days, typically when the temperature exceeds 30°C. If you notice that the image on the display deteriorates or disappears on hot days, then turn on the air conditioner and direct the air conditioner vent to blow cold air onto the display. Once the Visual Warning Display has cooled sufficiently, the quality of the visual images should return to normal. This will take about 5 to 10 minutes.

[SLIDE 2.8] So, to minimise the effect of heat on the Visual Warning Display, please fit the sun-shades provided to your winds creen when you park your SafeCar [Give the participant the sun-shades].

[SLIDE 2.9] – What about petrol?

**Fuel Arrangements and E-Tags:**

It is the responsibility of you, your company or fleet manager to set up your fuel arrangements and obtain an e-tag if required.

**Measurement of Fuel Consumption:**

I mentioned earlier that, as part of this study, we are interested in examining whether exposure to the safety systems in the SafeCars affects fuel consumption. To do this we need access to the fuel purchase data for your SafeCar. So, it would be really helpful if you could use your fuel card to purchase fuel where possible, and, on those occasions where you can’t use your fuel card, we would be grateful if you could record your odometer reading, the date of the fuel purchase, and the number of litres of fuel purchased. I’ll give you a log book at the end of this session in case you need it [Show SafeCar Fuel Purchase Log Book].

**Manual Speed Alert (Can I use the Manual Speed Alert?):**

[SLIDE 2.10] You may notice that your SafeCar has controls for the Manual Speed Alert function, which is separate from the safety systems in your SafeCar. But, we ask that you do not use this function. This is really important because we do not know whether use of the Manual Speed Alert will have an effect on the data collected in the study. The device has been pre-set to a speed, which will not interfere with data collection. Please, do not change this setting.
Cruise Control (where applicable)(Can I use the Cruise Control?):

[SLIDE 2.11] You will probably notice that your vehicle has the controls for Cruise Control. But, it won’t work. Because we don’t know whether use of the cruise control will have an effect on the data collected the Cruise Control has been disabled.

Memory Card:

[SLIDE 2.12] – Where are data from your SafeCar logged?
I mentioned earlier that each SafeCar is fitted with a Data Logging System. The Data Logger will record certain driving information such as SafeCar speed, following distance, and your approximate location on the road network.

Data are logged and stored on a removable flash memory card. The memory card also contains pre-programmed information that enables the SafeCar systems to operate as well as the database of speed limits. [Show flash memory card]

[SLIDE 2.13] – Where is the memory card located?
The memory card is located in the storage compartment between the driver and front passenger seats of the SafeCar. The memory card can only store a limited amount of data and so, once a month, you need to replace the memory card with a new one. Later I will show you in the SafeCar how to remove and replace the memory card.

[SLIDE 2.14] – What is the procedure for replacing the memory card?
Once a month, you will receive in the mail a replacement memory card, a short form to complete and a stamped “bubble” envelope addressed to MUARC. As soon as you receive the replacement memory card, take out the used one and insert the new one. Make sure that you put the replacement card in the right way. The side of the card labelled FRONT should face the front of the car and the side of the card labelled BACK should face the back of the car. When replacing a card, the SafeCar ignition should be switched off and the key removed from the ignition.

[SLIDE 2.15] The form that you will receive in the mail lists the old and replacement memory card numbers, and your participant ID number. All you need to do is to write the date and time of memory card replacement, the SafeCar registration number, and the odometer reading at the time of memory card replacement. You then put this form along with the used memory card into the pre-paid “bubble” envelope provided and mail it to MUARC as soon as possible.

[SLIDE 2.16] Once we receive your old card, we will record all the accompanying data in a logbook and we will download the data into a database. This information is kept confidential and anonymous. The card will then be emptied and re-used.

With the exception of when you are replacing your memory card, it is essential that the memory card be kept securely in its slot in the SafeCar at all times - not only to ensure
that your driving data are logged, but also because the on-board systems rely on the communication with the card to function properly. If you take the card out, the SafeCar systems will not operate properly.

But, there is one more exception. We ask that when you leave your SafeCar at the mechanics for its service that you remove the flash memory card and that you put the flash memory card back in its slot when you pick up your SafeCar from the mechanics after its service.

[SLIDE 2.17]

[END OF PART 2 SLIDES]

(Ask the participant to complete the Participant Contact Details Form. Inform the participant that you need his/her address so that you know where to send his/her flash memory cards and you will need his/her phone number for the phone interviews and for courtesy calls, etc.)

(Ask the participant if he/she wouldn’t mind completing a second questionnaire in his/her own time and returning it to you using the pre paid envelope. Inform the participant that it is important that the questionnaire be completed within 5 days of having done the briefing and training. [Give the participant questionnaire 2 and the pre paid envelope].)

[Give the participant a t-shirt]
BRIEFING PART 2 -TREATMENT GROUP

[REFER PART 2 SLIDES]

DESIGN OF THE ON-ROAD STUDY

Do you have any questions about what we have covered so far?

Now I’m going to talk to you about the design of the study.

[SLIDE 2.1] As I said before, as part of this study you will drive a SafeCar for at least 16,700 kilometres. This is expected to take you about 5 months. But you won’t be exposed to all of the SafeCar systems for the entire 5 months. During this time different SafeCar systems will automatically turn on and off in pre-determined orders.

System order depends, in part, on whether you are in the “control” group or in the “treatment” group. Some drivers have been assigned to what we call a “control” group and the rest have been assigned to what we call a “treatment” group.

Treatment Group (What is the treatment group design?):

[SLIDE 2.2] You have been assigned to the treatment group. For you, the study is divided into several periods called: the “Familiarisation”, “Before”, “During”, and “After” periods.

The Familiarisation period is designed to get you used to driving a different car from the one you usually drive. Other than the Daytime Running Lights, no SafeCar systems are on during the Familiarisation period. The Daytime Running Lights stay on for the rest of the study. The Familiarisation period lasts for at least 200 kilometres. Because you have been driving your car for a few days already, you have already had your Familiarisation period.

Next is the Before 1 period. It is the same as the Familiarisation period in that the Daytime Running Lights are the only SafeCar system that is switched on. Also, Before 1 lasts for 1,500 kilometres, and it is when the data logger is first activated. The data logger then stays on for the rest of the study. The Before 2 period is next and it lasts for another 1,500 kilometres. During this time, the Reverse Collision Warning and the Seat Belt Reminder Systems are also on.

The During period is divided into “During 1, 2 and 3” periods. Each During period lasts for 3,000 kilometres. The During 1 period occurs straight after Before 2. In each During period, in addition to the Daytime Running Lights, the Reverse Collision Warning and the Seatbelt Reminder systems, the Speed Warning System, the Following Distance Warning System, or both Speed Warning and Following Distance Warning systems, is turned on. The system that switches on in each During period differs across treatment drivers. One driver, for example, might receive warnings from the Speed Warning System in During 1 while another driver might receive Following Distance Warnings during this same period.
Each During period is followed by a 1,500 kilo metre “After” period in which the system that was turned on in the previous During period (e.g. Speed Warning system) is switched off. You will be automatically reminded by the SafeCar messaging system when the Speed Warning and Following Distance Warning systems are about to turn on and when they are about to turn off. Even though you may receive such a message at the end of a trip, it won’t be until you start your next trip that the relevant system will turn on or off.

[SLIDE 2.3] So, because you are in the treatment group you will interact with the Speed Warning and Following Distance Warning systems. Control drivers do not.

(Inform the treatment driver, in which order he/she will be receiving warnings from the key systems. Issue handout with personalised schematic of the order in which the participant will receive warnings.)

Because you will interact with the Following Distance and Speed Warning systems you will need to do some refresher training. You should do your Speed Warning System refresher training around the time when you receive notification from the SafeCar messaging system that the Speed Warning System is the next system to switch on. Similarly, you should do your Following Distance Warning System refresher training when you receive notification from the SafeCar messaging system that the Following Distance Warning System is the next system to switch on. You only need to do the refresher training once for each of the two systems, that is, before your first scheduled use of each of the systems.

(If a participant receives either order 5 or 6, repeat the following – This means that you only have to do one refresher training session, because you will interact with both the Speed Warning and Following Distance Warning systems in the During 1 period. )

The refresher training takes about 5 minutes and you can do it on your own. All it involves is reading the relevant notes and, for the Following Distance Warning System, also listening to the CD. [Show Refresher Notes and Refresher CD]

Also, because you are in the treatment group you will be able to manually request the current speed limit using the Speed Request Button, but only during the periods when the Speed Warning System is on.

Administration Of Questionnaires During the Trial:

I mentioned earlier that in this study we are also interested in finding out what you think about the systems – whether they are easy to use, are useful to you, and so on. So, at various points during the study, we will ask you to complete an interview.

[SLIDE 2.4] – How many interviews do you need to do?

Because you are in the TREATMENT group... (read only that option that applies)
ORDER OF TREATMENTS 1, 2, 3 or 4 - We will call you for an interview about 3 weeks into the trial, then another 5 times during the trial at intervals of about 2 to 6 weeks and once more at the end of the trial – within about one week of finishing – 7 times in total.

ORDER OF TREATMENTS 5 or 6 - We will call you for an interview about 3 weeks into the trial, then another 4 times during the trial at intervals of about 2 to 6 weeks and once more at the end of the trial – within about one week of finishing – 6 times in total.

Each interview will take about 15 minutes. If using the telephone is not convenient for you, we can arrange a face to face meeting. But, whatever the method, we will arrange to conduct the interview at a time that is convenient for you.

MANAGEMENT ISSUES

To finish with, we have to go over a few management issues.

Are there any questions before we begin?

SafeCar Maintenance:

[SLIDE 2.5] Please maintain your SafeCar as you would any other fleet vehicle. Make sure that the SafeCar is locked when it is unattended, that you park the SafeCar off the street where possible, and that you maintain the tyres at their correct operating pressure. The correct tyre pressures are shown on the Tyre Label on the inside of the driver’s door. It is important that you maintain the tyres at the correct operating pressure because under-inflated tyres will affect the accuracy of the speedometer, which will affect the operation of the Speed Warning System.

Contact Numbers (Who do you call?):

[SLIDE 2.6]

In the event of a mechanical breakdown you should contact Ford Assist, which is Ford’s 24-hour roadside assistance.

If there are any technical problems with the ITS safety technologies in the SafeCar, please call the Transport Accident Commission. A special number has been set up for this purpose.

A second telephone line has also been set up so you can call me (Kristie) at MUARC to report any comments you might have about the look and feel of the systems and to talk about any issues to do with the study itself.

In the event that you are involved in a collision and someone is hurt, contact emergency services directly. Organise towing as per your company’s fleet policy.
You can find all of these numbers in your SafeCar User Manual. You might like to keep the SafeCar User Manual in the glove box of your car for safe keeping.

Care of the Visual Warning Display in Hot Weather:

[SLIDE 2.7] The quality of the images that appear on the Visual Warning Display could be affected if the display overheats. The visual image may fade or disappear. These effects are likely to occur on hot days, typically when the temperature exceeds 30°C. If you notice that the image on the display deteriorates or disappears on hot days, then turn on the air conditioner and direct the air conditioner vent to blow cold air onto the display. Once the Visual Warning Display has cooled sufficiently, the quality of the visual images should return to normal. This will take about 5 to 10 minutes.

[SLIDE 2.8] So, to minimise the effect of heat on the Visual Warning Display, please fit the sun-shades provided to your windscreen when you park your SafeCar [Give the participant the sun-shades]

[SLIDE 2.9] – What about petrol?

Fuel Arrangements and E-Tags:

It is the responsibility of you, your company or fleet manager to set up your fuel arrangements and obtain an e-tag if required.

Measurement of Fuel Consumption:

I mentioned earlier that, as part of this study, we are interested in examining whether exposure to the safety systems in the SafeCars affects fuel consumption. To do this we need access to the fuel purchase data for your SafeCar. So, it would be really helpful if you could use your fuel card to purchase fuel where possible, and, on those occasions where you can’t use your fuel card, we would be grateful if you could record your odometer reading, the date of the fuel purchase, and the number of litres of fuel purchased. I’ll give you a log book at the end of this session in case you need it [Show SafeCar Fuel Purchase Log Book].

Manual Speed Alert (Can I use the Manual Speed Alert?):

[SLIDE 2.0] You may notice that your SafeCar has controls for the Manual Speed Alert function, which is separate from the safety systems in your SafeCar. But, we ask that you do not use this function. This is really important because we do not know whether use of the Manual Speed Alert will have an effect on the data collected in the study. The device has been pre-set to a speed, which will not interfere with data collection. Please, do not change this setting.

Cruise Control (where applicable)(Can I use the Cruise Control?):
[SLIDE 2.11] You will probably notice that your vehicle has the controls for Cruise Control. But, it won’t work. Because we don’t know whether use of the cruise control will have an effect on the data collected the Cruise Control has been disabled.
Memory Card:

[SLIDE 2.12] – Where are data from your SafeCar logged?
I mentioned earlier that each SafeCar is fitted with a Data Logging System. The Data Logger will record certain driving information such as SafeCar speed, following distance, and your approximate location on the road network.

Data are logged and stored on a removable flash memory card. The memory card also contains pre-programmed information that enables the SafeCar systems to operate as well as the database of speed limits. [Show flash memory card]

[SLIDE 2.13] – Where is the memory card located?
The memory card is located in the storage compartment between the driver and front passenger seats of the SafeCar. The memory card can only store a limited amount of data and so, once a month, you need to replace the memory card with a new one. Later I will show you in the SafeCar how to remove and replace the memory card.

[SLIDE 2.14] – What is the procedure for replacing the memory card?
Once a month, you will receive in the mail a replacement memory card, a short form to complete and a stamped “bubble” envelope addressed to MUARC. As soon as you receive the replacement memory card, take out the used one and insert the new one. Make sure that you put the replacement card in the right way. The side of the card labelled FRONT should face the front of the car and the side of the card labelled BACK should face the back of the car. When replacing a card, the SafeCar ignition should be switched off and the key removed from the ignition.

[SLIDE 2.15] The form that you will receive in the mail lists the old and replacement memory card numbers, and your participant ID number. All you need to do is to write the date and time of memory card replacement, the SafeCar registration number, and the odometer reading at the time of memory card replacement. You then put this form along with the used memory card into the pre-paid “bubble” envelope provided and mail it to MUARC as soon as possible.

[SLIDE 2.16] Once we receive your old card, we will record all the accompanying data in a logbook and we will download the data into a database. This information is kept confidential and anonymous. The card will then be emptied and re-used.

With the exception of when you are replacing your memory card, it is essential that the memory card be kept securely in its slot in the SafeCar at all times – not only to ensure that your driving data are logged, but also because the on-board systems rely on the communication with the card to function properly. If you take the card out, the SafeCar systems will not operate properly.

But, there is one more exception. We ask that when you leave your SafeCar at the mechanics for its service that you remove the flash memory card and that you put the
flash memory card back in its slot when you pick up your SafeCar from the mechanics after its service.

[SLIDE 2.17]

[END OF PART 2 SLIDES]

(Ask the participant to complete the Participant Contact Details Form. Inform the participant that you need his/her address so that you know where to send his/her flash memory cards and you need his/her phone number for the phone interviews and for courtesy calls, etc.)

(Ask the participant if he/she wouldn’t mind completing a second questionnaire in his/her own time and returning it to you using the pre paid envelope. Inform the participant that it is important that the questionnaire be completed within 5 days of having done the briefing and training [Give the participant questionnaire 2 and the pre paid envelope].)

[Give the participant a t-shirt]
Appendix L  Participant Briefing and Training Session - Slides Briefing Part 1
SafeCar Project

Participant Briefing and Training Session
What is this session all about?

To give you important background information, knowledge and skills for participating in the SafeCar study.
Session Overview

- What is the SafeCar study all about?
- What does the SafeCar study involve?
- What are the eligibility requirements for participating in the SafeCar study?
- What are the obligations on your part, our part, and your company’s part?
- Training in how to use the SafeCar systems
- What is the design of the SafeCar study?
- Taking care of your SafeCar and some management issues...
After all that...

- Demonstration of some of the SafeCar features
- Guided practice drive...

Please feel free to ask questions at any time during the session.
What is the SafeCar study all about?

- We have equipped several advanced safety technologies to 15 cars – “SafeCars”
- In the motoring world, these safety technologies are called Intelligent Transport Systems – ITS.
- The ITS systems in the SafeCars are designed to alert you if they detect that you are driving in an unsafe or illegal manner.
- Alerting systems – they do not take control away from you as the driver.
What are the ITS systems in the SafeCars?

- Speed Warning
- Following Distance Warning
- Seat Belt Reminder
- Reverse Collision Warning
- Daytime Running Lights
So... what is the aim of the SafeCar study?

To find out:

- what effects these systems have on your driving style and
- what you think about the look and feel of the systems.
What does the SafeCar study involve?

- 15 SafeCars have been circulated among several company car fleets located in and around Melbourne.
- Your company is one of the fleets that has volunteered to participate.
- Across fleets, 30 drivers will participate.
- Each driver will be given 1 of the 15 SafeCars.
- Each driver will drive their SafeCar for business and private purposes for at least 16,700 km – about 5 months.
What does the SafeCar study involve? (continued...)

- A data logger in the SafeCar will record how the SafeCar is being driven during the study e.g. how fast you drive, whether your belt is buckled.
- There are no video or audio recorders in the car.
- In general, neither your fleet manager nor anyone else will have access to any of the logged data from individual drivers.
What does the SafeCar study involve? (continued...)

- We are also interested to know what you think about the look and feel of the systems.
- At several times during the study, we will ask you to complete a phone interview to gather information on your impressions of the SafeCar systems.
What does the SafeCar study involve? (continued...)

- We are also interested in finding out whether exposure to the ITS systems in the SafeCars affects how much fuel the SafeCars use up.
- To do this, we need access to fuel purchase data for the SafeCars. More on this later...
- Really helpful to us if you can report by phone any technical problems if they arise and your comments on what you think of the systems.
What are the eligibility requirements for participating in the SafeCar study?

- Vehicle usage rate of at least 40,000 km/year
- Full and current Victorian car driver licence
- Aged 25 to 64 years
- Normal hearing and vision – glasses/contact lenses OK
- No substance abuse disorder – diagnosed
- Written consent to participate
Obligations?

- Your participation must be voluntary.
- We must keep confidential any information that you provide us.
- Only MUARC project team members will have access to the study data.
- But, if the data logged from your SafeCar show that you are driving your SafeCar in a sustained dangerous manner, MUARC must report this to TAC, who will notify your fleet manager.
Obligations? (continued…)

- If you are involved in a crash while driving your SafeCar, the logged data from your SafeCar could be subpoenaed for use as evidence in a court of law.
- If a traffic infringement notice is issued for your SafeCar, your fleet manager will be sent the notice, which will then be issued to you.
- We may be required to stop your participation in the study if:
  - You drive in a sustained dangerous manner
  - You don’t properly maintain and secure your SafeCar
  - You purposely don’t adhere to study requirements
  - You willfully damage the SafeCar
Obligations? (continued...)

No one except you should drive your SafeCar while the system warnings are turned on.

- Undertaking the training yourself does not qualify you to train others in the use of the SafeCar systems.
- Other people can still drive your SafeCar – but if they do, they must press a button on the dashboard that flashes when you turn on the SafeCar ignition. Doing this will deactivate the SafeCar systems. More on this in the training...
Obligations? (continued…)

- Even though you have done the training, you must not drive a SafeCar other than your own when the systems are active.

Although it has some special features, treat the SafeCar as being no different from any other car. Drive it as you would any other fleet vehicle in your organisation.
Appendix M Participant Briefing and Training Session – Slides Training
What is this training about?

- Provide you with information about the safe and effective operation of the SafeCar systems.
- Answer your questions about the SafeCar systems.
What does the training cover?

- General system operation
- Daytime Running Lights
- Seat Belt Reminder System
- Reverse Collision Warning System
- Following Distance Warning System
- Speed Warning System
- Review and practice
General System Operation

- Visual Warning Display
- Master Volume Control
- Log In Interface
- System Override
Visual Warning Display

Brightness Control

Visual Warning Display
Successful Log In

"SafeCar safety system is starting up – please wait"

iButton correctly in holder
Log In Failure

“Please insert log in button”

iButton not inserted properly
Log In Failure

“iButton not detected – all warnings will be disabled”

iButton not inserted after 30 seconds
Designated Driver

“If you are not the designated driver, please press the flashing button”

DO NOT PRESS THE FLASHING BUTTON
Non-designated Driver

“If you are not the designated driver, please press the flashing button”

PRESS THE FLASHING BUTTON
Are you the designated driver?

Designated Driver (YOU)

DO NOT PRESS the flashing button

Non-Designated Driver

PRESS the flashing button
Shutting Down

“SafeCar safety system is shutting down”

iButton properly inserted
Shutting Down

“Please insert log in button to complete shut down process”

No iButton
System Override
System Override

“System override activated”

System Override Button
When to override SafeCar systems?

- When a system malfunctions
- If you feel overloaded with the messages and warnings
General Systems Operation Summary

• All visual warnings and messages appear on the Visual Warning Display, which must be adjusted for brightness and orientation.
• You should adjust the volume of the SafeCar audio warnings so that they can be heard at all times.
• Your iButton must be inserted for log in.
• Only non-designated drivers are to press the flashing button during log in. You should press it only if you are on an interstate trip.
• You can override warnings if you feel you need to.
• Log out is automatic, but requires that your iButton is inserted properly.
• Always leave the iButton in the holder, even when the ignition is switched off.
What are Daytime Running Lights?

Headlights always on, but only 80% brightness

BEWARE - Not adequate for night driving and dash and tail lights not on
What is the Seat Belt Reminder System?

Lets the driver know if anyone in the SafeCar, including the driver, is not wearing a seat belt.
Seat Belt Reminder System
Seat Belt Reminder System
Seat Belt Reminder System
Limitations
Seat Belt Reminder System
Limitations
What is the Reverse Collision Warning System?

• Warns drivers when cars and other objects are too close to the rear of the SafeCar when reversing.
• Only issues warnings when the SafeCar is in reverse gear.
• You cannot adjust the volume of the Reverse Collision Warning System audio warnings
Reverse Collision Warning System
Reverse Collision Warning System
Reverse Collision Warning System
Summary

• Daytime Running Lights operate at 80% normal low-beam brightness but are not adequate for night driving.

• Seat Belt Reminder System issues warnings to let the driver know if anyone in the SafeCar is unrestrained but it may not activate when loads are light, eg baby capsule.

• Reverse Collision Warning System is a reverse parking aid but it does not replace your own lookout.
What is the Following Distance Warning System?

At least 2 Seconds

At least 2 Seconds
Following Distance Warning System

Ladder
Following Distance Warning
Following Distance Warning
System Limitations

Stopping Distance Required

Dry and Good Road Conditions

Wet or Degraded Road Conditions
Following Distance Warning System Limitations
Following Distance Warning System is advisory and only an aid.

- It will NOT warn you if you are getting too close to stationary objects, such as parked cars when you are parking, or a car broken down in your lane of travel.
- It is NOT a parking aid.
- It is NOT a collision avoidance system and will not warn you if you are about to collide with a car or object in front.
- It has limitations, so don’t rely on the Following Distance Warning System when it is raining or difficult to see cars ahead eg. Fog.
Following Distance Warning System

• Don’t wait for the audio warning before you slow down to increase following distance.
• You still need to monitor following distance for yourself at all times and not rely solely on the system.
Following Distance Warning System in Dry Conditions
Following Distance Warning System in Wet Conditions
Following Distance Warning

System Summary

• Yellow is the first sign that we are getting too close to the car in front.

• Warnings become more urgent the closer you get to the car in front.

• Don’t rely solely on the warnings for your safety, as the system has some limitations.

• The system will not warn you if you are about to collide with a stationary vehicle or object in front.

• Don’t wait for the audio warning to increase following distance.

• Continuously monitor following distance for yourself.
What is the Speed Warning System?

Warns you if you are travelling 3 km/h or more over the posted speed limit.
How does the Speed Warning System work?

Position Information

Local Speed Zone Identified

Speed Limit Displayed
Speed Warning System
Speed Warning System Limitations

Speed Zone

70

50

Time delay for revised speed limit

Warning Display

[Images of speedometers and warning signs]

[Images of speed zones and warning displays]
Speed Warning System
Limitations

Any speed limit zone below 50 km/h

Any speed limit zone which varies with the time of day
Speed Warning System Limitations

Outside Digital Map Zone
Speed Warning System
Limitations

“No GPS signal”
Speed Warning System
Limitations

70
50

20 40 60 80 100 120 140
Speed Warning System Limitations
Speed Warning System Limitations

Speed Warning System map database ≠ Posted Speed Limit

50 ≠ 80

50
The Speed Warning System is simply an advisory system

Don’t drive faster than you think it is safe to drive just because you are not receiving any warnings.
Speed Warning System
The Speed Warning System warns you if you are travelling 3 km/h or more over the posted speed limit.

There are two warning stages – a static visual warning followed by a flashing visual warning and upward pressure on the accelerator pedal.

You can override the accelerator pressure if necessary.

The Speed Warning system has some limitations; so always rely on your own judgement in choosing appropriate driving speeds.
Speed Request Button

60

Speed Request Button
Any Questions?
SafeCar Systems Practice
Task 2
Task 3
Given that no warning is displayed after passing the second sign, is it still safe for you to travel at 65km/h?

Yes             No
Task 5

- False Statement
- False Statement
- True Statement
Task 5

- Young children and baby capsules are heavy enough to trigger Seat-Belt Warnings.

- Young children and baby capsules may be too light to trigger a Seat-Belt Warning.

- The seat belt reminder system issues auditory warnings when someone is unbelted and the car is stationary.
Task 5

• SafeCar warnings have no limitations and guarantee safe driving.

• SafeCar warnings only provide an aid and do not reduce the need for drivers to look out for hazards.

• SafeCar warnings have some limitations, but reduce the need for drivers to look out for hazards.
Task 5

- The SafeCar systems have some limitations, so not all hazards will trigger a warning.
- The SafeCar systems have no limitations, and all hazards will trigger a warning.
- The SafeCar systems have some limitations, but all hazards will trigger a warning.
Any Questions?
Appendix N  Participant Briefing and Training Session – Slides Briefing Part 2: Treatment Group
SafeCar study design

The Basics

- Each participant will drive a SafeCar for at least 16,700 km
- This is expected to take around 5 months
- You won’t be exposed to all SafeCar systems for the entire 5 months...
  - During this time different SafeCar systems will automatically turn on and off in predetermined orders
  - System order depends, in part, on whether you are in the “control” group or the “treatment” group.
What is the treatment group design?

**Familiarisation**
(200 km)
- DRLs on

**Before 1**
(1500km)
- DRLs, SBR, RCW on

**Before 2**
(1500km)
- DRLs, SBR, RCW on

**During 1**
(3000km)
- DRLs, SBR, RCW on
- SW or FDW or Both on

**During 2**
(3000km)
- DRLs, SBR, RCW on
- SW or FDW or Both on

**During 3**
(3000km)
- DRLs, SBR, RCW on
- SW or FDW or Both on

**After**
(1500km)
- DRLs, SBR, RCW on
- SW or FDW or Both on
So, if you are in the treatment group...

- You do interact with the Speed Warning and Following Distance Warning systems
- You need to do Refresher Training
- You will be able to manually request the current speed limit using the Speed Request Button, but only during the periods when the Speed Warning system is enabled in your SafeCar.
How many phone interviews do you need to do?

TREATMENT group:

- 6 or 7 in total
- At a time that is convenient for you
SafeCar maintenance

Please maintain your SafeCar as you would any other company fleet vehicle

- Lock the SafeCar when unattended
- Park the SafeCar off the street where possible
- Maintain the tyres at their correct operating pressure
Who do you call?

- General vehicle mechanical problems – call Ford Assist (24 hour roadside assistance)
  
  1800 133 673

- SafeCar system technical problems – call TAC help line (leave a message outside business hours)
  
  (03) 9664 6767

- Feedback line – call MUARC help line (leave a message outside normal business hours)
  
  (03) 9905 1258

- Emergency  000

You can find all of these numbers in your SafeCar User Manual.
Care of the visual warning display in hot weather

- The Visual Warning Display image quality could be affected if the Visual Warning Display over heats.
- Likely to occur on very hot days – over 30 degrees.
- What should you do if your Visual Warning Display is affected?
  1. Turn on the air conditioner
  2. Direct air conditioner vent to blow cold air onto the display
  3. Once the display has cooled sufficiently, the images should return to normal
So...

As a precaution, on hot days, always fit the sun-shades to the windscreen when you park your SafeCar.
What about petrol?

- It is the responsibility of you, your company or fleet manager to set up your fuel arrangements and obtain an e-tag if you need one.

- Measurement of SafeCar fuel consumption:
  - Use your fuel card to purchase petrol where possible
  - If you can’t, record your SafeCar odometer reading, the date of the fuel purchase, and the number of litres purchased in your SafeCar Fuel Purchase Log Book
Can I use the manual speed alert?

- NO
- We don’t know whether use of the manual speed alert will have an effect on the data collected in this study.
- The manual speed alert has been set to a speed, which will not interfere with data collection – DO NOT change this setting.
Can I use the cruise control?

- You can try, but it won’t work!
- We don’t know whether use of the cruise control will have an effect on the data collected in this study.
- The cruise control has been disabled.
Where are data from your SafeCar logged?

- Each SafeCar is fitted with a Data Logging system
- The Data Logger records certain driving information, e.g. speed, following distance
- Data are logged and stored on a removable flash memory card.
- The memory card also contains pre-programmed information that enables the SafeCar systems to operate
Where is the memory card located?

Each memory card can only store a limited amount of data. Once a month, you need to replace the memory card with a new one.
What is the procedure for replacing the memory card?

1. Once a month, you will receive in the mail:
   - A replacement memory card
   - A short form to complete
   - A stamped “bubble” envelope addressed to MUARC

2. As soon as you receive the replacement memory card, take out the used one and insert the new one. Make sure you put the card in the right way. SafeCar ignition should be off and the key removed from the ignition.
What is the procedure for replacing the memory card? (continued...)

3. The form lists the old and new memory card numbers, and your participant ID number. Write the date and time of memory card replacement, the SafeCar registration number, and the odometer reading at the time of memory card replacement.

4. Put the completed form and used memory card into the “bubble” envelope provided and mail it to MUARC as soon as possible.
Memory Card Replacement (continued…)

- Once we receive your old card, we will record all the accompanying data in a log book and we will download the data into a database. All information is kept confidential. The card is emptied and reused.
- With the exception of when you are replacing your memory card…

Keep the memory card securely in its slot at all times. Otherwise the SafeCar systems will not work properly.
Thank you for listening...

Any Questions?
Appendix O  Participant Briefing and Training Session – Slides Briefing Part 2: Control Group
SafeCar study design

The Basics

- Each participant will drive a SafeCar for at least 16,700 km
- This is expected to take around 5 months
- You won’t be exposed to all SafeCar systems for the entire 5 months...
  - During this time different SafeCar systems will automatically turn on and off in pre-determined orders
  - System order depends, in part, on whether you are in the “control” group or the “treatment” group.
What is the control group design?

- **Familiarisation** (200 km) - DRLs on
- **Control 1** (1,500 km) - DRLs on
- **Control 2** (15,000 km) - DRLs, SBR, RCW on
So, if you are in the control group...

- Never interact with Speed Warning and Following Distance Warning systems
- Cannot manually request current speed limit using the Speed Request Button
How many phone interviews do you need to do?

CONTROL group:

- 5 in total
- At a time that is convenient for you
SafeCar maintenance

Please maintain your SafeCar as you would any other company fleet vehicle

- Lock the SafeCar when unattended
- Park the SafeCar off the street where possible
- Maintain the tyres at their correct operating pressure
Who do you call?

• General vehicle mechanical problems – call Ford Assist (24 hour roadside assistance) 1800 133 673

• SafeCar system technical problems – call TAC help line (leave a message outside business hours) (03) 9664 6767

• Feedback line – call MUARC help line (leave a message outside normal business hours) (03) 9905 1258

• Emergency 000

You can find all of these numbers in your SafeCar User Manual.
Care of the visual warning display in hot weather

- The Visual Warning Display image quality could be affected if the Visual Warning Display over heats.
- Likely to occur on very hot days – over 30 degrees.
- What should you do if your Visual Warning Display is affected?
  1. Turn on the air conditioner
  2. Direct air conditioner vent to blow cold air onto the display
  3. Once the display has cooled sufficiently, the images should return to normal
So...

As a precaution, on hot days, always fit the sun-shades to the windscreen when you park your SafeCar.
What about petrol?

- It is the responsibility of you, your company or fleet manager to set up your fuel arrangements and obtain an e-tag if you need one.

- Measurement of SafeCar fuel consumption:
  - Use your fuel card to purchase petrol where possible
  - If you can’t, record your SafeCar (**odometer reading**, the **date of the fuel purchase**, and the **number of litres purchased**) in your **SafeCar Fuel Purchase Log Book**
Can I use the manual speed alert?

- NO
- We don’t know whether use of the manual speed alert will have an effect on the data collected in this study
- The manual speed alert has been set to a speed, which will not interfere with data collection – DO NOT change this setting.
Can I use the cruise control?

- You can try, but it won’t work!
- We don’t know whether use of the cruise control will have an effect on the data collected in this study.
- The cruise control has been disabled.
Where are data from your SafeCar logged?

- Each SafeCar is fitted with a Data Logging system.
- The Data Logger records certain driving information, e.g. speed, following distance.
- Data are logged and stored on a removable flash memory card.
- The memory card also contains pre-programmed information that enables the SafeCar systems to operate.
Where is the memory card located?

Each memory card can only store a limited amount of data. Once a month, you need to replace the memory card with a new one.
What is the procedure for replacing the memory card?

1. Once a month, you will receive in the mail:
   - A replacement memory card
   - A short form to complete
   - A stamped “bubble” envelope addressed to MUARC

2. As soon as you receive the replacement memory card, take out the used one and insert the new one. Make sure you put the card in the right way. SafeCar ignition should be off and the key removed from the ignition.
What is the procedure for replacing the memory card? (continued…)

3. The form lists the old and new memory card numbers, and your participant ID number. Write the date and time of memory card replacement, the SafeCar registration number, and the odometer reading at the time of memory card replacement.

4. Put the completed form and used memory card into the “bubble” envelope provided and mail it to MUARC as soon as possible.
Memory Card Replacement (continued...)

- Once we receive your old card, we will record all the accompanying data in a log book and we will download the data into a database. All information is kept confidential. The card is emptied and reused.
- With the exception of when you are replacing your memory card...

Keep the memory card securely in its slot at all times. Otherwise the SafeCar systems will not work properly.
Thank you for listening...

Any Questions?
Appendix P  SafeCar User Manual
SafeCar
User Manual
for Study Participants

**IMPORTANT NUMBERS**

<table>
<thead>
<tr>
<th>Service</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Vehicle Mechanical Problems</td>
<td>1800 133 673</td>
</tr>
<tr>
<td>SafeCar System Problems</td>
<td>(03) 9664 6767</td>
</tr>
<tr>
<td>Feedback Line</td>
<td>(03) 9905 1258</td>
</tr>
<tr>
<td>Emergency</td>
<td>000</td>
</tr>
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Introduction

1. WHAT IS IN THIS MANUAL?

Thank you for volunteering to participate in the SafeCar Project. Your involvement in the project is greatly appreciated. This manual is intended for study participants only.

This manual tells you about the SafeCar systems and their various warnings. It also gives you an overview of the study design, issues of maintenance, fuel purchase and the procedure for replacement of memory cards. You will also find a troubleshooting guide at the end of this manual to help you fix any simple problems if they occur.

Throughout this manual, items requiring particular attention are emboldened and listed in boxes separate from the main text. Important safety information is headed “CAUTION”. Information that is critical to the successful conduct of the study is headed “IMPORTANT”.

CAUTION: This text box lists important safety information that must be followed in order to minimise injury to yourself and to others.

IMPORTANT: This text box lists important information that must be followed in order for the study to run properly.

2. GENERAL SAFETY INFORMATION

CAUTION: As the driver, you are responsible for the safe operation of your SafeCar and the safety of any passengers that you carry. The safe operation of your SafeCar should always be your first priority.
3. NUMBERS TO CALL IF YOU REQUIRE ASSISTANCE

Four telephone numbers are available for you to use should you need assistance or require further information about the study.

*General Vehicle Mechanical Problems*

If you experience any mechanical problems with your SafeCar or if your SafeCar breaks down, call Ford Assist – 24 hour Roadside Assistance on the following number.

1800 133 673

*SafeCar System Problems*

If you experience any technical problems with the safety systems in your SafeCar, contact the Transport Accident Commission on the following number. If you call outside normal business operating hours please leave a message.

(03) 9664 6767

*Feedback Line*

If you would like to provide feedback on what you think of the safety systems in the SafeCar, or if you would like to discuss any issues regarding the study procedures, please contact Kristie Young at the Monash University Accident Research Centre on the following number. If you call outside normal business operating hours, please leave a message.

(03) 9905 1258

*Emergency*

In the event that you are involved in a collision and someone is hurt, contact emergency services directly.

000

Organise towing as per your company’s fleet policy.
Part 1 – SafeCar Systems

1. SAFE CAR INTERIOR CONTROLS

- Visual Warning Display
- Log In Interface
- Master Volume Control
- Speed Request Button
- System Override Button
### Controls and Functions

<table>
<thead>
<tr>
<th>Control</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log In Interface</td>
<td>This is where the iButton is inserted. The iButton is required for logging into the SafeCar systems. The iButton resembles a large watch battery (see Accessories below). The iButton should be inserted at all times. It should not be removed (See Sections 3 and 4).</td>
</tr>
<tr>
<td>Visual Warning Display</td>
<td>Displays all visual warnings and messages issued by the SafeCar systems.</td>
</tr>
<tr>
<td>Master Volume Control</td>
<td>For adjusting the volume of all audio warnings and voice messages issued by the SafeCar systems.</td>
</tr>
<tr>
<td>System Override Button</td>
<td>For temporarily turning off the warnings issued by the SafeCar systems.</td>
</tr>
<tr>
<td>Speed Request Button</td>
<td>Allows you to find out the current speed limit.</td>
</tr>
</tbody>
</table>

**CAUTION:** For your safety, be sure not to take your eyes off the road more than momentarily when reading information on the Visual Warning Display.

### 2. ACCESSORIES

**iButton**

For logging into the SafeCar systems
3. ACCESSING THE SAFECAR SYSTEMS

To be able to access the SafeCar systems you need to log in.

Logging In for the First Time

Before you drive your SafeCar for the first time you need to insert your iButton into the Log In Interface.

1. Find the cigarette lighter socket in your SafeCar. This is the Log In Interface/iButton holder for your SafeCar.

2. Before you start the car for the first time, push your iButton into the holder. The iButton should click into place.

3. Start the car.

4. The following message should appear on the Visual Warning Display.

   “SafeCar safety system is starting up – Please wait”

5. After 1 to 2 seconds, the System Override Button should begin to flash. A new message should appear on the Visual Warning Display. You should also hear this same message.

   “If you are not the designated driver of this vehicle please press the flashing button”
6. As you are the designated driver, DO NOT press the flashing System Override Button, unless you are travelling outside Victoria (see Section 6). (See Section 5 for the procedure for non-designated drivers.)

7. After 10 seconds, the System Override Button will automatically stop flashing. The voice and visual message will also stop. Log in is now complete. You are now ready to drive your SafeCar.

8. DO NOT remove the iButton from the holder during the drive or at the end of the drive. For the SafeCar systems to work properly, your iButton must be in the holder at all times. Your iButton must remain in the holder for the duration of the study, even when the ignition is switched off.

**IMPORTANT:** Once you have inserted the iButton into the holder for the first time, leave the iButton in the holder at all times - even when the ignition is switched off.

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**Logging In on Subsequent Occasions**

Logging into the SafeCar systems on each subsequent occasion that you drive your SafeCar should be automatic because the iButton should already be in its holder. If for some reason the iButton is not in its holder, follow the procedure for “Logging In for the First Time”.

---

**4. SHUTTING DOWN THE SAFECAR SYSTEMS**

The SafeCar automatically logs users out when they turn off the ignition. For this to work, the iButton must be in the holder.

1. At the end of the drive, turn off the engine but DO NOT remove the iButton. The Visual Warning Display will switch off automatically. DO NOT remove your iButton. Your iButton should remain in the holder for the duration of the trial, even when the ignition is switched off.

---

**5. WHAT TO DO IF SOMEONE OTHER THAN YOURSELF WANTS TO DRIVE YOUR SAFECAR?**

No one, except you, should drive your SafeCar while the safety systems are operating. This is really important for two reasons. Firstly, the data collected for your SafeCar would not relate to your driving performance. Secondly, only drivers participating in the study will be properly trained to use the SafeCar systems. If
someone not properly trained to use the systems is exposed to the system warnings, his/her safety might be compromised.

The following procedure must be adopted by all non-designated drivers who use your SafeCar – that is, anyone other than yourself. Following this procedure will ensure that all SafeCar warnings are disabled for non-designated drivers. It is your responsibility to make sure that all non-designated drivers of your SafeCar are familiar with this procedure.

1. Before the SafeCar is started, the driver should find the cigarette lighter socket in the SafeCar. He/she should check that the iButton is in the socket. If it is not, he/she should push the iButton into the socket.

2. He/she should start the SafeCar.

3. The following message should appear on the Visual Warning Display.

   "SafeCar safety system is starting up – Please wait"

4. After 1 to 2 seconds, the System Override Button should begin to flash. At the same time a new message should appear on the Visual Warning Display. He/she will also hear this same message.

   "If you are not the designated driver of this vehicle please press the flashing button"

5. He/she must PRESS the flashing System Override Button.

6. The System Override Button will stop flashing and all messages will cease. Log in is now complete. All SafeCar systems have been disabled for the duration of the trip. He/she is now ready to drive the SafeCar. He/she must NOT remove the iButton from the holder during the drive.

7. At the end of the drive, he/she should turn off the engine but must NOT remove the iButton. The Visual Warning Display will switch off automatically. He/she must NOT remove the iButton at any time.

**IMPORTANT:** All non-designated drivers (that is, anyone other than you) should press the flashing System Override Button during log in.

Even though you have undertaken the training, please do not drive a SafeCar other than your own when the safety systems in that SafeCar are active. Similarly, no other study participants should drive your SafeCar while the systems are enabled. Doing so may affect the scientific data collected during the study.
6. WHAT TO DO IF YOU TRAVEL OUTSIDE VICTORIA?

Some of the SafeCar systems are not designed to work outside Victoria. For the purposes of the study, therefore, it is vitally important that each time you start your SafeCar while on an interstate trip you follow the procedure for non-designated drivers and press the flashing button during log in.

**IMPORTANT:** On interstate trips, follow the log in procedure for non-designated drivers – press the flashing button during log in.

7. ADJUSTING THE BRIGHTNESS OF THE VISUAL WARNING DISPLAY

The Visual Warning Display in your SafeCar has a Brightness Control to allow you to adjust the brightness of the screen. The Brightness Control is located on top of the Visual Warning Display. It is in the form of a thumbwheel.

- To **increase** the brightness of the screen, turn the thumbwheel **clockwise** – that is, to the right.

- To **decrease** the brightness of the screen, turn the thumbwheel **anti-clockwise** – that is, to the left.
CAUTION: For your safety, DO NOT adjust the brightness of the Visual Warning Display while you are driving and the SafeCar is in motion.

8. ADJUSTING THE ORIENTATION OF THE VISUAL WARNING DISPLAY

The orientation of the Visual Warning Display can be adjusted to suit your individual requirements. The Display is attached to the dashboard via a flexible arm, which is similar to that connecting your rear-vision mirror to the windscreen.

- To adjust the orientation of the Visual Warning Display, move it as you would the rear-vision mirror.

CAUTION: For your safety, DO NOT adjust the orientation of the Visual Warning Display while you are driving and the SafeCar is in motion.

9. ADJUSTING THE VOLUME OF SAFECAR AUDIO WARNINGS AND MESSAGES

The audio warnings and messages in the SafeCar cannot be turned off. But, you can adjust the volume of these warnings and messages using the Master Volume Control. Please note, however, that the volume of the audio warning cannot be adjusted for the Reverse Collision Warning System (See Section 13).
• To **increase** the volume of the audio warnings and messages, press the button on the right.

• To **decrease** the volume of the audio warnings and messages, press the button on the left.

![Press to increase warning/message volume](image1)

![Press to decrease warning/message volume](image2)

**CAUTION:** For your safety, DO NOT adjust the volume of the audio warnings and messages while you are driving and the SafeCar is in motion.

10. **TEMPORARILY OVERRIDING SAFECAR WARNINGS**

If necessary, you can temporarily stop all of the SafeCar warnings by pressing the System Override Button. Pressing the System Override Button will stop all warnings for around **1 minute** – sometimes a little longer (up to 2 minutes).

The System Override Button is the red button located underneath the Master Volume Control on the dashboard.
1. Press the System Override Button to temporarily stop all SafeCar warnings.

2. All SafeCar warnings will stop for 1 minute – sometimes they could stop for a little longer (up to 2 minutes). During this time you should see on the Visual Warning Display the following message:

   “System override activated”

3. When the time has passed, the visual message will disappear and the SafeCar warnings will be enabled once again.

   CAUTION: For your safety, be sure NOT to take your eyes off the road more than momentarily while pressing the System Override Button.

   IMPORTANT: Only use the System Override Button if you feel you really need to.

11. USING THE DAYTIME RUNNING LIGHTS

Daytime Running Lights are fitted to your SafeCar. The headlights turn on automatically when the engine is started and turn off automatically when the engine is stopped.

Daytime Running Lights operate at 80 percent of normal low-beam brightness.

   CAUTION: The reduced headlight brightness and the lack of tail light and dashboard lighting mean that Daytime Running Lights are not adequate for night driving. It is important, therefore, that you manually turn on the headlights when driving at night.

12. USING THE SEAT BELT REMINDER SYSTEM

The Seat Belt Reminder System fitted to your SafeCar is designed to let you know if anyone in the SafeCar, including yourself, is not wearing a seat belt. It does this by issuing a visual warning and, if the SafeCar is travelling above a certain speed, an audio warning also.
SafeCar speeds below 10 km/h

1. If you are travelling below 10 km/h and anyone in the SafeCar is not wearing a seat belt, an image of a person wearing his/her seat belt will appear on the Visual Warning Display. This image will be flashing. The text “FASTEN SEATBELT” will be displayed under the image.

2. To stop the warning, fasten your seat belt and/or ensure that your passenger(s) fastens his/her seat belt.

SafeCar speeds 10 km/h and above

1. If you are travelling 10 km/h or above and any one in the SafeCar is not wearing a seat belt, an image of a person wearing his/her seat belt will appear on the Visual Warning Display. This image will be flashing. The text “FASTEN SEATBELT” will be displayed under the image. You will also hear an audio warning.

2. To stop the warnings, fasten your seat belt and/or ensure that your passenger(s) fastens his/her seat belt.
CAUTION: The Seat Belt Reminder warnings are triggered when an object weighing greater than 10 to 15 kg is on a seat and the seat belt is not fastened. Small children weighing less than 10 to 15 kg may not trigger the system warnings, especially if they are in a baby capsule or children’s car seat. When small children are in the car, be sure to check that they are properly restrained.

13. USING THE REVERSE COLLISION WARNING SYSTEM

The Reverse Collision Warning System fitted to your SafeCar is designed to let you know if there are stationary cars or other objects too close to the rear of the SafeCar while the SafeCar is reversing. It does this by issuing repetitive audio warnings, which become more frequent the closer the SafeCar gets to the car or object behind it. The Reverse Collision Warning system only issues warnings if the SafeCar is in reverse gear.

1. Put the gear into Reverse. You will hear a single audio tone, which lasts for about half a second.

2. If you continue to reverse, repetitive audio warnings will start to sound once the distance between the rear of your SafeCar and an object behind you is less than 1 metre.

3. These warnings will become more frequent as you continue to decrease the distance between the rear of your SafeCar and the object behind you. You should only continue reversing with caution.

4. The warning takes the form of a continuous, unbroken, auditory tone when the distance between the rear of your SafeCar and the object behind you is 30 cm or less. You should stop reversing immediately.

CAUTION: The Reverse Collision Warning System only detects stationary objects within a metre behind the reversing SafeCar. You cannot rely on the system to warn you of moving objects such as pedestrians, cyclists, or other vehicles moving behind you.

Also, false warnings can occur in certain situations, such as when you are backing down a steep or narrow driveway. This is because the system thinks that the road at the end of the driveway or shrubs/plants on the side of the driveway are obstacles to be avoided.

So remember, while the Reverse Collision Warning System is a reversing aid, it does not replace your own lookout.
14. USING THE FOLLOWING DISTANCE WARNING SYSTEM

The Following Distance Warning System fitted to your SafeCar is designed to warn you when the following distance of your SafeCar to the car in front is two seconds or less for the current speed of the vehicle. Visual and auditory warnings are issued by this system. The visual warnings appear on the right side of the Visual Warning Display and resemble a ladder comprising six bars.

![Visual Warning Display Diagram]

1. As soon as your SafeCar is 2 seconds from the car ahead the bars in between the steps of the ladder start to fill with colour. Firstly, you will see the top bar fill with yellow.

2. As you get closer to the car ahead Bar 2 will also turn yellow.

3. As you get even closer to the car ahead Bar 3 will turn yellow.
4. If you get even closer, such that your following distance from the car ahead is 1.3 seconds, Bar 4 fills with red. At this point, the entire ladder display begins to flash.

5. If you get even closer, such that your following distance from the car ahead decreases further to 1.2 seconds, Bar 5 also fills with red. The ladder display continues to flash.

6. If you decrease following distance further to 1.1 seconds, the final bar fills with red. The ladder display continues to flash and, in addition, you will hear an audio warning.

At any warning stage, if it is safe to do so, you can stop the warnings by increasing the following distance between your SafeCar and the car in front (e.g. by slowing down).

**CAUTION:** If it is safe to do so, you should increase following distance as soon as the first yellow bar appears. Don’t wait for the audio warning – the audio warning is a last resort warning.

Also, the Following Distance Warning System:

- will NOT warn you if you are getting too close to stationary objects, such as parked cars when you are parking or a car broken down in your lane of travel;
- is advisory and only an aid;
- is NOT a collision warning system and will not warn you if you are about to collide with a car in front;
- is NOT a parking aid;
- has been designed with good driving conditions in mind, that is when the road is dry and the road surface is good - wet weather and poor road conditions require a following distance greater than two seconds; and
- does not work as effectively in wet conditions and, as such, it is best not to rely on the system in such situations.

You still need to monitor following distance for yourself.

**15. USING THE SPEED WARNING SYSTEM**

The SafeCar Speed Warning System is designed to warn you when the SafeCar is travelling 3 km/h or more over the posted speed limit. The Speed Warning System comprises two stages of warning.
First stage of warning

1. If your travel speed is 3 km/h or more over the posted speed limit, you will see an image of the posted speed limit on the Visual Warning Display. At the same time a single chime sounds.

2. To stop the warnings, if it is safe to do so, you should decrease your speed until you are travelling at or below the posted speed limit.

Second stage of warning

1. If your travel speed is not reduced within 2 seconds, the speed sign image on the Visual Warning Display will start to flash and you will feel upward pressure on the accelerator pedal.

2. To stop the warnings, if it is safe to do so, you should decrease your speed until you are travelling at or below the posted speed limit.
3. If necessary, you can overcome the accelerator pressure by pressing down harder on the accelerator pedal.

**CAUTION:**

- Sometimes, when you enter a new speed zone, the new speed limit will not be immediately detected by the Speed Warning System. If this happens, it may take a few seconds for a speed warning to be issued if you are exceeding the speed limit in a new speed zone. Conversely, it may take a few seconds for a speed warning to cease if your speed is not above the limit in the new speed zone.

- Only permanent speed limits are programmed into the system. Therefore, the system does not know what the speed limit is on roads where the speed limit changes with the time of day. So, if the speed limit near a school is normally 60km/h, but is reduced to 30km/h during school hours, you will not experience any warnings during school hours unless you are travelling at 63km/h or more.

- Similar, the system is not programmed to know what the speed limit is on sections of roads where variable message signs are used to temporarily lower the speed limit, such as near road works and in City Link tunnels.

- Not all speed limits in Victoria are programmed into the Speed Warning System, although you will receive warnings virtually everywhere in Melbourne, greater Melbourne, most parts of Geelong, Bendigo and Ballarat, and on the highways between Melbourne and each of Geelong, Bendigo and Ballarat. If you drive outside the confines of the Speed Warning System map database or drive-off-road, you will see on the Visual Warning Display the message “Outside digital map zone”. In this case, you will not receive any warnings if you exceed the speed limit.

- Even though speed limits in the Melbourne CBD are programmed into the Speed Warning System map database, tall buildings may cause a temporary loss of accuracy in the GPS signal. If this occurs you will see on the Visual Warning Display the message “Outside digital map zone”. This message is very brief and will disappear once the accuracy of the GPS link is re-established.

- Also, speed zones where the speed limit is less than 50km/h are not programmed into the system. So, if you are driving 3km/h or more over the posted speed limit in a 20km/h zone, for example, you will not experience any warnings.

- The Speed Warning System does not take into account poor weather and road conditions. These conditions may make a chosen speed unsafe even if it is below the legal speed limit and no warnings are issued.
• The system will not issue speed warnings if the GPS satellites providing SafeCar location information to the system are out of range or cannot be “seen” by the system, because they are blocked by tall buildings, mountains or some other large structure. If this occurs, you will see on the Visual Warning Display the message “No GPS signal” and you will not receive warnings if you exceed the speed limit.

• Sometimes, the Speed Warning System may detect the speed limit of an intersecting side street and issue you with a brief warning if your speed exceeds the speed limit of the side street (i.e. 50 km/h). If this happens, the warning should cease within a few seconds.

• For some roads, the speed limit programmed into the Speed Warning System may not be an exact match with the actual speed limit. So, even if you are not exceeding the posted speed limit, you may be issued with a speed warning if you are exceeding the speed limit programmed into the Speed Warning System. Conversely, you may not be issued with a speed warning if your speed exceeds the posted speed limit, but does not exceed the speed limit programmed into the Speed Warning System. While such instances are expected to be rare, it would be very helpful if you could report them to Monash University Accident Research Centre by calling (03) 9905 1258. However, please only report such instances if they occur at least two or three times on the same stretch of road. Please note that service roads, for the most part, are programmed into the Speed Warning System as having the same speed limit as the neighbouring main through road.

The Speed Warning System is simply an advisory system. Ultimately, it is your responsibility to monitor speed limit signs and to take account of local weather and road conditions in choosing appropriate travel speeds. Don’t drive faster than you think it is safe to drive just because you are not receiving any warnings.

16. MANUALLY REQUESTING THE CURRENT SPEED LIMIT

Although the Speed Warning System will automatically warn you if you are driving above the speed limit (by 3 km/h or more), you can manually check the current speed limit by pressing the Speed Request Button. This facility is available only when the Speed Warning System is operating in your SafeCar.

The Speed Request Button is the blue button located above the Master Volume Control on the dashboard.
1. To manually request the current speed limit, press the Speed Request Button.

2. You will see on the Visual Warning Display an image of a speed limit sign displaying the speed limit of the zone that you are in. (This is the same image that appears if you exceed the speed limit by 3km/h or more.) You will also hear a single audio chime, which usually precedes the visual image.
3. The image will stay on the Visual Warning Display for about 3 seconds and then will disappear.

CAUTION: For your safety, only use the Speed Request Button when it is safe to do so, and be sure NOT to take your eyes off the road more than momentarily while pressing the button and reading the display.

While the system is easy to operate, it has the same limitations as the ones identified for the Speed Warning System (see Section 15, pp. 19-20).
1. DESIGN OF THE ON-ROAD STUDY

For this study you have been asked to drive a SafeCar for at least 16,700 kilometres. This is expected to take you about 5 months (based on the number of kilometres you drive in one year). However, you will not be exposed to all of the SafeCar systems for the entire 5 months. Rather, during this time different systems in the SafeCar will automatically turn on and off in pre-determined orders.

Some drivers have been assigned to what we call a “control” group and the rest have been assigned to what we call a “treatment” group. You will have been told to which group you have been assigned in your Participant Briefing Session.

For Control Group Participants:

If you are in the control group, the study is divided into three periods known as the “Familiarisation”, the “Control 1” and the “Control 2” periods. The control group design sequence is shown in the diagram on page 24.

The “Familiarisation” period is designed to get you used to driving a different car from the one you usually drive. Other than the Daytime Running Lights, no SafeCar systems are on during this period. The Daytime Running Lights stay on for the rest of the study. The “Familiarisation” period will last for 200 kilometres – or about 2 days, depending on how long it takes you to accumulate the kilometres.

Next is the “Control 1” period. The “Control 1” period is the same as the “Familiarisation” period in that the Daytime Running Lights are the only SafeCar system that is switched on. Also, it lasts for 1,500 kilometres, and it is when the data logger is first switched on. The data logger then stays on for the rest of the study.

The “Control 1” period is followed by the “Control 2” period. “Control 2” lasts for the rest of the study, that is for the remaining 15,000 kilometres. During this period the Seat Belt Reminder System and the Reverse Collision Warning System are also on.

Because you are in the control group you will never have to interact with the Speed Warning and Following Distance Warning systems. As such, you do not have to do any of the Refresher Training. Also, you will not be able to manually request the current speed limit using the Speed Request Button, since this function is only available when the Speed Warning System is on.
Design sequence for the control group

Daytime Running Lights ON  
Daytime Running Lights ON  
Daytime Running Lights ON  
Seat Belt Reminder ON  
Reverse Collision Warning ON

Distance travelled (km)

0 200 1,700 16,700
For Treatment Group Participants:

If you are in the treatment group, the study is divided into several periods. These are called: the “Familiarisation”, “Before”, “During”, and “After” periods. The treatment group design sequence is shown in the diagram on page 26.

The “Familiarisation” period is designed to get you used to driving a different car from the one you usually drive. Other than the Daytime Running Lights, no SafeCar systems are on during this period. The Daytime Running Lights stay on for the rest of the study. The “Familiarisation” period will last for 200 kilometres – or about 2 days, depending on how long it takes you to accumulate the kilometres.

Next is the “Before 1” period. It is the same as the “Familiarisation” period in that the Daytime Running Lights are the only SafeCar system that is switched on. Also, it lasts for 1,500 kilometres, and it is when the data logger is first activated. The data logger then stays on for the rest of the study. The “Before 2” period is next and it lasts for another 1,500 kilometres. During this time, the Reverse Collision Warning and the Seat Belt Reminder Systems are also on.

The “During” period is divided into “During 1, 2 and 3” periods. Each “During” period lasts for 3000 kilometres. The “During 1” period occurs straight after “Before 2”. In each “During” period, in addition to the Daytime Running Lights, the Reverse Collision Warning and Seatbelt Reminder systems, the Speed Warning System, the Following Distance Warning System, or both Speed Warning and Following Distance Warning systems, is turned on. The system that switches on in each “During” period differs across drivers. You, for example, might receive warnings from the Speed Warning System in “During 1” while another driver might receive Following Distance Warnings during this same period or warnings from both the Speed Warning and Following Distance Warning systems.

Each “During” period is followed by a 1,500 kilometre “After” period in which the system that was turned on in the previous “During” period (e.g. Speed Warning) is switched off. You will be automatically reminded by the SafeCar messaging system when the Speed Warning and Following Distance Warning systems are about to turn on and when they are about to turn off. Even though you may receive such a message at the end of a trip, it will not be until you start your next trip that the relevant system will turn on or off.

Only drivers in the treatment group will be able to manually request the current speed limit using the Speed Request Button, since this function is only available when the Speed Warning System is on. Because you are in the treatment group, you will need to do the Refresher Training. You should do your Speed Warning System refresher training when you receive notification from the SafeCar messaging system that the Speed Warning System is the next system to switch on. You should do your Following Distance Warning System refresher training when you receive notification from the SafeCar messaging system that the Following Distance
### Design sequence for the treatment group

<table>
<thead>
<tr>
<th>Distance travelled (km)</th>
<th>Daytime Running Lights ON</th>
<th>Seat Belt Reminder ON</th>
<th>Reverse Collision Warning ON</th>
<th>Speed Warning ON or Following Distance Warning ON or Both ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,700</td>
<td></td>
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</tr>
<tr>
<td>3,200</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6,200</td>
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</tr>
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</tr>
<tr>
<td>16,700</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Familiarisation**
Warning System is the next system to switch on. You only need to do the refresher training once for each of the two systems, that is, before your first scheduled use of each of the systems.

2. SAFECAR MAINTENANCE

Please maintain your SafeCar as you would any other company fleet vehicle. Make sure that the SafeCar is locked when it is unattended, that you park the SafeCar off the street where possible, and that you maintain the tyres at their correct operating pressure. The correct tyre pressures for tyres fitted to your SafeCar are shown on the Tyre Label on the inside of the driver’s door. It is critically important that you maintain the tyres at the correct pressure because under-inflated tyres will affect the accuracy of the speedometer which will affect the operation of the Speed Warning System.

3. CARE OF THE VISUAL WARNING DISPLAY IN HOT WEATHER

The quality of the images that appear on the Visual Warning Display could be affected if the Visual Warning Display heats up. The visual image may fade or disappear. These effects are likely to occur on hot days, typically when the temperature exceeds 30°C. If you notice that the image on the Visual Warning Display disappears or deteriorates on hot days, turn on the air conditioner and direct the air conditioner vent, which is closest to the Visual Warning Display, upwards to blow cold air onto the display. Once the Visual Warning Display has cooled sufficiently, the quality of the visual images should return to normal. To minimise the effect of heat on the Visual Warning Display, please fit the “sun-shades” provided to your windscreen when you park your SafeCar.

4. FUEL ARRANGEMENTS AND E-TAGS

It is the responsibility of your employer and fleet manager to set up your fuel arrangements and obtain an e-tag if required.

5. MEASUREMENT OF FUEL CONSUMPTION

We are interested in examining whether exposure to the safety systems in the SafeCars affects fuel consumption. To measure fuel consumption reliably we need access to the fuel purchase data for the SafeCar that you will be driving. If you have a company fuel card, it would be of great benefit to the study if you would attempt as far as possible to purchase fuel using only your company fuel card. When it is
not possible to use your company fuel card, it would be appreciated if, on every such occasion, you could record your SafeCar **odometer reading**, the **date of the fuel purchase**, and the **number of litres** of fuel purchased. You should have been issued a log book for this purpose at your Participant Briefing Session. If you did not receive one, please contact Kristie Young at the Monash University Accident Research Centre on (03) 9905 1258. If you call outside normal business operating hours, please leave a message.

```
IMPORTANT: Where it is not possible to use your fuel card to purchase petrol for your SafeCar, please record, on every such occasion, your SafeCar odometer reading, the date of the fuel purchase and the number of litres of fuel purchased in the log book provided.
```

6. MANUAL SPEED ALERT

You may notice that your SafeCar has controls for the Manual Speed Alert function, which is separate from the safety systems in your SafeCar. However, we request that you do not use this function. This is really important because we do not know whether use of the Manual Speed Alert will have an effect on the data collected in the study. The device has been pre-set to a speed, which will not interfere with data collection. Please do not adjust this setting.

```
IMPORTANT: DO NOT use the manual speed alert facility in your SafeCar. DO NOT change its setting.
```

7. CRUISE CONTROL (WHERE APPLICABLE)

For the purposes of this study, the Cruise Control function in your SafeCar has been disabled. Consequently, the relevant buttons will not be operational. We apologise for any inconvenience.

8. DATA LOGGING SYSTEM AND MEMORY CARD REPLACEMENT

Each SafeCar is fitted with a Data Logging System. The Data Logger will record certain driving information such as SafeCar speed, following distance, and your approximate location on the road network using satellite tracking.

Data are logged and stored on a removable flash memory card located in the console between the two front seats of the car. The memory card also contains pre-programmed information that enables the SafeCar systems to operate.
The memory card can only store a limited amount of data. Therefore, it is vitally important that, at regular intervals (i.e. once a month), you replace it with an empty one.

1. Once a month, you will receive in the mail:
   - a replacement memory card;
   - a short form to complete; and
   - a stamped envelope addressed to the Monash University Accident Research Centre.
   These items will be sent to your nominated address.

2. As soon as you receive the replacement memory card, take out the used one and insert the new one. Make sure that you put the replacement card in the right way. The side of the card labelled FRONT should face the front of the car and the side of the card labelled BACK should face the back of the car. When replacing a card, the SafeCar ignition should be switched off and the key removed from the ignition.
3. The form that you will receive in the mail will list the old and replacement memory card numbers, and your participant ID number. You will be asked to write the date and time of memory card replacement, the SafeCar registration number, and the odometer reading at the time of memory card replacement.

4. Put the completed form with the used memory card into the envelope provided and mail it to us as soon as possible.

If we do not receive this information within one week of sending you your replacement memory card, we will contact you to make sure that you have received the replacement card – and if you have, we will remind you to insert the new card and send the old one to the Monash University Accident Research Centre immediately.

Once we receive your old card, we will record all the accompanying data in a logbook and we will download the data into a database. This information is kept strictly confidential and anonymous. The card will then be emptied and re-used.

IMPORTANT: With the exception of when you are replacing your memory card, it is essential that the memory card be kept securely in its slot in the SafeCar at all times – not only to ensure that your driving data are logged, but also because the on-board systems rely on the communication with the card to function properly. If you take the card out, the SafeCar systems will not operate properly.
Part 3 - Troubleshooting

This section describes some common problems you might have with the SafeCar systems and what you can do to solve them. If a problem occurs that you cannot solve using this manual, please contact the Transport Accident Commission help line on (03) 9664 6767. If you call outside normal business operating hours please leave a message.

Log In (pp. 7-8)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>• You receive the visual message “Please insert log in button” and the voice message “Please insert iButton to log in”.</td>
<td>• iButton is not in the holder</td>
<td>• Insert iButton into holder.</td>
</tr>
<tr>
<td>• You have attempted to insert the iButton into the holder, but you receive the visual message “Please insert log in button” and the voice message “Please insert iButton to log in”.</td>
<td>• iButton not inserted properly in the holder.</td>
<td>• Insert iButton into holder.</td>
</tr>
<tr>
<td>• You receive the visual and voice message “iButton not detected – all warnings will be disabled”.</td>
<td>• iButton is not inserted or has not been inserted properly in the holder within 30 seconds of system first issuing “Please insert log in button”/”Please insert iButton to log in” message.</td>
<td>• Turn off engine. Insert the iButton into the holder and restart the engine.</td>
</tr>
</tbody>
</table>
**Log In continued (pp. 7-8)**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>• You do not receive any warnings or messages.</td>
<td>• iButton has not been inserted properly into the holder after receiving the message “iButton not detected – all warnings will be disabled”. • You pressed the flashing System Override Button.</td>
<td>• Turn off engine. Insert the iButton into the holder and restart the engine. • Turn off engine. Restart the engine.</td>
</tr>
</tbody>
</table>

**Log Out (p. 8)**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>• You receive the visual message “Please insert log in button to complete shut down process” and voice message “Please insert iButton to log out”.</td>
<td>• iButton has been removed from the holder.</td>
<td>• Insert iButton into the holder immediately.</td>
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</tbody>
</table>

**Daytime Running Lights (pp. 13)**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cannot see too far ahead at night and there is no tail light or dashboard lighting.</td>
<td>• Your lights have not been turned on for night driving.</td>
<td>• Turn on your lights. Remember, Daytime Running Lights are not adequate for night driving.</td>
</tr>
</tbody>
</table>
**Seat-Belt Reminder System (pp. 13-15)**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
</table>
| • You receive Seat Belt Reminder warnings even though everyone in the SafeCar is restrained. | • Rear occupant’s belt inserted into the wrong belt buckle.  
• Rear occupant has shifted his/her weight to another seat from the one they are buckled into.  
• Heavy object (e.g. suitcase) weighing 10 to 15kg or more on seat. | • Stop the SafeCar, if safe to do so, and ask the rear occupant to insert his/her belt into the correct buckle  
• Ask rear occupant to move back into his/her seat.  
• Stop the SafeCar, if safe to do so, and remove object or fasten seat belt around object. |

**Reverse Collision Warning System (pp. 15)**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Auditory warnings occur when there is nothing behind or to the side of the SafeCar.</td>
<td>• The system registers the road or shrubs/plants as an object when reversing down a steep or narrow driveway.</td>
<td>• Continue reversing with caution.</td>
</tr>
</tbody>
</table>

**Following Distance Warning System (pp. 16-17)**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>• You receive brief warnings when there is no vehicle in front of the SafeCar.</td>
<td>• System detects objects close to the car such as bridges/overpasses or signs which may briefly trigger warnings.</td>
<td>• No action – proceed with caution</td>
</tr>
</tbody>
</table>
### Following Distance Warning System continued (pp. 16-17)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>• No warnings are being issued even though there is a car in front that appears to be at a following distance of 2 seconds or less from your SafeCar.</td>
<td>• The road is wet or it is foggy.</td>
<td>• The Following Distance Warning System does not work as effectively in wet conditions. Do not rely on the system in such conditions. Proceed with caution and monitor following distance for yourself. It is a good idea to increase your following distance to more than you would in dry conditions.</td>
</tr>
<tr>
<td></td>
<td>• The road is not wet nor is it foggy. There may be a technical problem with the system.</td>
<td>• If you suspect a technical problem, contact the Transport Accident Commission Help line as soon as possible on (03) 9664 6767. Please leave a message after hours.</td>
</tr>
</tbody>
</table>

### Speed Warning System (pp. 17-20)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>• You receive on the Visual Warning Display the message “Outside digital map zone”.</td>
<td>• You are travelling in an area outside the confines of the Speed Warning System map database.</td>
<td>• Monitor your own speed.</td>
</tr>
<tr>
<td>• You receive a brief speed warning for a 50 km/h speed zone, which is different from the speed zone of the road that you are currently in.</td>
<td>• The Speed Warning System has detected the speed limit of an intersecting side street.</td>
<td>• Monitor your own speed until the speed limit is updated.</td>
</tr>
</tbody>
</table>
**Speed Warning System continued (pp. 17-20)**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>• No speed warnings issued despite exceeding the speed limit.</td>
<td>• You have come across a discrepancy between what the Speed Warning System recognises is the speed limit for the road that you are on and what is the actual speed limit for that road.</td>
<td>• Monitor your own speed. If the same problem occurs on the same stretch of road on at least two or three occasions, call Kristie Young at Monash University Accident Research Centre on (03) 9905 1258 at your earliest convenience. Please leave a message after hours.</td>
</tr>
<tr>
<td></td>
<td>• You have entered a new speed zone. Sometimes there is a delay of a few seconds for the speed information to be updated by the system when you enter a new speed zone.</td>
<td>• Monitor your own speed.</td>
</tr>
<tr>
<td></td>
<td>• You are driving in a speed zone where the speed limit is less than 50km/h.</td>
<td>• Monitor your own speed.</td>
</tr>
<tr>
<td></td>
<td>• You are driving in a speed zone where variable message signs are used to lower the speed limit, such as near road works and in City Link tunnels.</td>
<td>• Monitor your own speed.</td>
</tr>
<tr>
<td></td>
<td>• You are driving in a speed zone where the speed limit changes with the time of day.</td>
<td>• Monitor your own speed.</td>
</tr>
<tr>
<td>Problem</td>
<td>Possible Cause(s)</td>
<td>Action Required</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>• You are travelling in Melbourne CBD and you receive on the Visual Warning Display the message “Outside digital map zone”.</td>
<td>• Tall buildings have resulted in a temporary loss of accuracy in the GPS signal.</td>
<td>• Monitor your own speed until the accuracy of the GPS link is re-established.</td>
</tr>
<tr>
<td>• Speed warnings issued even though you have not exceeded the speed limit.</td>
<td>• You have come across a discrepancy between what the Speed Warning System recognises is the speed limit for the road that you are on and what is the actual speed limit for that road.</td>
<td>• Monitor your own speed. If the same problem occurs on the same stretch of road on at least two or three occasions, call Kristie Young at Monash University Accident Research Centre on (03) 9905 1258 at your earliest convenience. Please leave a message after hours. • Monitor your own speed until the speed limit is updated.</td>
</tr>
<tr>
<td>• You receive on the Visual Warning Display the message “No GPS signal”.</td>
<td>• GPS satellites providing location information to the Speed Warning System are out of range or cannot be “seen” due to obstructions such as tall buildings or mountains.</td>
<td>• Monitor own speed until GPS signal is re-established.</td>
</tr>
</tbody>
</table>
### Speed Request Button (pp. 20-22)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Incorrect speed limit is displayed for the current location.</td>
<td>• You have entered a new speed zone. Sometimes there is a delay of a few seconds for the speed information to be updated by the system when you enter a new speed zone.</td>
<td>• Wait a few seconds and press the Speed Request Button again. In the mean time, monitor your own speed.</td>
</tr>
<tr>
<td></td>
<td>• You are driving in a speed zone where the speed limit is less than 50km/h.</td>
<td>• Monitor your own speed.</td>
</tr>
<tr>
<td></td>
<td>• You are driving in a speed zone where variable message signs are used to lower the speed limit, such as near road works and in City Link tunnels.</td>
<td>• Monitor your own speed.</td>
</tr>
<tr>
<td></td>
<td>• You are driving in a speed zone where the speed limit changes with the time of day.</td>
<td>• Monitor your own speed.</td>
</tr>
<tr>
<td></td>
<td>• You have come across a discrepancy between what the Speed Warning System recognises is the speed limit for the road that you are on and what is the actual speed limit for that road.</td>
<td>• Monitor your own speed. If the same problem occurs on the same stretch of road on at least two or three occasions, call Kristie Young at Monash University Accident Research Centre on (03) 9905 1258 at your earliest convenience. Please leave a message after hours.</td>
</tr>
</tbody>
</table>
### Speed Request Button continued (pp. 20-22)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>• You receive on the Visual Warning Display the message “Outside digital map zone”.</td>
<td>• You are travelling in an area outside the confines of the Speed Warning System map database.</td>
<td>• Monitor your own speed.</td>
</tr>
<tr>
<td>• You are travelling in Melbourne CBD and you receive on the Visual Warning Display the message “Outside digital map zone”.</td>
<td>• Tall buildings have resulted in a temporary loss of accuracy in the GPS signal.</td>
<td>• Monitor your own speed until the accuracy of the GPS link is re-established.</td>
</tr>
<tr>
<td>• You receive on the Visual Warning Display the message “No GPS signal”.</td>
<td>• GPS satellites providing location information to the Speed Warning System are out of range or cannot be “seen” due to obstructions such as tall buildings or mountains.</td>
<td>• Monitor own speed until GPS signal is re-established.</td>
</tr>
</tbody>
</table>

### Visual Warning Display (pp. 5-6, 27)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Visual Warning Display screen frozen.</td>
<td>• The SafeCar systems have locked up.</td>
<td>• When safe, pull over and stop the engine. Wait until the screen switches off. This could take up to 15 minutes. Restart the engine and, when instructed to do so, press the flashing System Override Button. Report the fault to the TAC at your earliest opportunity. The number is (03) 9664 6767. Please leave a message after hours.</td>
</tr>
</tbody>
</table>

38
**Visual Warning Display continued (pp. 5-6, 27)**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Visual image disappeared/deteriorated in hot weather.</td>
<td>• The Visual Warning Display is overheated.</td>
<td>• Turn on the air conditioner and direct the air conditioner vent, which is closest to the Visual Warning Display, upwards to blow cold air onto the display. Once the Visual Warning Display has cooled sufficiently, the quality of the visual images should return to normal. To minimise the chances of this happening again, use the sun-shades provided.</td>
</tr>
<tr>
<td>• Visual image too bright.</td>
<td>• Brightness of the display is too low.</td>
<td>• Increase the brightness of the Visual Warning Display until the visual image reappears.</td>
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</tbody>
</table>

**Memory Card (pp. 28-30)**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Action Required</th>
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<tbody>
<tr>
<td>• You have just replaced your memory card and the next time you start your SafeCar the usual SafeCar messages and warnings no longer appear to be available.</td>
<td>• Corrupt memory card</td>
<td>• Contact Kristie Young at Monash University Accident Research Centre on (03) 9905 1258. Please leave a message after hours.</td>
</tr>
<tr>
<td></td>
<td>• Memory card not properly inserted.</td>
<td>• Reinsert memory card.</td>
</tr>
</tbody>
</table>

**IMPORTANT:** If a problem occurs that you cannot solve using this manual, contact the Transport Accident Commission “SafeCar System Problems” help line on (03) 9664 6767. If you call outside normal business operating hours, please leave a message.
Appendix Q  SafeCar Fuel Purchase Logbook
SafeCar
Fuel Purchase
Logbook

WHAT IS THE PURPOSE OF THIS LOGBOOK?

Please use this logbook to record information about your fuel purchases when it is not possible to use your company fuel card to purchase fuel.

Participant ID Number: 

Vehicle Registration Number: 
<table>
<thead>
<tr>
<th>Date of fuel purchase</th>
<th>Vehicle odometer reading</th>
<th>Number of litres of fuel purchased</th>
</tr>
</thead>
<tbody>
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<td>1</td>
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<td>Date of fuel purchase</td>
<td>Vehicle odometer reading</td>
<td>Number of litres of fuel purchased</td>
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<td>Date of fuel purchase</td>
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<td>Number of litres of fuel purchased</td>
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<td>Date of fuel purchase</td>
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</table>
If you run out of room and require a new logbook, please call Kristie Young at the Monash University Accident Research Centre on 9905 1258.

This logbook must be returned to Kristie Young at the Monash University Accident Research Centre at the end of the study.
# Following Distance Warning

<table>
<thead>
<tr>
<th>Aim</th>
<th>The aim of this module is to refresh your knowledge of the SafeCar Following Distance Warning System.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>The SafeCar Following Distance Warning System is designed to warn you if you are traveling too close to a vehicle traveling in front of your SafeCar. It is important to the success of this study that you understand how the system operates and the limitations of the system.</td>
</tr>
<tr>
<td>Relevance</td>
<td>This material is intended for review immediately prior to your scheduled use of the Following Distance Warning System. The SafeCar messaging system will automatically remind you when the Following Distance Warning System is about to turn on. You should review these notes when you receive this reminder.</td>
</tr>
<tr>
<td>Format</td>
<td>These written notes are accompanied by an audio CD. This CD has a recording of the audio warning and will be referred to within these notes.</td>
</tr>
<tr>
<td>Questions?</td>
<td>Contact staff at Monash University Accident Research Centre if you have any questions. (Contact: Kristie Young (03) 9905 1258).</td>
</tr>
</tbody>
</table>
Background

It is widely accepted that at least a two second gap should be maintained between vehicles. Two seconds should be enough time to react to unexpected and dangerous braking by the car ahead.

As our speed increases, the actual distance between our car and the one immediately ahead must also increase in order to maintain a two second gap.

Following distance can be difficult to monitor at times and the SafeCar Following Distance Warning System is designed to warn you when the following distance of your SafeCar to the car in front is two seconds or less for the current speed of the vehicle.

It is important to understand that the Following Distance Warning System only applies to vehicles we are following. The system will not warn you if you are getting too close to stationary objects, such as parked cars when you are parking or a car broken down in your lane of travel.

Warnings

Visual warnings for the Following Distance Warning system are displayed using a ladder similar to the one shown on the opposite page. As soon as your SafeCar is two seconds from the car ahead the bars in between the steps of the ladder start to fill with colour. Firstly, you will see the top bar fill with yellow. As you get closer to the car ahead bars 2 and 3 will also turn yellow, one after the other. If you get even closer, the next bar that appears is coloured red. At this time the ladder starts to flash. If you drive even closer to the car ahead, the final two bars will also turn red. The ladder will continue to flash. If you decrease following distance further the final bar fills with red. The ladder display continues to flash and, in addition, an audio warning starts to sound and this indicates that you are dangerously too close to the car ahead.
Listen to the audio CD provided for a demonstration of the audio warning. The CD is labeled "SafeCar Training Refresher CD". Listen to Track 1 on the CD.

**If it is safe to do so, you should increase your following distance as soon as the first yellow bar appears. Don’t wait for the audio warning - the audio warning is a last resort warning.**

Limitations

The two second rule is based on good driving conditions; that is, when the road is dry and the road surface is good.

**Wet weather and poor road conditions require a following distance greater than two seconds. The Following Distance Warning System does not take account of such conditions.**

Also, the Following Distance Warning System does not work as effectively in wet conditions. In such situations it is best **not to rely on the Following Distance Warning System.**
False warnings may arise from the Following Distance Warning System detecting objects close to the road such as bridges or overpasses. These may briefly trigger the warnings.

Keep in mind that the Following Distance Warning System is advisory and only an aid. It:

- will NOT warn you if you are getting too close to stationary objects, such as parked cars when you are parking or a car broken down in your lane of travel;
- is NOT a parking aid;
- is NOT a collision avoidance system and will not warn you if you are about to collide with a car or object in front; and
- has some limitations, so don’t rely on the Following Distance Warning System when it is raining or difficult to see cars ahead, for example in fog.

The first sign of yellow in the ladder is warning the driver that following distance should be increased. The situation is very dangerous by the time the audio warning is heard. So don’t wait for the audio warning before you slow down to increase following distance.

You still need to monitor following distance for yourself at all times and not rely solely on the system.

**Summary**

In summary:

- Yellow is the first sign that we are getting too close to the car in front.
- Warnings become more urgent the closer we get to the car in front.
- Don’t rely solely on the warnings for your safety, as the system has some limitations.
- The system will not warn you if you are about to collide with a stationary vehicle or object in front.
- **Don’t wait for the audio warning to increase following distance.**
- Continuously monitor following distance for yourself.
### Aim
The aim of this module is to refresh your knowledge of the SafeCar Speed Warning System.

### Purpose
The SafeCar Speed Warning System is designed to warn you if you are traveling 3 km/h or more over the posted speed limit. It is important to the success of this study that you understand how the system operates and the limitations of the system.

### Format
These written notes constitute the refresher materials for the Speed Warning System.

### Relevance
This material is intended for review immediately prior to your scheduled use of the Speed Warning System. The SafeCar messaging system will automatically remind you when the Speed Warning System is about to turn on. You should review these notes when you receive this reminder.

### Questions?
Contact staff at Monash University Accident Research Centre if you have any questions. (Contact: Kristie Young (03) 9905 1258).
### Background

Speed is a prime cause of crashes on our roads. In addition, crash severity increases with increasing impact speed.

The Speed Warning System is designed to warn you if you are traveling 3 km/h or more over the posted speed limit.

The Speed Warning System comprises a visual warning and upward pressure on the accelerator pedal.

### Warnings

If your travel speed is 3 km/h over the posted speed limit, that speed limit is displayed on the Visual Warning Display. At the same time a single chime sounds. This is the first warning that you are traveling too fast and should slow down.

If speed is not reduced within 2 seconds, the speed limit display begins to flash and you will feel upward pressure on the accelerator pedal.

The pressure on the accelerator will continue until you slow down. You can overcome this pressure firstly by reducing your speed to less than 3 km/h over the speed limit or, if necessary, by pressing down harder on the accelerator pedal.

Below is an example of the warning sequence if you are traveling in a 50 km/h zone and exceeding the speed limit by 3 km/h or more.
Limitations

- Sometimes, when you enter a new speed zone, the new speed limit will not be immediately detected by the Speed Warning System. If this happens, it may take a few seconds for a speed warning to be issued if you are exceeding the speed limit in the new speed zone. Conversely, it may take a few seconds for a speed warning to cease if your speed is not above the limit in the new speed zone.

- Only permanent speed limits are programmed into the system. Therefore, the system does not know what the speed limit is on roads where the speed limit changes with the time of day. So, if the speed limit near a school is normally 60 km/h, but is reduced to 30 km/h during school hours, you will not experience any warnings unless you are traveling at 63 km/h or more. Similarly, the system is not programmed to know what the speed limit is on sections of roads where variable message signs are used to temporarily lower the speed limit, such as near road works and in City Link tunnels.

- Not all speed limits in Victoria are programmed into the Speed Warning System electronic map, although you will receive warnings virtually everywhere in Melbourne, greater Melbourne, most parts of Geelong, Bendigo and Ballarat, and on the highways between Melbourne and each of Geelong, Bendigo and Ballarat. If you drive outside the confines of the electronic map database or drive off-road, you will see on the Visual Warning Display the message “outside digital map zone”. In this case, you will not receive any warnings if you exceed the speed limit.

- Even though the speed limits in the Melbourne CBD are programmed into the Speed Warning System map database, tall buildings may cause a temporary loss of accuracy in the GPS signal. If this occurs, you will see on the Visual Warning Display the message “outside digital map zone”. This message is very brief and will disappear once the accuracy of the GPS link is re-established.

- The system will not issue speed warnings if the GPS satellites providing location information are out of range or cannot be “seen” by the system, because they are blocked by tall buildings, mountains or some other structure. In this case, you will see on the visual warning display the message “no GPS signal” and you will receive no warnings if you exceed the speed limit.
In summary, the Speed Warning System has some limitations that you need to know about. Ultimately, it is your responsibility to monitor speed limit signs and to take account of local weather and road conditions in choosing appropriate travel speeds.

- The Speed Warning System map does not have programmed into it speed zones where the limit is less than 50 km/h. So, if you are driving 3 km/h or more over the speed limit in a 20 km/h zone, for example, you will not see or hear any warnings.

- The Speed Warning System does not take into account poor weather and road conditions. These conditions may make a chosen speed unsafe, even if it is below the legal speed limit and no warnings are issued.

- Sometimes, the Speed Warning System may detect the speed limit of an intersecting side street and issue you with a brief warning if your speed exceeds the speed limit of the side street (i.e. 50 km/h). If this happens, the warning should cease within a few seconds.

- For some roads the speed limit programmed into the Speed Warning System may not be an exact match with the posted speed limit. So, even if you are not exceeding the posted speed limit, you may be issued with a speed warning if you are exceeding the speed limit programmed into the Speed Warning System. Conversely, you may not be issued with a speed warning if your speed exceeds the posted speed limit, but does not exceed the speed limit programmed into the Speed Warning System. While such instances are expected to be rare, it would be very helpful if you could report them directly to Kristie Young at the Monash University Accident Research Centre on (03) 9905 1258. But, please only report such instances if they occur at least two or three times on the same stretch of road.

- Please note that service roads, for the most part, are programmed into the Speed Warning System as having the same speed limit as the neighbouring main through road.
Over-Reliance

The Speed Warning System is simply an advisory system. It is your responsibility to monitor changes in the speed limit. Don’t drive faster than you think it is safe to drive just because you are not receiving any warnings.

Summary

The main points to remember about the Speed Warning System are:

- The system warns you if you are traveling 3 km/h or more over the legal speed limit.
- There are two warning stages – a visual warning followed by the visual warning plus upward pressure on the accelerator pedal.
- You can override the accelerator pressure if necessary
- **The Speed Warning System has some limitations, so always rely on your own judgment in choosing appropriate driving speeds.**
Appendix S  Transfer of Training Drive Protocol – Treatment Group
Transfer of Training Drive Protocol

TREATMENT GROUP

NOTATION:

E denotes Experimenter

P denotes Participant

PREPARATION:

- E to have defined a familiarisation drive route in a quiet area prior to session and to have selected a quiet car park in which to perform the reversing manoeuvre. E to have set up object for reversing manoeuvre (e.g. rubbish bin).

- E to buckle a rear seat belt tongue into the wrong buckle.

- E to place heavy load on the rear seat.

- E to show P how to replace the flash memory card. Leave flash memory card in its slot.

INTRODUCTION TO PARTICIPANT:

“Now it is time for our practice drive where I will guide you through some activities. Remember that the purpose of this drive is so that we can test your understanding of some of the information covered in the training. Before we go on our drive, I will ask you to perform a few tasks while the SafeCar is stationary. At the end of the drive, I will ask you to perform a reversing manoeuvre and then, we will finish off with some further tasks while the SafeCar is stationary. All of this will probably take about 15 minutes.”
SAFECar STATIONARY:

- P to sit in driver’s seat and E in the front passenger seat.
- E to give P the iButton and the keys.
- E to ask P to log in and to start the car.

“Please log in and start the car.”

- P inserts the iButton into the holder before starting the engine.
- If not, P inserts the iButton into the holder when instructed to do so by the SafeCar messaging system and logs in properly. (“Remember the iButton should have been inserted into the holder before the engine was started.”)

- When the message “If you are not the designated driver of this vehicle, press the flashing button” is issued, E to ask P under what conditions the flashing button should be pressed. E to prompt if necessary.

“Who should press the flashing button or, under what conditions should it be pressed?”

- Non-designated driver.
- Travelling interstate.
- Driver of another SafeCar (desirable, but not necessary – do not prompt).

Before continuing, E to make sure that P does not press the flashing button.

- P does not press flashing button.
Once log in is complete E to ask P what things he/she should do or check with the Visual Warning Display before commencing the drive. E to prompt if necessary.

“Before starting your drive, what things should you do or check with the Visual Warning Display?”

- P checks and, if necessary, adjusts orientation of Visual Warning Display.
- P checks and, if necessary, adjusts brightness of Visual Warning Display.

E to ask P what additional thing he/she would need to do if driving at night. E to prompt if necessary.

“If it were night time, what additional thing would you need to do before starting your drive?”

- Turn on the headlights. P demonstrates this successfully.

If P has not yet commented on it, E to ask P to explain what the flashing Seat Belt Reminder visual icon (which should be currently on the Visual Warning Display) is indicating. E to prompt if necessary.

“What is this warning telling us?”

- Speed less than 10 km/h and a vehicle occupant is unrestrained.
- But, in this case, false warning due to rear belt buckled incorrectly and heavy load on the seat.

E to ask P to demonstrate what he/she would do if the image on the Visual Warning Display fades because of over-heating. E to prompt if necessary.

“If the image on the Visual Warning Display started to fade and it was a hot day, what should you do?”

- Turn on the air conditioner and point the vent closest to the display in the direction of the Visual Warning Display in order to blow cold air onto the display. P demonstrates this successfully.
FAMILIARISATION DRIVE:

- E to ask P to commence drive (E to give directions along the way).

  “Now we are going to go on a short drive. Can you please start the drive? I will give you directions along the way.”

- Once SafeCar speed exceeds 10 km/h, audio Seat Belt Reminder Warning should start to sound. E to ask P what the audio warning means. E to prompt if necessary.

  “Can you hear the audio warning? What is it telling us?”

  - Audio represents a more aggressive Seat Belt Reminder System warning. It comes on when the SafeCar is travelling above 10 km/h.

  - P comments on what the speed was when the audio warning started to sound (desirable, but not necessary – do not prompt).

  - P comments on the irregularity of the audio warning presentation rate (desirable, but not necessary – do not prompt).

- E to ask P how to increase the volume of the Seat Belt Reminder audio warning. E to prompt if necessary.

  “Without actually doing it, can you please tell me how would you go about increasing the volume of the audio warning?”

  - By pressing the right button of the Master Volume Control.

  E to demonstrate.

- E to ask P how to decrease the volume of the Seat Belt Reminder audio warning. E to prompt if necessary.

  “Without actually doing it, can you please tell me how would you go about decreasing the volume of the audio warning?”

  - By pressing the left button of the Master Volume Control.

  E to demonstrate.
E to ask P how to turn off the Seat Belt Reminder system warnings temporarily if it was suspected that the system was malfunctioning. E to prompt if necessary.

“Without actually doing it, how would you go about turning off the warnings temporarily if you suspected that the system was not working properly?”

- Press the System Override Button.

E to demonstrate.

P to continue driving until warnings resume.

“After a minute or so the warnings should come back on. We will keep driving until that happens.”

- E to ask P to slow down and pull over (when safe to do so).

“When you feel that it is safe, can you please slow down and pull over?”

E to unbuckle rear belt and to remove heavy load from the seat. Seat belt reminder warnings should cease.

- E to ask P to re-commence drive.

“Can you please re-commence your drive?”

- E to ask P how he/she could find out the current speed limit. E to prompt if necessary.

“Without actually doing it, how would you go about finding out the current speed limit?”

- Press the Speed Request Button.

- E to ask P what he/she would expect to see on the Visual Warning Display after pressing the Speed Request Button. E to also ask P what he/she would expect to hear. E to prompt if necessary.

“What would you expect to see on the Visual Warning Display after pressing the Speed Request Button? What would you expect to hear?”

- Image of speed limit sign displaying current speed limit.

- Audio chime.

Return to familiarisation drive starting point (or to car park where reversing manoeuvre is to be performed).
**REVERSING MANOEUVRE:**

- E to instruct P to pull over a couple of metres in front of the previously nominated object in readiness for performing the reversing manoeuvre.

  "Can you please pull up a couple of metres in front of that object ahead? Don’t start to reverse yet."

- E to ask P to perform a reversing manoeuvre, which triggers reverse collision audio warnings.

  "Can you please start to reverse? – stop when you feel that the most urgent level of audio warning has been issued."

    - P stops reversing before continuous tone is issued.
    - P stops reversing when continuous tone is issued (skip next instruction).

  (If necessary) "Can you please continue to reverse and stop when you hear the continuous, unbroken, tone?"

    - P stops reversing when continuous tone is issued.

- E to ask P to comment on the meaning of the different levels of audio warnings. E to prompt if necessary.

  "What are the different levels of audio warning telling us?"

    - Getting closer to rear object. Warnings sound more urgent.
    - Continuous audio tone sounds when the SafeCar is very close to the rear object. We should stop reversing.
SAFE CAR STATIONARY:

- Once reversing manoeuvre is complete, E to ask P to turn off the engine and to log out. E to prompt if necessary.

  “Could you please turn off the engine and log out?”

- P leaves the iButton in to log out.

- If not, P inserts the iButton into the holder when instructed to do so by the SafeCar messaging system and logs out properly. (“Remember the iButton should remain in the holder at all times.”)

- E to remove iButton.

- E to ask P to start the car and to log in without the iButton. E to prompt if necessary.

  “Now let’s see what would happen if you were to attempt to log in without the iButton. Can you please start the car and insert the iButton when you are instructed to by the SafeCar messaging system?”

- P inserts iButton into the holder when instructed to do so by the SafeCar messaging system and logs in properly. (“Remember you shouldn’t have to respond to this message if your iButton is properly inserted in the holder at all times.”)

- Once log in is complete (i.e. after have been issued with “flashing button” message and the systems are ready), E to ask P to remove the iButton while the engine is still running and to log out. E to prompt if necessary.

  “Now let’s see what would happen if you were to remove the iButton while the engine is still running. Can you please remove the iButton while the engine is still running? Can you please turn off the engine and log out?”

- P inserts the iButton into the holder when instructed to do so by the SafeCar messaging system and logs out properly. (“Remember you shouldn’t have to respond to this message if your iButton is properly inserted in the holder at all times.”)
☐ Once log out is complete and the engine is switched off, E to ask P to demonstrate what to do in order to stop the Visual Warning Display from over-heating when he/she leaves his/her car parked outside. E to prompt if necessary.

“Can you please show me what you need to do in order to stop the Visual Warning Display from over-heating when you leave your car parked outside?”

☐ P fits sun-shades to the windscreen.

☐ P fits the sun-shades without difficulty.

☐ E to ask P to remove and replace the flash memory card and to fill in the appropriate form. E to prompt if necessary.

“Can you please replace the flash memory card and fill in the appropriate details in the form?” (E to provide P with replacement flash memory card and form.)

☐ P successfully removes and replaces the flash memory card.

☐ P successfully records the odometer reading.

☐ P successfully fills out the rest of the form.

☐ E to ask P what the tyre pressures are for that SafeCar. E to prompt if necessary.

“What are the tyre pressures for this car?”

☐ P locates the tyre pressure label.

☐ P successfully reports the correct tyre pressures.

☐ E issues P with the following items:

☐ SafeCar User Manual (“You can refer to this manual at any time during the study.”)

☐ SafeCar Training Refresher Notes

☐ SafeCar Training Refresher Audio CD (“You refer to these only at the appropriate times during the study – that is, when you receive notification from the SafeCar messaging system that the Speed Warning System and/or Following Distance Warning System are about to come on.”)
SafeCar Fuel Purchase Log Book ("This is where you record information about any fuel purchases where you have not used your fuel card.")

“For safe keeping, you might like to keep these items in the glove box.”

- E to remind P that he/she is in the treatment group and in what order he/she will be receiving “treatments”. E to refer to the personalised schematic of the treatment group design issued to P during the briefing session.

“For safe keeping and quick reference, you might like to keep this diagram with your SafeCar User Manual.”

- E removes iButton which is currently in the holder.

- E asks P to insert iButton programmed especially for P and to log in.

“Here is the iButton that has been set up for you. Remember, that once you log in for the first time your iButton should remain in the holder for the rest of the study. Can you please insert the iButton and log in?”

- iButton correctly inserted.

- P successfully logs in.

- E to record SafeCar odometer reading and flash memory card number in a Master log book to be kept at MUARC.

End of Tasks
Appendix T  Transfer of Training Drive Protocol – Control Group
Transfer of Training Drive Protocol

CONTROL GROUP

NOTATION:

E denotes Experimenter

P denotes Participant

PREPARATION:

- E to have defined a familiarisation drive route in a quiet area prior to session and to have selected a quiet car park in which to perform the reversing manoeuvre. E to have set up object for reversing manoeuvre (e.g. rubbish bin).

- E to buckle a rear seat belt tongue into the wrong buckle.

- E to place heavy load on the rear seat.

- E to show P how to replace the flash memory card. Leave flash memory card in its slot.

INTRODUCTION TO PARTICIPANT:

“Now it is time for our practice drive where I will guide you through some activities. Remember that the purpose of this drive is so that we can test your understanding of some of the information covered in the training. Before we go on our drive, I will ask you to perform a few tasks while the SafeCar is stationary. At the end of the drive, I will ask you to perform a reversing manoeuvre and then, we will finish off with some further tasks while the SafeCar is stationary. All of this will probably take about 15 minutes.”
SAFE CAR STATIONARY:

- P to sit in driver’s seat and E in the front passenger seat.
- E to give P the iButton and the keys.
- E to ask P to log in and to start the car.

“Please log in and start the car.”

- P inserts the iButton into the holder before starting the engine.
- If not, P inserts the iButton into the holder when instructed to do so by the SafeCar messaging system and logs in properly. (Remember the iButton should have been inserted into the holder before the engine was started.)

- When the message “If you are not the designated driver of this vehicle, press the flashing button” is issued, E to ask P under what conditions the flashing button should be pressed. E to prompt if necessary.

“Who should press the flashing button or, under what conditions should it be pressed?”

- Non-designated driver.
- Travelling interstate.
- Driver of another SafeCar (desirable, but not necessary – do not prompt).

Before continuing, E to make sure that P does not press the flashing button.

- P does not press flashing button.
Once log in is complete E to ask P what things he/she should do or check with the Visual Warning Display before commencing the drive. E to prompt if necessary.

“Before starting your drive, what things should you do or check with the Visual Warning Display?”

- P checks and, if necessary, adjusts orientation of Visual Warning Display.
- P checks and, if necessary, adjusts brightness of Visual Warning Display.

E to ask P what additional thing he/she would need to do if driving at night. E to prompt if necessary.

“If it were night time, what additional thing would you need to do before starting your drive?”

- Turn on the headlights. P demonstrates this successfully.

If P has not yet commented on it, E to ask P to explain what the flashing Seat Belt Reminder visual icon (which should be currently on the Visual Warning Display) is indicating. E to prompt if necessary.

“What is this warning telling us?”

- Speed less than 10 km/h and a vehicle occupant is unrestrained.
- But, in this case, false warning due to rear belt buckled incorrectly and heavy load on the seat.

E to ask P to demonstrate what he/she would do if the image on the Visual Warning Display fades because of over-heating. E to prompt if necessary.

“If the image on the Visual Warning Display started to fade and it was a hot day, what should you do?”

- Turn on the air conditioner and point the vent closest to the display in the direction of the Visual Warning Display in order to blow cold air onto the display. P demonstrates this successfully.
FAMILIARISATION DRIVE:

- E to ask P to commence drive (E to give directions along the way).

  “Now we are going to go on a short drive. Can you please start the drive? I will give you directions along the way.”

- Once SafeCar speed exceeds 10 km/h, audio Seat Belt Reminder Warning should start to sound. E to ask P what the audio warning means. E to prompt if necessary.

  “Can you hear the audio warning? What is it telling us?”

    - Audio represents a more aggressive Seat Belt Reminder System warning. It comes on when the SafeCar is travelling above 10 km/h.

    - P comments on what the speed was when the audio warning started to sound (desirable, but not necessary – do not prompt).

    - P comments on the irregularity of the audio warning presentation rate (desirable, but not necessary – do not prompt).

- E to ask P how to increase the volume of the Seat Belt Reminder audio warning. E to prompt if necessary.

  “Without actually doing it, can you please tell me how would you go about increasing the volume of the audio warning?”

    - By pressing the right button of the Master Volume Control.

    E to demonstrate.

- E to ask P how to decrease the volume of the Seat Belt Reminder audio warning. E to prompt if necessary.

  “Without actually doing it, can you please tell me how would you go about decreasing the volume of the audio warning?”

    - By pressing the left button of the Master Volume Control.

    E to demonstrate.
E to ask P how to turn off the Seat Belt Reminder system warnings temporarily if it was suspected that the system was malfunctioning. E to prompt if necessary.

"Without actually doing it, how would you go about turning off the warnings temporarily if you suspected that the system was not working properly?"

- **Press the System Override Button.**

E to demonstrate.

P to continue driving until warnings resume.

"After a minute or so the warnings should come back on. We will keep driving until that happens."

- E to ask P to slow down and pull over (when safe to do so).

"When you feel that it is safe, can you please slow down and pull over?"

E to unbuckle rear belt and to remove heavy load from the seat. Seat belt reminder warnings should cease.

- E to ask P to re-commence drive.

"Can you please re-commence your drive?"

Return to familiarisation drive starting point (or to car park where reversing manoeuvre is to be performed).
**REVERSING MANOEUVRE:**

- E to instruct P to pull over a couple of metres in front of the previously nominated object in readiness for performing the reversing manoeuvre.

  “Can you please pull up a couple of metres in front of that object ahead? Don’t start to reverse yet.”

- E to ask P to perform a reversing manoeuvre, which triggers reverse collision audio warnings.

  “Can you please start to reverse? – stop when you feel that the most urgent level of audio warning has been issued.”

  - P stops reversing before continuous tone is issued.
  - P stops reversing when continuous tone is issued (skip next instruction).

  (If necessary) “Can you please continue to reverse and stop when you hear the continuous, unbroken, tone?”

  - P stops reversing when continuous tone is issued.

- E to ask P to comment on the meaning of the different levels of audio warnings. E to prompt if necessary.

  “What are the different levels of audio warning telling us?”

  - Getting closer to rear object. Warnings sound more urgent.
  - Continuous audio tone sounds when the SafeCar is very close to the rear object. We should stop reversing.
SAFE CAR STATIONARY:

- Once reversing manoeuvre is complete, E to ask P to turn off the engine and to log out. E to prompt if necessary.

  “Could you please turn off the engine and log out?”

  - P leaves the iButton in to log out.

  - If not, P inserts the iButton into the holder when instructed to do so by the SafeCar messaging system and logs out properly. (“Remember the iButton should remain in the holder at all times.”)

- E to remove iButton.

- E to ask P to start the car and to log in without the iButton. E to prompt if necessary.

  “Now let’s see what would happen if you were to attempt to log in without the iButton. Can you please start the car and insert the iButton when you are instructed to by the SafeCar messaging system?”

  - P inserts iButton into the holder when instructed to do so by the SafeCar messaging system and logs in properly. (“Remember you shouldn’t have to respond to this message if your iButton is properly inserted in the holder at all times.”)

- Once log in is complete (i.e. after have been issued with “flashing button” message and the systems are ready), E to ask P to remove the iButton while the engine is still running and to log out. E to prompt if necessary.

  “Now let’s see what would happen if you were to remove the iButton while the engine is still running. Can you please remove the iButton while the engine is still running? Can you please turn off the engine and log out?”

  - P inserts the iButton into the holder when instructed to do so by the SafeCar messaging system and logs out properly. (“Remember you shouldn’t have to respond to this message if your iButton is properly inserted in the holder at all times.”)
Once log out is complete and the engine is switched off, E to ask P to demonstrate what to do in order to stop the Visual Warning Display from over-heating when he/she leaves his/her car parked outside. E to prompt if necessary.

"Can you please show me what you need to do in order to stop the Visual Warning Display from over-heating when you leave your car parked outside?"

- P fits sun-shades to the windscreen.
- P fits the sun-shades without difficulty.

E to ask P to remove and replace the flash memory card and to fill in the appropriate form. E to prompt if necessary.

"Can you please replace the flash memory card and fill in the appropriate details in the form?" (E to provide P with replacement flash memory card and form.)

- P successfully removes and replaces the flash memory card.
- P successfully records the odometer reading.
- P successfully fills out the rest of the form.

E to ask P what the tyre pressures are for that SafeCar. E to prompt if necessary.

"What are the tyre pressures for this car?"

- P locates the tyre pressure label.
- P successfully reports the correct tyre pressures.

E issues P with the following items:

- SafeCar User Manual ("You can refer to this manual at any time during the study.")
- SafeCar Fuel Purchase Log Book ("This is where you record information about any fuel purchases where you have not used your fuel card.")

"For safe keeping, you might like to keep these items in the glove box."
E to remind P that he/she is in the control group and what that means (i.e. no Speed Warning or Following Distance Warning systems, etc.). E to refer to schematic of the control group design in the User Manual (p. 24).

“For safe keeping and quick reference, you might like to keep this diagram with your SafeCar User Manual.”

E removes iButton which is currently in the holder.

E asks P to insert iButton programmed especially for P and to log in.

“Here is the iButton that has been set up for you. Remember, that once you log in for the first time your iButton should remain in the holder for the rest of the study. Can you please insert the iButton and log in?”

- iButton correctly inserted.
- P successfully logs in.

E to record SafeCar odometer reading and flash memory card number in a Master log book to be kept at MUARC.

End of Tasks
Appendix U  Database of Calls to the Feedback Line - Form
SafeCar OnRoad Study
Calls to MUARC Help and Feedback Line

All calls made to the MUARC Help and Feedback Line should be recorded in this database. Please use a new record for each call made to the MUARC Help and Feedback Line. If more than one reason is given for any one call, create a new record for each reason. For example, if three call reasons are discussed in any one call, then create three records in the database for that call. The only difference between the three entries should be the reason for the call and the action taken.

Unless indicated otherwise, responses to fields are to be determined at the time of call.

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant ID Number</td>
<td></td>
</tr>
<tr>
<td>SafeCar Registration Number</td>
<td></td>
</tr>
<tr>
<td>Date of Call</td>
<td></td>
</tr>
<tr>
<td>Time of Call</td>
<td></td>
</tr>
<tr>
<td>Reason for Call</td>
<td></td>
</tr>
<tr>
<td>Keyword</td>
<td></td>
</tr>
<tr>
<td>SafeCar Odometer Reading at Time of Call</td>
<td>0 km</td>
</tr>
<tr>
<td>- Odometer Reading at Start of Study</td>
<td>0 km</td>
</tr>
<tr>
<td>= Number of Kilometres Travelled at Time of Call</td>
<td>0 km</td>
</tr>
<tr>
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<tr>
<td>Group</td>
<td></td>
</tr>
<tr>
<td>Correct Study Phase</td>
<td></td>
</tr>
<tr>
<td>Action</td>
<td></td>
</tr>
</tbody>
</table>

Determine after call

Determine from Participant Records after call

Determine from Participant Records and/or Participant ID Number after call

Determine after call

Determine after call

Determine after call

Determine after call

Determine after call
Appendix V  Exit Protocol
**EXIT PROTOCOL**

The exit protocol to be followed for each SafeCar participant is outlined below.

1. As a first step, Participant Liaison Officer (PLO) will advise the TAC SafeCar Project Officer that a participant has almost completed his/her trial approximately 3 to 4 weeks before the participant finishes. If the estimated completion date is extended or reduced, then the PLO will notify the TAC SafeCar Project Officer of this change.

2. TAC SafeCar Project Officer to provide the PLO with the names and contact details of each new driver, where relevant.

3. PLO will phone the participant within a week of sending the Interim 6 questionnaire to obtain his/her odometer reading and determine if he/she has accrued the required 16,500 kilometres. For future drivers, PLO will also ask drivers whether they are still receiving Seat Belt Reminder and Reverse Collision Warnings, as all future iButtons will be programmed to turn off the Seat Belt Reminder and Reverse Collision Warning systems at the end of the After 3 period. This will allow us to more accurately determine when a driver has completed the trial.

4. If the participant has finished the trial, the PLO will send the participant an exit letter instructing him/her to remove the ibutton and flashcard and return these items to MUARC in the reply paid envelope provided. The participant will also be instructed in the letter to unplug the power to turn off the visual display (instructions on how to do this will also be given over the phone if necessary). As some drivers may continue to drive the SafeCar for a number of days after finishing the trial, it was decided that participants should unplug the power so that the visual display is turned off. Finally, participants will be asked to return the SafeCar to their fleet manager or another designated person. At the same time, participants will also be sent, in a separate envelope, the post questionnaire and an invitation to attend a debriefing session.

5. If the participant has not completed the trial, the PLO will advise the participant to call her when the odometer reading is 'X', where X is what their odometer should read after they have accrued 16,500 kilometres. If the driver has not made contact within 5 days of the anticipated date, MUARC will follow up with a courtesy call to ascertain whether the required kilometres have been reached or to revise the estimated date of completion. The process outlined in step 4 will then be followed.

6. A letter thanking the participant for his/her participation in the project will be sent to the participant after he/she has returned the post questionnaire (if they indicate that they do not want to attend the debriefing session), or after the participant has attended the debriefing session.
Appendix W Exit Letter to Participants
Dear [Name],

Congratulations. You have successfully completed your SafeCar trial. Before returning your SafeCar to your fleet manager, there are a number of steps you will need to complete. These steps are outlined below. It is important that you complete the steps in the order listed to ensure that none of your driving data is lost.

1. Make sure the car’s engine is switched off and that the keys are out of the ignition.

2. Please remove the flashcard from the centre console (as you did when previously replacing the cards) and place it in the reply-paid padded envelope.

3. Please remove the iButton from its holder (cigarette lighter) and place it in the padded envelope along with the flashcard. Return this envelope to Monash University as soon as possible.

4. As a last step you will need to unplug the power to the visual display. The power plug is located in the centre compartment (where the flashcard is located). Below is a diagram of the centre compartment illustrating where the power plug is located (the plug closest to the front passenger seat marked ‘Power’ and with green, blue and red cords). Once holding the power plug, squeeze the clips on the front and back of the plug and pull upwards to disconnect. If you have any difficulties locating the power plug or disconnecting it, please do not hesitate to call me on 9905 1258 (BH).
After you have completed these steps, your SafeCar will act as a normal car. That is, you will not receive any warnings or messages, the visual display will not turn on when you start the car and your driving will not be logged. Please return your SafeCar to your fleet manager or designated person on the date you have arranged with your fleet manager.

If you have any questions about any of these steps or the study, please do not hesitate to contact me at the Accident Research Centre by telephone (03) 9905 1258 or e-mail kristie.young@general.monash.edu.au.

Yours sincerely,

Kristie Young
Appendix X  Exit Interview Discussion Guide
EXIT INTERVIEW - DISCUSSION QUESTIONS

1. What did you like most/dislike most about the SafeCar you drove?

2. Do you feel that, as a result of participating in the study, you drive any differently?

3. What do your friends and passengers think about the SafeCar systems?

4. If you could keep any of the SafeCar systems, which one(s) would you keep? Why?

5. If you were in the market for a new car would you actively seek to purchase models that offered the SafeCar technologies as options?

6. If the SafeCar technologies were commercially available, as an employee do you think your employer should provide vehicles to its staff that include these technologies?

7. Can you recommend ways in which we could improve the way in which the study was run for the benefit of other participants?
   - Were you happy with the recruitment procedure?
   - Did you find the supplementary materials (e.g. user manual and refresher notes and CD) useful?
   - Did you find it easy to get in contact with the research team members?

8. What do you think are the major hurdles to be overcome in getting the SafeCar safety systems into production vehicles?

9. Do you have any questions or any additional comments you would like to make?
Appendix Y  Subjective Acceptability Data - Results
Appendix Y  Subjective Results

This final report presents the results from all of the questionnaires administered throughout the TAC SafeCar on-road study. The questionnaires were designed to collect subjective data relating to the acceptability of the systems implemented in the SafeCar, the level of workload participants experienced while interacting with the systems, and attitudinal and other factors of interest.

Analysis plan
An inferential analysis of the differences between groups and across time enables an investigation of some important questions.

- Did the treatment and control groups differ in their ratings at baseline, prior to any subject using the ITS systems?
- For the key systems, did the ratings of the group that were exposed to the system change over time?
- If so, was it likely that this change was simply due to the passage of time? This can be tested by determining if the group who did not use the system also change their ratings across time.
- For the other systems, did the ratings change after use (i.e. across time)?

The significance level was set at the conventional level of 5% (0.05) for these analyses. However due to the relatively small number of subjects in this study and the resultant power considerations, any p-value that was less than 0.10 was considered to be of interest in highlighting possible differences that might be worth exploring in future studies.

Differences in ratings for individual items for the treatment group compared to the control group and differences across time were analysed using either parametric or non-parametric statistics.

Parametric analysis, in the form of a mixed two-way within-subjects analysis of variance (ANOVA), was undertaken for items where

- the data was on an interval scale
- there were at least five categories for response
- the responses ranged over a number of categories
- the data were normally distributed
- there was homogeneity of variance between groups

For items where the data did not meet the constraints listed above, non-parametric analysis techniques were used. Comparisons between the ratings of the treatment group and the control group were conducted separately for each questionnaire using the Wilcoxon-Mann-Whitney test. All subjects who completed the item at that particular time point were included in these between group comparisons.
To detect whether the ratings changed over time, the Wilcoxon signed ranks test for related or matched samples was conducted for comparisons across two time points (ISA and FDW) and the Friedman two-way analysis of variance by ranks was conducted where there were more than two time points (SBR, RCW, DRL). One overall test for a change in ratings across time for all subjects was conducted when there was no evidence of a difference in ratings between the groups. Where there was evidence for a difference in ratings between the treatment and control groups, the groups were considered separately. When a significant difference in ratings across the four questionnaires was found, multiple pair-wise comparisons were conducted according to the method for average ranks described in Siegel and Castellan (1988, p180).

There is one final point regarding the inferential analyses that is important to note. The multiple testing approach increases the chance of a type I error above the specified rate of 5%. This is particularly so for the non-parametric analyses, where between three and six tests might be conducted on the data for a particular questionnaire item. No correction has been made for the possibility of an inflated type I error, because for a given sample size, it is impossible to reduce the type I error rate without also decreasing the power to detect true effects. Due to the small sample size of this study, the power to detect any real differences is already quite low.

**Acceptability**

In the sections that follow, acceptability data (in terms of usefulness, effectiveness, affordability and social acceptability) are reported for all of the systems that were implemented in the TAC SafeCar. The data are presented for every questionnaire in which acceptability was assessed; at baseline (Preliminary Questionnaire Time 2), and during the three After periods (Interim Questionnaire Time 3, Interim Questionnaire Time 5 and Interim Questionnaire Time 6). Usability data are also reported, however these were only gathered at one time point.

<table>
<thead>
<tr>
<th>Group</th>
<th>Preliminary time 2</th>
<th>Interim time 3</th>
<th>Interim time 5</th>
<th>Interim time 6</th>
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<td>15</td>
<td>14</td>
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<td>11</td>
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<tr>
<td>Control</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

There was some attrition in the treatment group, but all control group participants completed each of the relevant questionnaires. For comparisons between responses at the beginning of the project compared to the start, there are 11 treatment and 8 control participants.

Full acceptability data sets are available for the following participants: 011, 022, 023, 031, 032, 033, 041, 042, 051, 052, 062, 101, 102, 103, 104, 105, 106, 107, 108.
Limited acceptability data sets are available for the following participants:
Subject 012: Dropped out prior to completing Interim time 6, therefore there are 3 complete acceptability questionnaires and one missing. (3 COMPLETE)
Subject 013: Only Preliminary time 2 was completed (1 COMPLETE)
Subject 021: Preliminary time 2 and Interim time 3 were completed, but not Interim 5 or Interim 6. (2 COMPLETE)
Subject 061: Dropped out prior to completing Interim time 6, therefore there are 3 complete acceptability questionnaires and one missing. (3 COMPLETE)

**Key systems: FDW and ISA (including Speed Request button) analysis**
All subjects received questions regarding the FDW and ISA in Preliminary questionnaire time 2 and Interim questionnaire time 6. The subjects in the treatment group also received questions regarding the FDW and ISA at Interim questionnaire time 3 and Interim questionnaire time 5, however not all subjects in the treatment group had experienced the FDW and/or ISA at these times. As such, the inferential analysis for the FDW and ISA is restricted to the responses to the Preliminary questionnaire time 2 (baseline) when neither group had experienced these systems, and Interim questionnaire time 6, after all of the treatment group had experienced these systems. Only subjects who completed both the Preliminary time 2 and Interim time 6 questionnaires are included in this analysis.

**Other systems: SBR, RCW, DRL**
All subjects received questions regarding the SBR, RCW and DRL in each of the four acceptability questionnaires. The analysis for these systems thus includes data from all four questionnaires. Only subjects who completed all of the acceptability questionnaires are included in these comparisons.
Intelligent Speed Adaptation

Usefulness

Baseline questions (All subjects included – even those who did not answer further acceptability questionnaires)

1. When driving, how often would you exceed the speed limit by 3km/h or more?

All of the control group subjects (8, 100%) reported that they sometimes exceed the speed limit by 3km/h or more. In the treatment group, seven subjects (46.7%) also report sometimes exceeding the speed limit by 3 km/h or more, six (40%) reported often, one (6.7%) reported rarely and one (6.7%) reported never doing so.

There was no significant difference between groups in how often they reported exceeding the speed limit by 3km/h or more (z=1.23, p=0.22).

Subjects who reported rarely, sometimes, often or always exceeding the speed limit by 3km/h or more (22 subjects, 95.7%) were asked their main reason for doing so.

Subjects who chose the other response (one subject in the control group) were asked to specify why. Their reason was:

• to remove myself from dangerous situations.

There was no difference between the treatment and control groups in terms of the main reason chosen for exceeding the speed limit by 3km/h or more ($\chi^2(5)=8.11$, p=0.15).
<table>
<thead>
<tr>
<th>Reason</th>
<th>Treatment group (%)</th>
<th>Control group (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I don’t notice I’m speeding</td>
<td>3 (21.4)</td>
<td>4 (50)</td>
<td>7 (31.8)</td>
</tr>
<tr>
<td>Cars around me carry me over the speed limit</td>
<td>1 (7.1)</td>
<td>0</td>
<td>1 (4.6)</td>
</tr>
<tr>
<td>The speed limit is too low</td>
<td>1 (7.1)</td>
<td>0</td>
<td>1 (4.6)</td>
</tr>
<tr>
<td>I aim to travel at the speed limit but occasionally I edge over before reducing my speed again</td>
<td>6 (42.3)</td>
<td>0</td>
<td>6 (27.3)</td>
</tr>
<tr>
<td>Other</td>
<td>1 (12.5)</td>
<td></td>
<td>1 (4.6)</td>
</tr>
<tr>
<td>Missing (did not answer)</td>
<td>3 (21.4)</td>
<td>3 (37.5)</td>
<td>6 (27.3)</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>8</td>
<td>22</td>
</tr>
</tbody>
</table>
Questions asked in all questionnaires
1. To what extent do you feel that the ISA will be of use to you?

![Histograms of the percent of responses in each category, by group. (0=no use, 5=always of use)](image)

Figure 2. Histograms of the percent of responses in each category, by group. (0=no use, 5=always of use)

At the beginning of the project when neither group had yet experienced ISA, (Preliminary questionnaire time 2), a large proportion of subjects rated the system as “always of use” Ratings ranged from 2 to 5. The treatment group’s mean rating was 4.36 (1.03), while that of the control group was 3.88 (1.13).

At the end of the project, when the treatment group had used ISA but the control group had not, the mean rating in the treatment group decreased to 3.27 (2.00), and the distribution of responses changed somewhat. Although a large proportion of subjects still believed the system to be always of use (45.5%), there were some subjects who now felt the system would be of no use (18.2%). The mean rating for the control group also decreased, to 2.86 (1.77), and like the treatment group, the distribution of responses changed.

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.01, p=0.92), and no difference between the treatment group and control group
in terms of how useful they thought ISA would be to them (F(1, 17)=0.61, p=0.44). However, there was a significant change in ratings over time (F(1, 16)=5.14, p=0.038). Subjects rated the system as less useful at the end of the study compared to the beginning, regardless of whether they were exposed to the system or not.

The three subjects who rated the system as being of no use (zero) in the Interim time 6 questionnaire were asked to specify why. Their reasons were as follows:

Treatment group:
- every car exceeds the speed limit around you
- margin above limit too low

Control group
- it is the driver’s responsibility to drive at appropriate speeds for conditions

Another subject also chose to answer this question, even though they had given a rating of 2 for the usefulness of the system. The reason was:
- system has too many inaccuracies with GPS
3. To what extent do you agree or disagree with each of the following statements?

a. Receiving warnings from the ISA system for exceeding the speed limit will be really helpful in areas where there are lots of pedestrians, such as in strip shopping centres or outside schools.

```
<table>
<thead>
<tr>
<th></th>
<th>treatment</th>
<th>control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>10</td>
<td>0</td>
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</tr>
<tr>
<td>4</td>
<td>50</td>
<td>40</td>
</tr>
</tbody>
</table>
```

Figure 3. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.03, p=0.85), and no difference between the treatment group and control group (F(1, 17)=1.25, p=0.28). There was also no significant change in ratings over time (F(1, 16)=2.45, p=0.14).

The mean rating at the beginning of the project was 2.79 (sd=0.79), and at the end was 2.44 (sd=1.20), which both lie between “neither agree nor disagree” and “agree”.


b. Warnings from the ISA system are unnecessary in 60km/h zones

The responses to this item ranged from strongly disagree to strongly agree, with the majority of subjects disagreeing (Preliminary time 2, 68.4%; Interim time 6, 44.4%) or strongly disagreeing (Preliminary time 2, 15.8%; Interim time 6, 38.9%). Only a small proportion of subjects agreed (or strongly agreed) that ISA warnings are unnecessary in 60km/h zones (Preliminary time 2, 3 subjects, 15.8%; Interim time 6, 1 subject, 5.6%).

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, \(z=-0.05\), \(p=0.96\); Interim time 6, \(z=-0.29\) \(p=0.77\)).

There was a significant difference in the ratings across time (\(z=2.16\), \(p=0.03\)). Although the median ratings did not differ across time (1=disagree), the mean ratings changed from 1.26 to 0.83. From figure 4, it can be seen that there was an increase in the number of subjects who strongly disagreed, and a decrease in the number who agreed in the final questionnaire compared to the initial questionnaire.
d. There is no need for the ISA system when travelling on the freeway.

None of the subjects agreed that there was no need to for ISA system when travelling on the freeway. The majority of subjects disagreed (Preliminary time 2, 63.2%; Interim time 6, 61.1%). The mean rating was 0.84 in the initial questionnaire and 0.83 for the final questionnaire (between strongly disagree and disagree).

There was no significant interaction between treatment group and questionnaire (F(1,16)=1.11, p=0.31), and no difference between the treatment group and control group (F(1, 17)=1.52, p=0.23). There was also no significant change in ratings over time (F(1, 16)=0.02, p=0.88).

Figure 5. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)
There is no need for the ISA system when travelling on rural roads.

None of the subjects agreed that there was no need to for ISA system when travelling on rural roads. The majority of subjects disagreed (Preliminary time 2, 73.79%; Interim time 6, 50.0%). The proportion of subjects who strongly disagreed increased from 21.1% to 38.9% across time. The mean rating was 0.84 in the initial questionnaire and 0.72 for the final questionnaire (between strongly disagree and disagree).

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.59, p=0.45), and no difference between the treatment group and control group (F(1, 17)=0.36, p=0.56). There was also no significant change in ratings over time (F(1, 16)=0.57, p=0.46).
f. Receiving warnings from the ISA system for exceeding the speed limit in 100km/h zones is unnecessary.

None of the subjects agreed that warnings from the ISA system were unnecessary in 100km/h zones. The majority of subjects disagreed (Preliminary time 2, 68.4%; Interim time 6, 50.0%). The proportion of subjects who strongly disagreed increased from 21.1% to 38.9% across time. The mean rating was 0.89 in the initial questionnaire and 0.72 for the final questionnaire (between strongly disagree and disagree).

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.02, p=0.88), and no difference between the treatment group and control group (F(1, 17)=2.03, p=0.17). There was also no significant change in ratings over time (F(1, 16)=0.48, p=0.50).
The majority of subjects agreed that warnings from the ISA system were unnecessary in 50km/h zones (Preliminary time 2, 57.9%; Interim time 6, 38.9%). Only a small proportion disagreed or strongly disagreed with this statement (Preliminary time 2, 15.8%; Interim time 6, 16.7%). The median rating given in both questionnaires was 3 (agree).

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, z=0.65, p=0.52; Interim time 6, z=0.48, p=0.63). There was also no significant difference in ratings across time (z=-0.10, p=0.92).
There is a need for the ISA system when road conditions are poor (e.g. slippery road, poor visibility).

There was a wide range of responses to this item, ranging from strongly disagree to strongly agree. The mean rating given in the Preliminary time 2 questionnaire was 2.58 (sd=1.07), and in the Interim time 6 questionnaire was 2.33 (sd=1.24). These mean ratings lie between neither agree nor disagree and agree.

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.57, p=0.46). There was no evidence of a difference in ratings between the groups (F(1,17)=0.05, p=0.82), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.60, p=0.45).
None of the subjects agreed that warnings from the ISA system were unnecessary when there are hardly any other cars on the road. The majority of subjects disagreed (Preliminary time 2, 68.4%; Interim time 6, 55.6%). The mean rating was 0.79 (sd=0.54) for Preliminary questionnaire time 2, and 0.89 (0.68) for Interim questionnaire time 6, which lie between strongly disagree and disagree.

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.30, p=0.59). There was no evidence of a difference in ratings between the groups (F(1,17)=1.34, p=0.26), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.31, p=0.58).
j. The ISA system will be of most benefit to drivers who repeatedly exceed the speed limit without realising it.

<table>
<thead>
<tr>
<th></th>
<th>Preliminary time 2</th>
<th>Interim time 6</th>
</tr>
</thead>
<tbody>
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<td><img src="image" alt="Histogram" /></td>
</tr>
<tr>
<td>control</td>
<td><img src="image" alt="Histogram" /></td>
<td><img src="image" alt="Histogram" /></td>
</tr>
</tbody>
</table>

Figure 11. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

In the initial questionnaire all subjects in the treatment group agreed (63.6%) or strongly agreed (36.4%) that the ISA system will be of most benefit to drivers who repeatedly exceed the speed limit without realising it. Similarly, most subjects in the control group agreed (37.5%) or strongly agreed (37.5%), however the remaining 25% of subjects in the control group were split between “disagree” and “neither agree nor disagree”.

By the end of the study and after experiencing the ISA system, there was a decrease in the proportion of subjects in the treatment group who agreed (45.5%, reduction of 18.1%) or strongly agreed (18.2%, reduction of 18.2%). There was a corresponding 18.2% increase in the both the “disagree” and “neither agree nor disagree” options for the treatment group. The majority of the control group chose “agree” (57.1%) or “strongly agree” (14.3%), with the remaining 28.6% disagreeing that the ISA system will be of most benefit to drivers who repeatedly exceed the speed limit without realising it.
There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, $z=0.60$, $p=0.55$; Interim time 6, $z=0.05$, $p=0.96$).

There was a significant difference in the ratings across time ($z=2.80$, $p=0.005$). Although the median ratings did not change over time ($3=\text{agree}$), there was a change in the mean ratings, from 3.21 (between agree and strongly agree) to 2.61 (between neither agree nor disagree and agree). Thus subjects’ level of agreement with this statement decreased over time.

**k. Warnings from the ISA system are unnecessary in 80 km/h zones**

![Figure 12. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)](image)

Most subjects disagreed (Preliminary time 2, 68.4%; Interim time 6, 44.4%) or strongly disagreed (Preliminary time 2, 21.1%; Interim time 6, 44.4%) that warnings from the ISA were not necessary in 80km/h zones.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, $z=0.20$, $p=0.84$; Interim time 6, $z=-0.25$, $p=0.80$). There was some evidence for a change in ratings across time, although this did not reach the conventional 5% level of significance ($z=1.73$, $p=0.08$).
Effectiveness

3. To what extent do you agree or disagree with each of the following statements?
c. I will drive more safely with the ISA system in my car.

For both the treatment and control groups the responses at the initial questionnaire ranged from strongly disagree to strongly agree. At the final questionnaire, the treatment group’s responses still varied from disagree to strongly disagree, with 54.6% agreeing. 71.4% percent of the control group chose “agree”, which was an increase of 46.4% compared to the beginning of the project.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, $z=0.86$, $p=0.39$; Interim time 6, $z=0.05$, $p=0.96$). There was also no significant difference in ratings across time ($z=-0.21$, $p=0.83$).
The ISA system is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Ballarat and Bendigo.

Most subjects disagreed that the ISA system would be of little use to them because of its coverage limitations (Preliminary time 2, 63.2%; Interim time 6, 61.1%). No subjects agreed with this statement.

There was no significant interaction between treatment group and questionnaire (F(1,16)=3.22, p=0.09). There was no evidence of a difference in ratings between the groups (F(1,17)=0.00, p=0.95), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.97, p=0.34).

Although the p-value for the interaction did not reach the 5% level of significance, it was below 0.10, and thus may be of interest. Investigating the interaction between group and
questionnaire involves looking at the change in ratings across time for the treatment group compared to the change in ratings across time for the control group. There was some evidence for an increase in the mean rating for the treatment group over time ($t(11)=-2.19, p=0.05$), however there was no significant change in the mean rating for the control group ($p>.10$) (refer to figure below).
m. The ISA system will be wasted on drivers who speed intentionally – these drivers will ignore or override the warnings.

There was a range of responses to this statement, from strongly disagree to strongly agree. The mean rating for the responses to this item in the Preliminary time 2 questionnaire was 2.05 (sd=1.13), and the mean rating for the Interim time 6 questionnaire was 2.44 (sd=1.04).

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.18, p=0.68). There was no evidence of a difference in ratings between the groups (F(1,17)=0.36, p=0.56), nor was there any evidence of a change in opinion over the time period (F(1,16)=1.85, p=0.19).
After having driven the car with the ISA system, I will probably be less likely to exceed the speed limit when driving a car that is not fitted with an ISA system.

Subjects’ responses varied as to whether or not they would be less likely to exceed the speed limit when driving a car that is not fitted with ISA. The mean rating at the beginning of the study was 2.53 (0.77) and at the end was 2.33 (0.84), which both lie between “agree” and “neither agree nor disagree”.

There was no significant interaction between treatment group and questionnaire (F(1,16)=1.54, p=0.13). There was no evidence of a difference in ratings between the groups (F(1,17)=0.60, p=0.45), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.33, p=0.57).
I will be able to concentrate more on the traffic when the ISA system is enabled than when it is not because I will not have to look out for speed signs.

Figure 17. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

Subjects’ responses varied as to whether or not they would be able to concentrate more on the traffic when the ISA is enabled because they would not have to watch out for speed signs. The mean rating was 1.58 (1.07) for Preliminary questionnaire time 2, and 1.72 (1.02) for Interim questionnaire time 6, which lie between “disagree” and “neither agree nor disagree”.

The interaction between treatment group and questionnaire was not significant (F(1,16)=1.81, p=0.20). There was no evidence of a difference in ratings between the groups (F(1,17)=0.0, p=0.999), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.04, p=0.85).
q. The warnings of the ISA could distract me from my driving, compromising my safety and that of any passengers that I might be carrying.

Responses to this statement varied mainly from disagree to agree. The mean rating for this item at the initial questionnaire was 1.47 (sd=0.77) and at the final questionnaire was 1.56 (sd=0.70).

The interaction between treatment group and questionnaire was not significant (F(1,16)=0.25, p=0.63). There was no evidence of a change in opinion over the time period (F(1,1)=0.25, p=0.63).

There was a significant difference in ratings between the groups (F(1,17)=4.83, p=0.04). The mean rating for the treatment group (1.27, sd=0.63) was lower than the mean rating for the control group (1.87, sd=0.74). Both of these ratings lie between “disagree” and
“neither agree nor disagree”, but the treatment group disagreed with this statement more than the control group.

r. The ISA system will allow me to spend more time attending to the traffic because I will not have to look as much at the speedometer to monitor my speed.

![Histograms of percent of responses in each category, by group.](image)

The responses of the treatment group to this statement ranged from strongly disagree to strongly agree in both questionnaires (i.e. before and after experiencing the ISA system). For the control group on the other hand, at the beginning of the project, 62.5% of subjects disagreed with this statement, with the remaining 37.5% split evenly between strongly agree, agree and neither agree nor disagree. At the end of the study however, the proportion that disagreed or strongly disagreed had reduced to 42.9%, while the other 57.1% agreed.

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.13, p=0.72). There was no evidence of a difference in ratings between the
groups (F(1,17)=0.01, p=0.91), nor was there any evidence of a change in opinion over
the time period (F(1,16)=0.12, p=0.73).

s. I will lose trust in the ISA system if it issues false warnings.

![Histograms of the percent of responses in each category, by group.](image)

Figure 20. Histograms of the percent of responses in each category, by group.
(0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly
agree)

The responses to the statement “I will lose trust in the ISA system if it issues false
warnings” ranged from disagree to strongly agree. The category with the highest
proportion of responses was agree (Preliminary time 2, 57.9%; Interim time 6, 50.0%).
The mean ratings lay between “neither agree nor disagree” and “agree” (Preliminary time
2, 2.74 (sd=0.93), Interim time 6, 2.78 (sd=1.00).

The interaction between treatment group and questionnaire was not significant
(F(1,16)=0.20, p=0.66). There was no evidence of a difference in ratings between the
groups (F(1,17)=0.09, p=0.76), nor was there any evidence of a change in opinion over
the time period (F(1,16)=0.20, p=0.66).
t. I will end up relying too strongly on the ISA system to let me know if I am exceeding the speed limit at the expense of my own judgement.

![Histograms](image)

Figure 21. Histograms of the percent of responses in each category, by group.

(0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

The majority of treatment group subjects disagreed that they would rely too strongly on the ISA to let them know they were speeding (72.7% in both questionnaires). The responses of the control group were split quite evenly between agree and disagree (with a proportion neither agreeing nor disagreeing).

There was a significant difference in ratings between the groups at both the initial questionnaire ($z=-2.32$, $p=0.02$) and some evidence for a difference in ratings between groups in the last acceptability questionnaire ($z=-1.82$, $p=0.07$). The median rating for the treatment group was “disagree” while that for the control group was “neither agree nor disagree”.

There was no change in ratings across time for either the treatment group ($z=0.84$, $p=0.40$) or the control group ($z=0.58$, $p=0.56$).
u. I will lose faith in the ISA system if it does not issue warnings when it should.

A large proportion of subjects agreed that they would lose faith in the ISA system if it failed to issue warnings when it should (Preliminary time 2, 57.9%; Interim time 6, 50.0%). There was a range of responses to this statement, from disagree to strongly agree.

The interaction between treatment group and questionnaire was not significant (F(1,16)=0.0, p=1.0). There was no evidence of a difference in ratings between the groups (F(1,17)=0.07, p=0.80), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.0, p=1.0).
4. For most drivers what effect on travel speed will the ISA system have in each of the following areas/conditions?

a. 50km/h zone

![Histograms of percent responses in each category, by group.](image)

Most subjects felt that the ISA system would decrease travel speeds in 50km/h zones (Preliminary time 2, 84.2%; Interim time 6, 83.3%). No subject rated the ISA system as likely to increase speeds in 50km/h zones.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, $z=1.31$, $p=0.19$; Interim time 6, $z=-0.30$, $p=0.76$). There was also no significant difference in ratings across time ($z=1.41$, $p=0.16$).
b. 60 km/h zone

![Histograms of the percent of responses in each category, by group.](image)

Most subjects felt that the ISA system would decrease travel speeds in 60km/h zones (Preliminary time 2, 89.5%; Interim time 6, 83.3%). No subject rated the ISA system as likely to increase speeds in 60km/h zones.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, z=0.33, p=0.74; Interim time 6, z=-0.30, p=0.76). There was also no significant difference in ratings across time (z=1.41, p=0.16).
Most subjects felt that the ISA system would decrease travel speeds in 80km/h zones (Preliminary time 2, 79.0%; Interim time 6, 83.3%). No subject rated the ISA system as likely to increase speeds in 80km/h zones.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, z=0.50, p=0.62; Interim time 6, z=-0.30, p=0.76). There was also no significant difference in ratings across time (z=-0.82, p=0.41).
Most subjects felt that the ISA system would decrease travel speeds in 100km/h zones (Preliminary time 2, 84.2%; Interim time 6, 77.8%). No subject rated the ISA system as likely to increase speeds in 100km/h zones.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, $z=-0.47$, $p=0.64$; Interim time 6, $z=-0.90$, $p=0.37$). There was also no significant difference in ratings across time ($z=0.82$, $p=0.41$).
e. Freeways

Figure 27. Histograms of the percent of responses in each category, by group. (0=increase speed, 1= no change, 2=decrease speed)

Most subjects felt that the ISA system would decrease travel speeds on freeways (Preliminary time 2, 68.4%; Interim time 6, 66.7%). No subject rated the ISA system as likely to increase speeds on freeways.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, z=0.66, p=0.51; Interim time 6, z=0.95, p=0.34). There was also no significant difference in ratings across time (z=0.54, p=0.591).
Most subjects felt that the ISA system would decrease travel speeds on rural roads (Preliminary time 2, 63.2%; Interim time 6, 61.1%). No subject rated the ISA system as likely to increase speeds on rural roads.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, z=0.07, p=0.94; Interim time 6, z=0.38, p=0.70). There was also no significant difference in ratings across time (z=0.54, p=0.59).
Most subjects felt that the ISA system would decrease travel speeds on residential roads (Preliminary time 2, 89.5%; Interim time 6, 83.3%). No subject rated the ISA system as likely to increase speeds on residential roads.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, z=-0.33, p=0.74; Interim time 6, z=-0.30, p=0.76). There was also no significant difference in ratings across time (z=1.41, p=0.16).
h. Low traffic levels

None of the subjects rated the ISA system as likely to increase speed in low traffic level conditions. At the beginning of the study, the majority of treatment group subjects believed it would decrease travel speeds (72.7%) whereas most of the control group subjects believed it would cause no change (62.5%). At the end of the study, the proportion of subjects who believed it would decrease speed had increased for both the treatment group (81.8%, increase of 9.1%) and the control group (57.1%, increase of 19.6%).

There was a significant difference between the treatment and control groups rankings at the Preliminary time 2 questionnaire ($z=2.14, p=0.03$), at which time the majority of the treatment group thought travel speeds would decrease, while the majority of control group subjects thought travel speeds would not change. However, this difference between groups was not present at the Interim time 6 questionnaire ($z=1.59, p=0.11$). There was
no significant difference in ratings across time for either the treatment group or the control group (both groups: $z=-0.82$, $p=0.41$).

i. Poor road conditions.

None of the subjects rated the ISA system as likely to increase speed in poor road conditions. At the beginning of the study, 72.7% of the treatment group and 50% of the control group subjects rated the system as likely to decrease speed in these conditions, while the other 27.3% of the treatment group and 50% of the control group thought there would be no change in speed. After experiencing the ISA system, the ratings for the treatment group didn’t change much; they were split almost equally between thinking ISA would cause no change and thinking it would decrease speeds in poor road conditions. In contrast, the subjects who did not have experience with the system rated it slightly more favourably than they had previously. At that time, 57.1% of the control
group subjects rated the system as likely to decrease speed in poor road conditions, while 42.3% thought there would be no change.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, \(z=1.42, p=0.16\); Interim time 6, \(z=-0.15, p=0.88\)). There was also no significant difference in ratings across time (\(z=1.16, p=0.25\)).

5. What effect on travel speed will the ISA system have on drivers who exceed the speed limit for the following reasons?

a. Speed inadvertently

Most subjects felt that the ISA system would decrease travel speeds of drivers who speed inadvertently (Preliminary time 2, 94.7%; Interim time 6, 94.4%). No subject rated the ISA system as likely to increase speeds for these drivers.
There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, \(z=-1.22, p=0.22\); Interim time 6, \(z=-1.15, p=0.25\)). For the subjects who completed both questionnaires, their ratings were exactly the same across time, and so it was impossible to calculate the signed ranks test, but clearly this means there was no difference across time.

**b. Speed for fun**

![Histograms of the percent of responses in each category, by group.](image)

Figure 33. Histograms of the percent of responses in each category, by group. (0=increase speed, 1= no change, 2=decrease speed)

Most subjects felt that the ISA system would lead to no change in speed for drivers who speed for fun (Preliminary time 2, 84.2%; Interim time 6, 77.8%). Two subjects in the control group (14.3% of the control group) rated the ISA system as likely to increase speeds for these drivers, at the end of the project.
There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, $z=-1.31$, $p=0.19$; Interim time 6, $z=-0.45$, $p=0.65$). There was also no significant difference in ratings across time ($z=0.06$, $p=0.95$).

c. Believe it is safe to speed

![Histograms of the percent of responses in each category, by group.](image)

Figure 34. Histograms of the percent of responses in each category, by group. (0=increase speed, 1=no change, 2=decrease speed)

Most subjects felt that the ISA system would lead to no change in speed for drivers who believe it is safe to speed (Preliminary time 2, 68.4%; Interim time 6, 77.8%). No subject rated the ISA system as likely to increase speeds for these drivers.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, $z=-0.66$, $p=0.51$; Interim time 6, $z=-0.72$, $p=0.47$). There was also no significant difference in ratings across time ($z=1.41$, $p=0.16$).
d. In a hurry

Approximately 70% of the treatment group (72.7% at Preliminary time 2 and 63.6% at Interim time 6) felt that the ISA system would not change travel speed for drivers in a hurry. A large proportion of the control group agreed (50% at Preliminary time 2, 71.4% at Interim time 6). No subject rated the ISA system as likely to increase speeds for drivers in a hurry.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, $z=-1.42$, $p=0.16$; Interim time 6, $z=0.48$, $p=0.63$). There was also no significant difference in ratings across time ($z=0.82$, $p=0.41$).
e. Believe they won’t get caught/fined for speeding

No subject rated the ISA system as likely to increase speeds for drivers who believe they won’t get caught or fined for speeding. 72.7% of the treatment group believed that speeds would not change for these drivers (at both questionnaires), as did 50% of the control group in Preliminary questionnaire time 2 and 71.4% at Interim questionnaire time 6.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, $z=-1.42$, $p=0.16$; Interim time 6, $z=-0.08$, $p=0.93$). There was a significant difference in ratings across time ($z=2.00$, $p=0.045$), with an increase in the proportion that believed there would be no change.
Most of the subjects in the treatment group believed the ISA system would not change speeds for drivers who believe they shouldn’t have to follow speed limits (Preliminary time 2, 81.8%; Interim time 6, 72.7%). Half of the control group rated the ISA as likely to cause no change to speeds for these drivers at Preliminary time 2, while the other half thought speeds would decrease. At Interim time 6, these proportions had changed to 71.4% and 28.6% respectively.

There was a significant difference between the ratings given by the treatment and control groups at Preliminary time 2 ($z=-2.06$, $p=0.04$), but not at Interim time 6 ($z=-0.08$, $p=0.93$). There was no significant difference in ratings across time for the treatment group ($z=-1.41$, $p=0.16$), however the control group did change their ratings over time ($z=2.00$, $p=0.045$).
g. Believe they can control their car safely at any speed

Most of the subjects believed the ISA system would not change speeds of drivers who believe they can control their car safely at any speed (Preliminary time 2, 63.2%; Interim time 6, 72.2%). The remaining subjects believed the ISA system would decrease speeds for these drivers.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, \( z = -0.07, p = 0.94 \); Interim time 6, \( z = -0.08, p = 0.93 \). There was also no significant difference in ratings across time (\( z = 1.41, p = 0.16 \)).
Most of the subjects in the treatment group believed the ISA system would not change speeds of drivers who believe the speed limit is too low (Preliminary time 2, 63.6%; Interim time 6, 72%). Half of the control group rated the ISA as likely to cause no change to speeds for these drivers at Preliminary time 2, while the other half thought speeds would decrease. At Interim time 6, these proportions had changed to 71.4% and 28.6% respectively. No subject rated the ISA system as likely to increase speeds for these drivers.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, \( z=-0.83, \ p=0.41 \); Interim time 6, \( z=-0.08, \ p=0.93 \)). There was some significant difference in ratings across time (\( z=1.90, \ p=0.06 \)), although this did not reach the conventional 5% level of significance. There was a decrease in the
proportion of participants who believed speeds would decrease, and an increase in the proportion that thought speeds would not change.

i. Carried over the speed limit by other cars

![Histograms of the percent of responses in each category, by group.](image)

Most of the subjects believed the ISA system would decrease speeds for drivers who are carried over the speed limit by other cars (Preliminary time 2, 89.5%; Interim time 6, 77.8%). The remaining subjects believed the ISA system would lead to no change in speeds for these drivers.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, z=0.33, p=0.74; Interim time 6, z=0.72, p=0.47). There was a significant difference in ratings over time (z=2.45, p=0.01). Again, there was a reduction in the proportion of participants who thought that travel speeds would
decrease, and an increase in the proportion who believed that travel speeds would not change.

**j. Aim to travel at the speed limit, but occasionally edge over before reducing speed again**

![Histograms of the percent of responses in each category, by group. (0=increase speed, 1= no change, 2=decrease speed)](image)

Most of the subjects believed the ISA system would decrease speeds for drivers who aim to travel at the speed limit but occasionally edge over before reducing speed again (Preliminary time 2, 94.7%; Interim time 6, 83.3%). The remaining subjects believed the ISA system would lead to no change in speeds for these drivers.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, \( z=-1.22, p=0.22 \); Interim time 6, \( z=-0.30, p=0.76 \)). There was however, a significant difference in ratings across time (\( z=2.00, p=0.045 \)), with a decrease in the proportion who thought travel speeds would decrease, and a
corresponding increase in the proportion who thought there would be no change in travel speeds.

6. What effect will the ISA system have on each of the following?

a. Incidence of crashes

Most of the subjects believed the ISA system would decrease the incidence of crashes (Preliminary time 2, 89.5%; Interim time 6, 77.8%). The remaining subjects believed the ISA system would lead to no change in the incidence of crashes.

There was a significant difference between the ratings given by the groups at Preliminary time 2 (z=2.45, p=0.01) when all of the treatment group believed the incidence of crashes would decrease, compared to only 75% of the control group. However, this difference disappeared by Interim time 6 (z=-0.90, p=0.37).
There was a significant change in ratings over time for participants in the treatment group ($z=2.45, p=0.01$), with a 27% reduction over time in the proportion that thought crash incidence would decrease. For the subjects in the control group who answered this question in both questionnaires, none changed their responses over time, and so the statistical test could not be computed.

**b. Crash severity**

![Histograms of percent of responses in each category, by group.](image)

Most of the subjects believed the ISA system would decrease the severity of crashes (Preliminary time 2, 89.5%; Interim time 6, 77.8%). The remaining subjects believed the ISA system would lead to no change in crash severity.

There was a significant difference between the ratings given by the groups at Preliminary time 2 ($z=2.45, p=0.01$) when all of the treatment group believed the severity of crashes
would decrease, compared to only 75% of the control group. However, this difference disappeared by Interim time 6 ($z=-0.90$, $p=0.37$).

There was a significant change in ratings over time for participants in the treatment group ($z=2.45$, $p=0.01$), with a 27% reduction over time in the proportion that thought crash severity would decrease. For the subjects in the control group who answered this question in both questionnaires, none changed their responses over time, and so the statistical test could not be computed.

c. Fuel consumption

![Histograms of percent of responses in each category by group](image)

Figure 44. Histograms of the percent of responses in each category, by group.

(0=increase, 1= no change, 2=decrease)

Most drivers believed that the ISA system would reduce fuel consumption (Preliminary time 2, 73.7%; Interim time 6, 55.6%). All of the remaining drivers believed it would cause no change to fuel consumption, apart from two subjects in the treatment group in the initial questionnaire (9.1%) who rated it as likely to increase fuel consumption.
There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, $z=1.08$, $p=0.28$; Interim time 6, $z=1.21$, $p=0.23$). There was a significant difference in ratings across time ($z=2.11$, $p=0.03$) with a reduction in the proportion of participants who believed that fuel consumption would decrease, and an increase in the proportion who believed it would not change.

**d. Travel time**

![Histograms of the percent of responses in each category, by group.](image)

Most subjects believed the ISA system would not change travel time (Preliminary time 2, 63.2%, Interim time 6, 72.2%). At the beginning of the project, the remaining subjects were split between rating the system as likely to increase travel times (21.1%) or decrease travel times (15.8%). By the end of the project however, all of the subjects who did not think that travel times would not change rated the system as likely to increase travel times (27.8%).
There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, $z$=-0.41, $p=0.68$; Interim time 6, $z=0.08$, $p=0.93$). There was, however, a significant difference in ratings across time ($z=2.31$, $p=0.02$).

e. Probability of being fined.

![Histograms](image)

Figure 46. Histograms of the percent of responses in each category, by group. (0=increase, 1= no change, 2=decrease)

All of the treatment group subjects at the beginning of the project believed that the ISA system would reduce the probability of being fined. After experiencing the system, this was reduced to 81.8%, while the remaining 18.2% believed there would be no change. Most of the control group subjects also believed that the risk of being fined would be reduced (Preliminary time 2, 75.0%; Interim time 6, 57.1%). For the preliminary time 2 questionnaire, the remaining 25% believed there would be no change in the probability of being fined, while about two-thirds of the remaining 40% (28.6%) of subjects in the Interim time 6 questionnaire rated the system as unlikely to change the probability of receiving a fine, and the other third (14.3%) thinking it would increase the probability of a fine.
There was a significant difference between the ratings of the treatment group and the control group at the beginning of the project \((z=2.45, p=0.01)\), when all of the treatment group believed the system would reduce the probability of a fine, compared with 75% of the control group. There was also some evidence for a difference between groups at the end of the project \((z=1.74, p=0.08)\), when the proportion who believed the system would reduce the probability of a fine was still higher in the treatment group compared to the control group.

There was a significant difference in ratings across time for both the treatment group \((z=2.00, p=0.045)\) and the control group \((z=1.99, p=0.046)\). In both groups there was a reduction over time in the proportion of participants who believed the ISA system would decrease the probability of a fine.

Social Acceptability

To what extent do you agree or disagree with the following statements?

- 0. The enjoyment of driving will decrease as a result of driving with the ISA system

Figure 47. Histograms of the percent of responses in each category, by group. 
(0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)
Subjects’ responses to this statement ranged from strongly disagree (0) to agree (3). The mean rating in the initial questionnaire was 1.32 (sd=0.75). The mean rating in the final questionnaire was 1.44 (sd=0.98). Both of these mean ratings lie between “disagree” and “neither agree nor disagree”.

The interaction between treatment group and questionnaire was not significant (F(1,16)=0.90, p=0.36). There was no evidence of a difference in ratings between the groups (F(1,17)=0.70, p=0.41), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.19, p=0.67).

v. The ISA system should be compulsory for all drivers.

![Histograms of the percent of responses in each category, by group.](image)

Figure 48. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

Subjects’ responses to this statement ranged from strongly disagree (0) to strongly agree (4). The mean rating for the initial questionnaire was 2.21 (sd=1.23) and for the final
The interaction between treatment group and questionnaire was not significant (F(1,16)=0.04, p=0.84). There was no evidence of a difference in ratings between the groups (F(1,17)=0.28, p=0.60), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.05, p=0.83).

The ISA system should only be compulsory for drivers who have been booked on multiple occasions for exceeding the speed limit.

Figure 49. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

Subjects’ responses to this statement ranged from strongly disagree (0) to strongly agree (4). The most common response in the treatment group was to disagree that the ISA system should only be compulsory for drivers who have been booked on multiple occasions for exceeding the speed limit (Preliminary time 2, 36.4%; Interim time 6,
63.6%). This was also the most common response for the control group at the beginning of the project (50%), however by the end of the project, the response “agree” was as common as “disagree” for the control group (both 28.6%).

The mean rating for the Preliminary time 2 questionnaire was 1.58 (sd=1.22) which was similar to the mean rating at the Interim time 6 questionnaire, 1.67 (sd=1.24).

There was no significant interaction between group and time on the ratings of this statement (F(1,16)=2.21, p=0.16). There was no evidence of a difference in ratings between the groups (F(1,17)=0.00, p=0.96), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.20, p=0.66).

x. The ISA system takes too much control away from the driver.

Figure 50. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)
No subject agreed with this statement. Approximately a quarter of the participants neither agreed nor disagreed (Preliminary time 2: 26.3%; Interim time 6: 27.8%), while the remaining subjects disagreed or strongly disagreed.

The interaction between treatment group and questionnaire was not significant (F(1,16)=0.62, p=0.44). There was no evidence of a difference in ratings between the groups (F(1,17)=2.45, p=0.14), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.66, p=0.43).

y. Rather than a system that simply warns the driver, I would prefer an ISA system that made it impossible for the driver to exceed the speed limit

![Figure 51. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)](image)

Subjects’ responses to this statement ranged from strongly disagree (0) to strongly agree (4). The median rating in both questionnaires was “disagree”.
There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, \(z=-0.44, p=0.66\); Interim time 6, \(z=-0.58, p=0.56\)). There was also no significant difference in ratings across time (\(z=0.92, p=0.36\)).

z. It would not bother me if the ISA system were used as a device by authorities to monitor and track car speeds and locations on the road network.

![Histograms of the percent of responses in each category, by group.](image)

Figure 52. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

Subjects’ responses to this statement ranged from strongly disagree (0) to strongly agree (4). The mean rating for the initial questionnaire was 1.42 (sd=1.30) while that for the final questionnaire was 1.78 (sd=1.17). Both of these ratings lie between disagree and neither agree nor disagree.

The interaction between treatment group and questionnaire was not significant (\(F(1,16)=1.37, p=0.26\)). There was no evidence of a difference in ratings between the
groups (F(1,17)=0.51, p=0.48), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.51, p=0.48).

aa. I would prefer an ISA system that I could turn on or off as required depending on the situation (e.g. turn off in a hurry, or turn on if travelling on a road where I know that there are speed cameras)

![Figure 53. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)](image)

Subjects’ responses to this statement ranged from strongly disagree (0) to agree (3). The mean rating for the initial questionnaire was 1.37 (sd=0.83), while for the final questionnaire it was 1.17, disagree (sd=0.86). These mean ratings lie between “disagree” and “neither agree nor disagree”.

The interaction between treatment group and questionnaire was not significant (F(1,16)=0.13, p=0.73). There was no evidence of a difference in ratings between the groups (F(1,17)=0.06, p=0.81), nor was there any evidence of a change in opinion over the time period (F(1,16)=1.34, p=0.26).
Affordability

7. How much would you be willing to pay for the ISA system if it were an optional feature in a new car?

Subjects reported being willing to pay between zero and $1000 for purchase of the ISA as part of a new car, however most subjects reported values between zero and $500. The median price that subjects were willing to pay at the beginning of the project was $120 for the treatment group and $250 for the control group. By the project’s conclusion, the median value that both groups were willing to pay was $200.

Statistical tests revealed no significant difference was found between groups in terms of how much they were willing to pay for the ISA system as an optional feature in a new car (Preliminary time 2, \( z=-0.41, p=0.68 \); Interim time 6, \( z=-0.56, p=0.58 \)). There was also no evidence of a change in the amount subjects were willing to pay across time (\( z=0.91, p=0.37 \)).
Subjects reported being willing to pay between zero and $100 for maintenance/service of the ISA in a new car. The median price that subjects were willing to pay was $25 for the treatment group at the beginning of the project, and zero at the end. The median price the control group was willing to pay remained at zero for both questionnaires.

Statistical tests revealed no significant difference was found between groups in terms of how much they were willing to pay for maintenance/service of the ISA system in a new car (Preliminary time 2, $z=0.23$, $p=0.82$; Interim time 6, $z=0.40$, $p=0.69$). There was also no evidence of a change in the amount subjects were willing to pay across time ($z=0.92$, $p=0.36$).
8. How much would you be willing to pay for the ISA system if it could be retrofitted to an existing car?

There was a lot of variation in the price that subjects were willing to pay for purchase of the ISA for an existing car, which ranged from zero to $1000. The median price that the treatment group was willing to pay was $120 at the beginning of the project, and this decreased to $100 over time. The median price that the control group was willing to pay also decreased from $250 to $100.

Statistical tests revealed no significant difference was found between groups in terms of how much they were willing to pay for purchase of the ISA system to be fitted to an existing car (Preliminary time 2, z=-0.41, p=0.68; Interim time 6, z=-0.33, p=0.74). There was also no evidence of a change in the amount subjects were willing to pay across time (z=0.91, p=0.36).
Subjects reported being willing to pay between zero and $250 for installation of the ISA system into an existing car, with most subjects choosing values between zero and $100. The median price that the treatment group was willing to pay was $75 at the beginning of the project, and this decreased to $25 over time. The median price that the control group was willing to pay also decreased from $100 to $50.

Statistical tests revealed no significant difference was found between groups in terms of how much they were willing to pay for installation of the ISA system into an existing car (Preliminary time 2, $z=0.10$, $p=0.92$; Interim time 6, $z=0.24$, $p=0.81$). There was also no evidence of a change in the amount subjects were willing to pay across time ($z=0.16$, $p=0.87$).
Subjects reported being willing to pay between zero and $100 for yearly maintenance/service of the ISA system in an existing car. The median price that the treatment group was willing to pay was $25 at the beginning of the project, and this decreased to zero over time. The median price that the control group was willing to pay remained at zero for the duration of the project.

Statistical tests revealed no significant difference was found between groups in terms of how much they were willing to pay for yearly maintenance/service of the ISA system in an existing car (Preliminary time 2, z=0.23, p=0.82; Interim time 6, z=0.88, p=0.38). There was also no evidence of a change in the amount subjects were willing to pay across time (z=1.27, p=0.21).
Hypothetically, if you had the option of keeping the ISA system in your vehicle at the end of the study (at no extra cost) would you be interested?

![Histograms showing the percent of responses in each category, by group.](image)

**Figure 59.** Histograms of the percent of responses in each category, by group. (0=very disinterested, 1=disinterested, 2=neither interested nor disinterested, 3=interested, 4=very interested).

Most subjects expressed interest (or strong interest) in keeping the ISA system, both at the beginning of the study, and at the end of the study. This was true for both those subjects who experienced the ISA system during the study period and those who did not. The median rating given by both groups at both questionnaires was 3, “interested”.

Statistical tests revealed no significant difference was found between groups in terms of how interested they were in keeping the ISA system (Preliminary time 2, $z=0.35$, $p=0.72$; Interim time 6, $z=0.00$, $p=1.00$). There was some evidence for a change in ratings over time, although it did not reach the conventional 5% level of significance ($z=1.75$, $p=0.08$). Although the median ratings did not change from “agree” over time, the mean rating did decrease from 3.05 (sd=1.13) to 2.72 (sd=1.27). There may be evidence for a slight decrease in interest over time.
Table 3. Level of interest in keeping ISA – number and percentage of subjects who were interested, very interested, disinterested or very disinterested in keeping ISA.

<table>
<thead>
<tr>
<th>Questionnaire - group</th>
<th>Interested</th>
<th>Very Interested</th>
<th>Disinterested</th>
<th>Very Disinterested</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>Control</td>
<td>Treatment</td>
<td>Control</td>
</tr>
<tr>
<td>Prelim 2</td>
<td>5 (45.5)</td>
<td>3 (37.5)</td>
<td>4 (36.4)</td>
<td>3 (37.5)</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1 (12.5)</td>
<td>1 (9.1)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1 (9.1)</td>
<td></td>
<td>1 (9.1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 (9.1)</td>
<td></td>
</tr>
<tr>
<td>Interim 6</td>
<td>5 (45.5)</td>
<td>2 (28.6)</td>
<td>3 (27.3)</td>
<td>3 (42.9)</td>
</tr>
<tr>
<td></td>
<td>1 (9.1)</td>
<td></td>
<td>1 (9.1)</td>
<td>1 (14.3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 (9.1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 (9.1)</td>
<td></td>
</tr>
</tbody>
</table>

If disinterested, why?
Subjects who reported they were either disinterested or very disinterested in keeping the ISA system were asked to state why.

Preliminary questionnaire time 2

Treatment group
One subject in the treatment group expressed disinterest in keeping the ISA system at this time. Their reasons were as follows:
- cruise control is the best method of controlling speed

Control group
One subject in the control group expressed disinterest in keeping the ISA system at this time. Their reason was as follows:
- distracting if you are trying to drive safely. Once again it depends on how it works

Interim questionnaire time 6

Treatment group
Two subjects in the treatment group expressed disinterest in keeping the ISA system at the end of the project. Their reasons were as follows:
- too many roads are incorrectly mapped for speed limit. Alarm level too low to be practical particularly in 80km/h + zones
- It's overkill - very expensive system for the responsible driver. Eg commodore - push a button eg 60km for warning

Control group
One subject in the control group expressed disinterest in keeping the ISA system at the end of the project. This subject did not provide a reason for their disinterest.

If interested, why?

Preliminary questionnaire time 2
Treatment group
Nine subjects in the treatment group expressed interest in keeping the ISA system at this time. Their reasons were as follows:

- set to speed without being set by driver
- I can slip above speed limit accidentally when driving
- at no cost
- speed warning system helps me to keep within the speed limits
- would just about guarantee me never receiving a speeding fine
- tend to only speed when I don't notice I am speeding although this does occur sometimes. The device will improve safety awareness and therefore reduce potential accident/injury
- enable me to keep within or very close to speed limits
- safety feature
- rarely I speed but I do edge over the limit at times

Control group
Six subjects in the control group expressed interest in keeping the ISA system at this time. Their reasons were as follows:

- good system to have in the car (reminder)
- I like the system because it reminds me of my speed, most of all no more fines and a fuel cost saving
- currently own vehicles with speed warnings
- good tool to remind me of speed limits
- not sure fully if I want it yet
- alert me when inadvertently driving over the speed limit

Interim questionnaire time 6

Treatment group
Eight subjects in the treatment group expressed interest in keeping the ISA system at this time. Their reasons were as follows:

- when working correctly it's a great check on inadvertently speeding or not noticing changing speed limits. Twice I had to override this on the Hume hwy because the posted speed limit was 110 and the system said 80. This made it very difficult to drive.
- I am now more aware how of how easy it is to slip over the speed limit while driving
- I need some sort of speed control system ie cruise control to help me stay within the speed limits on open roads
- It is a helpful device
- Have found my speed compliance much better with the system
- good feature and will save getting speeding fines
- a good aid in areas where signs are scarce
- it comes in handy for poorly signed roads and residential areas where unsure of speed limits
Control group
Five subjects in the control group expressed interest in keeping the ISA system at this time. Their reasons were as follows (one subject did not provide a reason):

- decrease speeding fines
- good for reminding of speed limit when speeding without realising
- I think any device that can save lives and reduce fines is worth developing and keeping
- I believe the system will assist me to stick to the speed limit
Following Distance Warning

Usefulness

Baseline question – When driving, how often would you travel less than 2 seconds from the car in front?

In the control group, 6 subjects (75%) reported rarely travelling less than 2 seconds from the car in front, while the remaining 2 subjects (25%) reported often doing so. The treatment group had a range of responses with 5 subjects (33.3%) reporting often driving less than 2 seconds from the car in front, 1 subject (6.7%) reported always, and the remaining 60% of subjects being split evenly across never, rarely and sometimes (3 subjects reported each).

There was no significant difference between groups in how often they reported travelling less than 2 seconds from the car in front ($z=0.68$, $p=0.50$).

Subjects that did not report never driving less than 2 seconds from the car in front were asked their main reason for doing so. The reasons chosen were as follows:
Table 4. Main reasons that drivers travel less than 2 seconds from the car in front.

<table>
<thead>
<tr>
<th>Reason</th>
<th>Treatment group (%)</th>
<th>Control group (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I don’t notice</td>
<td>2 (18.2)</td>
<td>5 (62.5)</td>
<td>7 (36.8)</td>
</tr>
<tr>
<td>I don’t want other drivers to cut in front of me</td>
<td>1 (9.1%)</td>
<td>0</td>
<td>1 (5.3)</td>
</tr>
<tr>
<td>There is a lot of traffic</td>
<td>4 (36.4)</td>
<td>1 (12.5)</td>
<td>5 (26.3)</td>
</tr>
<tr>
<td>I am a good driver and I can control my car</td>
<td>1 (9.1)</td>
<td>0</td>
<td>1 (5.3)</td>
</tr>
<tr>
<td>and I can control my car regardless of how close</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am to the car in front</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>3 (27.3)</td>
<td>2 (25.0)</td>
<td>5 (26.3)</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>8</td>
<td>19</td>
</tr>
</tbody>
</table>

Subjects who chose the other response were asked to specify why. Their reasons were as follows:

Treatment group
- speed of traffic changes
- not always obvious to me
- someone cuts into the gap I have created

Control group
- gap closed by vehicles cutting in
- cars cut in
1. To what extent do you feel that the FDW system will be of use to you?

![Histograms of the percent of responses in each category, by group. (0=no use, 5=always of use)](image)

Figure 61. Histograms of the percent of responses in each category, by group. (0=no use, 5=always of use)

There was a range of responses, with the overall mean response of 3.2 (sd=1.3) lying in the upper half of the range (i.e. closer to always of use than never of use).

A parametric analysis revealed no interaction between treatment group and questionnaire (F(1,15)=1.34, p=0.27). There was no evidence of a difference in ratings between the groups (F(1,17)=0.02, p=0.89), nor was there any evidence of a change in opinion over the time period (F(1,15)=2.95, p=0.11).

Subjects who rated the FDW system as being of no use to them (i.e. a rating of 5 for the previous question) were asked to state why (one subject in the control group at Interim time 6). This subject stated:

- Again it's the driver allowing for the overall environment
3. To what extent do you agree or disagree with each of the following statements?

a. The FDW system will be helpful when travelling on the freeway

At the Preliminary time 2 questionnaire, no subjects disagreed that the FDW system would helpful to them on the freeway. Most subjects agreed or strongly agreed (treatment group, 72.7%; control group, 87.5%). By the time of the Interim time 6 questionnaire however, 36.4% of the group that had experienced the FDW system disagreed that it would be helpful on the freeway, as did 14.3% of the control group, although a large proportion still agreed or strongly agreed that it would be helpful (54.5% of the treatment group, 71.4% of control group).

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.05, p=0.82), nor was there a significant difference between groups (F(1,17)=0.24, p=0.63). There was evidence of a difference in ratings across time for this item (F(1,16)=3.58, p=0.08) although this did not reach the conventional 5% level of...
significance. The mean rating did decrease from 2.84 (sd=0.60) to 2.39 (sd=0.98), which reflects the increase over time in the proportion of participants that disagreed with this statement.

b. Warnings from the FDW system will be more of a nuisance than a help in heavy traffic

Subjects varied in their opinion as to whether the FDW would be a nuisance in heavy traffic. The percentage of subjects in the treatment group who agreed or strongly agreed with this statement increased over time, whereas the responses of subjects in the control group remained fairly stable.

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.72, p=0.41). There was no evidence of a difference in ratings between the
groups (F(1,17)=.056, p=0.47), however there was some evidence of a change in opinion over the time period (F(1,16)=3.18, p=0.09). The mean rating increased from 1.74 (sd=0.93) at Preliminary time 2 (between disagree and neither agree nor disagree) to 2.33 (sd=0.97) at Interim time 6 (between neither agree nor disagree and agree).

c. The FDW system will be helpful to drivers who do not have a clear view of the car ahead because of poor weather conditions (e.g. fog).

Responses ranged from strongly disagree to strongly agree. There was no significant interaction between treatment group and questionnaire (F(1,16)=0.95, p=0.34). There was no evidence of a difference in ratings between the groups (F(1,17)=0.08, p=0.78), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.29, p=0.60).
d. There is no need for the FDW system when travelling on rural roads.

![Histograms of the percent of responses in each category, by group.](image)

(0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

The majority of subjects either disagreed or neither agreed nor disagreed with statement. Two subjects, both in the treatment group agreed at Interim time 6 that there is no need for FDW when travelling on rural roads.

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.85, p=0.37). There was no evidence of a difference in ratings between the groups (F(1,17)=1.85, p=0.19), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.02, p=0.90).
Most subjects disagreed that warnings from the FDW were unnecessary in 50km/hr speed zones. Only one subject (at Preliminary time 2) agreed with this statement.

No significant difference was found between groups for their level of agreement with this statement (Preliminary time 2, z=0.43, p=0.67; Interim time 6, z=-0.75, p=0.45). There was also no evidence of a change in ratings across time (z=-1.23, p=0.22).
g. Receiving warnings from the FDW system will be really helpful in 100km/h zones

![Histograms showing percent of responses by group](image)

Figure 67. Histograms of the percent of responses in each category, by group.
(0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

There was a range of responses to this question. 72.7% of the treatment group either agreed or strongly agreed that the FDW system would be really helpful in 100km/h zones when they completed Preliminary questionnaire time 2, compared with 50% of the control group. The remainder of the treatment group was split between “disagree” (9.1%) and neither agree nor disagree (18.2%). The other half of the control group neither agreed nor disagreed.

By the end of the project, 63.6% of the treatment group still agreed or strongly agreed, however the proportion that disagreed increased to 27.3%. Most of the control group subjects (71.4%) agreed with this statement by the end of the project.

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.00, p=0.97). There was no evidence of a difference in ratings between the
groups (F(1,17)=0.01, p=0.91), nor was there any evidence of a change in opinion over the time period (F(1,16)=2.24, p=0.15).

h. Warnings from the FDW system are necessary in 60 km/h zones

![Histograms of the percent of responses in each category, by group.](image)

Most subjects agreed (or strongly agreed) that following distances warnings are necessary in 60 km/h zones (Preliminary time 2, 72.7% of treatment subjects, 62.5% of controls; Interim time 6, 63.6% of treatment subjects, 71.4% of control subjects).

A parametric analysis was performed and revealed no interaction between treatment group and questionnaire (F(1,16)=0.01, p=0.92). There was no evidence of a difference in ratings between the groups (F(1,17)=0.00, p=0.97), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.24, p=0.63).
i. The FDW system is of little use when there are few other cars on the road

At Preliminary questionnaire time 2, the majority of subjects disagreed that the FDW is of little use when there are few other cars on the road (63.6% of treatment group subjects, 62.5% of control group), although some subjects did agree (9.1% treatment, 25% control). At the end of the project (Interim questionnaire time 6), most of the treatment group subjects (54.6%) still disagreed with this statement, compared to 28.6% of the control group. The remaining subjects in the control group (71.4%) neither agreed nor disagreed, which may reflect their lack of experience with the system.

A parametric analysis was performed and revealed no interaction between treatment group and questionnaire (F(1,16)=0.08, p=0.78). There was no evidence of a difference in ratings between the groups (F(1,17)=0.98, p=0.34), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.09, p=0.77).
j. **Warnings from the FDW system are unnecessary in 80 km/h zones.**

![Histograms of the percent of responses in each category, by group.](image)

Figure 70. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

Most subjects disagreed that following distance warnings are unnecessary in 80km/h zones.

No significant difference was found between groups for their level of agreement with this statement (Preliminary time 2, \(z=0.65, p=0.52\); Interim time 6, \(z=-0.70, p=0.49\)). There was also no evidence of a change in ratings across time (\(z=-1.41, p=0.16\)).
The majority of subjects either agreed or strongly agreed that the FDW system would be useful in alerting distracted or fatigued drivers. No subject disagreed with this statement. A small number of subjects neither agreed nor disagreed.

No significant difference was found between groups for their level of agreement with this statement (Preliminary time 2, $z=-0.84$, $p=0.40$; Interim time 6, $z=0.70$, $p=0.49$). There was also no evidence of a change in ratings across time ($z=1.34$, $p=0.18$).
1. The FDW system will be really helpful when approaching intersections or roundabouts.

Opinions were mixed about whether the FDW system would be useful when approaching intersections or round-a-bouts.

A parametric analysis was performed and revealed no interaction between treatment group and questionnaire ($F(1,16)=0.02$, $p=0.89$). There was no evidence of a difference in ratings between the groups ($F(1,17)=0.25$, $p=0.63$), nor was there any evidence of a change in opinion over the time period ($F(1,16)=0.02$, $p=0.89$).

Figure 72. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)
Effectiveness

3e. I will drive more safely with the FDW system in my car

Only a small proportion of subjects disagreed (or strongly disagreed) that they would drive more safely with FDW (Prelim time 2, 9.1% of treatment group, 12.5% of control group, Interim time 6, 18.2% of treatment group, 14.3% of control group). Quite a large number neither agreed nor disagreed (Prelim2, 27.3% treatment, 50% controls; Interim6, 18.2% treatment, 42.9% controls). A large proportion agreed (or strongly agreed) that they would drive more safely with FDW (Prelim 2, 63.6% treatment, 37.5% controls; Interim 6, 63.6% treatment, 42.9% controls).

No significant difference was found between groups for their level of agreement with this statement (Preliminary time 2, z=1.17, p=0.24; Interim time 6, z=0.55, p=0.58). There was also no evidence of a change in ratings across time (z=0.40, p=0.69).
n. As a result of driving a car with the FDW system, I will be less likely to tailgate when driving a car that is not fitted with a FDW system.

![Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree) ](image)

In the initial questionnaire, 63.6% of treatment group subjects and 50% of the control group agreed (or strongly agreed) that, as a result of driving a car with the FDW system, they would be less likely to tailgate when driving a car that is not fitted with a FDW system. The other half of the control group, and 27.3% of the treatment group neither agreed nor disagreed. The remaining 9.1% of the treatment group disagreed.

By the end of the project, 71.4% of the subjects who did not experience the FDW agreed with this statement, compared with only 45.5% of the subjects who did experience the FDW.
No significant difference was found between groups for their level of agreement with this statement ($z=0.55, p=0.58$; Interim time 6, $z=-0.74, p=0.46$). There was also no evidence of a change in ratings across time ($z=1.18, p=0.24$).

0. The warnings from the FDW system could distract me from my driving, affecting my safety and my passengers’ safety.

![Figure 75. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)](image)

The majority of subjects disagreed (or strongly disagreed) that the FDW would be distracting and adversely affect their safety (Prelim2, 68.42%; Interim 6, 66.7%). Few subjects agreed with this statement.

No significant difference was found between groups for their level of agreement with this statement (Preliminary time 2, $z=-0.19, p=0.85$; Interim time 6, $z=-0.33, p=0.74$). There was also no evidence of a change in ratings across time ($z=-0.87, p=0.39$).
I will lose faith in the FDW system if it issues false warnings.

Figure 76. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

A large proportion of the treatment group subjects agreed, or strongly agreed, with this statement at both the beginning (81.8%) and end (72.7%) of the project. Three-quarters of the control group also agreed at the beginning, but by the end of the project, this had reduced to 57.1%

There was no significant interaction between treatment group and questionnaire (F(1,16)=1.11, p=0.31). There was no significant difference between the ratings given by the treatment and control groups (F(1,17)=0.33, p=0.58), nor a significant change in ratings across time (F(1,16)=0.02, p=0.88).
q. I will lose trust in the FDW system if it fails to issue warnings when it should issue warnings.

Most subjects agreed that they would lose trust if the FDW system issued false warnings.

There was no significant interaction between treatment group and questionnaire (F(1,16)=2.12, p=0.16). There was no significant difference between the ratings given by the treatment and control groups (F(1,17)=0.52, p=0.48), nor a significant change in ratings across time (F(1,16)=0.08, p=0.77).
Instead of using my own judgement, I am likely to end up waiting until I hear warnings from the FDW system before I back off from the car in front.

The majority of subjects did not agree that they would be likely to wait for warnings from the FDW system instead of using their own judgement.

There was no significant interaction between treatment group and questionnaire (F(1,16)=1.31, p=0.27). There was no significant difference between the ratings given by the treatment and control groups (F(1,17)=0.98, p=0.34), nor a significant change in ratings across time (F(1,16)=0.15, p=0.70).
4. For most drivers, what effect on following distance will the FDW system have in each of the following areas/conditions?
   a. 50 km/h zone

   ![Histograms of the percent of responses in each category, by group.](image)

   Figure 79. Histograms of the percent of responses in each category, by group. (0=increase following distance, 1= no change, 2= decrease following distance)

   At the beginning of the project, subjects’ responses were mixed as to what effect the FDW system would have on following distances in 50km/h zones. Approximately 42% of subjects believed it would increase following distance, 26% thought it would cause no change, and 32% thought it would decrease following distance. By the end of the project, the proportion of people who thought the FDW would increase following distance had increased to 72%, with the other 17% of subjects believing it would cause no change, and 11% believing it would decrease following distance.

   No significant difference was found between groups in terms of what effect they thought the FDW system would have on following distances in 50km/h zones (Preliminary time 2, z=−0.44, p=0.66; Interim time 6, z=0.17, p=0.86).

   There was a significant change in the ratings across time (z=1.98, p=0.048). The median rating decreased from 1 (no change) to 0 (increase following distance) over time.
The pattern of responses to this item (effect at 60 km/h) was similar to that of the previous item (50 km/h). Initially, most subjects thought that the FDW would increase following distances (52.6%), however 15.8% thought it would cause no change, while 31.6% believed it would decrease following distances. By the end of the project, the proportion who believed the FDW would increase following distances in 60km/h zones had increased to 72.2%

No significant difference was found between groups in terms of what effect they thought the FDW system would have on following distances in 60km/h zones (z=−0.32, p=0.75; Interim time 6, z=0.17, p=0.86). There was some evidence of a change in ratings across time (z=1.73, p=0.08), although this did not reach the conventional level of significance. The median rating was zero (increase following distance) for both questionnaires, however the mean rating did decrease over time, from 0.79 (sd=0.92) to 0.39 (sd=0.70).
Initially, most subjects thought that the FDW would increase following distances (57.9%), however 31.6% believed it would decrease following distances while 10.5% thought it would cause no change. By the end of the project, the proportion who believed the FDW would increase following distances in 80km/h zones had increased to 77.8%, with 11.1% of the remaining subjects believing it would cause a decrease in following distance and the remaining 11.1% believing it would cause no change.

No significant difference was found between groups in terms of what effect they thought the FDW system would have on following distances in 80km/h zones (Preliminary time 2, $z=-0.56$, $p=0.57$; Interim time 6, $z=0.75$, $p=0.45$).

There was however, a significant change in ratings over time ($z=2.00$, $p=0.046$). Similarly to the previous item, the median rating was zero (increase following distance).
for each questionnaire, however the mean rating reduced over time from 0.74 (sd=0.93) to 0.33 (sd=0.69).

d. 100 km/h zone

![Histograms of percent responses in each category by group](image)

Figure 82. Histograms of the percent of responses in each category, by group (0=increase following distance, 1= no change, 2= decrease following distance)

The pattern of responses and the change over time was similar for 100km/h to the other speed zones discussed previously. Initially, most subjects thought that the FDW would increase following distances (52.6%), however 31.6% believed it would decrease following distances while 15.8% thought it would cause no change. By the end of the project, the proportion who believed the FDW would increase following distances in 100km/h zones had increased to 83.3%, with 11.1% of the remaining subjects believing it would cause a decrease in following distance and the remaining 5.6% believing it would cause no change.
No significant difference was found between groups in terms of what effect they thought the FDW system would have on following distances in 100km/h zones (Preliminary time 2, $z=-0.91$, $p=0.36$; Interim time 6, $z=1.47$, $p=0.14$).

There was a significant difference in the ratings over time ($z=2.44$, $p=0.01$). Significantly more subjects at the end of the project believed that the FDW system would increase following distances, compared to the beginning of the project.

e. Freeways

![Histograms of the percent of responses in each category, by group. (0=increase following distance, 1= no change, 2= decrease following distance)](image)

Figure 83. Histograms of the percent of responses in each category, by group. (0=increase following distance, 1= no change, 2= decrease following distance)

The ratings given by the treatment group were not significantly different (at the .05 level) to those given by the control group at the beginning of the study (Preliminary questionnaire time 2, $z=-1.25$ $p=0.21$) At the end of the project, there was some evidence for a difference in the groups’ ratings, although not at the 5% significance level ($z=1.74$,
p=0.08). At this time, everyone in the control group thought the FDW system would increase following distance on freeways compared to 63.6% of the treatment group.

Differences across time were determined for each group separately. It was found that the treatment group did not change their ratings significantly across time (z=0.11, p=0.92), however the control group did show a significant change in ratings across time (z=2.17, p=0.03). The proportion of subjects in the control group who thought that the FDW would increase following distances on freeways increased markedly from 25% at the beginning of the project to 100% at the end.

f. Rural

![Histograms of the percent of responses in each category, by group. (0= increase following distance, 1= no change, 2= decrease following distance)](image)

The treatment group showed only a small change in ratings over the course of the project, with a slight increase in the proportion who believed following distances would increase (54.6% to 63.6%) and a corresponding decrease in the proportion who believed following
distances would decrease. The control group did change their ratings over time. At the beginning, 37.5% believed the FDW would cause no change, and the same percentage believed it would decrease following distances, while only 25% believed it would increase following distances. By the end of the project however, the percentage of subjects who believed FDW would increase following distances in rural areas had increased to 57.1%, while 42.9% believed there would be no change.

No significant difference was found between groups in terms of what effect subjects believed FDW would have on following distance in rural areas (Preliminary time 2, \( z = -1.01, p = 0.31 \); Interim time 6, \( z = 0.05, p = 0.96 \)). There was also no evidence of a change in ratings across time (\( z = 1.55, p = 0.12 \)).

g. Residential

![Histograms of the percent of responses in each category, by group.](image)

Figure 85. Histograms of the percent of responses in each category, by group. (0=increase following distance, 1= no change, 2= decrease following distance)
Again, the control group subjects showed the biggest change in their ratings over time. At the Preliminary time 2 questionnaire, 37.5% believed the FDW would increase following distances on residential roads, and this increased to 85.7% at the Interim time 6 questionnaire. The treatment group subjects were more consistent across time, with 63.6% believing that the FDW would increase following distances at the beginning of the project, compared to 72.7% at the project’s completion.

Statistical tests revealed no significant difference between groups in terms of what effect subjects believed FDW would have on following distance in residential areas (z=−0.73, p=0.47; Interim time 6, z=0.81, p=0.42). There was also no evidence of a change in ratings across time (z=1.42, p=0.16).

h. Little traffic

Figure 86. Histograms of the percent of responses in each category, by group (0= increase following distance, 1= no change, 2= decrease following distance)
There was more variation in responses to this item than previous ones. At the initial questionnaire, the majority of participants in the control group felt that the FDW system would cause no change to following distances when there was little traffic around, whereas the treatment group’s responses were spread more evenly across options. By the end of the project, most subjects (54.6% of treatment group, 57.1% of control group) rated the FDW system as likely to increase following distance when there is little traffic around, although a large percentage of control group subjects (42.9%) still believed there would be no change.

No significant difference was found between groups in terms of what effect they thought the FDW system would have on following distances when there was little traffic (Preliminary time 2, z=-0.32, p=0.75; Interim time 6, z=0.56, p=0.58).

The difference in rankings across time was not significant at the conventional .05 level (z=1.91, p=0.056), however the p-value was close to .05. Thus there may be some effect of time (both for the treatment group and the control group), with the proportion of subjects thinking FDW would increase following distance being larger at the end of the project.
i. Difficult to see road ahead

At the initial questionnaire, the majority of the control group felt that the FDW system would cause no change to following distances when it was difficult to see the road ahead, while the treatment group’s responses were split between believing the FDW would increase, decrease or cause no change to following distances. By the end of the project however, most subjects rated the FDW system as likely to increase following distance when it is difficult to see the road ahead.

No significant difference was found between groups in terms of what effect they thought the FDW system would have on following distances when it was difficult to see the road ahead (Preliminary time 2, z=0.57, p=0.57; Interim time 6, z=1.47, p=0.14).

There was a significant difference in ratings across time (z=2.36, p=0.02). Thus the ratings changed across time (both for the treatment group and the control group), with the
The proportion of subjects thinking FDW would increase following distance being larger at the end of the project.

**j. Heavy traffic**

![Histograms showing percent responses by group](image)

Figure 88. Histograms of the percent of responses in each category, by group. (0=increase following distance, 1= no change, 2= decrease following distance)

The proportion of subject who believed that the FDW system would increase following distances in heavy traffic increased for the control group from the beginning of the project to the end.

Statistical tests revealed no significant difference between groups in terms of what effect the FDW system would have on following distances in heavy traffic (Preliminary time 2, z=-0.73, p=0.47; Interim time 6, z=0.44, p=0.66). There was also no evidence of a change in ratings across time (z=1.16, p=0.25).
At the beginning of the study, most subjects (63.2%) rated the FDW system as likely to cause no change to the following distances at intersections/round-a-bouts. By the end of the project, that proportion was similar for the treatment group, but had decreased to 42.9% for the control group. The other 57.1% of the control group rated the system as likely to increase following distances in this situation.

For the ratings given at the Preliminary time 2 questionnaire, statistical tests revealed no significant difference between groups in terms of what effect the FDW system would have on following distances in heavy traffic ($z=-1.06, p=0.29$). However, there was a significant difference between the groups’ ratings at the end of the project ($z=2.32, p=0.02$). At the end of the project, the majority (63.6%) of subjects who experienced the FDW system (i.e. the treatment group) believed it would cause no change to following distances at intersections/ round-a-bouts, while most of the control group (57.1%)
believed it would increase following distances. Thus, most of the treatment group thought the FDW would be ineffective at intersections/round-a-bouts, whereas most of the control group believed FDW would be effective.

Differences across time were determined for each group separately. It was found that the treatment group did not change their ratings significantly across time ($z=-1.63, p=0.10$), however there was some evidence to suggest the control group changed their ratings across time ($z=1.72, p=0.085$). The control subjects did change their ratings over time, with 62.5% of control subjects initially feeling that the FDW would not change following distances at intersections/round-a-bouts, while at the end of the project, 60% felt that it would increase following distances in this situation. Thus the group that did not have experience using FDW changed their opinion of its effectiveness over time, whereas the group which did have experience with the system did not.

5. What effect on following distance will the FDW system have on drivers who follow cars too closely for the following reasons?

a. Don’t notice that they are following cars too closely

![Histograms of the percent of responses in each category, by group.](image)

Figure 90. Histograms of the percent of responses in each category, by group. (0=increase following distance, 1= no change, 2= decrease following distance)
The majority of subjects felt that the FDW system would increase following distances for drivers who don’t notice they are following other cars too closely. The proportion of subjects who believed this increased over time.

No significant difference was found between groups in terms of what effect they thought the FDW system would have on the following distance of drivers who don’t notice that they are following cars too closely (Preliminary time 2, $z=-0.37$, $p=0.71$; Interim time 6, $z=1.47$, $p=0.14$). There was, however, a significant change in ratings across time ($z=2.00$, $p=0.046$).

b. Believe that following cars too closely is fun

![Histograms of the percent of responses in each category, by group. (0=increase following distance, 1= no change, 2= decrease following distance)](image)

Figure 91. Histograms of the percent of responses in each category, by group. (0=increase following distance, 1= no change, 2= decrease following distance)

For the ratings given at the Preliminary time 2 questionnaire, statistical tests revealed that there was a significant difference between groups in terms of their ratings of what effect the FDW system would have on following distances for drivers who believe that
following cars closely is fun ($z=-1.97$, $p=0.049$). It can be seen from figure 91 that 81.8% of the treatment group thought there would be no change, and 18.2% thought following distances would increase. Most of the control group also believed there would be no change in following distances (75%), however the other 25% believed the following distance would decrease. However, by the end of the project, there was no significant difference between the groups’ ratings ($z=1.44$, $p=0.15$).

Differences across time were determined for each group separately. It was found that the treatment group did not change their ratings significantly across time ($z=1.00$, $p=0.32$), however there was some evidence of a difference in the control group’s ratings across time ($z=1.72$, $p=0.09$). As mentioned previously, 75% of the control group at the beginning of the project thought there would be no change, while 25% thought following distances would decrease. However, at the end of the project, a similar proportion (71.4%) still believed there would be no change in following distances, however the remaining 28.6% now thought that following distances would increase.

c. Believe that following cars too closely has no effect on safety

![Histograms of the percent of responses in each category, by group. (0=increase following distance, 1= no change, 2= decrease following distance)](image)

Figure 92. Histograms of the percent of responses in each category, by group. (0=increase following distance, 1= no change, 2= decrease following distance)
At the beginning of the project, 52.6% of subjects believed that a FDW system would have no effect on following distances for drivers who believed that following cars too closely has no effect on safety, while 31.6% thought it would increase following distances and 15.8% thought following distances would decrease. By the end of the project, the proportion of subjects who thought that there would be no change in following distances for these drivers had increased to 72.2%, with a corresponding decrease in the proportion who felt it would increase (22.2%) or decrease (5.6%) following distances.

Statistical tests revealed no significant difference was found between groups in terms of what effect subjects believed FDW would have on following distance for drivers who believe that following cars too closely has no effect on safety (Preliminary time 2, $z=-0.82$, $p=0.41$; Interim time 6, $z=0.75$, $p=0.45$). There was also no evidence of a change in ratings across time ($z=-0.60$, $p=0.55$).

d. In a hurry

Figure 93. Histograms of the percent of responses in each category, by group. (0=increase following distance, 1= no change, 2= decrease following distance)
Overall, the majority of subjects felt that the FDW system would not affect the following distance for drivers who were in a hurry (Preliminary time 2, 68.4%; Interim time 6, 61.1%). The most noticeable difference over time was in the proportion of control group subjects who thought that following distances would increase, which increased from 12.5% to 42.9% over time.

There was no significant difference between the treatment and control groups’ ratings in either questionnaire (Preliminary time 2, z=-0.15, p=0.88; Interim time 6, z=1.41, p=0.16). There was also no significant change in the ratings across time (z=1.39, p=0.16).

e. Believe that they won’t get caught/fined

![Histograms of the percent of responses in each category, by group.](image)

Figure 94. Histograms of the percent of responses in each category, by group. (0=increase following distance, 1=no change, 2=decrease following distance)

Most subjects believed the FDW system would have no effect on following distances for drivers who believed they wouldn’t get caught or fined.
Statistical tests revealed no significant difference was found between groups in terms of what effect subjects believed FDW would have on following distance for drivers who believe that the won’t get caught or fined (Preliminary time 2, z=-0.56, p=0.58; Interim time 6, z=1.25, p=0.21). There was also no evidence of a change in ratings across time (z=-0.60, p=0.55).

f. Believe that they can drive as close to cars as they like because it is their choice

Most subjects believed the FDW system would have no effect on following distances for drivers who believe they can drive as close to cars as they like because it is their choice. Statistical tests revealed no significant difference was found between groups in terms of what effect subjects believed FDW would have on following distance for drivers who believe that the won’t get caught or fined (Preliminary time 2, z=-1.39, p=0.16; Interim...
time 6, \( z=1.25, p=0.21 \). There was also no evidence of a change in ratings across time (\( z=0.56, p=0.58 \)).

g. Believe that they can control their car regardless of how close they are to the car in front

![Histograms of the percent of responses in each category, by group.](image)

Figure 96. Histograms of the percent of responses in each category, by group. (0=increase following distance, 1=no change, 2=decrease following distance)

Most subjects believed the FDW system would have no effect on following distances for drivers who believe that they can control their car regardless of how close they are to the car in front.

Statistical tests revealed no significant difference was found between groups in terms of what effect subjects believed FDW would have on following distance for drivers who believe that they can control their car regardless of how close they are to the car in front. (Preliminary time 2, \( z=-1.39, p=0.16 \); Interim time 6, \( z=1.25, p=0.21 \)). There was also no significant difference in ratings over time (\( z=0.12, p=0.90 \)).
Most subjects believed the FDW system would have no effect on following distances for drivers when the car in front is driving too slowly, however some subjects did believe that it would increase or decrease following distance.

Statistical tests revealed no significant difference was found between groups in terms of what effect subjects believed FDW would have on following distance for drivers when the car in front is driving too slowly (Preliminary time 2, $z=-0.29$, $p=0.77$; Interim time 6, $z=0.58$, $p=0.57$). There was also no evidence of a change in ratings across time ($z=-0.08$, $p=0.94$).
The majority of subject believed the FDW system would not effect following distance for drivers who do not want other drivers cutting in front of them (Preliminary time 2, 68.4%; Interim time 6, 77.8%). The proportion of subjects who believed it would decrease following distances dropped over time (26.3% to 5.6%), and there was an increase in the proportion who believed the FDW would act to increase following distances, from 5.3% to 16.7%.

Statistical tests revealed no significant difference was found between groups in terms of what effect subjects believed FDW would have on following distance for drivers who do not want other drivers cutting in front of them (Preliminary time 2, \( z=-0.20, \ p=0.84 \); Interim time 6, \( z=1.25, \ p=0.21 \)).
There was a significant change in ratings across time ($z=2.00$, $p=0.046$). As discussed above, this was due to the increase in the proportion of subjects who believed the FDW would increase following distance (5.6% to 16.7%) and the corresponding decrease in the proportion who believed it would decrease following distance (26.3% to 5.6%).

6. What effect will the FDW system have on each of the following?
   a. Incidence of crashes
   
   ![Figure 99. Histograms of the percent of responses in each category, by group. (0=increase, 1=no change, 2=decrease)](image)

   The majority of subjects believed that the FDW system would decrease the incidence of crashes (Preliminary time 2, 89.5%; Interim time 6, 94.4%), with the remaining small proportion of subjects believing there would be no change. None of the subjects thought the FDW system would lead to an increase in the incidence of crashes.

   There was some evidence of a difference in the ratings of the treatment group and control group at the Preliminary time 2 questionnaire ($z=1.71$, $p=0.09$), although this did not
reach the conventional 5% level of significance. At this time, all of the treatment group subjects rated the system as likely to decrease the incidence of crashes, compared to 75% of the control group. However this difference between groups was not present in the ratings given at the Interim time 6 questionnaire ($z=-0.80, p=0.43$).

Differences over time were investigated separately for each group. There was no significant change in ratings across time for the treatment group ($z=1.00, p=0.32$) or the control group ($z=-1.00, p=0.32$).

**b. Crash Severity**

![Histograms of the percent of responses in each category, by group.](image)

Figure 100. Histograms of the percent of responses in each category, by group. (0=increase, 1=no change, 2=decrease)

The majority of subjects believed that the FDW system would decrease crash severity (Preliminary time 2, 84.2%; Interim time 6, 88.9%), with a small proportion believing there would be no change (Preliminary time 2, 15.8%; Interim time 6, 11.1%), and none who believed it would lead to an increase in the incidence of crashes.
Statistical tests revealed no significant difference was found between groups in terms of the effect subjects believed FDW would have on the incidence of crashes (Preliminary time 2, $z=0.91$, $p=0.36$; Interim time 6, $z=0.33$, $p=0.74$). There was also no evidence of a change in ratings across time ($z=-0.58$, $p=0.56$).

c. Probability of being fined

![Figure 101. Histograms of the percent of responses in each category, by group. (0=increase, 1=no change, 2=decrease)](image)

No subject believed that the FDW system would increase the probability of being fined. Most subjects believed that it would decrease the probability of a fine (Preliminary time 2, 68.4%; Interim time 6, 77.8%), however the rest of the subjects thought there would be no change.

Statistical tests revealed no significant difference was found between groups in terms of the effect subjects believed FDW would have on the probability of being fined.
(Preliminary time 2, z=-0.51, p=0.61; Interim time 6, z=-0.63, p=0.53). There was also no evidence of a change in ratings across time (z=-0.45, p=0.65).

Social Acceptability

3. To what extent do you agree or disagree with the following statements

m. The enjoyment of driving will decrease as a result of driving with the FDW system

Most subjects in the control group disagreed, or strongly disagreed, that the enjoyment of driving would decrease as a result of driving with the FDW system (Preliminary time 2, 87.5% either disagreed or strongly disagreed; Interim time 6, 85.7% disagreed). The remaining subjects in the control group neither agreed nor disagreed. Subjects in the
treatment group responded in a more mixed fashion to this statement, with the majority choosing either “disagree” or “neither agree nor disagree”.

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.00, p=0.98). There was also no evidence of a difference in ratings across time (F(1,16)=1.22, p=0.29).

There was a significant difference between the ratings given by the two groups (F(1,17)=9.18, p=0.008). The mean rating given by the treatment group was 1.68, sd=0.78 (between “disagree” and “neither agree nor disagree”, while that for the control group was 1.0, sd=0.53 (disagree). That is, the control group disagreed with this statement more strongly than the treatment group.

r. The FDW system should be compulsory for all drivers.

Figure 103. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)
There was mixed response to whether the FDW system should be compulsory for all drivers. At the beginning of the project, 31.6% of subjects disagreed (or strongly disagreed), 36.8% agreed (or strongly agreed), and 31.6% neither agreed nor disagreed. The pattern was similar at the end of the project, with 22.2% either disagreeing or strongly disagreeing, 33.3% either agreeing or strongly agreeing, and the other 44.4% neither agreeing nor disagreeing.

A parametric analysis was performed and revealed no interaction between treatment group and questionnaire (F(1,16)=0.00, p=1.00). There was no evidence of a difference in ratings between the groups (F(1,17)=0.02, p=0.90), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.00, p=1.00).

t. The FDW system should only be compulsory for drivers who have been booked on several occasions for tailgating and/or have had several rear-end collisions.
Subjects were mixed in their response to whether FDW should only be compulsory for drivers who have been booked on several occasions for tailgating and/or have had several rear-end collisions. In the Preliminary time 2 questionnaire, 52.6% disagreed or strongly disagreed, 21.1% agreed, and 26.3% neither agreed nor disagreed. At the end of the project, 50.0% disagreed or strongly disagreed, 22.2% agreed or strongly agreed and 27.8% neither agreed nor disagreed.

A parametric analysis was performed and revealed no interaction between treatment group and questionnaire (F(1,16)=2.04, p=0.17). There was no evidence of a difference in ratings between the groups (F(1,17)=0.04, p=0.84), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.23, p=0.64).

The responses of this question were compared to those of the previous question. The previous question asked whether the FDW system should be compulsory for all drivers, compared with this question which asked about drivers who have been booked on several occasions for tailgating or and/or have had several rear end collisions. It is interesting to note that subjects disagreed more (mean rating=1.62, sd=1.01) with making the system compulsory only for drivers that have been booked for tailgating or have had several rear-end collisions than they did for all drivers (mean rating=2.08, sd=0.98). However, the difference in ratings between these two items was not significant (F(1,18)=1.70, p=0.21). This was determined using a 2-way repeated measured ANOVA, with questionnaire and item as the repeated measures. There was also no interaction between questionnaire and item (F(1,17)=0.02, p=0.88), and no effect of questionnaire, or time (F(1,17)=0.03, p=0.86).
u. The FDW system takes too much control away from the driver.

The majority of subjects disagreed that the FDW system takes too much control away from the driver (Preliminary time 2, 84.2% either disagreed or strongly disagreed, Interim time 6, 72.2% either disagreed or strongly disagreed). No subject agreed with this statement.

There was no significant difference between groups in terms of their rating of whether the FDW system takes too much control away from drivers at the initial questionnaire (Preliminary time 2, $z=0.81$, $p=0.42$). However, at the last acceptability questionnaire, there was a significant difference between the ratings of the treatment group and the control group (Interim time 6, $z=-2.19$, $p=0.03$). At this time, while 81.8% of treatment group subjects disagreed with the statement, only 42.9% of control group subjects disagreed, while the remaining control group subject neither agreed nor disagreed.
Differences across time were investigated separately for each group. There was no difference in the ratings across time for the treatment group (z=1.41, p=0.16), however the control group displayed a significant difference in ratings across time (z=-2.24, p=0.03). This was due to the decrease in the proportion of control group subject who disagreed with this statement, and the corresponding increase in the proportion who neither agreed nor disagreed.

**v. I would prefer a FDW system that made it impossible for the driver to get to within 2 seconds or less from the car in front.**

![Histograms of the percent of responses in each category, by group.](image)

Figure 106. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree).

Very few subjects agreed that they would prefer a FDW system that made it impossible for the driver to get to within 2 seconds or less from the car in front (25% of control subjects at the initial questionnaire). Most subjects did not agree with this statement.

There was no significant interaction between group and questionnaire (F(1,16)=2.39, p=0.14), nor was there a significant difference between the ratings given by the two
There was some evidence of a difference in ratings over time (F(1,16)=4.42, p=0.052), with the p-value coming close to the conventional 5% level of significance. Over time, the mean rating decreased from 1.26 (sd=0.87) to 1.0 (sd=0.69), that is, the level of disagreement increased over time.

w. I would prefer a FDW system that I could turn on or off as required depending on the traffic situation.
groups (F(1,17)=1.21, p=0.29). There was also no significant difference in the ratings given to this item across time (F(1,16)=0.69, p=0.42).

**Affordability**

7. How much would you be willing to pay for the FDW system if it were an optional feature in a new car?

**Purchase**

In general, most subjects were willing to pay between zero and approximately $300 for purchase of the FDW as part of a new car. There was one outlying observation from one subject in the control group of $1000 at Preliminary time 2. The median of the amounts that participants reported being willing to pay was $100 for both questionnaires.

Statistical tests revealed no significant difference between groups in terms of how much they were willing to pay for the FDW system as an optional feature in a new car (Preliminary time 2, z=-0.52, p=0.60; Interim time 6, z=-0.55, p=0.58). There was also no evidence of a change in ratings across time (z=1.27, p=0.21).
Most participants reported that they would be willing to pay a value between zero and $50 for maintenance/service of FDW after purchase as part of a new car. The median price that subjects were willing to pay for maintenance/service of the FDW as part of a new car was zero.

Statistical tests revealed no significant difference was found between groups in terms of how much they were willing to pay for maintenance/service of the FDW system in a new car (Preliminary time 2, $z=0.27, p=0.79$; Interim time 6, $z=0.00, p=1.00$). There was also no evidence of a change over time in the amount participants were willing to pay ($z=1.14, p=0.26$).
8. How much would you be willing to pay for the FDW system if it could be retrofitted to an existing car?

- **Purchase**

The median amount that subjects were willing to pay for purchase of the FDW for retrofit to an existing car was $100 for the treatment group and $130 for the control group at the initial questionnaire. However, by the end of the project, the median price subjects in the treatment group were willing to pay had reduced to $50, while that of the control group had decreased to $100.

Statistical tests revealed no significant difference between groups in terms of how much they were willing to pay for the FDW system as an optional feature in a new car (Preliminary time 2, z=-0.57, p=0.57; Interim time 6, z=-0.31, p=0.76).

There was some evidence of a change in ratings across time, despite not reaching the conventional 5% level of significance (z=1.83, p=0.07). Although the median value was $100 at both times, the mean value did decrease from $181.18 (sd=268.09) to $160 (sd=210.68), and as mentioned previously the median values for each group decreased over time.
Installation

Fig 111. How much subjects were willing to pay for installation of the FDW for retrofit to an existing car

At the initial questionnaire all subjects except one were willing to pay between zero and $100 for installation of the FDW into an existing car. The median price that the treatment group were willing to pay was $12.50 at both time-points, while the control group were willing to pay a median price of $45 at Preliminary time 2 and $22.50 at Interim time 6.

Statistical tests revealed no significant difference was found between groups in terms of how much they were willing to pay for the FDW system as an optional feature in a new car (Preliminary time 2, z=-0.40, p=0.69; Interim time 6, z=0.23, p=0.82). There was also no evidence of a change in ratings across time (z=0.91, p=0.36).
Most subjects were willing to pay between zero and $50 for maintenance/service of the FDW after retrofit to an existing car. The median price that subjects were willing to pay was zero.

Statistical tests revealed no significant difference was found between groups in terms of how much they were willing to pay for the FDW system as an optional feature in a new car (Preliminary time 2, $z=0.13$, $p=0.90$; Interim time 6, $z=0.62$, $p=0.53$). There was also no evidence of a change in ratings across time ($z=1.13$, $p=0.26$).
9. Hypothetically, if you had the option of keeping the FDW system in your vehicle at the end of the study (at no extra cost) would you be interested?

![Histograms of the percent of responses in each category, by group.](image)

At the beginning of the project, before anyone had experienced the FDW system, most subjects expressed interest in keeping the FDW, by selecting either interested or very interested (81.8% of treatment group, 62.5% of controls). This had decreased by the end of the project, particularly for the treatment group, with only 30.0% expressing interest in keeping the FDW after having experienced it. The level of interest in the control group (who did not experience the FDW) remained fairly constant at 57.2%.

There was some evidence of an interaction between treatment group and questionnaire (F(1,12)=3.52, p=0.08). The mean ratings for the treatment group decreased over time, from 2.91 (sd=0.54) to 1.6 (sd=1.43), and this change was significant (t(9)=2.69, p=0.02). In contrast, the ratings of the control group were consistent over time; 2.5 (sd=1.07) at Preliminary time 2 and 2.57 (sd=0.98) at Interim time 6 (p>.05).
Therefore, after experiencing FDW, the treatment group became significantly less interested in keeping the system, in comparison to the control group who did not change their interest in keeping the system over time (and with no experience of FDW).

**Table 5.** Level of interest in keeping FDW – number and percentage of subjects who were interested, very interested, disinterested or very disinterested in keeping FDW.

<table>
<thead>
<tr>
<th>Questionnaire - group</th>
<th>Interested</th>
<th>Very Interested</th>
<th>Disinterested</th>
<th>Very Disinterested</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8 (72.7)</td>
<td>1 (9.1)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Prelim 2</td>
<td>4 (50.0)</td>
<td>1 (12.5)</td>
<td>2 (25.0)</td>
<td>0</td>
</tr>
<tr>
<td>Treatment</td>
<td>2 (20.0)</td>
<td>1 (10.0)</td>
<td>2 (20.0)</td>
<td>3 (30.0)</td>
</tr>
<tr>
<td>Control</td>
<td>3 (42.9)</td>
<td>1 (14.3)</td>
<td>1 (14.3)</td>
<td>0</td>
</tr>
</tbody>
</table>

**If disinterested, why?**

Subjects who reported they were either disinterested or very disinterested in keeping the FDW system were asked to state why.

**Preliminary questionnaire time 2**

Treatment group

No subjects in the treatment group were disinterested in keeping the FDW at Preliminary time 2.

Control group

Two subjects in the control group were disinterested in keeping the FDW system at the beginning of the project. Only one provided a reason, as follows:

- unlikely to change my driving style

**Interim questionnaire time 6**

Treatment group

Three subjects in the treatment group were very disinterested, and two were disinterested in keeping the FDW system at the end of the project. Their reasons were as follows:

- too many false readings. You can come up quickly behind a slow moving vehicle without receiving a warning
- unless ALL cars are fitted with warning system it is distracting, particularly on freeways where other drivers cut in front of you, so warning is always going on regardless of your driving safety
- too many false readings and in peak hour traffic where people cut in and change lanes it goes off all the time
- system is activated by spurious objects, cars overtaking etc. needs to be able to be switched on or off
- In heavy traffic it annoys me. With greater follow distance it gives license to dipsticks who cut in
Control group
One of the subjects in the control group was disinterested in keeping the FDW system at the end of the project. They did not provide a reason for their disinterest.

If interested, why?
Subjects who reported they were either interested or very interested in keeping the FDW system were asked to state why.

Preliminary questionnaire time 2
Treatment group
In the treatment group, one subject was very interested and eight subjects were interested in keeping the FDW at the beginning of the project. Their reasons were as follows (one subject did not give a reason):

- to help in heavy traffic
- As I drive a great deal, it is easy to get caught in traffic flow behaviour, on freeways everyone travels too close to cars in front
- reinforces good driving practice by reminding driver
- useful warning device
- It will make driving safer
- good safety feature
- as a reminder to keep following distance adequate
- It would be a great driving assistance device.

Control group
In the control group, one subject was very interested and four subjects were interested in keeping the FDW at the beginning of the project. Their reasons were as follows (one subject did not give a reason):

- purely due to the safety factor
- useful alert if tired or distracted
- good reminder not to drive close to other vehicles
- is a valuable safety tool

Interim questionnaire time 6
Treatment group
In the treatment group, one subject was very interested and two subjects were very interested in keeping the FDW at the end of the project. Their reasons were as follows:

- It is a good tool to reinforce good driving practice
- Although annoying at times, particularly in heavy traffic, the device improves safe driving.
- Surprised at how often I tailgate. Noticed that I reverted to bad habits when it turned off

Control group
In the treatment group, one subject was very interested and three subjects were interested in keeping the FDW at the end of the project. Their reasons were as follows:
• very good tool to have available in vehicle
• good reminder to allow suitable distance to cars in front
• It's a great reminder and actual behaviour indicator
• I have not used this option but would be interested in driving with it activated

It is interesting to note that of the nine subjects in the treatment group who were interested in keeping the system at the beginning of the project, and who completed the questionnaire at the end, five were either disinterested or very disinterested in keeping the system after having experienced it. The reasons given related mainly to false readings, distraction and annoyance. Three of the subjects remained interested in keeping the FDW, one of whom commented that even though the system was annoying, it led to safe driving.
Seat Belt Reminder

Usefulness

Baseline questions – only asked at Preliminary Questionnaire time 2.
1. When driving, how often do you wear a seat belt?

![Frequency histogram of seat belt use](image)

Figure 114. Frequency histogram of the responses to “How often do you wear a seat belt”, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=always)

Almost all of the subjects reported always wearing a seat belt when driving (100% of the control group and 86.7% of the treatment group). The only subjects who did not report that they always wore a seat belt, reported that they often wore a seat belt (13.3% or 2 of the 15 subjects in the treatment group). Not surprisingly, given the above data, there was no difference between groups \((z=-1.06, p=0.29)\)

Subjects who did not report ALWAYS wearing a seat belt were asked their main reason for not wearing a seat belt. Of the 2 subjects who reported OFTEN wearing a seat belt, one did not respond to this question. The other subject chose the option, “I’m reversing from a driveway or car park”.


2. When you are driving, how often do you ensure that your passengers are wearing their seat belts?

![Frequency histogram of the responses to “How often do you ensure that your passengers are wearing seat belts”, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=always)]](image)

The question regarding how often drivers check on passenger use of seat belts elicited a greater range of responses than the question asking how often drivers themselves wore seat belts. The majority of subjects still responded always (60% of treatment group, 62.5% of control group). A further 20% of the treatment group and 25% of the control group reported often ensuring that their passengers were wearing seat belts. Two subjects in the treatment group (13.3%) and one in the control group (12.5%) reported sometimes checking that their passengers were wearing seat belts, while the remaining person in the treatment group (6.7%) admitted to rarely ensuring that their passengers were wearing seat belts.

Again, there was no significant difference between the two groups in their response to this item ($z=-0.26$, $p=0.80$).

Subjects who did not report ALWAYS ensuring their passengers were wearing seat belts (40% of the treatment group and 37.5% of the control group) were asked their main reason for not doing so.

One subject in the control group chose the option, “I don’t think about it”.

Seven subjects (5 treatment and 2 control) chose the option, “I assume that they will always put on their seat belts”.

The remaining subject in the control group who did not answer ALWAYS to the previous question failed to nominate a reason.
Questions asked in all the questionnaires.
1. To what extent do you feel that the SBR system will be of use to you?
It can be seen that at the beginning of the project, responses varied as to how useful subjects thought the SBR system would be to them. As time progressed however, responses began to cluster more at the upper end of the scale, and by the last acceptability questionnaire, most of the subjects thought the system would be of use to them.

There was no significant difference observed between the treatment and control groups’ ratings in the first three questionnaires (Preliminary time 2, \( z=-0.81, p=0.42 \); Interim time 3, \( z=0.64, p=0.52 \); Interim time 5, \( z=0.95, p=0.34 \)). At the end of the project (Interim time 6) there was a significant difference between the groups’ ratings of the usefulness of the SBR system (\( z=2.27, p=0.02 \)). At this time, although the majority of subjects in both groups thought the system would be of use, the treatment group subjects rated this item higher (median rating =5) than the control group (median rating= 3.5).

Analyses were conducted to determine if the subjects’ opinion of how useful the SBR system would be to them differed over time. This analysis was performed separately for each group, in light of the difference between groups at the last questionnaire. There was no significant difference observed between the ratings given across the four time points for the treatment group (\( n=11, F_r=6.39, p=0.09 \) ) or the control group (\( n=8, F_r=2.47, p=0.48 \)). It is of interest that the p-value for the treatment group is less than 0.10, which indicates there may be a change in opinion over time. The median rating for the treatment group did increase from 2 to 5 across the course of the study.

Thus there might be some support for a trend towards a favourable change of opinion over time for subjects in the treatment group.

Subjects who responded that the SBR system would be of no use to them (rating of zero for the previous question) were asked why.
Table 6. Number of subjects in treatment and control groups who responded that the SBR system would be of no use to them for each questionnaire

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Treatment group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary time 2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Interim time 3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Interim time 5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Interim time 6</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

All of the subjects chose the response, “I always wear my seat belt anyway”.

3. To what extent do you think that the SBR system will be of use to you in letting you know if any of your passengers are not wearing their seat belts?
Figure 117. Histograms of the percentage of responses in each category, by group (0=no use, 5=always of use).

**Table 7.** Percentage of subjects who responded at or near the ends of the ratings scale for item 3.

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>% of responses of 4 or 5</th>
<th>% of responses of 0 or 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary time 2</td>
<td>78.95</td>
<td>21.05</td>
</tr>
<tr>
<td>Interim time 3</td>
<td>84.21</td>
<td>5.26</td>
</tr>
<tr>
<td>Interim time 5</td>
<td>78.94</td>
<td>15.79</td>
</tr>
<tr>
<td>Interim time 6</td>
<td>89.47</td>
<td>5.26</td>
</tr>
</tbody>
</table>

A large proportion of subjects gave ratings of 4 or 5 – that is, they believed the system would be of use in alerting them to passengers not wearing seat belts.

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, z=1.83, p=0.07; Interim time 3, z=-0.23, p=0.82; Interim time 5, z=1.43, p=0.15; Interim time 6, z=1.61 p=0.11). The data do indicate a possible difference between the treatment and control groups at the beginning of the project. Although most subjects in both groups rated the SBR favorably, more subjects in the treatment group rated the system as “always of use” in letting them know their passengers were not wearing seat belts at this time.
Analyses were conducted to determine if the subjects’ opinion differed over time in terms of how useful the SBR system would be in letting them know that their passengers were not wearing seat belts. Two separate analyses were performed, one for the treatment group and one for the controls despite there being no significant differences between the groups for any of the questionnaires. It was felt that the observed p-value at Preliminary time 2 was close enough to significance to warrant treating the groups separately.

There was no significant difference found in the ratings given to this item across the four questionnaires for either the treatment group (n=11, Fr=3.31, p=0.35) or the control group (n=8, Fr=3.94, p=0.27). Thus, although there appears to be a greater acceptance of the use of the SBR system to aid in passenger seat belt use over time, this was not statistically supported.

Subjects who responded that the SBR system would be of no use to them in letting them know if any of their passengers were not wearing seat belts (rating of zero for the previous question) were asked why.

There were five ratings of zero given to the previous item at one time or another, all in the control group. For all of these instances, the same reason was chosen, “I always check anyway that my passengers are wearing their seat belts”.

5. To what extent do you agree or disagree with each of the following statements?
   a. Warnings from the SBR are unnecessary when reversing out of a driveway or parking spot.
The mean rating for this item was 1.72 (sd=1.18), which lies between “disagree” and “neither agree nor disagree”. There was no significant interaction between treatment group and questionnaire (F(3,51)=1.84, p=0.15). There was no significant difference between the ratings given by the treatment and control groups (F(1,17)=0.84, p=0.37), nor was there a significant change in the ratings across time (F(3,51)=1.84, p=0.15).
b. The SBR system will be of most benefit to drivers who forget to put their seat belts on.
In general, subjects tended to agree that SBR would be of most benefit to drivers who forget to put their seat belt on. The median response for the treatment group was “strongly agree”, and between “strongly agree” and “agree” for the control group at baseline. The median response for both groups at all other times was “agree”.

Comparisons were made at each time point to determine if the groups differed in their ratings of this item. There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, $z=0.00$, $p=1.00$; Interim time 3, $z=0.86$, $p=0.39$; Interim time 5, $z=0.45$, $p=0.66$; Interim time 6, $z=0.54$, $p=0.59$). There was also no significant difference in the ratings across time ($n=19$, Fr=3.22, $p=0.36$)
c. The SBR system is not necessary when there are hardly any other cars on the road.
Figure 120. Histograms of the percentage of responses in each category for each group, across the four questionnaires (0=strongly disagree, 1=disagree, 2=neither, 3=agree, 4=strongly agree).

The majority of subjects either disagreed, or strongly disagreed that the SBR is not necessary when there are hardly any other cars on the road.

There was no significant difference observed between the treatment and control groups’ ratings for three of the four questionnaires (Preliminary time 2, $z=-0.35$, $p=0.73$; Interim time 5, $z=0.47$, $p=0.64$; Interim time 6, $z=-0.05$, $p=0.96$). For Interim questionnaire time 3 however, there was a significant difference between groups ($z=2.16$, $p=0.03$). This difference was due to the fact that all subjects in the control group strongly disagreed (rating=0), whereas approximately half the subjects in the treatment group disagreed (rating=1) and the other half strongly disagreed (rating=0).

Analyses were conducted to determine if the subjects’ ratings differed over time. Two separate analyses were performed, one for the treatment group and one for the controls. There was a significant change in ratings across time for the control group ($n=8$, $F_r=8.27$, $p=0.04$), and some evidence for a change over time for the treatment group, although this did not reach the conventional 5% level of significance ($n=11$, $F_r=6.65$, $p=0.08$). Pairwise comparisons of the ratings given at each questionnaire did not reveal any statistically significant differences. However, there was a trend in both groups for the proportion of subjects who strongly disagreed to decrease, with a corresponding increase in the proportion that disagreed.
5d. There is no need for the SBR system when travelling at speeds of less than 10 km/h
Subjects varied in their opinion of whether there was a need for SBR when traveling less than 10km/h. Although the majority of subjects disagreed or strongly disagreed that the SBR is not necessary when travelling at speeds less than 10km/h (Preliminary time 2, 79.0%; Interim time 3, 63.2%; Interim time 5, 79.0%; Interim time 6, 47.4%), some subjects did agree or strongly agree (Preliminary time 2, 5.3%; Interim time 3, 21.1%; Interim time 5, 15.8%; Interim time 6, 15.8%).

A significant interaction was discovered between treatment group and questionnaire, that is, the difference between the ratings given by the treatment and control groups differed over the four questionnaires ($F(3,51)=3.96$, $p=0.03$, with Geisser-Greenhouse correction).

This interaction was investigated further by looking at the difference in the ratings given by the treatment and control groups for each questionnaire separately. Despite the significant interaction, none of the partial interactions involving the non-repeated factor (group membership) were significant, that is, there was no significant difference in the ratings of the treatment group compared to the control group, at any time ($p>0.05$).
5e. There is no need for the SBR system when travelling at speeds of greater than 10km/h.
There was much less variation in response to whether subjects need SBR at speeds greater than 10 km/hr, compared to the speeds less than 10 km/hr (previous question). From figure 122, it can be seen that most subjects disagreed that the SBR was not needed when travelling at speeds of greater than 10 km/h. No subject agreed with this statement.

Comparisons were made at each time point to determine if the groups differed their ratings of this item. There was no significant difference observed between the treatment and control groups’ ratings for the four questionnaires (Preliminary time 2, z=0.11, p=0.91; Interim time 3, z=1.83, p=0.07; Interim time 5, z=0.75, p=0.45; Interim time 6, z=-0.36, p=0.72). However, at the Interim questionnaire time 3, there was some evidence for a difference between groups, with a p-value of less than 0.10. The difference appears to be due to the magnitude of disagreement – most of the control subjects strongly disagreed with this statement at Interim time 3 (87.5%), whereas approximately 55% of the treatment subjects disagreed, and 45% strongly disagreed.

Analyses were conducted to determine if the subjects’ ratings differed over time. There was no significant difference found in the ratings given for the treatment group (n=11, Fr=4.78, p=0.19) however there was a significant difference across questionnaires for the control group (n=8, Fr=8.86, p=0.03). Pair-wise comparisons of the ratings given at each questionnaire did not reveal any statistically significant differences. It does appear that the level of disagreement decreased over time, with 25% of the control group neither agreeing nor disagreeing at Interim time 6, compared to none in the previous three questionnaires.
5f. The SBR system is a real necessity for people who do not put their seat belts on when travelling short distances.

<table>
<thead>
<tr>
<th></th>
<th>treatment</th>
<th>control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary time 2</td>
<td><img src="chart1.png" alt="Chart" /></td>
<td><img src="chart2.png" alt="Chart" /></td>
</tr>
<tr>
<td>Interim time 3</td>
<td><img src="chart3.png" alt="Chart" /></td>
<td><img src="chart4.png" alt="Chart" /></td>
</tr>
<tr>
<td>Interim time 5</td>
<td><img src="chart5.png" alt="Chart" /></td>
<td><img src="chart6.png" alt="Chart" /></td>
</tr>
</tbody>
</table>
The majority of subjects agreed or strongly agreed with this statement (Preliminary time 2, 84.2%; Interim time 3, 79.0%; Interim time 5, 79.0%; Interim time 6, 73.7%). Only a small proportion disagreed with this statement throughout the first three questionnaires (Preliminary time 2, 10.5%; Interim time 3, 5.3%; Interim time 5, 5.3%), and none disagreed with this statement at the end of the study.

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, \( z=1.57, p=0.12 \); Interim time 3, \( z=0.31, p=0.76 \); Interim time 5, \( z=-0.89, p=0.37 \); Interim time 6, \( z=0.22, p=0.83 \)). There was also no evidence for change in the ratings given across the four questionnaires (\( n=19, \text{Fr}=1.84, p=0.61 \)).

**5r. The SBR system will make it easier for me to encourage my passengers to fasten their seat belts**
Figure 124. Histograms of the percentage of responses in each category, across the four questionnaires (0=strongly disagree, 1=disagree, 2=neither, 3=agree, 4=strongly agree).

Most subjects agreed or strongly agreed with this statement (Preliminary time 2, 94.7%; Interim time 3, 89.5%; Interim time 5, 84.2%; Interim time 6, 79.0%).

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, z=0.51, p=0.61; Interim time 3, z=-0.23, p=0.81; Interim time 5, z=0.54, p=0.59; Interim time 6, z=-0.41, p=0.68). There was also no evidence for change in the ratings given across the four questionnaires (n=19, Fr=3.16, p=0.37).
Effectiveness

5g. The SBR system will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings.
The responses to this statement ranged from strongly disagree to strongly agree.

There was a significant interaction between treatment group and questionnaire on the ratings for this item (F(3,51)=3.58, p=0.03 with Geisser-Greenhouse correction). This interaction was investigated further by looking at the difference in the ratings given by the treatment and control groups for each questionnaire separately. The ratings given by the treatment and control groups were significantly different at Preliminary time 2 (F(1,17)=7.94, p=0.01), however there was no significant difference between the groups’ ratings at any of the other questionnaires.

**Table 8.** Mean ratings (with standard deviation) for question 5g, for each group across questionnaires

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Treatment group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary time 2</td>
<td>1.0 (0.89)</td>
<td>2.25 (1.04)</td>
</tr>
<tr>
<td>Interim time 3</td>
<td>2.27 (1.35)</td>
<td>1.88 (1.13)</td>
</tr>
<tr>
<td>Interim time 5</td>
<td>2.36 (1.29)</td>
<td>1.75 (0.89)</td>
</tr>
<tr>
<td>Interim time 6</td>
<td>2.55 (1.13)</td>
<td>2.5 (1.31)</td>
</tr>
</tbody>
</table>

It can be seen from table 8 that at the beginning of the study, the mean rating for the treatment group was “disagree”, while that of the control group lay between “neither agree nor disagree” and “agree”. However, by the end of the study, both groups had a mean rating which lay between “neither agree nor disagree” and “agree”.

Figure 125. Histograms of the percentage of responses in each category, across the four questionnaires (0=strongly disagree, 1=disagree, 2=neither, 3=agree, 4=strongly agree).
5h. I will end up relying too strongly on the SBR system to remind me to fasten my seat belt.
In general, subjects did not agree that they would rely too strongly on the SBR system to remind them to fasten their seatbelt. A small proportion of subjects in the first two questionnaires agreed or strongly agreed with this statement (Preliminary time 2, 5.6%; Interim time 3, 5.3%), however no subject agreed with this statement in the final two questionnaires.

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, z=-1.81, p=0.07; Interim time 3, z=-0.47, p=0.64; Interim time 5, z=-0.70, p=0.49; Interim time 6, z=-0.63, p=0.53), however the p-value at Preliminary time 2 did approach significance. There was no significant change in ratings across time for the treatment group (n=10, Fr=6.27, p=0.10), or the control group participants (n=8, Fr=2.68, p=0.44).

5i. I will end up relying too strongly on the SBR system to let me know if any of my passengers are not wearing their seat belts.
Figure 127. Histograms of the percentage of responses in each category, across the four questionnaires (0=strongly disagree, 1=disagree, 2=neither, 3=agree, 4=strongly agree).

There was a range of opinion as to whether drivers would rely too much on the SBR system to let them know that their passengers were not wearing seatbelts.

There was no significant difference observed between the treatment and control groups’ ratings in the first three of the questionnaires (Preliminary time 2, z=-1.05, p=0.13; Interim time 3, z=0.04, p=0.97; Interim time 5, z=-1.58, p=0.11). However, at the final questionnaire, the ratings for the control group were significantly different than those of the treatment group (z=-2.66, p=0.01). At the end of the project, the majority of the treatment group (63.6%) disagreed with this statement, while 62.5% of the control group neither agreed nor disagreed with this statement.
There was no significant difference in the ratings that either the treatment group (n=11, Fr=5.66, p=0.13) or the control group (n=8, Fr=6.00, p=0.11) gave to this item across time.

5j. After having driven the car with the SBR system, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a SBR system.
The majority of subjects disagreed (or strongly disagreed) with this statement (Preliminary time 2, 100%; Interim time 3, 94.7%; Interim time 5, 94.7%; Interim time 6, 89.5%). Only one subject agreed with this statement. This was at Interim time 3 when a subject in the control group chose “strongly agree”.

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, z=-0.05, p=0.96; Interim time 3, z=-0.61, p=0.54; Interim time 5, z=0.00, p=1.00; Interim time 6, z=-0.37, p=0.72).

There was also no evidence for a change in ratings across time (n=19, Fr=4.39, p=0.22).

5k. I will lose trust in the SBR system if it does not issue warnings when it should issue warnings.
Figure 129. Histograms of the percentage of responses in each category, across the four questionnaires (0=strongly disagree, 1=disagree, 2=neither, 3=agree, 4=strongly agree).

There was a range of opinion as to whether drivers would lose trust in the SBR system if it does not issue warnings when it should issue warnings.
There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, $z=-0.43$, $p=0.67$; Interim time 3, $z=-0.09$, $p=0.93$; Interim time 5, $z=1.32$, $p=0.19$; Interim time 6, $z=0.18$, $p=0.86$).

There was a significant change in ratings across time ($n=19$, $F=16.23$, $p=0.001$). The largest difference between the ratings given was between the first and second questionnaires ($p<0.02$). None of the other pair-wise comparisons revealed any differences between time points. Between the beginning of the project and the second questionnaire, median rating increased from 2 (neither agree nor disagree) to 3 (agree).

5. I will lose trust in the SBR system if it issues false warnings.
Responses to this statement were skewed towards subjects agreeing that they would lose trust in the SBR system if it issued false warnings, however there were subjects at each questionnaire who disagreed.

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, $z=0.50$, $p=0.62$; Interim time 3, $z=-0.71$, $p=0.48$; Interim time 5, $z=0.95$, $p=0.34$; Interim time 6, $z=0.09$, $p=0.93$). There was also no evidence of a change in opinion over time ($n=19$, $Fr=5.91$, $p=0.12$).
5m. The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying.
The majority of subjects believed that they would not be distracted by the SBR system and that it would not detrimentally affect their safety (percent who disagreed or strongly disagreed, Preliminary time 2, 84.2%; Interim time 3, 84.2%; Interim time 5, 57.9%; Interim time 6, 78.9%).

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, z=0.96, p=0.34; Interim time 3, z=-1.66, p=0.098; Interim time 5, z=0.17, p=0.86; Interim time 6, z=-0.70, p=0.49), however it is worth noting that there is some evidence for a difference at the Interim time 3 questionnaire, with a p-value of less than 0.10.

There as no significant difference in the ratings across time for participants in the treatment group (n=11, Fr=5.18, p=0.16) or the control group (n=8, Fr=1.63, p=0.65).

5. I will drive more safely with the SBR system in my car
Figure 132. Histograms of the percentage of responses in each category, across the four questionnaires (0=strongly disagree, 1=disagree, 2=neither, 3=agree, 4=strongly agree).
Responses to this statement were mixed, with just under half of the subjects neither agreeing nor disagreeing that they would drive more safely with the SBR system in their car (Preliminary time 2, 36.8%; Interim time 3, 44.4%; Interim time 5, 42.1%; Interim time 6, 42.1%).

A mixed two-way within-subjects ANOVA was performed. There was no significant interaction between group and questionnaire (F(3,50)=0.44, p=0.73). There was no difference between the ratings given by the treatment and control groups (F(1,17)=0.08, p=0.78), nor was there any evidence of a difference in ratings across time (F(3,50)=0.98, p=0.41).

6. For most drivers what effect on seat belt wearing will the SBR system have in each of the following conditions/situations?
   a. Reversing

   ![Graph showing seat belt wearing percentages for reversing conditions/situations.](image)
Responses were split between subjects believing that the SBR system would cause either an increase (Preliminary time 2, 52.6%; Interim time 3, 52.6%; Interim time 5, 63.2%; Interim time 6, 55.6%) or no change (Preliminary time 2, 47.4%; Interim time 3, 47.4%; Interim time 5, 36.8%; Interim time 6, 44.4%) on seat belt wearing for most drivers while reversing. No subject believed that the SBR system would decrease seat belt wearing while reversing.

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, z=-1.10, p=0.27; Interim time 3, z=-0.19, p=0.85; Interim time 5, z=-0.99, p=0.32; Interim time 6, z=-1.34, p=0.18). There was no significant change across time in subjects’ opinion of the effect of the SBR system on wearing a seat belt while reversing (n=18, Fr=1.84, p=0.61).
b. Driving short distances

The graphs show the percent of participants in the treatment and control groups at different interim times. The x-axis represents the interim times, and the y-axis represents the percent of participants. The graphs indicate that the treatment group consistently has a lower percentage of participants driving short distances compared to the control group across all interim times.
Most subjects believed that the SBR system would cause an increase in the wearing of seat belts by most drivers when driving short distances (Preliminary time 2, 94.4%; Interim time 3, 94.7%; Interim time 5, 79.0%; Interim time 6, 94.4%). No subject rated the SBR system as likely to decrease the wearing of seat belts in this situation.

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, z=0.80, p=0.43; Interim time 3, z=-1.17, p=0.24; Interim time 5, z=-0.35, p=0.73; Interim time 6, z=-1.12, p=0.26). There was no significant change across time in subjects’ opinion of the effect of the SBR system on wearing a seat belt while driving short distances (n=17, Fr=2.25, p=0.52).

c. Low traffic levels
Figure 135. Histograms of the percentage of responses in each category, across the four questionnaires (0=increase wearing, 1=no change, 2=decrease wearing).
Most subjects believed that the SBR system would cause an increase in the wearing of seat belts by most drivers when driving in low traffic levels (Preliminary time 2, 72.2%; Interim time 3, 79.0%; Interim time 5, 79.0%; Interim time 6, 84.2%). No subject believed the SBR system would decrease seat belt wearing in this situation.

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, \( z=0.99, p=0.32 \); Interim time 3, \( z=-1.46, p=0.14 \); Interim time 5, \( z=-1.46, p=0.14 \); Interim time 6, \( z=-0.91, p=0.36 \)).

There was no significant change across time in subjects’ opinion of the effect of the SBR system on wearing a seat belt while driving short distances (\( n=18, \text{Fr}=2.11, p=0.55 \)).

d. Speeds less than 10km/h
Overall, the majority of subjects thought that the SBR system would increase the wearing of seat belts when traveling at speeds less than 10km/hr (Preliminary time 2, 77.8%; Interim time 3, 68.4%; Interim time 5, 73.7%; Interim time 6, 63.2%). The remaining subjects believed that the system would cause no change. No subject believed that the system would decrease the wearing of seat belts in this situation.

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, $z=-0.50$, $p=0.62$; Interim time 3, $z=-0.46$, $p=0.64$; Interim time 5, $z=-1.95$, $p=0.05$; Interim time 6, $z=-0.99$, $p=0.32$). However, at Interim time 5, there was some evidence of a difference ($p<0.10$). At that time, 90.9% of the treatment group said that the SBR would increase seat belt wearing, while only 50% of the control group did.

There was no evidence of a change in opinion over time for either the treatment group ($n=11$, Fr=1.94, $p=0.59$) or the control group ($n=7$, Fr=0.75, $p=0.86$).
e. Speeds more than 10 km/hr
The majority of subjects believed that the SBR would increase wearing of seat belts when traveling at speeds more than 10km/hr (Preliminary time 2, 72.2%; Interim time 3, 79.0%; Interim time 5, 79.0%; Interim time 6, 84.2%).

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, z=0.99, p=0.32; Interim time 3, z=-1.46, p=0.14; Interim time 5, z=-1.46, p=0.14; Interim time 6, z=-0.91, p=0.36). No difference was found between the ratings across time (n=18, Fr=2.11, p=0.55).

7. What effect on seat belt wearing will the SBR system have on drivers who do not wear seat belts for the following reasons?

a. Forget to put their seat belt on
Figure 138. Histograms of the percentage of responses in each category, across the four questionnaires (0=increase wearing, 1=no change, 2=decrease wearing).
For the first two questionnaires, all subjects stated that the SBR would increase the wearing of seat belts for those drivers who forget to put their seat belt on. For the last two questionnaires, one subject felt it would cause no change, while the rest of the subjects still believed it would increase seat belt wearing in this situation.

Inferential statistics were not performed on this data, as there is clearly no difference between groups or across time.

b. Believe that seat belts are uncomfortable to wear
None of the subjects believed the SBR would decrease seat belt wearing by drivers who did not wear seat belts because they were uncomfortable to wear. The subjects were divided in their opinion between believing the SBR would increase seat belt wearing in these drivers, or believing there would be no change.

There was no significant difference observed between the treatment and control groups’ ratings in any of the four questionnaires (Preliminary time 2, z=-0.92, p=0.36; Interim time 3, z=0.11, p=0.91; Interim time 5, z=1.50, p=0.14; Interim time 6, z=0.58, p=0.56). There was a significant difference in the ratings given across the four questionnaires (n=19, Fr=11.37, p=0.01), however there were no significant pair-wise comparisons between the ratings given in the questionnaires (p>.05). From visual inspection, it appears that most of the participants began by thinking that there would be an increase in seat belt wearing, but by the end of the project there was an increase in the proportion who believed there would be no change.
c. Believe that seat belts are too fiddly to put on

- Preliminary time 2
- Interim time 3
- Interim time 5
The subjects’ responses to this question were split between believing that the SBR system would “increase wearing” or cause “no change” for drivers who do not wear seat belts because they believe they are too fiddly to put on. For the first two questionnaires, the majority of subjects chose the “increase wearing” option, however the proportion who believed there would be “no change” increased in the final two questionnaires.

There was no significant difference observed between the treatment and control groups’ ratings in any of the four questionnaires (Preliminary time 2, $z=-0.92$, $p=0.36$; Interim time 3, $z=-0.23$, $p=0.82$; Interim time 5, $z=1.10$, $p=0.27$; Interim time 6, $z=0.19$, $p=0.85$).

There was a significant difference in ratings across time ($n=19$, $F=16.03$, $p=0.001$). None of the pair-wise comparisons were significantly different. From visual inspection, it appears that, in general, the pattern of responses were similar to the previous question, where the proportion of participants who believed SBR would lead to an increase in seat belt wearing decreased, while the proportion who believed there would be no change increased.
7d. Believe that wearing seat belts is a violation of freedom
Subject responses varied between thinking the SBR system would increase seat belt wearing, or cause no change, in those drivers who believed wearing seat belts is a violation of freedom.

There was no significant difference observed between the treatment and control groups’ ratings in any of the four questionnaires (Preliminary time 2, $z=-1.10$, $p=0.27$; Interim time 3, $z=1.10$, $p=0.27$; Interim time 5, $z=0.99$, $p=0.32$; Interim time 6, $z=0.92$, $p=0.36$). There was also no evidence of a change in the way subjects rated this item over time ($n=19$, $Fr=4.78$, $p=0.18$).
7e. Can’t be bothered putting their seat belt on.
Subject responses varied between thinking the SBR system would increase seat belt wearing, or cause no change, in those drivers who can’t be bothered putting their seat belts on. At the beginning of the study, most subjects believed that there would be an increase in seat belt wearing. By the end of the project there was an increase in the proportion of subjects who believed there would be no change in seat belt wearing behaviour.

There was no significant difference observed between the treatment and control groups’ ratings in any of the four questionnaires (Preliminary time 2, $z=-0.91$, $p=0.36$; Interim time 3, $z=-0.35$, $p=0.73$; Interim time 5, $z=1.25$, $p=0.21$; Interim time 6, $z=-0.05$, $p=0.96$).

There was also no significant change in the ratings across time ($n=19$, $Fr=6.00$, $p=0.11$)

7f. Believe that there is little chance of getting a fine for not wearing a seat belt.
Figure 143. Histograms of the percentage of responses in each category for each group, across the four questionnaires (0=increase wearing, 1=no change, 2=decrease wearing).
Responses were split between “increase wearing” and “no change”, with the majority of subjects in the beginning choosing the first option, whereas by the end of the project, a greater proportion of subjects believed there would be no change.

There was no significant difference observed between the treatment and control groups’ ratings in any of the four questionnaires (Preliminary time 2, \( z=-0.92, p=0.36 \); Interim time 3, \( z=0.51, p=0.61 \); Interim time 5, \( z=0.58, p=0.56 \); Interim time 6, \( z=-0.34, p=0.74 \)).

There was a significant difference in ratings between the four questionnaires (\( n=19, F_r=9.46, p=0.024 \)). Again, none of the pair-wise comparisons were significantly different, however there did appear to be a trend towards more people choosing “no change” and less people choosing “increase wearing” over time.

7g. Believe that wearing seat belts does not enhance safety.
The responses spread between increase wearing and no change and again, there was a trend for more people to choose “no change” in later questionnaires compared with earlier questionnaires.

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, z=-0.92, p=0.36; Interim time 3, z=-0.05, p=0.96; Interim time 5, z=1.50, p=0.14; Interim time 6, z=0.34, p=0.74).

There was a significant change over time in the ratings given to this item (n=19, Fr=8.10, p=0.04). Again, none of the pair-wise comparisons were significantly different, however there did appear to be a trend towards more people choosing “no change” and less people choosing “increase wearing” over time.
Social Acceptability

5n. The SBR system should be compulsory for all drivers
Figure 145. Histograms of the percentage of responses in each category for each group, across the four questionnaires (0=strongly disagree, 1=disagree, 2=neither, 3=agree, 4=strongly agree).

The subjects’ responses to whether the SBR system should be compulsory for all drivers ranged from strongly disagree to strongly agree.

There was no significant difference observed between the treatment and control groups’ ratings in three of the questionnaires (Preliminary time 2, z=-0.35, p=0.72; Interim time 5, z=0.87, p=0.38; Interim time 6, z=1.24, p=0.21). However, at the Interim time 3 questionnaire, the ratings for the control group were significantly different than those of the treatment group (z=2.31, p=0.02). It can be seen in the histogram above that the responses of treatment group were more positive than those of the control group. At that time, 45.5% of the treatment group strongly agreed compared with none of the controls, whereas 42.9% of the control group neither agreed nor disagreed, compared with none of the treatment group.

There was no significant difference in the ratings between questionnaires for the treatment group (n=10, Fr=3.87 p=0.28) or the control group (n=7, Fr=3.42, p=0.33).
5o. The SBR system should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving.
This question elicited a range of responses, with a slight tendency to disagree with this statement.

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, $z=0.14$, $p=0.89$; Interim time 3, $z=-0.39$, $p=0.70$; Interim time 5, $z=-1.24$, $p=0.22$; Interim time 6, $z=-1.18$, $p=0.24$). There was also no evidence of a change in the ratings over time ($n=18$, $F_r=2.30$, $p=0.51$).

5p. The SBR system takes too much control away from the driver.
Figure 147. Histograms of the percentage of responses in each category for each group, across the four questionnaires (0=strongly disagree, 1=disagree, 2=neither, 3=agree, 4=strongly agree).
Almost all subjects disagreed or strongly disagreed with the statement that the SBR takes too much control away from the driver. A small proportion of subjects neither agreed nor disagreed, while none of the subjects agreed with this statement.

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, \(z=-1.92, p=0.05\); Interim time 3, \(z=-0.45, p=0.65\); Interim time 5, \(z=-0.19, p=0.85\); Interim time 6, \(z=-0.52, p=0.61\)). There is some evidence of a possible difference between the ratings in the initial questionnaire (\(p<.10\)). At that time, a similar proportion of subjects disagreed with the statement (54.6% treatment, 62.5% control) but 25% of the control subjects neither agreed nor disagreed, compared with none of the treatment subjects.

There was no significant difference in the ratings given at the different questionnaires for the treatment group (\(n=11, Fr=0.35, p=0.72\)), or the control group (\(n=7, Fr=2.00, p=0.57\)).

**5q. I would prefer it if, rather than just warning the driver, the SBR system prevented the driver from starting the car if someone in the car is not wearing a seat belt.**
Subjects chose a range of responses to this item. In general, there was a slight trend towards disagreement.

There was a significant difference between the ratings of the treatment and control groups for the initial questionnaire ($z=1.98$, $p<0.05$) when a greater proportion of the treatment group subjects disagreed or strongly disagreed (63.2%) than the control group (37.5%). There was no significant difference between the groups’ ratings for the subsequent three questionnaires (Interim time 3, $z=0.84$, $p=0.40$; Interim time 5, $z=-0.22$, $p=0.83$; Interim time 6, $z=-0.44$, $p=0.66$).

There was no significant difference in the ratings given at the different questionnaires for the treatment group ($n=11$, $Fr=4.33$, $p=0.23$), or the control group ($n=7$, $Fr=0.36$, $p=0.95$).
5t. I will enjoy driving less as a result of having the SBR system in my car

<table>
<thead>
<tr>
<th>Time</th>
<th>Treatment</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary time 2</td>
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<td><img src="image2.png" alt="Graph" /></td>
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<tr>
<td>Interim time 3</td>
<td><img src="image3.png" alt="Graph" /></td>
<td><img src="image4.png" alt="Graph" /></td>
</tr>
<tr>
<td>Interim time 5</td>
<td><img src="image5.png" alt="Graph" /></td>
<td><img src="image6.png" alt="Graph" /></td>
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</tbody>
</table>
Most subjects disagreed that having the SBR in their car would make them enjoy driving less. There was a small proportion of subjects who agreed with this statement (i.e. rated it as either 3 or 4).

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, \(z=-1.05\), \(p=0.30\); Interim time 3, \(z=-0.36\), \(p=0.72\); Interim time 5, \(z=-0.79\) \(p=0.43\); Interim time 6, \(z=-0.81\), \(p=0.42\)). There was also no evidence of a change in ratings over time (\(n=18\), \(F_r=1.22\), \(p=0.75\)).

5u. I would prefer a SBR system that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers).
Figure 150. Histograms of the percentage of responses in each category for each group, across the four questionnaires (0=strongly disagree, 1=disagree, 2=neither, 3=agree, 4=strongly agree).
There was a range of responses to this statement, with a large proportion of subjects disagreeing that they would prefer a SBR system that they could turn off.

There was no significant difference observed between the treatment and control groups’ ratings in any of the questionnaires (Preliminary time 2, z=-0.19, p=0.85; Interim time 3, z=1.35, p=0.18; Interim time 5, z=-0.90, p=0.37; Interim time 6, z=-0.86, p=0.39). There was no significant difference in the ratings given across questionnaires (n=18, Fr=1.24, p=0.74).

Affordability

9. How much would you be willing to pay for the SBR system if it were an optional feature in a new car?

Purchase

Subjects were willing to pay between zero and $500 for purchase of SBR as part of a new car. The median amount subjects were willing to pay was $100 for most time points.

There was no significant difference between groups in terms of the amount they were willing to pay for purchase of SBR (Preliminary time 2, z=-0.87, p=0.38; Interim time 3, z=-0.36, p=0.72, Interim time 5, z=-0.51, p=0.61, Interim time 6, z=-0.59, p=0.55). There was also no difference across the questionnaires (n=17, Fr=0.38, p=0.95).
Subjects reported being willing to pay between zero and $100 for yearly maintenance of the SBR, with most subjects not willing to pay more than $50. This did not vary much between groups, or across time. For the control group, the median price was zero at all time-points. The median for the treatment group was $20 at Interim time 3, and zero for the other questionnaires.

There was no significant difference between groups in terms of the amount they were willing to pay for yearly maintenance/service of SBR (Preliminary time 2, z=-0.11, p=0.91; Interim time 3, z=0.44, p=0.66, Interim time 5, z=0.05, p=0.96, Interim time 6, z=0.56, p=0.58). There was also no difference across the questionnaires (n=16, Fr=0.71, p=0.88).
10. How much would you be willing to pay for the SBR system if it could be retrofitted to an existing car?

Subjects reported being willing to pay between zero and $500 for purchase of SBR to be retrofitted to an existing car. As can be seen in figure 41, there was much variation in the amount subjects were willing to pay, both between groups (e.g. at Interim time 5) and across time.

There was, however, no significant difference between groups in terms of the amount they were willing to pay for purchase of SBR for an existing car (Preliminary time 2, z=-0.28, p=0.78; Interim time 3, z=-0.55, p=0.58, Interim time 5, z=-0.51, p=0.61, Interim time 6, z=-0.74, p=0.46). There was also no significant difference across the questionnaires (n=15, Fr=0.74, p=0.86).
Most subjects reported being willing to pay between zero and $100 for installation of SBR into an existing car (with one outlier of $500 at Interim questionnaire time 5).

There was no significant difference between groups in terms of the amount they were willing to pay for installation of SBR for an existing car (Preliminary time 2, $z=-0.11$, $p=0.91$; Interim time 3, $z=0.36$, $p=0.72$, Interim time 5, $z=-0.39$, $p=0.70$, Interim time 6, $z=0.85$, $p=0.39$). There was also no significant difference across the questionnaires ($n=15$, Fr=2.72, $p=0.44$).
The median price subjects were willing to pay for yearly maintenance/service of SBR for an existing vehicle was zero across all questionnaires. Most subjects were not willing to pay more than $50, with a small proportion willing to pay up to $100.

No significant difference was found between groups in terms of the amount they were willing to pay for yearly maintenance/service of SBR for an existing car (Preliminary time 2, $z=0.00, p=1.00$; Interim time 3, $z=0.20, p=0.84$, Interim time 5, $z=0.05, p=0.96$, Interim time 6, $z=1.05, p=0.29$). There was also no significant difference across the questionnaires ($n=14$, Fr=1.65, $p=0.65$).
11. Hypothetically, if you had the option of keeping the SBR system in your vehicle at the end of the study (at no extra cost), would you be interested?
Most subjects showed interest in keeping the SBR, although as time progressed, a few started to express disinterest.

No significant difference was found between groups in terms of their interest in keeping the SBR (Preliminary time 2, $z=0.63$, $p=0.53$; Interim time 3, $z=-0.28$, $p=0.78$, Interim time 5, $z=0.04$, $p=0.96$, Interim time 6, $z=-0.10$, $p=0.92$). There was also no significant difference across the questionnaires ($n=18$, $Fr=3.20$, $p=0.36$).

Table 9. Level of interest in keeping SBR – number (and percentage of group) of subjects who were interested, very interested, disinterested or very disinterested in keeping SBR.

<table>
<thead>
<tr>
<th>Questionnaire - group</th>
<th>Interested</th>
<th>Very Interested</th>
<th>Disinterested</th>
<th>Very Disinterested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prelim 2</td>
<td>Treatment</td>
<td>5 (45.5)</td>
<td>5 (45.5)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>3 (37.5)</td>
<td>3 (37.5)</td>
<td>0</td>
</tr>
<tr>
<td>Interim 3</td>
<td>Treatment</td>
<td>4 (40.0)</td>
<td>3 (30.0)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>3 (37.5)</td>
<td>3 (37.5)</td>
<td>0</td>
</tr>
<tr>
<td>Interim 5</td>
<td>Treatment</td>
<td>6 (54.6)</td>
<td>3 (27.3)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>3 (37.5)</td>
<td>3 (42.9)</td>
<td>0</td>
</tr>
<tr>
<td>Interim 6</td>
<td>Treatment</td>
<td>5 (50.0)</td>
<td>3 (30.0)</td>
<td>1 (10.0)</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>3 (37.5)</td>
<td>3 (37.5)</td>
<td>1 (12.5)</td>
</tr>
</tbody>
</table>

**If disinterested, why?**
Subjects who were disinterested or very disinterested in keeping the SBR were asked to state why.
Preliminary questionnaire time 2
No subjects at this time expressed disinterest in keeping the SBR.

Interim questionnaire time 3
Treatment group
One subject in the treatment group expressed disinterest in keeping the SBR at this questionnaire. The reason was, “Need to be able to disable audible alarm. Also driver warning seems to be activated whenever motor is running - should be activated by pressure like other seats.”

Control group
One subject in the control group expressed disinterest in keeping the SBR at Interim time 3. “It is the wrong approach. Drivers need to be educated from school aware of the life saving benefits of wearing belts e.g. motor racing”

Interim questionnaire time 5
Treatment group
No subject in the treatment group was disinterested in keeping SBR at this time.

Control group
Two subjects in the control group were very disinterested in keeping the SBR. Their reasons were
- additional cost for no gain as I and my passengers are in the habit of always wearing seat belts
- drivers must be trained and educated of the benefits of seat belt wearing not be coerced into using them

Interim questionnaire time 6
Treatment group
One subject in the treatment group expressed disinterest at this time, and stated, “The screen displaying the system needs to be improved”

Control group
One subject in the control group expressed disinterest and stated, “I am in the habit of wearing seatbelts and insist passengers wear them also. Of no benefit to be but something else to go wrong”

If interested, why?
Preliminary questionnaire time 2
Treatment group
Five subjects were interested, and another five subjects were very interested in keeping the SBR. Their reasons were as follows:
- to check on passengers
- my children are less vigilant about wearing seat belts
- at no cost
• it lowers the risk of injury in a collision
• a useful feature for ensuring passengers are wearing seat belts
• Anything that improves safety awareness and reduces the potential for injury is a good investment
• I think it's a good system and with children it will automatically alert me that they are not buckled or have unbuckled
• enhances safety particularly for passengers
• as a check on passengers and to encourage other drivers to wear the seat belt
• great as a warning when kids are messing around

Control group
Three subjects were interested, and another three subjects were very interested in keeping the SBR. Their reasons were as follows:
• I believe that by having the system it will eliminate a person(s) forgetting
• my passengers will be reminded of the importance of the seat belt
• I have 2 current vehicles (not including the test vehicle) that have a seat belt reminder (saab, commodore)
• to ensure passengers always wear seat belts
• creates awareness and reminds all passengers without insulting or embarrassing passengers
• to assist identifying passengers without a seat belt on

Interim questionnaire time 3
Treatment group
Four subjects were interested, and another three subjects were very interested in keeping the SBR. Their reasons were as follows:
• keeps a check on passengers
• passenger reminder
• wearing a seat belt at all times by all passengers/drivers is essential to minimise injury. Even cars backing out of driveways can be hit at speed
• guarantees everyone in the car is wearing a belt
• I rarely wore a seat belt when reversing. I now do.
• good for passenger safety
• it's great when kids are in the car

Control group
Three subjects were interested, and another three subjects were very interested in keeping the SBR. Their reasons were as follows:
• has increased my awareness and importance of wearing a seatbelt
• I believe this system is great and ultimately will save lives
• useful reminder of passenger seatbelts
• assist with ensuring passengers are wearing seat belts
• my 4 children now tell me if they take time to put the belt on. I now wait. Normally I would have driven slowly to the bottom of our court and by then they
would have it on. As a parent I am pleased my children are aware of the need for the belt and when they start driving alone they will still feel this way.

- to encourage passengers to wear seat belts

**Interim questionnaire time 5**

*Treatment group*

Six subjects were interested, and another three subjects were very interested in keeping the SBR. Their reasons were as follows:

- reminds passengers in particular
- children forget to put on seatbelts
- personal safety depends on all persons wearing seat belts at all times in motor vehicles
- helps monitor other passengers
- seat belts save lives. Any system that aids the wearing of seat belts is good.
- good safety feature particularly with children
- good safety feature
- good check on passengers
- it keeps me honest

*Control group*

Three subjects were interested, and another three subjects were very interested in keeping the SBR. Their reasons were as follows:

- has increased my awareness and importance in wearing a seat belt
- safety of passengers
- useful reminder to wear seatbelts
- ensure passengers wear seat belts
- I have found my passengers (my kids) awareness has increased and much discussion has begun about seat belts and safety due to this trial. They now take the lead in telling new passengers the importance of wearing a seat belt.
- assists with identifying passengers without a seatbelt on

**Interim questionnaire time 6**

*Treatment group*

Five subjects were interested, and another three subjects were very interested in keeping the SBR. Their reasons were as follows:

- because it checks on passengers
- forces passengers to wear seat belts
- good safety tool. Low speed crashes can result in serious injury if not wearing a belt
- helpful, mainly for knowing about passengers’ use of seatbelts
- excellent safety device
- good safety feature particularly with children in the car
- good for passenger safety
- It helps at times
Control group
Three subjects were interested, and another three subjects were very interested in keeping the SBR. Their reasons were as follows:

- my awareness has increased
- because it makes sure that all my passengers are belted up correctly
- helps passengers to remember to put on seatbelts
- good for reminding passengers to fit seat belts
- I think it is great. I have 4 children who always put their seat belt immediately on and tell any new passenger to do the same.
- It is of particular use to me in encouraging passengers to use seat belts
Reverse Collision Warning

Usefulness

1. To what extent do you feel that Reverse Collision Warning System will be of use to you?

![Graph showing usefulness of Reverse Collision Warning System over time for treatment and control groups.](image-url)
Figure 157. Histograms of the percentage of responses in each category for each group across the four questionnaires (0=no use, 5=always of use).

The ratings for this item were clustered towards the positive end of the scale, that is, most subjects felt the RCW system would be of use to them.

There was no significant difference between groups in terms of the ratings given to this item for any of the four questionnaires (Preliminary questionnaire time 2, $z=-1.31$, $p=0.19$; Interim questionnaire time 3, $z=-1.20$, $p=0.23$; Interim questionnaire time 5, $z=-0.05$, $p=0.96$; Interim questionnaire time 6, $z=0.68$, $p=0.50$).

There was no significant difference in ratings across the questionnaires ($n=18$, $Fr=6.55$, $p=0.09$), however as the $p$-value is less than 0.10, there may be some evidence of a difference across time. The median score at Preliminary time 2 was 4, and this increased to 5 at Interim times 3 and 5, and 4.5 at Interim time 6.

2. If you gave a score of 0 to Question 1, why do you think the RCW will be of no use to you?

Three different subjects responded that the RCW would be of no use to them, one at Preliminary questionnaire time 2 (treatment group), one at Interim questionnaire time 3 (treatment group) and one at Interim questionnaire time 5 (control group).
One subject in the treatment group did not provide a reason for why they thought the RCW would be of no use to them. The other subject in the treatment group specified that “warning not early enough”, while the control group subject specified that the RCW was “infuriatingly inaccurate”.

**Effectiveness**

**To what extent do you agree or disagree with each of the following statements?**

3a. I will lose trust in the RCW system if it fails to issue warnings when it should
Most subjects agreed that they would lose trust in the RCW system if it fails to issue warnings when it should.

There were no significant differences between the ratings given by the treatment group compared with the control group, for any of the four questionnaires (Preliminary time 2, \( z=0.27, p=0.78 \); Interim time 3, \( z=-0.99, p=0.32 \); Interim time 5, \( z=0.18, p=0.86 \); Interim time 6, \( z=0.71, p=0.48 \)). There was also no evidence of a change in ratings across time (\( n=19, Fr=1.23, p=0.75 \)).
3b. I will lose trust in the RCW system if it issues false warnings
Most subjects agreed that they would lose trust in the RCW system if it issues false warnings.

There was no significant interaction between treatment group and questionnaire (F(3,51)=1.67, p=0.18), nor was there a significant difference between the ratings given by the treatment group and the control group (F(1,17)=0.49, p=0.49) or any evidence of a change in ratings over time (F(3,51)=0.16, p=0.92).

3c. I will end up relying more on the RCW system than my own lookout while reversing.
There was a range of responses to this statement, with a large proportion of subjects disagreeing that they would rely more on the RCW while reversing than their own lookout (Preliminary time 2, 47.4%; Interim time 3, 47.4%; Interim time 5, 54.6%; Interim time 6, 47.4%).
Comparison between groups for ratings given at the first three questionnaires were all non-significant, (Preliminary time 2, z=0.64, p=0.52; Interim time 3, z=-0.72, p=0.47; Interim time 5, z=-1.20, p=0.23). However, at the final questionnaire, there was a significant difference between the ratings of the treatment group and the control group (z=-4.32, p<0.001). At that time, most of the treatment group (63.6%) subjects disagreed that they will end up relying on the RCW when they are reversing, whereas the category with the largest response in the control group (37.5%) was “neither agree nor disagree”. These were also the median ratings for each group at this time. In addition, at the end of the project, only 9.1% of treatment group participants agreed, compared to 37.5% of control group participants who agreed or strongly agreed.

There was no significant difference in ratings across time for the treatment group (n=11, Fr=2.23, p=0.53) or for the control group (n=8, Fr=5.25, p=0.15).

3h. I will drive more safely with the RCW system in my car.
Figure 161. Histograms of the percentage of responses in each category for the each group across the four questionnaires (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

There was a range of responses to this item, which clustered towards the positive (agree) end of the scale. Subjects’ ratings increased over time, so that by the end of the study 68.4% of subjects agreed (with another 5.3% strongly agreeing) that they would drive more safely with the RCW system in their car.

There was no significant difference between groups in terms of the ratings given to this item for any of the four questionnaires (Preliminary questionnaire time 2, z=-0.44, p=0.66; Interim questionnaire time 3, z=0.27, p=0.79; Interim questionnaire time 5, z=0.54 , p=0.59; Interim questionnaire time 6, z=0.41, p=0.68).

There was a significant difference in ratings across time (n=19, Fr=11.97, p=0.007), however multiple pair-wise comparisons revealed no significant differences. It does appear from figure 5 that the proportion of subjects who agreed that they would drive more safely with the RCW in their car increased over time. The median ratings did increase from 2 (neither agree nor disagree) at Preliminary time 2, to 3 (agree) at the
other questionnaires. There was also a consistent increase in the mean rating across time (refer to table 10).

**Table 10. Summary measures of ratings for item 3h across the four questionnaires**

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Median rating</th>
<th>Mean rating (standard dev)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary time 2</td>
<td>2</td>
<td>2.11 (1.08)</td>
</tr>
<tr>
<td>Interim time 3</td>
<td>3</td>
<td>2.26 (1.22)</td>
</tr>
<tr>
<td>Interim time 5</td>
<td>3</td>
<td>2.63 (0.99)</td>
</tr>
<tr>
<td>Interim time 6</td>
<td>3</td>
<td>2.63 (0.88)</td>
</tr>
</tbody>
</table>
Q4 What effect will the RCW system have on each of the following?

a. Incidence of crashes

<table>
<thead>
<tr>
<th>Time</th>
<th>Treatment</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary time 2</td>
<td><img src="image1" alt="Preliminary time 2 Treatment" /></td>
<td><img src="image2" alt="Preliminary time 2 Control" /></td>
</tr>
<tr>
<td>Interim time 3</td>
<td><img src="image3" alt="Interim time 3 Treatment" /></td>
<td><img src="image4" alt="Interim time 3 Control" /></td>
</tr>
<tr>
<td>Interim time 5</td>
<td><img src="image5" alt="Interim time 5 Treatment" /></td>
<td><img src="image6" alt="Interim time 5 Control" /></td>
</tr>
</tbody>
</table>
Most subjects felt that the RCW system would decrease the incidence of crashes.

There was a significant difference between the groups’ ratings at the beginning of the study (Preliminary time 2, $z=-2.53$, $p=0.01$), and at the end of the study (Interim time 6, $z=2.29$, $p=0.02$). There was also some evidence for a difference between groups at Interim time 3 ($z=-1.66$, $p=0.097$), however this was not apparent at Interim time 5 ($z=-0.80$, $p=0.43$). While most subjects believed the RCW system would decrease the incidence of crashes, there was some difference between groups. For example, at the beginning of the study 100% of control group subjects believed the incidence would decrease, compared to 81.8% of the treatment group. At the end of the study, the opposite was found – 100% of treatment group subjects believed crash incidence would decrease, compared to 87.5% of the control group. Despite these significant differences between groups, the most compelling finding from this question was the large proportion of subjects who believed the RCW system would decrease the incidence of crashes.

There was no significant difference in ratings across time for the treatment group ($n=10$, $Fr=2.40$, $p=0.49$) or for the control group ($n=8$, $Fr=3.00$, $p=0.39$).
b. Crash severity

![Bar charts showing crash severity by treatment and control groups at different times.](chart.png)
Most subjects felt that the RCW system would decrease the severity of crashes, although a number believed it the severity of crashes would not change. Very few subjects felt that the RCW would increase the severity of crashes.

There was no significant difference between groups in terms of the ratings given to this item for any of the four questionnaires (Preliminary questionnaire time 2, $z=-1.05$, $p=0.30$; Interim questionnaire time 3, $z=-0.97$, $p=0.33$; Interim questionnaire time 5, $z=-0.44$, $p=0.66$; Interim questionnaire time 6, $z=-1.76$, $p=0.08$). However, due to a p-value of less than 0.10, there was some evidence for a difference at Interim time 6. At this time, while the most common response for both groups was “decrease”, a greater proportion of subjects in the control group chose this response (87.5%) than the treatment group (70%).

There was no significant difference in ratings across the four questionnaires for the treatment group ($n=10$, $Fr=4.00$, $p=0.26$) or the control group ($n=8$, $Fr=1.71$, $p=0.63$).
Social Acceptability

To what extent do you agree or disagree with each of the following statements?
3d. The RCW system should be compulsory in all vehicles
There was a range of responses to whether the RCW should be compulsory in all vehicles, ranging from strongly disagree to strongly agree.

There was no significant interaction between treatment group and questionnaire (F(3,51)=1.54, p=0.21). There was no significant difference between the ratings given by the treatment and control groups (F(1,17)=0.44, p=0.52), nor was there a significant change in ratings across time (F(3,51)=1.04, p=0.39).
3e. The RCW system takes too much control away from the driver
The most common response was for subjects to disagree that the RCW takes too much control away from the driver.

There was no significant difference between groups in terms of the ratings given to this item for the first three of the four questionnaires (Preliminary questionnaire time 2, \( z=-0.15 \), \( p=0.88 \); Interim questionnaire time 3, \( z=-0.70 \), \( p=0.48 \); Interim time 5, \( z=-1.05 \), \( p=0.29 \)), however there was a significant difference between the groups for the final questionnaire (Interim questionnaire time 6, \( z=-2.13 \), \( p=0.03 \)). In the last questionnaire, the proportion of control group subjects who neither agreed nor disagreed (50%) was larger than for the treatment group (9.1%). The proportion of treatment group subjects who disagreed (72.7%) was higher than that for the control group (50%).

There was no significant difference in ratings across the four questionnaires for the treatment group (\( n=11, \text{Fr}=2.43, p=0.49 \)) or the control group (\( n=8, \text{Fr}=3.27, p=0.35 \)).
3f. I would prefer it if the RCW system made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.
Subjects tended to disagree that they would prefer a system that took more control and actually prevented the driver from reversing if there was an obstacle in the way.

There was no significant difference between the ratings given by the treatment group and the control group for any of the four questionnaires (Preliminary time 2, $z=-1.16$, $p=0.25$; Interim time 3, $z=-0.14$, $p=0.89$; Interim time 5, $z=-0.79$, $p=0.43$; Interim time 6, $z=0.31$, $p=0.75$).

There was also no significant difference in ratings across time ($n=19$, $Fr=3.99$, $p=0.26$).

3g. The enjoyment of driving will increase as a result of having the RCW system in my car.
Figure 167. Histograms of the percentage of responses in each category for the each group across the four questionnaires (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

There was a wide range of responses to this item. Subjects varied as to whether they agreed that their enjoyment of driving would increase as a result of having the RCW system in their car.

Comparison between groups for ratings given at each questionnaire were all non-significant, Preliminary time 2, z=1.07, p=0.29; Interim time 3, z=-0.65, p=0.52; Interim time 5, z=-1.12, p=0.26; Interim time 6, z=1.09 p=0.28. There was no significant difference in ratings across time (n=19 Fr=4.30, p=0.23).
3i. I would prefer a RCW system that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me.
Subjects varied as to whether they agreed that they would prefer a RCW system that could be turned on and off depending on need.

Comparisons between groups for ratings given at each questionnaire were all non-significant, (Preliminary time 2, \( z = 0.27, p = 0.79 \); Interim time 3, \( z = 0.36, p = 0.72 \); Interim time 5, \( z = 0.26, p = 0.79 \); Interim time 6, \( z = -1.19, p = 0.24 \)). There was no significant difference in the ratings across questionnaires (\( n = 18, Fr = 2.08, p = 0.56 \)).
Affordability

5. How much would you be willing to pay for the RCW system if it were an optional feature in a new car?

The amount that subjects were willing to pay for purchase of the RCW as part of a new car varied, from zero to $500. The median price subjects in the treatment group were willing to pay increased from $50 at the beginning of the study to $150 by the end. The median price that the control group subjects were willing to pay ranged from $200 to $275.

Although there was no significant difference between groups in terms of the amount people were willing to pay for RCW in a new car across questionnaires (Preliminary time 2, z=-1.81, p=0.07; Interim time 3, z=-1.86, p=0.06; Interim time 5, z=-1.90, p=0.06; Interim time 6, z=-1.09, p=0.28), there was some evidence of a difference between groups for the first three questionnaires. There was a consistent trend for subjects in the control group to report being willing to pay more than subjects in the treatment group.

There was no significant difference in the amount people were willing to pay for RCW in a new car across the four questionnaires for participants in the treatment group (n=9, Fr=4.76, p=0.19) or the control group (n=7, Fr=2.56, p=0.47).
The range of values that subjects reported being willing to pay for yearly maintenance/service of the RCW in a new car was between zero and $100. In general, most subjects reported being willing to pay between zero and $50.

There was no significant difference between groups in terms of the amount subjects were willing to pay for maintenance of the RCW system in a new car for any of the questionnaires (Preliminary time 2, \(z=-0.32, p=0.75\); Interim time 3, \(z=1.30, p=0.19\); Interim time 5, \(z=0.18, p=0.85\); Interim time 6, \(z=0.93, p=0.35\)).

There was no significant difference in the amount subjects were willing to pay for maintenance of the RCW system in a new car across the four questionnaires (\(n=13, Fr=0.96, p=0.81\)).
6. How much would you be willing to pay for the RCW system if it could be retrofitted to an existing car?

The amount that subjects were willing to pay for purchase of the RCW for an existing car varied, from zero to $600. The median price subjects in the treatment group were willing to pay was $100 for all questionnaires except for the second one, where the median price was $50. The median price that the control group subjects were willing to pay increased from $105 to $260 throughout the course of the study.

There was no significant difference between groups in terms of the amount people were willing to pay for RCW in a new car across questionnaires; Preliminary time 2 (z=-0.62, p=0.54), Interim time 3 (z=-1.56, p=0.12), Interim time 5 (z=-1.36, p=0.17), Interim time 6 (z=-1.54, p=0.12).

There was no significant difference in the amount people were willing to pay for RCW in an existing car across the four questionnaires (n=14, Fr=0.53, p=0.91).
Fig 172. How much subjects were willing to pay for installation of the RCW into an existing car.

The range of values that subjects reported being willing to pay for installation of the RCW into an existing car was between zero and $250. In general, most subjects reported being willing to pay between zero and $50.

There was no significant difference between groups in terms of the amount subjects were willing to pay for installation of the RCW system into an existing car for any of the questionnaires (Preliminary time 2, z=-0.25, p=0.81; Interim time 3, z=0.29, p=0.77; Interim time 5, z=-0.26, p=0.79; Interim time 6, z=0.76, p=0.45).

There was no significant difference in the amount subjects were willing to pay for installation of the RCW system across the four questionnaires (n=13, Fr=4.82, p=0.19).
The amount that subjects were willing to pay for maintenance/service of a RCW system after fitting to an existing car was generally between zero and $50 per year.

There was no significant difference between groups in terms of the amount subjects were willing to pay for maintenance/service of a RCW system for an existing car for the questionnaires at Preliminary time 2 (z=0.07, p=0.94), Interim time 3 (z=0.36, p=0.72), Interim time 5 (z=0.18, p=0.85) and Interim time 6 (z=0.93, p=0.35).

There was no significant difference in the amount subjects were willing to pay for maintenance/service of a RCW system for an existing car across the four questionnaires (n=12, Fr=6.07, p=0.11).
Q7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested?
Most subjects were interested or very interested in keeping the RCW system at the beginning of the project, and this interest appeared to increase after experience with the RCW.

There was no significant difference between groups in terms of how interested subjects were in keeping the RCW for the questionnaires at Preliminary time 2 (z=-0.10, p=0.72), Interim time 3 (z=-0.20, p=0.84), Interim time 5 (z=-0.64, p=0.52) and Interim time 6 (z=-0.20, p=0.84).

There was no significant difference in ratings across the four questionnaires (n=17, Fr=4.20, p=0.24)

Table 11. Level of interest in keeping RCW – number and percentage of subjects who were interested, very interested, disinterested or very disinterested in keeping RCW.

<table>
<thead>
<tr>
<th>Questionnaire - group</th>
<th>Interested</th>
<th>Very Interested</th>
<th>Disinterested</th>
<th>Very Disinterested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prelim 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>7 (63.6)</td>
<td>2 (18.2)</td>
<td>1 (9.1)</td>
<td>0</td>
</tr>
<tr>
<td>Control</td>
<td>3 (42.9)</td>
<td>2 (28.6)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Interim 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>2 (20.0)</td>
<td>6 (60.0)</td>
<td>0</td>
<td>1 (10.0)</td>
</tr>
<tr>
<td>Control</td>
<td>2 (25.0)</td>
<td>5 (62.5)</td>
<td>1 (12.5)</td>
<td>0</td>
</tr>
<tr>
<td>Interim 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>4 (36.4)</td>
<td>5 (45.5)</td>
<td>1 (9.1)</td>
<td>0</td>
</tr>
<tr>
<td>Control</td>
<td>2 (25.0)</td>
<td>5 (62.5)</td>
<td>1 (12.5)</td>
<td>0</td>
</tr>
<tr>
<td>Interim 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>2 (20.0)</td>
<td>6 (60.0)</td>
<td>0</td>
<td>1 (10.0)</td>
</tr>
<tr>
<td>Control</td>
<td>3 (37.5)</td>
<td>4 (50.0)</td>
<td>1 (12.5)</td>
<td>0</td>
</tr>
</tbody>
</table>

If disinterested, why?

Subjects who responded that they were disinterested in keeping the RCW system were asked to state why. One subject was disinterested or very disinterested in keeping the
RCW at all four questionnaires. This subject (who was in the treatment group) stated at Preliminary questionnaire time 2 that they were disinterested and that
  • The system activates too late - it needs to be set at 3m.
This subject was very disinterested at Interim questionnaire 3
  • should be able to switch on or off as needed. Distance in which it is activated is too short - need to be able to vary the distance.
disinterested at Interim questionnaire 5
  • needs to be able to be switched on or off and to be able to vary distance (i.e. increase),
and very disinterested at Interim questionnaire 6
  • would like to be able to say the distance for the alarm, plus switch on/off when I need it.
Only one other subject expressed disinterest in keeping the RCW – a subject in the control group, who expressed disinterest at all but the initial questionnaire. This subject only provided a reason for their disinterest at the Interim time 5 questionnaire, when they stated:
  • It is not accurate enough or adjustable for varying conditions

If interested, why?

Most subjects stated that they were either interested or very interested in keeping the RCW system. Their reasons were as follows:

**Questionnaire time 2**

**Treatment group**
  • make my reversing safer
  • I park in city carparks, it would help
  • lowers risk of accident
  • useful parking tool, won't make driving safer
  • Although I always look when reversing, the device advises when you are getting close which sometimes is difficult to judge e.g. Sunlight or driving a vehicle you may not be familiar with
  • makes it easier to park car
  • assists in reversing in tight situations
  • safety feature
  • parallel parking and supermarkets great.

**Control group**
  • great system to have in all vehicles
  • more accurate reversing and parking where there is poor rear visibility
  • good tool to assist when reverse parking
  • I think it is a great idea
  • hard to detect end of car in sedans. I would not require it in stations wagons or hatches
**Interim Questionnaire time 3**

*Treatment group*
- would sense a pedestrian
- very helpful in CBD
- reduces the incidence of backing into objects
- handy feature that makes manoeuvring easier
- It is a helpful guide
- good/useful feature
- saves time and stress when parking
- it's a good aide while backing

*Control group*
- great system which I have to be accurate at all times. Once again it increases awareness.
- due to the new design vehicles with high front(? ) area it could make it harder to judge the distance, therefore I believe every vehicle should be fitted with a reversing warning device.
- the shape of current vehicles can at times make it difficult to judge distance - this helps
- very useful system when you can't see behind you
- makes reverse parking much easier
- It is always a worry reversing over children, you can always fix a car but children are so quick that you can't always see them
- Greatly assists my reversing when the back of the car is difficult to see.

**Interim Questionnaire time 5**

*Treatment group*
- a good safety device
- very helpful
- reduces the incidence of vehicle damage while backing
- great gadget. Very hard to judge distance when reversing
- any system that reduces the potential for an incident is worthwhile
- very handy for parking
- handy aid when in tight situations
- good aide for reverse parking
- It aids in reversing safely

*Control group*
- increases awareness
- prevents rear end collisions
- very useful assistance when rear visibility is poor
- very handy for reverse parking
- A very worthwhile aid to assist in reversing. You can never be 100% confident nothing has moved behind your car whilst reversing. It needs to be recognised for what it is - a driving aid.
• greatly assists reversing and parking

Interim Questionnaire time 6

Treatment group
• stops you inadvertently hitting a small object when reversing. Will alert you to a child who may have wandered behind the car.
• very helpful in city carparks
• reduces the incidence of backing into something
• Great gadget, although won’t do much for safety
• Improves reversing
• very handy when parking/reversing
• great feature, very useful for reverse parking
• It's great when backing

Control group
• increased awareness
• I reckon it's the best thing since sliced bread, it stops me hitting objects that are otherwise out of sight
• good feature although needs to be refined to avoid false hazards - particularly when reversing out of driveways.
• useful when rear visibility is poor
• good for determining reverse distance to aid parking
• An excellent thing to have. Even though I always look prior to reversing it is great to have help to identify something come behind after I start reversing or didn't see.
• Assists with judging distances between rear of car and other objects
A large proportion of the control group gave the speed request button a rating of 4, where 5=always of use (Preliminary time 2, 85.7%; Interim time 6, 71.4). The treatment group also rated it highly, with 81.8% rating it above 3 at the beginning of the project, compared with 80.0% at the end. The median rating was 4 for both questionnaires.

The treatment and control groups’ ratings were compared for each questionnaire to determine if there was a difference between groups. There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, $z=-0.43$, $p=0.70$; Interim time 6, $z=0.74$, $p=0.46$). There was also no evidence for a change in ratings across time ($z=0.46$, $p=0.65$).
Subjects who gave the system a rating of zero were asked why the system would be of no use to them. One subject in the treatment group rated the system of no use after experiencing the system; their reason was “Inaccurate, often no GPS signed.”

3. To what extent do you agree or disagree with each of the following statements?
   a. The speed request button will be really helpful in areas where speed limit signs are displayed infrequently.

![Histograms](image)

Figure 176. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)

None of the subjects disagreed that the system would be helpful in areas where speed limit signs are displayed infrequently. At the beginning of the project, most subjects either agreed (57.9%) or strongly agreed (31.6%) with this statement. A small proportion of the treatment group subjects neither agreed nor disagreed (18.2%), while none of the control group chose this option. After experiencing the speed request button, the proportion of treatment group subjects who neither agreed nor disagreed increased to
36.7%, with 45.6% agreeing and 18.2% strongly agreeing with the statement. All of the control group subjects still agreed or strongly agreed with the statement at that time.

The interaction between treatment group and questionnaire was not significant (F(1,16)=0.13, p=0.73). There was no significant difference between the ratings of the treatment group and the control group (F(1, 17)=2.10, p=0.17), nor was there any significant difference in the ratings given at Preliminary time 2 compared to Interim time 6 (F(1,16)=1.34, p=0.26).

b. The speed request button will be really helpful in areas where I think there are speed cameras

At the beginning of the project, the responses to this statement ranged from disagree to strongly agree, with most subjects choosing “neither agree nor disagree” (42.1%) or “agree” (31.6%). After having experience with the speed request button, the majority of
treatment group participants (81.8%) chose “neither agree nor disagree. Of the control group (who did not have any experience with the system), 28.6% chose this option, while the remaining 71.4% agreed the speed request button would be helpful in areas where there are speed cameras.

There was no significant interaction between treatment group and questionnaire (F(1,16)=0.50, p=0.49). There was no evidence of a difference in ratings between the groups (F(1,17)=2.07, p=0.17), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.53, p=0.48).

**Effectiveness**

c. I will not use the speed request button if it issues inaccurate speed limit advice

![Histograms of responses](image)

*Figure 178. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)*
Responses to this statement ranged from disagree to strongly agree, with the most common response for both groups at both questionnaires being agree (Preliminary time 2, 57.9%; Interim time 6, 55.6%). Only a small proportion of subjects disagreed with this statement (approximately 11%). The mean rating for both questionnaires lay between “neither agree nor disagree” and “agree” (Preliminary time 2, 2.79 (sd=0.85); Interim time 6, 2.78 (sd=0.88)).

The interaction between treatment group and questionnaire was not significant (F(1,16)=0.00, p=1.00). There was no evidence of a difference in ratings between the groups (F(1,17)=0.59, p=0.45), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.00, p=1.00).

d. The speed request button is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Bendigo and Ballarat.

Figure 179. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)
Responses to this statement ranged from strongly disagree to agree. Very few subjects agreed that the system would be of little use to them because of its coverage limitations (Preliminary time 2, 10.5%, Interim time 6, 5.6%). The most common response for the treatment group was “disagree” (Preliminary time 2, 63.6%, Interim time 6, 54.6%), which was so for the control group at the beginning of the study (50%). By the end of the study however, 57.1% of the control group chose “neither agree nor disagree.

The interaction between treatment group and questionnaire was not significant (F(1,16)=0.18, p=0.68). There was no evidence of a difference in ratings between the groups (F(1,17)=0.36, p=0.56), nor was there any evidence of a change in opinion over the time period (F(1,16)=0.67, p=0.43).

e. I will drive more safely with the speed request button in my car

![Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)](image)

Figure 180. Histograms of the percent of responses in each category, by group. (0=strongly disagree, 1=disagree, 2=neither agree nor disagree, 3=agree, 4=strongly agree)
Responses to this statement ranged from strongly disagree to strongly agree. The most common response at the beginning of the study was “agree” (42.1%). However, the most common response at the end of the study was “neither agree nor disagree” (50%).

The interaction between treatment group and questionnaire was not significant (F(1,16)=0.02, p=0.90). There was no evidence of a difference in ratings between the groups (F(1,17)=0.00, p=0.99), nor was there any evidence of a change in opinion over the time period (F(1,16)=1.13, p=0.30).

4. What effect will the speed request facility have on each of the following?
   a. Incidence of crashes

![Figure 181. Histograms of the percent of responses in each category, by group. (0=increase, 1= no change, 2=decrease)](image)

None of the subjects thought the speed request button would increase the incidence of crashes. Approximately 55% of subjects thought the speed request button would decrease crash incidence, while the remaining subjects thought it would cause no change.
There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, \(z=-0.34, p=0.74\); Interim time 6, \(z=-1.05, p=0.29\)). There was also no evidence for a change in ratings across time (\(z=0.58, p=0.56\)).

b. Crash severity

![Histograms of the percent of responses in each category, by group.](image)

None of the subjects thought the speed request button would increase the severity of crashes. The majority of subjects believed that it would decrease the severity of crashes, while the remaining subjects believed it would cause no change.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, \(z=0.05, p=0.96\); Interim time 6, \(z=-0.70, p=0.49\)). There was also no evidence for a change in ratings across time (\(z=0.58, p=0.56\)).
c. Probability of being fined

None of the subjects thought the speed request button would increase the probability of being fined. The majority of subjects believed that it would decrease the probability of a fine, while the remaining subjects believed it would cause no change.

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, z=-1.14, p=0.26; Interim time 6, z=-0.33, p=0.74). There was also no evidence for a change in ratings across time (z=0.45, p=0.65).
None of the subjects agreed that their driving enjoyment would decrease as a result of using the speed request button. The responses to this statement ranged from strongly disagree to neither agree nor disagree. Most participants disagreed with this statement to some extent (Preliminary time 2, 63.6% of treatment group, 100% of controls; Interim time 6, 72.7% of treatment group, 85.7% of controls).

There was no significant difference between the ratings given by the groups for either questionnaire (Preliminary time 2, $z=1.11$, $p=0.27$; Interim time 6, $z=1.08$, $p=0.28$). There was also no evidence for a change in ratings across time ($z=1.00$, $p=0.32$).
The responses to the question of whether the speed request button should be compulsory for all vehicles ranged from strongly disagree to strongly agree in the treatment group and disagree to agree in the control group.

The interaction between treatment group and questionnaire was not significant ($F(1,16)=0.12, p=0.74$). There was no evidence of a difference in ratings between the groups ($F(1,17)=0.07, p=0.79$), nor was there any evidence of a change in opinion over the time period ($F(1,16)=0.12, p=0.73$).
Affordability

5. How much would you be willing to pay for the speed request button if it were an optional feature in a new car?

Purchase

Fig 186. How much subjects were willing to pay for purchase of the speed request button as part of a new car.

Subjects reported being willing to pay an amount between zero and $600 for purchase of the speed request button as part of a new car. The median price subjects reported being willing to pay at the beginning of the study was $100, and $110 by the end of the project.

There was no significant difference between groups in terms of the amount subjects were willing to pay for purchase of the speed request button as part of a new car in either questionnaire (Preliminary time 2, z=-0.72, p=0.47; Interim time 6, z=-0.22, p=0.82). There was also no evidence for a change in the amount subjects were willing to pay across time (z=-0.22, p=0.83).
The majority of subjects reported a price between zero and $50 for how much they were willing to pay for yearly maintenance/service of a speed request button, with the maximum amount being $100.

There was no significant difference between groups in terms of the amount subjects were willing to pay for yearly maintenance/service of the speed request button in a new car for either questionnaire (Preliminary time 2, z=-0.08, p=0.94; Interim time 6, z=0.41, p=0.68). There was also no evidence for a change in amount subjects were willing to pay across time (z=0.63, p=0.53).
6. How much would you be willing to pay for the speed request button if it could be retrofitted to an existing car?

![Bar chart showing willingness to pay for purchase of the speed request button for an existing car.

Subjects reported being willing to pay an amount between zero and $500 for purchase of the speed request button for an existing car. The median price that the treatment group was willing to pay was $75 at the beginning of the study and $100 at the end, while for the control group the median was $175 at Preliminary time 2, and $145 at Interim time 6.

There was no significant difference between groups in terms of the amount subjects were willing to pay for purchase of the speed request button to fit to an existing car in either questionnaire (Preliminary time 2, z=-0.89, p=0.37; Interim time 6, z=-0.89, p=0.37). There was also no evidence for a change in amount subjects were willing to pay across time (z=0.95, p=0.34).
Most subjects reported being willing to pay an amount between zero and $100 for installation of the speed request button into an existing car.

There was no significant difference between groups in terms of the amount subjects were willing to pay for installation of the speed request button into an existing car in either questionnaire (Preliminary time 2, z=-0.50, p=0.62; Interim time 6, z=0.51, p=0.61). There was also no evidence for a change in amount subjects were willing to pay across time (z=1.00, p=0.32).
Fig 190. How much subjects were willing to pay for yearly maintenance/service of the speed request button in an existing car.

The median price that subjects in the treatment group were willing to pay for yearly maintenance/service of the speed request button after installation into an existing car was zero at the beginning of the study, and $10 by the end of the study.

There was no significant difference between groups in terms of the amount subjects were willing to pay for yearly maintenance/service of the speed request button for an existing car in either questionnaire (Preliminary time 2, $z=0.08$, $p=0.93$; Interim time 6, $z=0.41$, $p=0.68$). There was also no evidence for a change in amount subjects were willing to pay across time ($z=0.63$, $p=0.53$).
7. Hypothetically, if you had the option of keeping the speed request button in your vehicle at the end of the study (at no extra cost) would you be interested?

Most subjects expressed at least some interest in keeping the speed request button (Preliminary time 2, 72.7% of treatment group, 75% of controls; Interim time 6, 63.6% of treatment group, 85.7% of controls). At the beginning of the study, none of the subjects expressed disinterest in keeping the speed request button. However, by the end of the study, 18.2% of the treatment group (i.e. those who had experience with using the system) expressed disinterest in keeping it.

There was no significant difference between groups in terms of their interest in keeping the speed request button for either of the questionnaires (Preliminary time 2, z=-0.97, p=0.33; Interim time 6, z=-1.02, p=0.31). There was also no significant difference in the ratings across time (z=1.46, p=0.15).
Table 12. Level of interest in keeping the Speed Request button – number and percentage of subjects who were interested, very interested, disinterested or very disinterested in keeping SR button.

<table>
<thead>
<tr>
<th>Questionnaire - group</th>
<th>Interested</th>
<th>Very Interested</th>
<th>Disinterested</th>
<th>Very Disinterested</th>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prelim 2</td>
<td>Treatment</td>
<td>6 (54.6%)</td>
<td>2 (18.2%)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>2 (25%)</td>
<td>4 (50%)</td>
<td>0</td>
</tr>
<tr>
<td>Interim 6</td>
<td>Treatment</td>
<td>5 (45.5%)</td>
<td>2 (18.2%)</td>
<td>1 (9.1%)</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>4 (57.1%)</td>
<td>2 (28.6%)</td>
<td>0</td>
</tr>
</tbody>
</table>

If disinterested, why?
Subjects who reported they were either disinterested or very disinterested in keeping the speed request button were asked to state why.

Interim time 6
Treatment group
Two subjects in the treatment group expressed disinterest in keeping the speed request button at this time. Their reasons were as follows:
- data base inaccurate, often no GPS signed
- It's just another button you have to find when you should be focused on traffic

If interested, why?

Preliminary time 2
Treatment group
Eight subjects in the treatment group expressed interest in keeping the speed request button at this time. Their reasons were as follows:
- some areas are not marked with speed limits
- It helps monitor speed limits in unknown streets
- At times I do not know the speed limit
- useful feature when not sure what the speed limit is
- Any safety device is a benefit
- help me keep within speed limits
- good back up system if street speed limit is not clear
- sometimes I am not sure of the speed limit - this would be a good check

Control group
Six subjects in the control group expressed interest in keeping the speed request button at this time. Their reasons were as follows:
- good device to have in vehicle
- no fines for speeding
• to check speed limits where they change frequently
• good tool for identifying speed limits if not adequately sign posted
• I think it is a great idea
• very useful in poorly sign posted streets

Interim time 6
Treatment group
Seven subjects in the treatment group expressed interest in keeping the speed request button at this time. Their reasons were as follows:
• when working correctly, allows you to find the speed limit in unmarked areas.
• very helpful in unknown areas where speed is unknown
• helps to be aware of the speed zone
• Useful gadget. Sometimes I forget the speed limit. It provides reassurance.
• A good driving aid
• will prevent me speeding
• good feature for poorly signed roads

Control group
Six subjects in the control group expressed interest in keeping the speed request button at this time. Their reasons were as follows:
• increase awareness/more observant
• it stops me looking at the speedometer all the time
• good for determining speed limit if unsure
• I like the idea of knowing the speed limit as many times you don't notice all changes in speeds
• It would be of most use to me in areas where signage is infrequent
Daytime Running Lights

Usefulness

Questions asked at the baseline (Preliminary time 2) questionnaire

Question 1. How often do you drive with your headlights on during the day when the weather is good?

The majority of people reported never (0) or rarely (1) turning on their headlights when driving during the day when the weather is good.

Comparing the ratings given to this item by the treatment group and the control, no significant difference was observed between the treatment and control group in terms of how often they drive with headlights on during the day (z=0.92, p=0.36).

Subjects who did not respond that they always turned on their headlights during the day when the weather is good were asked what their main reason for not doing so was. Of the subjects who responded to this question, the reasons chosen were:

- Other people can see me, even without my headlights on, when the weather is good (6; 30%)
- Headlights aren’t required to see other road users during the day when the weather is good (5; 25%)
- I forget to turn them on (2; 10%)
- I have a light coloured car (2; 10%)
- Other (5; 25%)

Where subjects chose the “other” option, they were asked to specify what their reason was;

- would almost certainly forget to turn them off again
- short local trips
I do not think of it
it is not an issue up till now
never occurs to me

One other subject commented that, “I'll forget to turn them off on arrival at destination”.

Questions asked in each questionnaire.

1. To what extent do you feel that DRL will be of use to you?
The median rating of how much use participants thought DRL would be to them increased over time, from 2 at Preliminary time 2, to 3 at Interim time 3, and 4 at Interim time 5 and 6.

There was no significant difference between groups for the ratings given to this item for any of the questionnaires (Prelim2, z=0.76, p=0.45; Interim3, z=0.94, p=0.35; Interim5, z=1.25, p=0.21; Interim6 z=1.93, p=0.05). There was however, some evidence for a difference at the end of the project, when the median rating for the treatment group was 4, while the median rating for the control group was 3.

There was a significant difference in ratings across time for both the treatment group (n=10, Fr=10.52, p=0.02) and the control group (n=8, Fr=7.88, p<0.05). Multiple pairwise comparisons of the ratings given in each questionnaire for each group did not reveal any significant differences. For both groups however, the median ratings increased over time, from 3 to 4 in the treatment group, and 2 to 4 in the control group. That is, participants’ opinion of how useful daytime running lights would be to them increased over time.
Subjects who rated the DRL system as being of no use to them in question 1 (a rating of zero) were asked why.

**Preliminary time 2 questionnaire**
Two subjects responded that they would find the DRL system of no use. Both of these subjects were in the treatment group, and both chose the response “Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users”.

**Interim 3 questionnaire**
Two subjects responded that they would find the DRL system of no use (one of whom also responded “no use” in the baseline questionnaire). One was in the treatment group, and one was in the control group. Both chose the response “Other”. When asked to specify what their reason was, they stated
- lights only at night
- There is no conclusive research to date that indicates day time running lights will reduce crashes

**Interim 5 questionnaire**
One subject responded that they would find the DRL system of no use. This was the same subject in the treatment group who responded “no use” for the previous two questionnaires. Again, this subject chose the response “Other”, and specified
- because brake lights always seem to be on

**Interim 6 questionnaire**
No subjects responded that they would find the DRL system of no use. The one subject who had responded “no use” in all the other questionnaires failed to answer these two questions in Interim Questionnaire 6.
3. To what extent do you agree or disagree with each of the following statements?
a. DRLs are not needed when there are hardly any other cars or pedestrians on the road.
For the preliminary time 2 questionnaire, the spread of responses was even for the treatment group subjects, with an equal number of subjects choosing “disagree”, “neither agree nor disagree” and “agree”. As time progressed, the distribution shifted to the left (i.e. more treatment group subjects disagreed with this statement), and by the Interim time 6 questionnaire, 81.8% of treatment group subjects either disagreed or disagreed strongly with this statement, compared with 36.3% of subjects at the baseline questionnaire.

For the control group, a large proportion of subjects neither agreed nor disagreed with this statement at baseline and Interim time 3 (75% and 87.5% respectively). Similar to the treatment group however, as time progressed, the proportion of control group subjects who disagreed with this statement increased; from 12.5% at baseline and Interim time 3, to 50% (a quarter of whom strongly disagreed) at Interim time 5, and Interim time 6.

There was no significant difference between groups for the ratings given to this item for any of the questionnaires (Prelim2, z=0.0, p=1.0; Interim3, z=-1.09, p=0.28; Interim5, z=-0.71, p=0.48; Interim6 z=-1.35, p=0.18).

There was a significant difference in ratings across the four time points (n=19, F_r =17.64, p=0.001). Multiple pair-wise comparisons revealed no significant differences at the .05 level, however there was evidence of a difference between the ratings at Preliminary time 2 and Interim time 5 (p=0.06). The median rating decreased from 2 (neither agree nor disagree) to 1 (disagree) over this time period.
b. DRLs are a real necessity for drivers who forget to turn their headlights on during the day
The majority of subjects in the control group (62.5% for the first two questionnaires, 50% for the final two) neither agreed nor disagreed that DRLs are a real necessity for drivers who forget to turn on their headlights during the day. The treatment group had a larger range of responses to this statement than the control group, however quite a large proportion also chose to neither agree nor disagree (36.4% at Preliminary time 2 and Interim time 5, and 45.5% at Interim times 3 and 6).

There was no significant difference between groups for the ratings given to this item for any of the questionnaires (Prelim2, z=1.15, p=0.25; Interim3, z=-0.32, p=0.75; Interim5, z=0.18, p=0.86; Interim6 z=1.78, p=0.08), however there was some evidence of a difference at the final questionnaire (p<0.10). At the final questionnaire, the median rating for the treatment group was “agree”, while that for the control group was “neither agree nor disagree”.

There was a significant difference in ratings across the four time points for the treatment group subjects (n=11, Fr = 9.71, p=0.02) and the control group subjects (n=9, Fr=8.34, p=0.04). Multiple pair-wise comparisons revealed no significant differences at the .05 level, nor were any p-values for the comparisons less than 0.10. For subjects in the treatment group, there was a trend for an increase in ratings over time. The median rating for the treatment group for the first two questionnaires was “neither agree nor disagree”, while for the second two questionnaires it was “agree”. For the control group subjects...
however, the median rating was “neither agree nor disagree” for three of the four questionnaires, the exception being for the Interim time 5 questionnaire, when the median rating of 2.5 lay halfway between “neither agree nor disagree” and “agree”.

Effectiveness

d. Daytime running lights will reduce my fuel economy
Very few subjects agreed that DRLs would reduce their fuel economy. Most subjects either disagreed or disagreed strongly with this statement.

A mixed two-way within-subjects analysis of variance was performed. The interaction between group and questionnaire was non-significant. (F(3,51)=0.62, p=0.61). There was no difference between the ratings given by the groups (F(1,17)=0.00, p=0.97) nor was there any evidence of a change in ratings over time, (F(3,51)=1.76, p=0.17).

e. Daytime running lights will put extra strain on my car battery
Subjects in the treatment group generally disagreed or disagreed strongly with this statement, and although at the beginning of the study there was a small proportion that agreed or strongly agreed (18.2% at baseline, 9.1% at Interim time 3), this reduced to zero by the Interim time 5 questionnaire. By contrast, the proportion of subjects who agreed with this statement in the control group increased, from 12.5% at baseline to 37.5% at Interim time 6 (the last acceptability questionnaire).

There was no significant interaction between treatment group and questionnaire (F(3,51)=2.50, p=0.07), nor was there a significant main effect of group (F(1,17)=1.49,
p=0.24) or a significant change in ratings over time (F(3,51)=0.55, p=0.65). Although the interaction was not significant, the p-value was less than 0.10, and so this was investigated further to determine if there was anything of interest.

To further investigate the possible interaction, the effect of group membership was investigated for each questionnaire separately. For the first three questionnaires, there was no significant difference between the ratings given by the groups (Preliminary time 2, F(1,17)=0.17, p=0.69; Interim time 3, F(1,17)=0.07, p=0.79; Interim time 5, F(1,17)=1.12, p=0.30). However, the ratings given by the treatment group were significantly lower than those given by the control group at the end of the project (F(1,17)=7.03, p=0.02). At this time, the mean rating for the treatment group was 0.82 (sd=0.87), which lies between “strongly disagree” and “disagree”, compared to the mean rating for the control group of 2; “neither agree nor disagree”.

**Q3f. I will need to change the headlamps more often because of the daytime running lights**
Responses to this statement ranged from strongly disagree to strongly agree.

There was a significant interaction between group and questionnaire ($F(3,51)=3.08$, $p=0.04$). That is, the difference in ratings given by the two groups, differed across questionnaires. This was investigated further by looking for a difference between the ratings of the treatment and control groups for each of the questionnaires separately. No significant differences were found between the treatment group and control groups ratings for any of the four acceptability questionnaires ($p>0.05$) nor was there evidence of any possible differences ($p>0.10$). The figure below displays the mean rating for each group for each of the four questionnaires. There was also no significant change in ratings over time for either the treatment group or the control group ($p>0.10$).
Q3g. I will be safer with daytime running lights equipped to my car

Figure 199. Percent of responses in each category (0=strongly disagree, 1= disagree, 2= neither agree nor disagree, 3=agree, 4=strongly agree) for each group across the four acceptability questionnaires.
In the first two questionnaires, approximately 10% subjects disagreed or strongly disagreed that they would be safer with DRLs equipped to their car. In the final two questionnaires, none of the subjects disagreed. The majority of subjects either agreed or strongly agreed that DRLs would make them safer (Preliminary time 2, 52.6%; Interim times 3, 5 and 6, 68.4%).

Although at the beginning of the project there was no significant difference between the ratings of the treatment and control groups (Preliminary time 2, z =0.72, p=0.47), this changed for the next three questionnaires. There was a significant difference between the ratings of the treatment and control groups at Interim questionnaire time 5 (z=2.44, p=0.01) and some evidence for a difference at Interim questionnaire time 3 and Interim time 6 (z = 1.66, p<0.10; z=1.82, p=0.07 respectively).

At Interim time 5, over 90% of treatment group subject agreed or strongly agreed that they would be safer with DRLs, compared to only 37.5% of control group subjects. The remaining control group subjects neither agreed nor disagreed. Thus the treatment group agreed more with this statement than the control group at Interim time 5. This trend also occurred at each of the other time points. For the Interim time 3 and 6 questionnaire, 81.8% of the treatment group agreed or strongly agreed compared to 50% of the control group, while for the Preliminary time 2 questionnaire these values were 63.6% and 50% respectively.

There was some evidence for a change in ratings across time for the treatment group (n=11, Fr=7.25, p=0.06), however there was no difference in ratings across time apparent for the control group (n=8, Fr=1.00, p=0.80). Although the median rating for the treatment group remained as “agree” for all four questionnaires, there was a consistent increase in the mean rating, from 2.45 (sd=1.13) to 3.09 (sd=0.70). Overall, as time progressed, the treatment group subjects agreed more that they would be safer with daytime running lights equipped to their car than they did at the beginning.
Q3h. Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights.
The majority of subjects agreed that other drivers and pedestrians would be able to see their car more easily during the day because of DRLs.

There was no significant difference in ratings between groups for any of the four questionnaires (Prelim2, $z=0.60$, $p=0.55$; Interim3 $z=0.97$, $p=0.33$; Interim5 $z=0.71$, $p=0.48$; Interim6 $z=0.34$, $p=0.74$).

There was a significant difference in ratings across time ($n=19$, $F_t=12.98$, $p=0.005$). None of the pair-wise comparisons were significantly different, and there was no noticeable trend for change across time. The median ratings for each questionnaire were 3 (agree).

**Q4. What effect will daytime running lights have on each of the following?**

**a. Incidence of crashes**
Figure 201. Percent of responses in each category (0=increase, 1=no change, 2=decrease) for each group across the four acceptability questionnaires
Most subjects felt that the DRLs would decrease the incidence of crashes. There was one subject in the treatment group who rated the DRLs as likely to increase the incidence of crashes in the first three questionnaires.

There was no significant difference found between the groups at any of the four time points (Prelim 2, z=0.75, p=0.45; Interim 3, z=0.78, p=0.43; Interim 5, z=-0.85, p=0.39; Interim 6, z=0.83, p=0.41).

There was no significant difference in the ratings across time (n=18; F=5.00, p=0.17).

b. Crash Severity

![Crash Severity Chart]

- Preliminary time 2
- Interim time 3
There was one subject in the treatment group who rated the DRLs as likely to increase the severity of crashes in the first three questionnaires. This was the same subject who rated the DRLs as likely to increase the incidence of crashes. All other subjects either responded that the DRLs would cause no change or decrease the severity of crashes.

There was no significant difference between groups at any of the four time points. (Prelim 2, z=0.93, p=0.35 ; Interim 3, z=-0.29, p=0.787 ; Interim 5, z=0.78, p=0.44 ; Interim 6, z=0.52, p=0.61). There was no evidence for a difference in ratings across time (n=18; F_7=5.06, p=0.17).
c. Injury Severity

![Bar charts showing injury severity over time for treatment and control groups.](chart.png)
Figure 203. Percent of responses in each category (0=increase, 1=no change, 2=decrease) for each group across the four acceptability questionnaires

Most subjects thought that the DRLs would cause either no change or decrease injury severity. One subject rated DRLs as likely to increase injury severity in the first two questionnaires. This was the same subject who rated DRLs as likely to increase crash incidence and crash severity. By the third questionnaire however, this subject rated the DRLs as likely to cause no change to injury severity.

There was no significant difference between groups at any of the four time points. (Prelim 2, z=0.57, p=0.57; Interim 3, z=0.20, p=0.85; Interim 5, z=0.19, p=0.85; Interim 6, z=0.52, p=0.61)

No significant difference was found across time in subjects’ perception of the effect of Daytime Running Lights on the severity of injury (n=18; F=3.39, p=0.34).
d. Probability of being fined

![Graph showing the probability of being fined for treatment and control groups at different times.](image)
Most subjects felt that the DRLs would have no effect on the probability of being fined.

There was no significant difference between groups at any of the four time points. (Prelim 2, \(z=0.85\), \(p=0.39\) ; Interim 3, \(z=-1.16\), \(p=0.25\) ; Interim 5, \(z=1.24\), \(p=0.21\) ; Interim 6, \(z=-0.80\), \(p=0.42\))

Subjects’ ratings of the probability of being fined changed did not change significantly over time (\(n=18\); \(F_r=7.00\), \(p=0.07\)). However, the \(p\)-value of 0.07 indicates that there might be an effect present which we do not have the power to detect. At the beginning of the study, the majority of subjects (94.7%) believed that DRL would make no difference to their probability of being fined, whereas only one subject (5.3%) believed it would decrease their chances. By the end of the project, although 72.2% of subjects still believed DRL would make no difference, the number of people that believed DRL would decrease the probability of being fined had increased to 27.8%.
Social Acceptability

3c. Daytime Running Lights should be compulsory for all drivers

![Bar charts showing social acceptability over time for treatment and control groups.](chart.png)
Subjects varied in their ratings of how much they agreed that DRLs should be compulsory for all drivers.

A mixed two-way within-subjects analysis of variance was performed. The interaction between group and questionnaire was non-significant. (F(3, 51) = 0.28, p = 0.84). There was no difference between the ratings of the two groups (F(1, 17) = 2.10, p = 0.17) nor was there any evidence of a change in ratings over time, (F(3, 51) = 2.62, p = 0.06). However, the p-value for the change in ratings over time is less than .10, and might highlight an interesting trend. Figure 206 displays the mean ratings given across the four questionnaires. There does appear to be a trend towards higher ratings as time progressed.

Figure 205. Percent of responses in each category (0=strongly disagree, 1= disagree, 2= neither agree nor disagree, 3=agree, 4=strongly agree) for each group across the four acceptability questionnaires

Figure 206. Mean ratings for question 3c across the four questionnaires.
Q3i. Driving will be less enjoyable with DRLs in my car
Most subjects chose “disagree” or “neither agree nor disagree” for this item. Only a small proportion of subjects agreed that the DRLs would decrease their driving enjoyment.

There was no significant difference between groups at any of the four time points. (Prelim 2, $z=-0.57$, $p=0.57$; Interim 3, $z=-0.35$, $p=0.72$; Interim 5, $z=-0.75$, $p=0.45$; Interim 6, $z=-1.56$, $p=0.12$).

There was no evidence of a change in opinion over time ($n=18$; $F_r=1.33$, $p=0.72$).
Affordability

5. How much would you be willing to pay for DRL if they were an optional feature in a new car?

Purchase:

Overall, most subjects reported being willing to pay somewhere between zero and $100 for purchase of Daytime Running Lights as an optional feature in a new car.

There was no significant difference between groups at any of the four time points. (Prelim 2, z=-0.21, p=0.83 ; Interim 3, z=-0.28, p=0.78 ; Interim 5, z=0.04, p=0.97 ; Interim 6, z=0.19, p=0.85).

There was a significant change in the amount participants reported being willing to pay over time (n=15, Fr=8.89, p=0.03). Multiple pair-wise comparisons between the ratings given at each questionnaire did not reveal any significant differences. The median amount that participants were willing to pay was $50 for each of the questionnaires.
Maintenance/service

Across all four questionnaires, the median amount that the control group reported being willing to pay for yearly maintenance/service of Daytime Running Lights as part of a new car was zero. This was also the median value reported by the treatment group for the first three questionnaires. At the final questionnaire, the median amount that the treatment group reported being willing to pay was $10.

There was no significant difference between groups at any of the four time points. (Prelim 2, \( z=-0.21, p=0.83 \); Interim 3, \( z=0.28, p=0.78 \); Interim 5, \( z=0.04, p=0.97 \); Interim 6, \( z=0.19, p=0.85 \)). There was no evidence of a difference across time (\( n=12; F_r=5.51, p=0.14 \)).
6. How much would you be willing to pay for Daytime Running Lights if they could be retrofitted to an existing car?

![Box plots of the amount subjects in each group were willing to pay for purchase of Daytime Running Lights to be retrofitted into an existing car, across the four questionnaires](image)

There was no significant difference between groups at any of the four time points. (Prelim 2, z=0.54, p=0.59; Interim 3, z=-0.27, p=0.79; Interim 5, z=0.13, p=0.90; Interim 6, z=0.00, p=1.00).

There was a significant change in the amount participants reported being willing to pay for Daytime Running Lights for an existing car over time (n=14, F=11.07, p=0.01). However, none of the multiple pair-wise comparisons between the ratings given at each questionnaire revealed any significant differences. When the median values are considered however, there was an increase, with the median value for the first two questionnaires being zero, and the median value for the final two questionnaires being $50.
The majority of subjects were willing to pay less than $50 for installation of DRLs to an existing car. The values of $500 at times 2 and 3, and $250 at time 4 were all from the same subject, who was clearly an outlier in terms of his willingness to pay for the installation of this feature. This was the same subject who stated in the previous question that he was willing to pay $500 for purchase at times 2 and 3, and $250 at time 4.

There was no significant difference between groups at any of the four time points. (Prelim 2, \( z=-0.34, p=0.74 \); Interim 3, \( z=0.78, p=0.43 \); Interim 5, \( z=0.85, p=0.39 \); Interim 6, \( z=1.15, p=0.25 \)).

There was some evidence for a change across time in the amount participants reported being willing to pay for installation into an existing car (\( n=11, Fr=7.19, p=0.07 \)), although the p-value did not reach the conventional level of significance. Although none of the pair-wise comparisons between the ratings given at each questionnaire were significant, the median amount did increase; from zero for the first three questionnaires to $12.50 at the conclusion of the project.
The median amount that subjects in the control group reported being willing to pay for yearly maintenance/service of daytime running lights after installation into an existing car was zero at all time-points. For the treatment group, the median was also zero for the first three questionnaires, and $10 at the end of the project.

There were no significant differences between groups (Preliminary time $z=0.28$, $p=0.78$; Interim time 3, $z=0.56$, $p=0.57$; Interim time 5, $z=1.15$, $p=0.25$; Interim time 6, $z=1.42$, $p=0.16$), while analyses conducted to investigate whether the ratings changed over time did not reveal any significant difference ($n=11$, $Fr=3.65$, $p=0.30$).
7. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested?
The proportion of subjects who expressed disinterest in keeping the DRLs decreased over time, from 15.8% at baseline, to 10.5% at Interim times 3 and 5 and 5.6% at Interim time 6. The proportion of subjects who expressed either interest or strong interest in keeping the DRLs increased from 42.1% at baseline to 61.1% at the end of the study.

There was no significant interaction between group membership and questionnaire number on the ratings for this item (F(3,50)=1.00, p=0.40), nor was there a significant difference between the ratings of the treatment group and the control group (F(1,17)=0.85, p=0.37). There was also no change in ratings over time (F(3,50)=2.27, p=0.11, with Greenhouse-Geisser correction.

If you responded “very disinterested” or “disinterested”, why?

Table 13. Level of interest in keeping DRLs – number and percentage of subjects who were interested, very interested, disinterested or very disinterested in keeping DRLs.

<table>
<thead>
<tr>
<th>Questionnaire - group</th>
<th>Interested</th>
<th>Very Interested</th>
<th>Disinterested</th>
<th>Very Disinterested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prelim 2</td>
<td>Treatment</td>
<td>5 (45.5)</td>
<td>1 (9.1)</td>
<td>2 (18.2)</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>2 (25.0)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Interim 3</td>
<td>Treatment</td>
<td>4 (36.7)</td>
<td>2 (18.2)</td>
<td>1 (9.1)</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>2 (25.0)</td>
<td>1 (12.5)</td>
<td>0</td>
</tr>
<tr>
<td>Interim 5</td>
<td>Treatment</td>
<td>5 (45.5)</td>
<td>2 (18.2)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>2 (25.0)</td>
<td>2 (25.0)</td>
<td>1 (12.5)</td>
</tr>
<tr>
<td>Interim 6</td>
<td>Treatment</td>
<td>5 (50.0)</td>
<td>3 (30.0)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>2 (25.0)</td>
<td>1 (12.5)</td>
<td>1 (12.5)</td>
</tr>
</tbody>
</table>

The reasons that subjects gave for being disinterested or very disinterested in keeping Daytime Running Lights were as follows:
Preliminary questionnaire time 2

Treatment group
- very unsafe when driving with headlights on
- I don't believe they are required in daylight hours - when "clear weather"
- I do not regard the feature as a safety enhancement in good conditions

Control group
No subjects in the control group expressed disinterest in keeping DRLs in the first questionnaire.

Interim questionnaire time 3

Treatment group
- they are too bright, parking lights would be sufficient

Control group
- If all vehicles have lights on at all times there is less effect, better to have all vehicle lights linked to a sensor of poor light conditions

Interim questionnaire time 5

Treatment group
No subject in the treatment group expressed disinterest in keeping DRLs at the time.

Control group
One subject who responded that they were disinterested in keeping DRLs in this questionnaire did not respond to the question asking them why. The other subject stated
- Firstly it should be all lights to avoid driving without tail lights and why not link to a low light sensor

Interim questionnaire time 6
The single control group subject who expressed disinterest in keeping the DRLs at this time did not provide a reason.

If you responded “very interested” or “interested”, why?
The reasons that subjects gave for being interested or very interested in keeping Daytime Running Lights were as follows:

Preliminary questionnaire time 2

Treatment group (6)
- be seen by other drivers
- It is probably safer with them on, other drivers do notice the car with lights on
- I believe I have a less chance of having an accident with oncoming traffic
- while having it in the safety my observation of traffic has resulted in seeing vehicles with lights on (mainly motorcycles) a lot earlier.
- greater visibility on the road
- Interested, however I already always put my lights on. Good for other drivers of my car
Control group (2)
- good safety initiative
- I think it is a great idea and adds safety

Interim questionnaire time 3
Treatment group (6)
- great increase to safety
- I notice pedestrians and other vehicles are aware you are there
- may assist with being more visible
- As I am a motor cycle rider, daytime running lights give me the confidence in knowing that on-coming traffic can see me
- good safety feature
- I usually drive with my lights on, but other users of the car do not, so it would be good for it to be automatic.

Control group (3)
- public pedestrian awareness will increase, they could see the vehicle coming
- because you are more visible to other road users
- I agree that people can see my car easier which will allow them to take preventative action earlier, this will result in a less severe accident or avoidance

Interim questionnaire time 5
Treatment group (7)
- great safety feature especially because the tail lights and dashboard lights do not come on.
- noticed by other drivers and pedestrians
- Daytime running lights are very effective for my personal safety provided they are not made compulsory for all motor vehicles. At present they are a non standard driving practice that makes other drivers more aware of me
- Anything that reduces the chance of an accident is worthwhile
- if you are seen then the chance of an incident is reduced
- good safety feature
- I always drive with lights on anyway, so an automatic system would be good.

Control group (4)
- public/pedestrian/other vehicle awareness will increase
- safety feature more visible
- improved vehicle visibility in strong shadow or when driving with sun behind
- I agree with the principle of "being seen is being safer " I like the headlights on without the hassle of switching on and worry of remembering to switch them off.
**Interim questionnaire time 6**

*Treatment group (8)*
- great safety feature in all conditions, especially as there are no tail lights(to reduce the effect of stop lights)or dash board lights(which may cause you to forget to turn your headlights on)
- helps pedestrians notice vehicle
- good safety tool provided everyone else does not have their lights on
- will make driving safer
- Excellent safety device
- good safety feature
- mainly to assist other drivers of my car - I always turn the lights on anyway
- It's a good idea - I think parkers would be sufficient

*Control group (3)*
- increase in awareness towards public/pedestrian and other vehicles
- because I am more visible to pedestrians and other motorists
- I think it is a great idea to have any safety device I can that doesn't hamper any driving by adding switching anything on or off (fully automatic)
Usability

Intelligent Speed Adaptation

Only subjects in the treatment group rated the usability of the Intelligent Speed Adaptation (ISA), because the control group subjects had no experience of ISA. Subjects rated the usability of the ISA in the first period in which they were exposed to it. Nine subjects were exposed to ISA during the first exposure period, and thus rated the ISA usability in Interim questionnaire time 2. Six subjects experienced ISA for the first time in the second exposure period, and were asked to rate the usability of the ISA in Interim questionnaire time 4. Three of these subjects did not return the questionnaire, and so usability data for the ISA system is only available for 12 subjects.

Overall

All 12 subjects (100%) reported experiencing warnings from the ISA during their first period of exposure.

All 12 subjects (100%) reported experiencing the second level of speed warning during their first period of exposure, that is, the flashing visual warning (i.e. miniature speed limit sign with flashing red circle) and upward pressure on the accelerator.

All 12 subjects (100%) reported experiencing the message that appeared on the VWD when driving outside the confines of the ISA system digital map database (“outside digital map zone”) during their first period of exposure.

During the first period of exposure, six subjects (50%) reported having seen the message that appeared on the VWD when the ISA system temporarily loses GPS reception (“No GSP signal”), while the other six subjects (50%) reported not having seen the message.

Learnability

Q 2a. Thinking back to the very first time the ISA issued warnings, how easy was it for you to judge what the warnings meant?

<table>
<thead>
<tr>
<th>Response</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very easy</td>
<td>9 (75%)</td>
</tr>
<tr>
<td>Easy</td>
<td>1 (8.3%)</td>
</tr>
<tr>
<td>Neither easy nor difficult</td>
<td>2 (16.7%)</td>
</tr>
<tr>
<td>Difficult</td>
<td>0</td>
</tr>
<tr>
<td>Very difficult</td>
<td>0</td>
</tr>
</tbody>
</table>

If you did not respond “very easy” (n=3) did you find it easier to judge what the warnings meant after you had experienced the warnings a few times?

<table>
<thead>
<tr>
<th>Response</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2 (66.7%)</td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>1 (33.3%)</td>
</tr>
</tbody>
</table>
If you responded “Yes” (n=2) roughly how many times did you have to experience the ISA system warnings before you were sure of what they meant? *** even though only two subjects responded Yes, the subject who did not respond to the previous question did respond to this one, and is included.

Twice 1 (33.3%)
3 to 5 times 2 (66.7%)
Other 0

What one thing do you like most about the ISA system? What one thing do you like least? What one thing would you tell the designers to change?

The answers to this question are presented for each subject

Subject 11
Like: The audio and upward accelerator pressure all alert well
Dislike: The warnings often do not coincide with the posted speed limits
Request for change: Ensure it always coincides with posted speed limits

Subject 22
Like: visual warning
Dislike: upward pressure on accelerator
Request for change: "bong", "accelerator" - dangerous in cross roads, intersections etc

Subject 23
Like: numbers that appear on screen
Dislike: noisy tones
Request for change: visual warning

Subject 31
Like: advice when I exceed the speed limit
Dislike: regularly the flow of traffic is in excess of the speed limit more than 3km/hr above the limit
Request for change:

Subject 32
Like: gives me confidence that I am much less likely to break the speed limit through inattention
Dislike: some roads are incorrectly coded e.g. diamond cr rd between g/borough bypass and greensborough is coded as 60k but is actually 80k north bd and 70k south bound
Request for change: adjust upward pressure on accelerator, ensure digital map coding is correct

Subject 33
Like: It is surprising how easy it is to go 3km over the speed limit. The SWS does not let you get away with it.
Dislike: The SWS alerts you of the speed limit of passing streets which can become annoying
Request for change: Widen the signal area. Pick up change in speed zones more quickly

Subject 41
Like: The warning that you have exceeded the speed limit
Dislike: It's inaccuracy
Request for change: Make it more accurate - G.P.S

Subject 42
Like:
Dislike:
Request for change:

Subject 51
Like: beep is okay
Dislike: is not accurate i.e. 200 metre lag in responding to new speed zones - will say 50 in 80 zones, will say 70 in 90 zones
Request for change: less pressure on accelerator, update gps digital map

Subject 52
Like: being able to find out the speed limit if unsure
Dislike: Upward pressure on accelerator - I think it is dangerous
Request for change: ability to disable alarm (audio), no upward pressure on accelerator

Subject 61
Like: it alerts you to the fact you are over speed limits
Dislike: it is not accurate in many areas on outskirts of Melbourne e.g. Canterbury Rd, Burwood Hwy, Wantirna Rd this causes problems as upward pressure on accelerator makes it difficult to travel at the real speed limit
Request for change: must be accurate

Subject 62
Like: When it was registering the correct speed limit. It keeps you safe
Dislike: This is an example - In Geelong - 100km/h section and the car wants to do 80km/h
Request for change: a bit less pressure(-ve) on the pedal accelerator, system disengage unless speed mapping is more reliable, incorporate in heads up display
Visual warning

Ease of use: stage 1

2b. Did you have any difficulty seeing the ISA warning system static visual icon (i.e. miniature speed limit sign without flashing) on the Visual Warning Display (VWD)?

Yes  2 (16.7%)
No   10 (83.3%)

Subjects who stated that they did have difficulty seeing the static visual icon were asked the reason:
Subject 23 chose the response
   • the visual icon was too small
Subject 51 chose the responses
   • there was too much glare on the screen
   • there was too much reflection on the screen
   • The visual warning display is too far over to the left, making the screen difficult to view.

Ease of use: Stage 2

2i. Did you have any difficult seeing the ISA warning system flashing visual icon (i.e. miniature speed limit sign with flashing red circle) on the VWD?

Yes  1 (8.3%)
No   11 (91.7%)

The subject who responded Yes was asked to choose the reason that they had difficult seeing the visual warning. This subject chose the following options:
   • There was too much glare on the screen
   • There was too much reflection on the screen
   • The VWD is too far over to the left, making the screen difficult to view.

Satisfaction

2c. Were you satisfied with the look of the ISA system visual warning graphics – that is, the miniature speed limit sign?

Yes  11 (91.7%)
No   0
Missing 1 (8.3%)

Effectiveness: stage 1

2d. How effective was the static visual warning (i.e. miniature speed limit without flashing) in alerting you that you were exceeding the speed limit by 3 km/h or more?
Very effective  2 (16.7%)
Effective     8 (66.7%)
Neither effective nor ineffective 1 (8.3%)
Ineffective   0
Very ineffective 1 (8.3%)

The subject who thought the static visual warning was very ineffective stated, “it doesn't catch the eye”.

Effectiveness: stage 2
2j. How effective was the flashing visual warning (i.e. miniature speed limit sign with flashing red circle) in alerting you that you were still exceeding the speed limit by 3 km/h or more?

Very effective  5 (41.7%)
Effective     7 (58.3%)
Neither effective nor ineffective 0
Ineffective   0
Very ineffective 0

Audio chime
Ease of use
2e. Did you have any difficult hearing the ISA system audio chime (bong)?

Yes          1 (8.3%)
No           11 (91.7%)

The subject who responded yes was asked to choose a reason why they had difficulty hearing the ISA system audio warning. The response they chose was “The sound was muffled by other sounds in the vehicle (e.g. talking, radio).

Satisfaction
2f. Were you satisfied with the sound of the ISA system audio chime (bong)?

Yes         9 (75%)
No          2 (16.7%)
Missing     1 (8.3%)

The subjects who had were not satisfied with the sound of the ISA system audio warning were asked what they didn’t like, and what they would recommend instead.

Subject 22 stated that the warning was “too annoying” and “don't know” with regard to changes to the system.
Subject 52 said that “need to be able to disable sound - visual is enough warning”.

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Effectiveness
2g. How effective was the audio chime (bong) in alerting you that you were exceeding the speed limit by 3 km/h or more?

Very effective 5 (41.7%)
Effective 5 (41.7%)
Neither effective nor ineffective 1 (8.3%)
Ineffective 1 (8.3%)
Very ineffective 0

The subject who reported that the ISA auditory warning was ineffective was asked to state why. This subject reported “Because it was annoying and comes on too early i.e. if doing 110km/hr it is easy to drift over the limit for a few seconds e.g. downhill. Should be set at 5% not 3km/h”.

Haptic warning
Ease of use
2k. Did you have any difficulty feeling the upward pressure on the accelerator?

Yes 1 (8.3%)
No 10 (83.3%)
Missing 1 (8.3%)

The subject who responded that they had difficult feeling the upward pressure on the accelerator was asked to state why. The subject stated, “I could feel when the pressure was removed (that it came back to the speed limit) but found that the upward pressure was not strong enough to have an impact or be noticed”

Satisfaction
2l. Were you satisfied with the degree of accelerator pressure?

Yes 8 (66.7%)
No 4 (33.3%)

The subjects who were not satisfied with the degree of accelerator pressure were asked if there should be more or less pressure.

More 1 (25%)
Less 3 (75%)

Effectiveness
2m. How effective was the upward pressure on the accelerator in alerting you that you were still exceeding the speed limit by 3 km/h or more?

Very effective 3 (25%)
Effective 5 (41.7%)
Neither effective nor ineffective 1 (8.3%)
Ineffective 2 (16.7%)
Very ineffective 1 (8.3%)

The subjects who reported that the ISA haptic warning was ineffective or very ineffective were asked to state why. Their reasons were as follows:
- pressure was not sufficient to further encourage me to slow down
- I do not think it is necessary and can be very disconcerting e.g. if it is an urgent situation or if overtaking

The subject who rated the system as very ineffective did not give a reason why.

**Warning sequence**

*Effectiveness and satisfaction*

Stage 1: Visual warning (miniature speed limit sign) plus a single audio chime (bong) when speed exceeds 3km/h over the posted speed limit.

Stage 2: Flashing visual warning (miniature speed limit sign with flashing red circle) plus upward pressure on the accelerator pedal when speed has not dropped below 3km/h over the speed limit within two seconds of the Stage 1 warning being issued.

3n. Are you satisfied with the sequence in which the ISA system warnings activate?

Yes 10 (83.3%)
No 2 (16.7%)

Subjects who were not satisfied with the sequence were asked how they would re-design the sequence. They stated:
- should only have warning tones not visual warnings
- no audible alarm - or ability to disable, no pressure on accelerator

**Ancillary Visual Messages**

*Effectiveness of “Outside digital map zone” message*

2o. How effective was the message “Outside digital map zone” in letting you know that you were outside the digital map area?

Very effective 6 (50%)
Effective 6 (50%)
Neither effective nor ineffective 0
Ineffective 0
Very ineffective 0

*Effectiveness of “No GPS signal” message*

2p. How effective was the message “No GPS signal” in letting you know that GPS reception had been lost?
Very effective 1 (16.7%)
Effective 4 (66.7%)
Neither effective nor ineffective 1 (16.7%)
Ineffective 0
Very ineffective 0

**Following Distance Warning**

Only subjects in the treatment group rated the usability of the Following Distance Warning (FDW) system. Subjects rated the usability of the FDW in the first period in which they were exposed to it. Ten subjects were exposed during the first exposure period, and eight of these completed the usability ratings in Interim questionnaire time 2. Five subjects experienced the FDW for the first time in the second exposure period, and four of these subjects completed the usability ratings in Interim questionnaire time 4. Consequently the data below is for the 12 treatment group subjects who rated the usability of the FDW system.

**Overall**

All twelve subjects (100%) reported experiencing warnings from the FDW system.

*Learnability*

2a. Thinking back to the very first time the FDW system issued warnings, how easy was it for you to judge what the warnings meant?

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<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Very easy</td>
<td>1 (8.3%)</td>
<td></td>
</tr>
<tr>
<td>Easy</td>
<td>7 (58.3%)</td>
<td></td>
</tr>
<tr>
<td>Neither easy nor difficult</td>
<td>3 (25%)</td>
<td></td>
</tr>
<tr>
<td>Difficult</td>
<td>1 (8.3%)</td>
<td></td>
</tr>
<tr>
<td>Very difficult</td>
<td>0</td>
<td></td>
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</table>

Subjects that did not rate the system as very easy were asked the following question, Did you find it easier to judge what the warnings meant after you had experienced them a few times?

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<tbody>
<tr>
<td>Yes</td>
<td>10 (90.9%)</td>
</tr>
<tr>
<td>No</td>
<td>1 (9.1%)</td>
</tr>
</tbody>
</table>

If you responded No, why?
- “the difficulty related to the display”.

If you responded Yes, roughly how many times did you have to experience the FDW system warnings before you were sure of what they meant?

<p>| | |</p>
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<tbody>
<tr>
<td>Twice</td>
<td>5 (50%)</td>
</tr>
<tr>
<td>3-5 times</td>
<td>5 (50%)</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
</tr>
</tbody>
</table>
What one thing do you like most about the FDW system? What one thing do you like least? What things (up to 3) would you tell the designers to change?
The answers to this question are presented for each subject

Subject 11
Like: The graduation would be good if the screen was correctly positioned
Dislike: The audible warning activates too late
Request for changes: modification so parked cars, warning signs etc are not picked up when driving around corners. but I believe the first warning should be at 3 seconds. The audible warnings should begin at 2 seconds.

Subject 12
Like: none specified
Dislike: very annoying - too loud
Request for changes: volume or type of sound omitted

Subject 22
Like: makes me aware of distance to cars in front
Dislike: freeways - people cut in front and it goes off
Request for changes: tone, voice instruction

Subject 23
Like: none specified
Dislike: none specified
Request for changes: none specified

Subject 31
Like: reinforces good driving practice
Dislike: can emit audio signal as you are beginning to pass a vehicle
Request for changes: possibly have a low audio signal for the "red zone"

Subject 32
Like: definitely changed my driving behaviour
Dislike: gives you a shock when a car cuts in front or go under a bridge
Request for changes: less susceptible to bridges etc. should not give an immediate warning when someone cuts in

Subject 41
Like: It does warn you about how close you do travel to the car in front
Dislike: It alerts you when cars cut in front of you - not your fault
Request for changes: Audio earlier, larger ladder, yellow/green to be a darker colour (blue?)

Subject 42
Like: keeps you alert, also reminds you not to travel too close to traffic
Dislike: when you leave the correct distance from traffic in front, other motorists cut in front of you, especially on freeways
Request for changes: none specified

Subject 51
Like: bar system
Dislike: cars cut in front and set off alert, barriers and tunnels set off alert
Request for changes: detection system seems fragile i.e. alerts can be a brief "peep" for no apparent reason, which is distracting

Subject 52
Like: a guide to following distance, if required
Dislike: audio alarm unnecessary, especially when activated for no apparent reason relating to driving
Request for changes: Increase time delay so that not activated by overtaking cars or by overhead structure etc, ability to disable audio alarm

Subject 61
Like: it expresses the distance between vehicles in time rather than the distance. At higher speeds greater distance between vehicles is needed and this is not always easy to judge
Dislike: when vehicles cut in, lights flash and bells sound. This can be quite disconcerting and could cause panic
Request for changes: a less dramatic sequence if a car pulls into a gap in front of you

Subject 62
Like: it keeps you honest
Dislike: the sound of the warning
Request for changes: be able to switch sound off, incorporate in a heads up display

**Visual warning**

*Ease of use: yellow bars*

Did you have any difficulty seeing the yellow bars of the FDW visual ladder?

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<table>
<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Yes</td>
<td>8 (66.7%)</td>
</tr>
<tr>
<td>No</td>
<td>4 (33.3%)</td>
</tr>
</tbody>
</table>

Subjects who reported having difficulty seeing the yellow bars of the FDW visual ladder were asked why, and given a range of options to choose from. The options chosen were as follows:

Subject 11
- The yellow bars rarely attracted my attention

Subject 23
- There was too much reflection on the screen
Subject 31
- Other (specified “difficult when wearing polaroid sunglasses”)

Subject 41
- The coloured bars and ladder were too small
- The yellow bars rarely attracted my attention
- Other (specified “I thought the yellow was green”)

Subject 51
- There was too much glare on the screen
- There was too much reflection on the screen
- The Visual Warning Display is too far over to the left, making the screen difficult to view

Subject 52
- The colour “yellow” is not obvious enough – it is too similar to the screen background
- Other (specified, “with sun glare cannot see clearly”)

Subject 61
- There was too much glare on the screen
- There was too much reflection on the screen

Subject 62
- The yellow bars rarely attracted my attention
- The colour “yellow” is not obvious enough – it is too similar to the screen background
- Other (specified, “the yellow was small and dull”)

**Effectiveness: yellow bars**
2c. How effective were the yellow bars of the visual warning ladder in alerting you that you were travelling too close to the car in front?

<table>
<thead>
<tr>
<th>Rating</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very effective</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Effective</td>
<td>5 (41.7%)</td>
<td></td>
</tr>
<tr>
<td>Neither effective nor ineffective</td>
<td>4 (33.3%)</td>
<td></td>
</tr>
<tr>
<td>Ineffective</td>
<td>2 (16.7%)</td>
<td></td>
</tr>
<tr>
<td>Very ineffective</td>
<td>1 (8.3%)</td>
<td></td>
</tr>
</tbody>
</table>

Subjects who rated the yellow bars of the visual warning ladder as ineffective or very ineffective were asked to state why. Their answers were as follows:
- when driving using the hendon system the screen is not in the field of vision
- light colour - no audio at the same times, you are only alerted when the orange/red comes on and then audio
- difficult to see
Ease of use: red bars

d. Did you have any difficulty seeing the red bars of the FDW visual warning ladder?

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2</td>
<td>16.7%</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>83.3%</td>
</tr>
<tr>
<td>I have never experienced this visual warning</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Subjects who responded that they had difficulty seeing the red bars of the FDW visual warning ladder were asked why, and given a range of options to choose from. The options they chose were as follows:

Subject 11
- The red bars rarely attracted my attention
- The VWD is too far over to the left, making the screen difficult to view

Subject 51
- There was too much glare on the screen
- There was too much reflection on the screen
- The VWD is too far over to the left, making the screen difficult to view

Ease of use: flashing warning

e. Did you have any difficulty seeing the visual warning ladder flash?

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
<td>8.3%</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>83.3%</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

The subject (subject 11) who responded that they had difficulty seeing the flashing warning of the FDW were asked why, and given a range of options to choose from. The options chosen were:
- The VWD is too far over to the left, making the screen difficult to view
- The flashing ladder rarely attracted my attention

Effectiveness: red bars

f. How effective were the red bars of the visual warning ladder in alerting you that you were travelling too close to the car in front?

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very effective</td>
<td>4</td>
<td>33.3%</td>
</tr>
<tr>
<td>Effective</td>
<td>5</td>
<td>41.7%</td>
</tr>
<tr>
<td>Neither effective nor ineffective</td>
<td>1</td>
<td>8.3%</td>
</tr>
<tr>
<td>Ineffective</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Very ineffective</td>
<td>1</td>
<td>8.3%</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

The subject who rated the red bars as very ineffective was asked why, and stated, “when driving using the hendon system the screen is not in the field of vision”.

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Effectiveness: flashing warning

2g. How effective was the flashing visual warning ladder in alerting you that you were travelling too close to the car in front?

- Very effective: 3 (25%)
- Effective: 6 (50%)
- Neither effective nor ineffective: 2 (16.7%)
- Ineffective: 0
- Very ineffective: 1 (8.3%)

The subject who rated the flashing warning as very ineffective was asked why, and stated, “when driving using the hendon system the screen is not in the field of vision”.

Satisfaction

2h. Were you satisfied with the look of the FDW system visual warning graphics (e.g. ladder display, coloured bars)?

- Yes: 10 (83.3%)
- No: 1 (8.3%)
- Missing: 1 (8.3%)

The subject who was not satisfied with the look of the FDW system visual warning graphics was asked what they didn’t like, why and what they would recommend instead, however they did not provide an answer.

Audio warning

Ease of use

2i. Did you have any difficulty hearing the FDW system audio warning?

- Yes: 1 (8.3%)
- No: 11 (91.7%)
- I have never experienced the audio warning: 0

The subject who reported difficulty hearing the FDW system audio warning were asked why, and given a range of options to choose from, however the subject did not answer the question.

Satisfaction

2j. Were you satisfied with the sound of the FDW system audio warning?

- Yes: 7 (58.3%)
- No: 4 (33.3%)
- Missing: 1 (8.3%)
Subjects who were not satisfied with the sound of the FDW audio warning were asked what they didn’t like about it, why and what they would recommend instead. Their answers were as follows:

- I think it would be better at a lower tone - it is a very irritating sound eg voice warning or lower tone
- irritating and too loud
- too loud and too prone to being activated spuriously e.g. static sign, overhead structure or by a car that overtakes, cuts in but is accelerating away and presents no danger
- annoying in busy traffic mainly due to people cutting in

**Effectiveness**
How effective was the audio warning in alerting you that you were travelling too close to the car in front?

<table>
<thead>
<tr>
<th>Rating</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very effective</td>
<td>7</td>
<td>58.3%</td>
</tr>
<tr>
<td>Effective</td>
<td>3</td>
<td>25%</td>
</tr>
<tr>
<td>Neither effective nor ineffective</td>
<td>1</td>
<td>8.3%</td>
</tr>
<tr>
<td>Ineffective</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Very ineffective</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

**Graded warnings**
The Following Distance warnings occur in several stages. When the distance to the car in front is 2 seconds, three bars at the top of the ladder fill with yellow, one after another, as following distance decreases. When the distance is 1.3 seconds or less, the bars under the yellow bars fill with red, one after the other. When the first red bar appears, the whole ladder display flashes and keeps flashing until following distance increases. If the distance is 1.1 seconds or less, the bar at the bottom of the display fills with red and an audio warning sounds.

**Effectiveness**
2l. How effective was the graded warning information (i.e. yellow bars, red bars and flashing visual warning ladder, then audio) in letting you know that you are getting progressively closer to the car in front?

<table>
<thead>
<tr>
<th>Rating</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very effective</td>
<td>2</td>
<td>16.7%</td>
</tr>
<tr>
<td>Effective</td>
<td>5</td>
<td>41.7%</td>
</tr>
<tr>
<td>Neither effective nor ineffective</td>
<td>1</td>
<td>8.3%</td>
</tr>
<tr>
<td>Ineffective</td>
<td>1</td>
<td>8.3%</td>
</tr>
<tr>
<td>Very ineffective</td>
<td>1</td>
<td>8.3%</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>16.7%</td>
</tr>
</tbody>
</table>
Subjects who rated the graded warning information as very ineffective or ineffective were asked to state why. The reasons they gave were as follows:

- because of the screen position the visual warnings cannot be seen. The audible warning sounds when you are much too close to the vehicle in front. The audible warning should be graduated.
- need audio alert earlier. In traffic you are watching the road not the screen. An audio alert early would quickly alert you.

*Satisfaction*

2m. Are you satisfied with the sequence in which the FDW system activates?

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<tbody>
<tr>
<td>Yes</td>
<td>9 (75%)</td>
</tr>
<tr>
<td>No</td>
<td>2 (16.7%)</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (8.3%)</td>
</tr>
</tbody>
</table>

Subjects who were not satisfied with the sequence were asked how they would redesign the FDW system sequence. The replies were as follows:

- audio warning should happen at stage 1
- no audio alarm

**Seat Belt Reminder**

Subjects in both the treatment and control groups rated the usability of the Seat Belt Reminder (SBR) system in Interim questionnaire time 1. At that point in time both groups had been treated equally, that is, they did not differ with respect to which systems they had been exposed to. As such, the usability data are not broken down by group.

**Overall**

*Experience with the system*

Q1. 21 subjects (91.3%) reported experiencing warnings from the SBR system by Interim questionnaire time 1, while 2 subjects (8.7%) did not.

Only the 21 subjects who reported experiencing the SBR system warnings were asked to answer the following questions.

**Learnability**

Q3a. Thinking back to the first time the SBR system issued warnings, how easy was it to judge what the warnings meant?

<p>| | |</p>
<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Very easy</td>
<td>13 (61.9%)</td>
</tr>
<tr>
<td>Easy</td>
<td>6 (28.6%)</td>
</tr>
<tr>
<td>Neither easy nor difficult</td>
<td>1 (4.8%)</td>
</tr>
<tr>
<td>Difficult</td>
<td>1 (4.8%)</td>
</tr>
<tr>
<td>Very difficult -</td>
<td>0</td>
</tr>
</tbody>
</table>
Eight subjects (38.1%) did not think it was very easy to judge what the warnings meant. These subjects were asked to answer the following question:
If you did not respond “very easy” did you find it easier to judge what the SBR warnings meant after you had experienced them a few times?

6 (75%) said yes
1 (12.5%) said no
1 (12.5%) did not answer the question.

The subject who responded no, said that it was not easier to judge after experience because “often had sun glare on screen”.

Subjects who responded that it was easier to just what the warnings meant after experience where asked roughly how many times they experienced the warnings before they were sure of what they meant.

Twice 2 (33.3%)
3-5 times 2 (33.3%)
Other 2 (33.3% - one specified “after first notice” and one specified “only once”)

What one thing do you like most about the SBR system? What one thing do you like least? What one thing would you tell the designers to change?
The answers to this question are presented for each subject

Subject 11
Like: it checks up on the passengers
Dislikes: none specified
Requests for change: none specified

Subject 12
Like: none specified
Dislikes: volume - too loud
Requests for change: make it a "tinkle" or not so harsh a sound

Subject 13
Like: intrusive
Dislikes: intrusive
Requests for change: nil

Subject 21
Like: that the warning tones don't start until you are travelling over 10kms giving me time to put the belt on before speeding up
Dislikes: not being able to disable the rear seat belt detectors when carrying loads in the back seat
Requests for change: same as 3k - the ability to turn of rear seat belt reminders

Subject 22
Like: It reminds my kids to put on the seatbelt
Dislikes: the alarm
Requests for change: the alarm sound

Subject 23
Like: None specified
Dislikes: None specified
Requests for change: None specified

Subject 31
Like: reminds the passengers to buckle up and wear seat belts until the car has stopped
Dislikes: None specified
Requests for change: no change

Subject 32
Like: The sound system makes it almost impossible to persevere driving without a seat belt. Best to just do the seat belt up.
Dislikes: whilst the siren was visible the image could be a little stronger/clearer
Requests for change: if the back seat passenger sitting on one side uses the centre buckle the system goes off. Took us about 10mins to work out why the alarm wouldn't stop. (note: the side and centre buckles are so close it is hard to know which one should use)

Subject 33
Like: It advises the driver when someone has disengaged their seat belt while the engine of the car is still on
Dislikes: When I park to let a passenger out of the vehicle the warning system will engage - this occurs even though I am stationary and safely out of the traffic
Requests for change: Even though answer for 3K is a bit annoying I would not change anything about the SBR system

Subject 41
Like: it tells me if one of my passengers (i.e. kids) have unbuckled
Dislikes: it's active immediately
Requests for change: allow a 10 second period from take off to "active"

Subject 42
Like: makes it a habit to apply seat belt before the car moves off
Dislikes: None specified
Requests for change: None specified

Subject 51
Like: None specified
Dislikes: visual display is ineffective
Requests for change: position - built into dashboard in front of driver more effective
Subject 52
Like: good check on passengers - especially in the back seat
Dislikes: need to be able to turn off e.g. when reversing or driving slowly away from roads etc
Requests for change: need to be able to turn off e.g. when reversing or driving slowly away from roads etc

Subject 61
Like: It alerts you to the fact that someone does not have a seat belt on and you can then take action
Dislikes: It comes on when you are stopped, several times I stopped but left engine on and unbelted - the warning sign then came on.
Requests for change: to only come on when the vehicle is moving

Subject 62
Like: the audio sound at speed
Dislikes: N/A
Requests for change: N/A

Subject 101
Like: the screen display (flashing)
Dislikes: N/A
Requests for change: no change required

Subject 102
Like: It alerts all passengers in the vehicle of how important the seatbelt really is.
Dislikes: I think it's a great idea
Requests for change: I would like them to take that glare off the screen or have the screen lower nearer to the centre consol.

Subject 103
Like: neither like nor dislike
Dislikes: became annoying in emergency work when car was used in stop and start fashion, required to use system override on occasions
Requests for change: None specified

Subject 104
Like: visual reminder
Dislikes: progressively louder warning
Requests for change: keep audible warning at same level

Subject 106
Like: It adds responsibility of ownership of wearing belts on all passengers and not just the driver
Dislikes: no issues
Requests for change: no change
Subject 107
Like: the combination of audio and visual messages
Dislikes: none specified
Requests for change: the display could tell the driver which seat position has not got belt secured

Visual warnings
Ease of use

3b. Did you have any difficult seeing the SBR system flashing visual icon (person wearing a seatbelt) and/or caption (“Fasten Seatbelt”) on the Visual Warning Display?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Yes</td>
<td>3 (14.3%)</td>
</tr>
<tr>
<td>No</td>
<td>17 (81.0%)</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (4.8%)</td>
</tr>
</tbody>
</table>

Subjects who stated that they did have difficulty seeing the flashing visual icon were asked the reason:
The reasons chosen were as follows:
Subject 12:
• Other (screen was dead)

Subject 51:
• There was too much glare on the screen regardless of the brightness and orientation of the display
• The VWD is too far over to the left, making the screen difficult to view

Subject 102:
• The screen was too bright
• Other (especially at night causes a glare)

Satisfaction

3c. Were you satisfied with the look of the SBR visual warning graphics – that is, the flashing visual icon and caption?

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Yes</td>
<td>21 (100%)</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
</tr>
</tbody>
</table>

Effectiveness

How effective was the visual warning by itself (i.e. without the audio warning) in alerting you that someone in your car was not wearing his/her seatbelt?

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<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Very effective</td>
<td>5 (23.8%)</td>
</tr>
<tr>
<td>Effective</td>
<td>11 (52.4%)</td>
</tr>
</tbody>
</table>
Neither effective nor ineffective  2 (9.5%)
Ineffective     3 (14.3%)
Very ineffective 0

The subjects who thought the visual warning by itself was ineffective were asked to specify why. Their answers (free text) were as follows:
  - Need to be aware of visual display
  - screen was out of peripheral vision. I focused more on driving instruments when first start the car
  - due to the glare from the screen I normally turn the brightness right down. I prefer the audio system.

**Audio warnings**

*Ease of use*

3e. Did you have any difficult hearing the SBR audio warning?

<p>| | |</p>
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<tbody>
<tr>
<td>Yes</td>
<td>0</td>
</tr>
<tr>
<td>No</td>
<td>21 (100%)</td>
</tr>
<tr>
<td>Never experienced audio warning</td>
<td>0</td>
</tr>
</tbody>
</table>

*Satisfaction*

3f. Were you satisfied with the sound of the SBR audio warning?

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</thead>
<tbody>
<tr>
<td>Yes</td>
<td>18 (85.7%)</td>
</tr>
<tr>
<td>No</td>
<td>3 (14.3%)</td>
</tr>
</tbody>
</table>

Subjects who were not satisfied with the sound of the SBR were asked to specify why. Their answers were as follows:
  - I think a person speaking would be more people friendly
  - it should have a different audio warning to be effective
  - too loud - minimum volume needs to be lower

*Effectiveness*

3g. How effective was the audio warning in alerting you that someone in your car was not wearing his/her seat belt?

<p>| | |</p>
<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Very effective</td>
<td>13 (61.9%)</td>
</tr>
<tr>
<td>Effective</td>
<td>5 (23.8%)</td>
</tr>
<tr>
<td>Neither effective nor ineffective</td>
<td>0</td>
</tr>
<tr>
<td>Ineffective</td>
<td>0</td>
</tr>
<tr>
<td>Very ineffective</td>
<td>2 (9.5%)</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (4.8%)</td>
</tr>
</tbody>
</table>
Subjects who did not believe the audio warning was effective in alerting them that someone in the car was not wearing hi/her seatbelt were asked to specify why. Their answers were as follows:

- annoying noise, loud baby seat set it off **** This subject claims that it ”only came on when parking or baby seat in - so less than 10kph”. The audio warning should not have occurred at this speed (should have only been visual – see Stage 1 information)
- I was immediately alerted to the fact  (Appears that this person misread the question, and in fact thought the system was effective)

**Effectiveness of graded audio warnings**

3h. Did you hear the audio warning occur at a progressively faster rate as you increased your speed?

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<thead>
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</thead>
<tbody>
<tr>
<td>Yes</td>
<td>10 (47.6%)</td>
</tr>
<tr>
<td>No</td>
<td>10 (47.6%)</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (4.8)</td>
</tr>
</tbody>
</table>

Of the subjects who did experience the progressively faster rate of audio warning with increased speed, all (100%) felt like it was more urgent for them (or a passenger) to fasten their seat belt.

**Warning sequence**

*Effectiveness and satisfaction*

3i. Are you satisfied with the sequence in which the SBR warnings activate?

Stage 1: flashing visual icon and static “Fasten Seatbelt” caption occurs at speeds between 0 and 10 km/h

Stage 2: Same as stage 1 plus audio warning occurs when speed exceeds 10km/h, and becomes progressively faster as speed increases.

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<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>16 (76.2%)</td>
</tr>
<tr>
<td>No</td>
<td>2 (9.5%)</td>
</tr>
<tr>
<td>Missing</td>
<td>3 (14.3%)</td>
</tr>
</tbody>
</table>

Subjects that were not satisfied with the sequence of warnings were asked how they would re-design the SBR warning sequence. The answers were as follows

- It is annoying, but maybe a softer verbal warning would not annoy so much *** this is not relevant to the sequence
- I would like the audio warning initially

**Reverse Collision Warning**

Subjects in both the treatment and control groups rated the usability of the Reverse Collision Warning (RCW) system in Interim questionnaire time 1. At that point in time
both groups had been treated equally, that is, they did not differ with respect to which systems they had been exposed to. As such, the usability data are not broken down by group.

**Overall**

*Experience with the system*

Q1. 21 subjects (91.3%) reported experiencing warnings from the RCW system by Interim questionnaire time 1, while 2 subjects (8.7%) did not.

Only the 21 subjects who reported experienced the system warnings were asked to answer the following questions.

*Learnability*

Q3a. Thinking back to the first time the RCW system issued warnings, how easy was it to judge what the warnings meant?

- **Very easy** 9 (42.9%)
- **Easy** 6 (28.6%)
- **Neither easy nor difficult** 4 (19.1%)
- **Difficult** 2 (9.5%)
- **Very difficult** 0

Twelve subjects (57.1%) did not think it was very easy to judge what the warnings meant. These subjects were asked to answer the following question:

If you did not respond “very easy” did you find it easier to judge what the RCW warnings meant after you had experienced them a few times?

- 9 (75%) said yes
- 1 (8.3%) said no
- 2 (16.7%) did not answer the question.

The subject who responded “no” stated that “because the warning will sound from bushes and shrubs lining the driveway or when backing down a slope to the road creating numerous false warnings. Effectively it is for drivers with poor judgement.”

Subjects who responded that it was easier to just what the warnings meant after experience where asked roughly how many times they experienced the warnings before they were sure of what they meant.

- **Twice** 4 (44.4%)
- **3-5 times** 5 (55.6%)
- **Other** 0

*What one thing do you like most about the RCW system? What one thing do you like least? What one thing would you tell the designers to change?*

The answers to this question are presented for each subject.
Subject 11
Like: The graduated warning
Dislikes: It doesn't turn off when a trailer is connected (the new Fairmont ghia does)
Request for change: allow it to turn off when a trailer is connected. Even after the application of glare foil the screen is still too bright for night driving. I place a black stocking over it - this allows me to see the warnings without the glare

Subject 12
Like: confidence in parking in general, in tight spots
Dislikes: none specified
Request for change: none specified

Subject 13
Like: simple
Dislikes: noise
Request for change: adjustable volume

Subject 21
Like: not having to make a calculated "guess" about distance behind
Dislikes: no visual indicator
Request for change: to have a visual indicator of distance

Subject 22
Like: It assists parking a large sedan in city carparks
Dislikes: the beeping
Request for change: softer beeping - different or lower tone

Subject 23
Like: none specified
Dislikes: none specified
Request for change: none specified

Subject 31
Like: helps to prevent accidents
Dislikes: none specified
Request for change: none specified

Subject 32
Like: clearly enhanced confidence when reversing
Dislikes: picks up side objects when reversing, goes off when reversing down the drive
Request for change: picking up side objects

Subject 33
Like: A person who lacks confidence reversing would feel less pressure with the RCW system
Dislikes: N/A
Request for change: N/A

Subject 41
Like: great assistance to reversing and reverse parking
Dislikes: none specified
Request for change: The visual screen could show closing distance in addition to the audio warnings i.e. 2m, 1.5m, 1m, 90cm, 60cm, 30cm

Subject 42
Like: good guide when reversing in tight areas
Dislikes: none specified
Request for change: nil

Subject 51
Like: sound levels
Dislikes: none specified
Request for change: none specified

Subject 52
Like: audio warning of an object I may not have noticed or when parking in tight situations
Dislikes: warning limits need to be set for greater distances, also annoying when reversing a trailer
Request for change: Increase distances, be able to disable when reversing trailer etc

Subject 62
Like: simplifies the positioning of a car while parking
Dislikes: N/A
Request for change: N/A

Subject 101
Like: visual display would be appropriate
Dislikes: N/A
Request for change: None specified

Subject 102
Like: It warns of any hidden obstructions. It is like the eyes in the back of your vehicle constantly watching which takes a big burden off your shoulders
Dislikes: none
Request for change: I believe this system works very effectively as it is.

Subject 103
Like: makes distance judgement easier as the shape of modern cars often makes it difficult to judge distance when parking
Dislikes: warning alert when reversing out of driveways etc. gives false impression of hazard
Request for change: correct the false reading/audio warning caused by vehicle angles or grade

Subject 104
Like: see (e) above  (refers to question asking about appropriateness of distance at which stages of system are activated- this subject felt the current distances were appropriate)
Dislikes: nil
Request for change: nil

Subject 106
Like: adds confidence when reversing
Dislikes: I have towed trailers, boat, caravan with this car and find it distracting and annoying when reversing - it doesn't stop for the entire time in reverse, I would like to be able to switch it off while towing.
Request for change: It needs and override button. When towing I found it hard to concentrate with the noise. I didn't turn it down though ( will next time)

Subject 107
Like: enables me to judge distances from objects behind the car easier
Dislikes: side objects are sometimes detected - warnings given when reversing past an object but not behind it (e.g. side fences in driveways, other cars parked too close)
Request for change: visual warnings as well as audible

Subject 108
Like: It may detect something you couldn't see such as a small child behind the car
Dislikes: It cannot distinguish between a concrete wall (hard fixture) and a shrub leaves and therefore can give many false warnings that can become an annoyance.
Request for change: modern warning systems indicate where the obstructing object is located or a display. But generally I would dedicate the system to the safety of not hitting unseen objects as opposed to simply indicating the distance to a wall which the driver should be able to judge anyway and should therefore be less frustrating.

Audio warning
Ease of use

3b. Did you have any difficulty hearing the RCW system audio warnings?
Yes  0
No    21 (100%)

Satisfaction

3c. Were you satisfied with the sound of the RCW audio warnings?
Yes   20 (95.2%)
No    0
Missing 1 (4.8%)
**Effectiveness**

3d. How effective is the graded warnings information (i.e. the warnings increasing in urgency as you get closer to the object/car behind you) in helping you to reverse?

- Very effective: 14 (66.7%)
- Effective: 4 (19.1%)
- Neither effective nor ineffective: 2 (9.5%)
- Ineffective: 1 (4.8%)
- Very ineffective: 0

The subject who responded that the graded warning information was ineffective stated that the system “needs to give earlier warnings”.

**Warning sequence**

*Effectiveness and satisfaction*

Level 1: Audio warnings start when you are within one metre from the rear object/car
Last level: Continuous tone sounds when your car is 30cm from the rear object/car

Do you think that the first and last levels of audio warnings are presented at the appropriate times? (i.e. at an appropriate distance from the rear object/car)

<table>
<thead>
<tr>
<th>1st level (1 metre):</th>
<th>Yes</th>
<th>17 (81.0%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>3 (14.3%)</td>
</tr>
<tr>
<td></td>
<td>Missing</td>
<td>1 (4.8%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Last level (30cm):</th>
<th>Yes</th>
<th>17 (81.0%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>2 (9.5%)</td>
</tr>
<tr>
<td></td>
<td>Missing</td>
<td>2 (9.5%)</td>
</tr>
</tbody>
</table>

If you responded no, at what distance should the RCW start to issue warnings?

**Table 14. Distance at which drivers who were dissatisfied thought the 1st and last level RCW warnings should occur**

<table>
<thead>
<tr>
<th>Subject number</th>
<th>1st level</th>
<th>Last level</th>
</tr>
</thead>
<tbody>
<tr>
<td>021</td>
<td>2 metres</td>
<td>10cm</td>
</tr>
<tr>
<td>041</td>
<td>200-300cm</td>
<td>-</td>
</tr>
<tr>
<td>052</td>
<td>3 metres</td>
<td>1 metre</td>
</tr>
</tbody>
</table>

**Speed Request Button**

Only subjects in the treatment group rated the usability of the Speed Request button. Subjects rated the usability of the speed request button in the first period in which they were exposed to it. Nine subjects were exposed during the first exposure period, and thus
rated the usability in Interim questionnaire time 2. Six subjects experienced the Speed Request Button for the first time in the second exposure period, and three of these rated its usability in Interim questionnaire time 4. Usability data for the Speed Request button is therefore available for 12 of the 15 treatment group subjects.

**Overall**
One subject (8.3%) reported not using the Speed Request Button during their first period of exposure. Eleven subjects (91.7%) reported having used this function. These 11 subjects were asked to rate the usability of the system by answering several questions.

The person who did not use it should have been asked why. Maybe the person wasn’t satisfied with it, or didn’t know how, which would be a usability issue.

*Effectiveness: system response*
2g. How effective was the Speed Request function in providing you with speed limit information with minimal delay (i.e. from the time you pressed the Speed Request button)?

<table>
<thead>
<tr>
<th>Rating</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very effective</td>
<td>6 (54.6%)</td>
</tr>
<tr>
<td>Effective</td>
<td>4 (36.4%)</td>
</tr>
<tr>
<td>Neither effective nor ineffective</td>
<td>1 (9.1%)</td>
</tr>
<tr>
<td>Ineffective</td>
<td>0</td>
</tr>
<tr>
<td>Very ineffective</td>
<td>0</td>
</tr>
</tbody>
</table>

**Button**

*Learnability: button use*
2a. Thinking back to the very first time you wanted to request the speed limit using the Speed Request function, how easy was it for you to use the Speed Request Button?

<table>
<thead>
<tr>
<th>Rating</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very easy</td>
<td>10 (90.9%)</td>
</tr>
<tr>
<td>Easy</td>
<td>1 (9.1%)</td>
</tr>
<tr>
<td>Neither easy nor difficult</td>
<td>0</td>
</tr>
<tr>
<td>Difficult</td>
<td>0</td>
</tr>
<tr>
<td>Very difficult</td>
<td>0</td>
</tr>
</tbody>
</table>

The subject who did rate the speed request button as very easy to use the first time was asked why. They chose the option, “Other” and specified that “concentrate on driving”.

This subject was also asked whether or not they found it easier to use the Speed Request button the next time they used it. The subject answered, “Yes”.

*Satisfaction: button location*
2b. Were you satisfied with the location of the Speed Request Button?
All eleven subjects (100%) who used the Speed Request Button were satisfied with its location.
Satisfaction: button look and feel
2c. Were you satisfied with the look and feel of the Speed Request Button (e.g. colour, size, shape)?
Yes 10 (90.9%)
No 1 (9.1%)

The subject who was not satisfied with the look and feel of the button stated that it “looks old fashioned.”

Visual display
Learnability: display interpretation
2d. Thinking back to the very first time you requested the speed limit using the Speed Request function, how easy was it for you to judge what the speed limit was from the information that appeared on the Visual Warning Display?

Very easy 10 (90.9%)
Easy 0
Neither easy nor difficult 1 (9.1%)
Difficult 0
Very difficult 0

If you did not respond “Very Easy” did you find it easier to judge what the speed limit was after you had used the Speed Request a few times?
Yes 1 (100%)
No 0
I never used the Speed Request again 0

If you responded Yes, roughly how many times did you have to use the Speed Request before you were able to judge what the speed limit was from the information that appeared on the Visual Warning Display?

Twice 0
3-5 times 1 (100%)
Other 0

Ease of use: visual notification
2e. Did you have any difficulty seeing the Speed Request visual notification on the Visual Warning Display (i.e. miniature speed limit sign showing the current speed limit)?

Yes 2 (18.2%)
No 9 (81.8%)

Subjects who responded Yes were asked to choose the reason. They responded as follows:
Subject 51 chose the options:
• There was too much glare on the screen
• There was too much reflection on the screen
• The visual warning display is too far over to the left, making the screen difficult to view

Subject 52 chose the options:
  • The screen was too bright
  • The screen was not bright enough
  • Other (specified, “background too bright at night”)

*Satisfaction: visual notification*
2f. Were you satisfied with the look of the Speed Request visual notification graphics, that is, the miniature speed limit sign showing the current speed limit?

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Yes</td>
<td>11 (100%)</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
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</table>

*Effectiveness and satisfaction: notification duration*
2l. In response to pressing the Speed Request button, the speed limit appears on the visual warning display and remains there for 3 seconds. Is this amount of time acceptable?

<p>| | |</p>
<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Yes</td>
<td>11 (100%)</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
</tr>
</tbody>
</table>

*Auditory warning*

*Ease of use*
2h. Did you have any difficulty hearing the Speed Request audio chime?

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</thead>
<tbody>
<tr>
<td>Yes</td>
<td>0</td>
</tr>
<tr>
<td>No</td>
<td>11 (100%)</td>
</tr>
</tbody>
</table>

*Satisfaction*
2i. Were you satisfied with the sound of the Speed Request audio chime?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>9 (81.8%)</td>
</tr>
<tr>
<td>No</td>
<td>2 (18.2%)</td>
</tr>
</tbody>
</table>

Subjects who were not satisfied with the sound of the Speed Request audio chime were asked why, and what they would recommend instead. The two subjects stated:
• annoys me
• no chime needed - what function does it serve?

*Effectiveness*
2j. How effective was the audio chime in alerting you that you had received speed limit information?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very effective</td>
<td>6 (54.5%)</td>
</tr>
</tbody>
</table>
Effective 4 (36.4%)
Neither effective nor ineffective 0
Ineffective 1 (9.1%)
Very ineffective 0

The subjects who responded “Ineffective” was asked to state why, and said it “serves no useful purpose”.

**Combined visual and auditory warning**

*Effectiveness and satisfaction: inconsistency*

2k. The audio chime sometimes sounds before notification of the speed limit appears on the Visual Warning Display and other times it sounds at the same time as when the speed limit notification appears on the display. Is this inconsistency acceptable?

- Yes 9 (81.8%)
- No 2 (18.2%)

If you responded no, should the audio chime sound before or at the same time as when the speed limit is displayed?
- should be consistent
- should be no sound at all

**System override**

Only subjects in the treatment group rated the usability of the System Override button.

**Overall**

Nine subjects (69.2%) reported that they had used the system override function by the time of Interim Questionnaire time 2, whereas 4 subjects did not (30.8%). Two subjects did not return Interim Questionnaire time 2.

The nine subjects who reported having used the system were asked a number of questions regarding the usability of the System Override.

**Button**

*Learnability: button use*

2a. Thinking back to the very first time you wanted to temporarily turn off system warnings, how easy was it for you to use the System Override Button?

- Very easy 8 (88.9%)
- Easy 1 (11.1%)
- Neither easy nor difficult 0
- Difficult 0
- Very difficult 0
The subject who did not rate the System Override button as very easy to use was asked why, and chose the option, “Couldn’t remember where the button was located”.

This subject was also asked if they found it easier to use the button the next time they wanted to temporarily override system warnings. The subject chose the option “Yes”.

*Satisfaction: button location*
2b. Were you satisfied with the location of the System Override Button?

<table>
<thead>
<tr>
<th>Yes</th>
<th>9 (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>0</td>
</tr>
</tbody>
</table>

*Satisfaction: button look and feel*
2c. Were you satisfied with the look and feel of the System Override Button (e.g. colour, size, shape)?

<table>
<thead>
<tr>
<th>Yes</th>
<th>8 (88.9%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1 (11.1%)</td>
</tr>
</tbody>
</table>

The subject who was not satisfied with the look and feel of the button stated that it was “old fashioned”.

**Visual warning**

*Ease of use*
2d. Did you have any difficulty seeing or reading the System Override message on the Visual Warning Display stating that the system override was activated?

<table>
<thead>
<tr>
<th>Yes</th>
<th>1 (11.1%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>8 (88.9%)</td>
</tr>
</tbody>
</table>

The subject who reported difficulty with seeing or reading the System Override message did not provide a reason.

*Satisfaction*
2e. Were you satisfied with the look of the System Override visual message stating that the system override was activated?

<table>
<thead>
<tr>
<th>Yes</th>
<th>9 (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>0</td>
</tr>
</tbody>
</table>

*Effectiveness: visual notification (initial response)*
2f. How effective was the System Override visual message in confirming that you had successfully activated the system override?

| Very effective | 7 (77.8%) |
| Effective      | 2 (22.2%) |
Neither effective nor ineffective   0
Ineffective                      0
Very ineffective                0

Effectiveness: visual notification (continued response)
2g. How effective was the System Override visual message in keeping you continually reminded that all system warnings were disabled?

Very effective                  6 (66.7%)
Effective                       3 (33.3%)
Neither effective nor ineffective 0
Ineffective                      0
Very ineffective                0

Effectiveness and satisfaction – duration of response
2h. In response to pressing the System Override Button, the system warnings are disabled for a period of 1 to 2 minutes. Is this amount of time acceptable?

Yes                              7  (77.8%)
No                               2  (22.2%)

Subjects who responded “No” were asked how long should the system warnings be temporarily disabled. The responses were:

- 5 minutes
- needs to be at least 5 minutes or perhaps the period can be selected

**Master Volume Control**

Only subjects in the treatment group rated the usability of the Master Volume Control. Two subjects did not return the questionnaire in which the usability of the Master Volume Control was assessed.

**Overall**

Three subjects (23.1%) reported having adjusted the volume of the audio warnings/message using the Master Volume control during the first exposure period, while 10 subjects (76.9%) reported not doing so. Of these 10 subjects, one subject stated that they had tried to do so, but that it didn’t work.

The three subjects who reported using the master volume control were asked several questions about its usability.

**Button**

*Learnability: button use*

2a Thinking back to the very first time you wanted to adjust the volume of the audio warnings and voice message using the Master Volume Control, how easy was it for you to use the Master Volume Control?
Very easy 1 (33.3%)
Easy 2 (66.7%)
Neither easy nor difficult 0
Difficult 0
Very difficult 0

The subjects who did not rate the Master Volume Control as very easy to use were asked why. The responses they chose were as follows:

Subject 41:
- The buttons were not sensitive enough – a button had to be pressed several times in order to detect a noticeable change in volume
- It was too difficult to tell whether the volume had been increased as a result of pressing the button for increasing volume or whether the volume had been decreased as a result of pressing the button for decreasing volume.
- After pressing a button (to adjust the volume) there as no way of knowing the volume setting

Subject 52:
- Couldn’t remember where the buttons were located
- The buttons were not sensitive enough – a button had to be pressed several times in order to detect a noticeable change in volume

Satisfaction: button location
2b. Were you satisfied with the location of the Master Volume Control buttons?

Yes 3 (100%)
No 0

Satisfaction: button look and feel
2c. Were you satisfied with the look and feel of the Master Volume Control buttons (e.g. colour, size, shape)?

Yes 1 (33.3%)
No 1 (33.3%)
Missing 1 (33.3%)

The subject who responded that they were not satisfied with the look and feel of the Master Volume Control button stated, “Shape and size okay. Colour should be different i.e. yellow/green”. The subject did not answer the previous question (designated missing above) also provided a reason. They stated, “The minimum volume is too loud. Also need to be able to switch off - if alarm goes when co-driver is sleeping, it disturbs sleep particularly for spurious alarms”.
**Visual Warning Display**

Only subjects in the treatment group rated the usability of the Visual Warning Display. Two subjects did not return the questionnaire in which the usability of the visual warning display was assessed.

**Overall**

*Ease of use: visual warnings during the day*

1a. Did you have any difficulty seeing/reading the warnings/messages presented on the Visual Warning Display during the day?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>5 (38.5%)</td>
</tr>
<tr>
<td>No</td>
<td>8 (61.5%)</td>
</tr>
</tbody>
</table>

Subjects who reported difficulty were asked to choose the reason why, from a number of options. The options that each subject chose were as follows:

Subject 11
- The Visual Warning Display is too far over to the left, making the screen difficult to view.

Subject 12
- The screen was too bright

Subject 23
- There was too much glare on the screen

Subject 51
- There was too much glare on the screen
- There was too much reflection on the screen
- The Visual Warning Display is too far over to the left, making the screen difficult to view.

Subject 61
- No reason given

*Ease of use: visual warnings during the night*

1b Did you have any difficulty seeing/reading the warnings/message presented on the Visual Warning Display at night?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>3 (23.1%)</td>
</tr>
<tr>
<td>No</td>
<td>10 (76.9%)</td>
</tr>
</tbody>
</table>

Subjects who reported difficulty were asked to choose the reason why, from a number of options. The options that each subject chose were as follows:

Subject 11
- The screen was too bright
• The Visual Warning Display is too far over to the left, making the screen difficult to view

Subject 51
• There was too much glare on the screen
• There was too much reflection on the screen
• The Visual Warning Display is too far over to the left, making the screen difficult to view

Subject 52
• The screen was too bright

Satisfaction: location
1c. Were you satisfied with the location of the Visual Warning Display?

Yes 11 (84.6%)
No 2 (15.4%)

The subjects who responded “No” were asked to state what they didn’t like about the location, why and what location they would recommend instead.
• too far to the left and takes your eye off the road to see it.
• too far to the left, too much glare, should be on dash board

Satisfaction: look and feel
1d. Were you satisfied with the look and feel of the VWD (e.g. size and colour)?

Yes 11 (84.6%)
No 2 (15.4%)

Subjects who responded “No” were asked to state what they didn’t like about the look and feel of the VWD, why and what they would recommend instead.
• ugly, obtrusive
• screen ineffective in all conditions

Brightness control
Learnability

1e. Have you adjusted the brightness of the Visual Warning Display?

Yes 12 (92.3%)
No 1 (7.7%)

The subjects who reported adjusting the brightness of the Visual Warning Display were asked the following question.
1f. Thinking back to the very first time you wanted to adjust the brightness of the display, how easy was it for you to use the brightness control?

<table>
<thead>
<tr>
<th>Rating</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very easy</td>
<td>8 (66.7%)</td>
</tr>
<tr>
<td>Easy</td>
<td>2 (16.7%)</td>
</tr>
<tr>
<td>Neither easy nor difficult</td>
<td>1 (8.3%)</td>
</tr>
<tr>
<td>Difficult</td>
<td>1 (8.3%)</td>
</tr>
<tr>
<td>Very difficult</td>
<td>0</td>
</tr>
</tbody>
</table>

Subjects who did not rate the brightness control as very easy to use were asked why, and given a list of options to choose from.

Two of the four subjects (one who rated the system as easy and another who rated the system as neither easy nor difficult) did not choose a reason for not rating the system as very easy.

The other two subjects chose the following options:

Subject 32
- Couldn’t remember where the control was located

Subject 51
- The control was difficult to see/find during the day
- Couldn’t remember where the control was located
- The control was difficult to see/find at night
- The control was too far away to reach comfortably
- The control was too small to turn

The subjects who did not rate the brightness control as easy to use were asked if they found it easier to use the brightness control the next time

<table>
<thead>
<tr>
<th>Response</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1 (25%)</td>
</tr>
<tr>
<td>No</td>
<td>1 (25%)</td>
</tr>
<tr>
<td>I never used the brightness control again</td>
<td>0</td>
</tr>
<tr>
<td>Missing</td>
<td>2 (50%)</td>
</tr>
</tbody>
</table>

The subject that did not find the system easier to use the next time stated that “often forget which controls to use”.

Satisfaction: location

1g. Were you satisfied with the location of the brightness control on the Visual Warning Display?

<table>
<thead>
<tr>
<th>Response</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>10 (83.3%)</td>
</tr>
<tr>
<td>No</td>
<td>1 (8.3%)</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (8.3%)</td>
</tr>
</tbody>
</table>
The subject who was not satisfied with the location of the brightness control was asked what they didn’t like about it, why, and what location they would recommend instead. The subject stated, “could be a little clearer which controls do what on the monitor screen”.

**Satisfaction: look and feel**
1h. Were you satisfied with the look and feel of the brightness control (e.g. size, colour, thumbwheel mechanism)?

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>10</td>
<td>83.3%</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>16.7%</td>
</tr>
</tbody>
</table>

The subjects who responded no, were asked what they didn’t like about the look and feel, why and what they would recommend instead. One subject did not provide a response and the other stated, “too small”.

**Effectiveness: brightness control mechanism**
1i. How effective was the brightness control mechanism in adjusting the brightness of the Visual Warning Display by an appropriate amount?

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very effective</td>
<td>7</td>
<td>58.3%</td>
</tr>
<tr>
<td>Effective</td>
<td>2</td>
<td>16.7%</td>
</tr>
<tr>
<td>Neither effective nor ineffective</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ineffective</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Very ineffective</td>
<td>2</td>
<td>16.7%</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

Subjects who rated the brightness control mechanism as very ineffective were asked to state why. The reasons given were as follows:

- too bright in night at lowest setting. Can’t be read at lowest setting.
- At night the background is too bright, but if the brightness is reduced to an acceptable level the information displayed is no longer visible. It is a very poor design.

**Orientation adjustment mechanism**

**Learnability**

1j. Have you adjusted the orientation of the VWD?

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>7</td>
<td>53.9%</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>38.5%</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>7.7%</td>
</tr>
</tbody>
</table>

Subjects who reported having adjusted the orientation of the VWD were asked to answer several questions.
2k. Thinking back to the very first time you wanted to adjust the orientation of the display, how easy was it to do?

<table>
<thead>
<tr>
<th>Difficulty</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very easy</td>
<td>7</td>
</tr>
<tr>
<td>Easy</td>
<td>0</td>
</tr>
<tr>
<td>Neither easy nor difficult</td>
<td>0</td>
</tr>
<tr>
<td>Difficult</td>
<td>0</td>
</tr>
<tr>
<td>Very difficult</td>
<td>0</td>
</tr>
</tbody>
</table>
**Workload**

Workload was measured using the NASA raw task load index. The NASA raw-tlx is made up of six subscales; mental demand, physical demand, temporal demand, effort, performance and frustration level. Participants were asked to rate their level of workload on each of the six dimensions for the following situations:

- For the period prior to SafeCar systems becoming active in the vehicle when the participant was
  1. Driving
  2. Reversing
  3. Following (i.e. driving with another car in front of them)

- When warnings from the system were being issued
  1. Seat Belt Reminder
  2. Reverse Collision
  3. Intelligent Speed Adaptation
  4. Following Distance Warning

Participants only rated their workload for systems they actually used. Consequently, all participants were asked to rate their workload for baseline driving, baseline reversing, the seat belt reminder system and the reverse collision warning system. Only participants in the treatment group rated their workload for baseline following, the intelligent speed adaptation system and the following distance warning system.

An alpha level of .05 was used for the statistical comparisons, however p-values of between .05 and 0.10 were considered to be of interest in highlighting possible differences that this study may not have been powerful to detect due to the relatively small sample size.

**Intelligent Speed Adaptation**

Out of the 15 participants in the group who were exposed to the ISA system, only 12 returned the questionnaire in which they were asked about their workload while receiving ISA warnings. Of these 12 treatment group participants, 2 had not received any warnings from ISA at the time of the workload questionnaire. The following data are from the 10 participants in the treatment group who returned the relevant questionnaire, and who reported having experienced ISA warnings.
Table 15. Ratings of workload (average and standard deviation) for each workload dimension while driving prior to, and while receiving warnings from, the Intelligent Speed Adaptation system.

<table>
<thead>
<tr>
<th>Workload dimension</th>
<th>Average workload</th>
<th>Results of the comparison using paired t tests, t (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Driving prior to ISA system being active</td>
<td>Driving while receiving ISA Warnings</td>
</tr>
<tr>
<td>Mental demand</td>
<td>42.5 (26.0)</td>
<td>37.0 (31.2)</td>
</tr>
<tr>
<td>Physical demand</td>
<td>36.0 (24.5)</td>
<td>38.5 (28.1)</td>
</tr>
<tr>
<td>Time demand</td>
<td>39.0 (20.8)</td>
<td>45.0 (23.5)</td>
</tr>
<tr>
<td>Performance</td>
<td>39.0 (23.8)</td>
<td>31.0 (21.8)</td>
</tr>
<tr>
<td>Effort</td>
<td>45.5 (23.6)</td>
<td>44.5 (26.8)</td>
</tr>
<tr>
<td>Frustration Level</td>
<td>38.5 (29.7)</td>
<td>53.0 (22.5)</td>
</tr>
<tr>
<td>Overall score</td>
<td>40.1 (20.3)</td>
<td>41.5 (18.5)</td>
</tr>
</tbody>
</table>

There was no significant difference between the overall workload that participants experienced while driving prior to the ISA system being active, and the workload they experienced while driving and receiving warnings from the ISA system (p>.05). There was no significant difference for any of the six workload dimensions (p>.05).

**Following Distance Warning**

Of the 15 participants who were exposed to the FDW system, three did not return the relevant questionnaire/s, while another three subjects failed to answer the questions relating to workload while following another car without the FDW system. The following data are from the 9 treatment group participants who completed the relevant questionnaires. All of these 9 participants reported having experienced the FDW system.
Table 16. Ratings of workload (average and standard deviation) for each workload dimension while following another car prior to, and while receiving warnings from, the Following Distance Warning system.

<table>
<thead>
<tr>
<th>Workload dimension</th>
<th>Average workload</th>
<th>Results of the comparison using paired t tests, t (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Following prior to FDW system being active</td>
<td>Driving while receiving Following Distance Warnings</td>
</tr>
<tr>
<td>Mental demand</td>
<td>54.4 (20.1)</td>
<td>40.0 (24.7)</td>
</tr>
<tr>
<td>Physical demand</td>
<td>42.8 (19.7)</td>
<td>30.6 (21.7)</td>
</tr>
<tr>
<td>Time demand</td>
<td>37.8 (28.5)</td>
<td>28.9 (22.6)</td>
</tr>
<tr>
<td>Performance</td>
<td>23.9 (19.2)</td>
<td>36.7 (27.4)</td>
</tr>
<tr>
<td>Effort</td>
<td>48.9 (23.0)</td>
<td>49.4 (24.6)</td>
</tr>
<tr>
<td>Frustration Level</td>
<td>39.4 (30.0)</td>
<td>62.2 (27.7)</td>
</tr>
<tr>
<td>Overall score</td>
<td>41.2 (18.0)</td>
<td>41.3 (15.3)</td>
</tr>
</tbody>
</table>

Key: * denotes comparisons where a significant difference was found between the workload prior to the FDW system being active and workload while receiving warnings from the FDW system, while ~ denotes effects of possible interest.

There was no significant difference in the overall workload that participants experienced while following another car prior to the FDW system being operational, and following a car while the FDW system was issuing warnings. In terms of the different dimensions of workload, there was no significant difference in mental, physical or time demand, or effort required. There was some evidence for a decrement in perceived performance when the FDW system was issuing warnings, although this did not reach the conventional .05 level of significance. Warnings from the FDW system however, did cause a significant increase in the frustration level that the participants felt while driving behind another car, compared to when no warnings were present.

**Seat Belt Reminder**

All 23 participants completed the questionnaires relevant for the comparison between workload under baseline driving and workload while driving and receiving SBR warnings. Two subjects in the control group reported not having experienced SBR warnings, consequently the following data are for 15 treatment group participants and 6 control group participants. There was some evidence for differences between the treatment and control groups, and so mixed two-way within subjects analyses of variance were performed.
Table 17. Ratings of workload (average and standard deviation) for each workload dimension while driving prior to, and while receiving warnings from, the Seat Belt Reminder system.

<table>
<thead>
<tr>
<th>Workload dimension</th>
<th>Average workload</th>
<th>Significant results from mixed 2-way within subjects ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Driving prior to</td>
<td>Driving while receiving SBR warnings</td>
</tr>
<tr>
<td></td>
<td>SBR system being active</td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>Control</td>
<td>Treatment</td>
</tr>
<tr>
<td>Mental demand</td>
<td>44.7 (23.2)</td>
<td>45.6 (27.8)</td>
</tr>
<tr>
<td>Physical demand</td>
<td>35.0 (21.4)</td>
<td>26.9 (18.9)</td>
</tr>
<tr>
<td>Time demand</td>
<td>42.0 (20.2)</td>
<td>37.5 (17.9)</td>
</tr>
<tr>
<td>Performance</td>
<td>37.3 (21.2)</td>
<td>20.0 (12.8)</td>
</tr>
<tr>
<td>Effort</td>
<td>44.7 (21.5)</td>
<td>31.3 (22.3)</td>
</tr>
<tr>
<td>Frustration Level</td>
<td>38.3 (25.8)</td>
<td>26.3 (25.4)</td>
</tr>
<tr>
<td>Overall score</td>
<td>40.3 (17.9)</td>
<td>31.3 (17.8)</td>
</tr>
</tbody>
</table>

Key: * denotes comparisons where a significant difference was found between the workload prior to the FDW system being active and workload while receiving warnings from the FDW system, while ~ denotes effects of possible interest.

For the overall score and all but one of the dimensions (time demand) there was a significant interaction (refer to table 4 for the reported statistics) between group and warning level. Even for the time demand dimension, there was some evidence for an interaction, with a p-value of less than 0.10. This means that the groups differed in terms of how their workload ratings changed from driving in the period prior to experiencing the SBR warnings to instances when SBR warnings were being issued.

These interactions were investigated further by determining if there was a change in ratings over time for the treatment group and control group separately. For each of the workload dimensions, the treatment group rated their workload while receiving SBR warnings as lower than their workload while driving without the SBR warnings. The
treatment group rated their workload as significantly lower in terms of mental demand, physical demand, effort, frustration level and performance (p<.05), and there was some evidence for a reduction in time demand with the SBR (p<0.10). There was also a significant decrease in overall workload for the treatment group participants (p<.01). However, there was no evidence of a change in ratings across time for participants in the control group, despite a consistent trend for these participants to rate their workload as higher when experiencing SBR warnings than when driving prior to the systems being active.

Reverse Collision Warning
In Interim Questionnaire time 1, participants were asked whether or not they had experienced reverse collision warnings. Two participants had not experienced warnings from the RCW system at this stage, while the remaining 21 participants reported having experienced the warnings.

The workload level that these 21 participants reported experiencing while reversing prior to introduction of the reverse collision warning (RCW) was compared to workload while reverse collision warnings were being issued, using the Wilcoxon signed ranks test. Initial inspection of the results revealed no differences between the ratings given by subjects in the treatment and control groups, so the data for all subjects was pooled for these comparisons.

The workload level that participants reported while reversing was significantly lower while reverse collision warnings were being issued compared to the period when the reverse collision warning system was not operational. Participants rated mental demand, physical demand, time demand, and effort as significantly lower when the reverse collision warnings were operational, and they rated their performance as significantly better. There was however, no significant difference between the frustration level they felt while reversing with or without the reverse collision warnings active.
Table 18. Ratings of workload (median, average and standard deviation) for each workload dimension while reversing prior to, and while receiving warnings from, the Reverse Collision Warning system.

<table>
<thead>
<tr>
<th>Workload dimension</th>
<th>Average workload</th>
<th>Results of the comparison using the Wilcoxon signed ranks test, z (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reversing prior to RCW system being active</td>
<td>Reversing while receiving Reverse Collision Warnings</td>
</tr>
<tr>
<td>Mental demand</td>
<td>65</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>53.1 (30.2)</td>
<td>27.9 (18.6)</td>
</tr>
<tr>
<td></td>
<td>3.41 (&lt;.001) *</td>
<td></td>
</tr>
<tr>
<td>Physical demand</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>41.4 (27.1)</td>
<td>27.1 (20.6)</td>
</tr>
<tr>
<td></td>
<td>3.00 (.003) *</td>
<td></td>
</tr>
<tr>
<td>Time demand</td>
<td>40</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>37.4 (26.9)</td>
<td>23.8 (22.0)</td>
</tr>
<tr>
<td></td>
<td>2.25 (0.025) *</td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>29.5 (22.7)</td>
<td>16.9 (17.6)</td>
</tr>
<tr>
<td></td>
<td>1.97 (.049) *</td>
<td></td>
</tr>
<tr>
<td>Effort</td>
<td>50</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>42.4 (25.8)</td>
<td>28.6 (20.6)</td>
</tr>
<tr>
<td></td>
<td>2.74 (.006) *</td>
<td></td>
</tr>
<tr>
<td>Frustration Level</td>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>32.4 (28.0)</td>
<td>23.6 (24.3)</td>
</tr>
<tr>
<td></td>
<td>1.57 (0.12)</td>
<td></td>
</tr>
<tr>
<td>Overall score</td>
<td>38.3</td>
<td>26.7</td>
</tr>
<tr>
<td></td>
<td>39.4 (23.8)</td>
<td>24.7 (16.3)</td>
</tr>
<tr>
<td></td>
<td>2.96 (.003) *</td>
<td></td>
</tr>
</tbody>
</table>

Key: * denotes comparisons where a significant difference was found between the workload prior to the RCW system being active and workload while receiving warnings from the RCW system.

**Multiple systems**

The questions pertaining to "Multiple Systems' were included to determine whether treatment participants experience additional workload during situations where warnings from multiple systems could have been issued simultaneously. More specifically, the questions were intended to gauge participants' perceptions of the message priority system in place in the SafeCar vehicles.

These questions were administered to treatment participants following the period when they were exposed to both ISA and FDW. Twelve out of the 15 treatment group participants completed the relevant questionnaires.

Four situations in which warnings from two or more systems could be issued concurrently were described, and participants were asked whether they had experienced concurrent warnings in these situations. If they had experienced concurrent warnings, they were asked whether or not they felt confused or overloaded, or if they had any other comment about the situations.
1. FDW visual warnings (i.e. no audio warning) and SBR audio and visual warnings concurrently.

Out of the 12 subjects who completed the relevant questionnaires, one did not answer this question. Two of the remaining 11 subjects reported having experienced FDW visual warning and SBR audio and visual warnings concurrently.

One subject reported feeling confused by the concurrent warnings. The other subject reported not feeling confused or overloaded.

2. ISA upward accelerator pressure and SBR audio and visual warnings concurrently

Only one of the 12 subject reported experiencing concurrent ISA upward accelerator pressure and SBR audio and visual warnings. This subject reported not feeling confused by the concurrent warnings.

3. FDW visual warnings (i.e. no audio warning), ISA visual warnings and upward accelerator pressure concurrently.

Nine of the twelve subjects reported experiencing concurrent FDW visual warnings and ISA visual and haptic warnings, while three subjects did not.

Of the nine subjects,
- Seven reported not feeling confused (two did not indicate whether they were confused or not)
- Two reported feeling overloaded, while the other 7 reported not feeling overloaded.
- Two other subjects gave their own feedback on how they felt when they experienced the concurrent warnings; “sometimes annoyed” and “frustration and annoyance”.

4. FDW visual warnings (i.e. no audio warning), ISA upward accelerator pressure and SBR audio and visual warnings concurrently.

Eleven of the 12 subjects reported not experiencing FDW visual warnings, ISA haptic warnings and SBR audio and visual warnings concurrently. The remaining subject did not respond whether such a situation had been experienced, however, this subject did respond that they were confused by the situation – which implies that they did experience the three system warnings at once.
**Attitudes**

**Driver behaviour**

The following analysis includes data for the 11 treatment group participants and 8 control group participants who completed the Preliminary 1 questionnaire and the Post-Questionnaire.

**How frequently did you do the following things in the period while you were driving your SafeCar?**

1a. Deliberately disregard the speed limit to stay with the traffic flow.

![Histograms of the percent of responses in each category, by group.
(0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)](image-url)

*Figure 214. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*
The median rating for both the treatment and control groups was “very seldom” both prior to exposure to the ITS and at the conclusion of the study. The mean ratings lay between “very seldom” and “rather seldom” for both groups in both questionnaires.

There was no significant difference between the behaviour reported by the participants in the treatment group compared with the control group ($F(1,17)=0.30, p=0.59$), or any significant change in reported behaviour over time ($F(1,17)=0.44, p=0.52$). Nor was there a significant interaction between group and questionnaire ($F(1,17)=1.53, p=0.23$).

b. Over take when the car in front is slowing down approaching an area with a lower speed limit.

*Figure 215. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*
The median rating for the treatment group was “never” prior to exposure to ITS, and “very seldom” after exposure to ITS. The median ratings for the control group was “never” both prior to, and after, exposure to the ITS.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=1.26$, $p=0.21$) or after the conclusion of the study ($z=1.08$, $p=0.28$). There was also no significant change in the self-reported behaviour over time ($z=-0.45$, $p=0.65$).

1c. Fail to notice a green arrow at a traffic light allowing you to turn

![Histograms of the percent of responses in each category, by group.](image)

*Figure 216. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*
The median rating for the treatment group was “very seldom” prior to, and after, exposure to ITS. The median ratings for the control group was “very seldom” prior to exposure to the ITS, and “never” afterwards.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=0.29$, $p=0.78$) or after the conclusion of the study ($z=0.81$, $p=0.42$). There was also no significant change in the self-reported behaviour over time ($z=-0.13$, $p=0.90$).

d. Forget to loosen the park brake when driving off

![Histograms of the percent of responses in each category, by group.](image)

Figure 217. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)
The median rating for the treatment group was “never” prior to exposure to ITS, and “very seldom” after exposure to ITS. The median ratings for the control group was “never” both prior to, and after, exposure to the ITS.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=0.97$, $p=0.33$). There was some evidence for a difference between the self-reported behaviour of the two groups at the end of the study, although this did not reach the conventional level for significance ($z=1.85$, $p=0.06$).

There was no significant change in the self-reported behaviour over time for the treatment group ($z=-0.45$, $p=0.65$) or the control group ($z=1.00$, $p=0.32$).

e. Drive especially close to the car in front as a signal to its driver to go faster or to get out of the way

![Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)](image-url)

*Figure 218. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*
The median rating for both the treatment and control groups was “never” both prior to exposure to the ITS and at the conclusion of the study.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=1.23$, $p=0.22$) or after the conclusion of the study ($z=0.47$, $p=0.64$). There was also no significant change in the self-reported behaviour over time ($z=-0.33$, $p=0.74$).

f. Forget to dip the lights when driving at night and are reminded to do so by other drivers flashing their lights

![Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)](image)

The median rating for the treatment group was “very seldom” both prior to, and after, exposure to ITS. The median rating for the control group was halfway between “never” and “very seldom” prior to exposure to ITS, and “never” after exposure.
There was a significant difference between the self-reported behaviour of the treatment and control groups prior to exposure to ITS \((z=2.03, p=0.04)\), with a larger proportion the control group reporting that they never exhibited this behaviour \((50.0\% \text{ compared with } 9.1\%)\), and a larger proportion of the treatment group reporting that they very seldom displayed this behaviour \((81.8\% \text{ compared with } 50.0\%)\). However, after exposure to the ITS, there was no difference in the reported behaviour of the treatment and control groups \((z=1.21, p=0.23)\).

There was no significant change over time in the reported behaviour of the treatment group \((z=1.34, p=0.18)\) or the control group \((z=0.58, p=0.56)\).

g. **Speed up to get through traffic lights when the lights are yellow or green**

![Histograms of the percent of responses in each category, by group.](image)

Figure 220. Histograms of the percent of responses in each category, by group. 
\((0=\text{never}, 1=\text{very seldom}, 2=\text{rather seldom}, 3=\text{sometimes}, 4=\text{often}, 5=\text{very often})\)
The median rating for both the treatment and control groups was “very seldom” both prior to exposure to the ITS and at the conclusion of the study.

There was no significant difference between the behaviour reported by the participants in the treatment group compared with the control group ($F(1,17)=0.26$, $p=0.61$), or any significant change in reported behaviour over time ($F(1,17)=0.15$, $p=0.71$). Nor was there a significant interaction between group and questionnaire ($F(1,17)=0.15$, $p=0.71$).

**h. Deliberately park your car illegally in order to run an errand**

![Histograms of the percent of responses in each category, by group.](image)

*Figure 221. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*
The median rating for both the treatment and control groups was “never” both prior to exposure to the ITS and at the conclusion of the study.

There was no significant different between the self reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=-0.47$, $p=0.64$) or after the conclusion of the study ($z=0.51$, $p=0.61$). There was also no significant change in the self-reported behaviour over time ($z=-0.28$, $p=0.78$).

i. Break a traffic rule because you hadn’t noticed the newly put up sign

![Histograms of the percent of responses in each category, by group.](image)

The median rating for both the treatment and control groups was “very seldom” both prior to exposure to the ITS and at the conclusion of the study.
There was no significant difference between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=0.65$, $p=0.51$) or after the conclusion of the study ($z=-0.19$, $p=0.85$). There was also no significant change in the self-reported behaviour over time ($z=-0.34$, $p=0.73$).

**j. Misread signs and find yourself lost**

![Histograms of the percent of responses in each category, by group.](image)

*Figure 223. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*

The median rating for both the treatment and control groups was “very seldom” both prior to exposure to the ITS and at the conclusion of the study.

There was no significant difference between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=-1.34$, $p=0.18$) or after the conclusion of the study ($z=0.18$, $p=0.86$). There was also no significant change in the self-reported behaviour over time ($z=-0.58$, $p=0.56$).
k. Fail to notice when a traffic light turns green

The median rating for the treatment group was “very seldom” both prior to exposure to the ITS and at the conclusion of the study. The median rating for the control group was “very seldom” at the beginning of the study, and halfway between “never” and “very seldom” after exposure to ITS.
There was no significant difference between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=-0.29$, $p=0.78$) or after the conclusion of the study ($z=1.13$, $p=0.26$). There was also no significant change in the self-reported behaviour over time ($z=-0.77$, $p=0.44$).

1. Deliberately exceed the speed limit on roads when there is little traffic

![Histograms of the percent of responses in each category, by group.](image)

*Figure 225. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*

The median rating for both the treatment and control groups was “very seldom” both prior to exposure to the ITS and at the conclusion of the study.
There was no significant difference between the behaviour reported by the participants in the treatment group compared with the control group (F(1,17)=0.15, p=0.70), or any significant change in reported behaviour over time (F(1,17)=1.12, p=0.31). Nor was there a significant interaction between group and questionnaire (F(1,17)=0.03, p=0.87).

m. Find yourself driving in the second last gear even though you are driving fast enough to be in the highest gear (answer only if applicable)

\[ \text{Before} \]

\[ \text{After} \]

\textit{Figure 226. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)}
The median rating for the treatment “never” prior to exposure to the ITS, and “very seldom” at the conclusion of the study. The median rating for the control group was “never” for both questionnaires.

There was no significant difference between the ratings of the treatment group and control group prior to exposure to ITS (z=0.82, p=0.41), however, after exposure to the ITS, the ratings of the treatment group were significantly different to those of the control group (z=2.00, p=0.046). At that time, 100% of the control group said they never displayed this behaviour, compared to only 25% of the treatment group.

There was some evidence of a change in reported behaviour over time for the participants in the treatment group, although this did not reach the conventional level of significance (z=-1.69, p=0.09). It must be said however, that this analysis is only based upon the 4 treatment group subjects who answered this question at both time points. There was no difference over time for the control group.

n. Uncertain where you parked your car in a large car park
The median rating for both groups was “never” prior to ITS exposure, and “very seldom” after ITS exposure.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=0.23, p=0.82$) or after the conclusion of the study ($z=0.14, p=0.89$). There was also no significant change in the self-reported behaviour over time ($z=-1.36, p=0.17$).
o. Intend to reverse but find that the car is moving forward because it is in the wrong gear

The median rating for both the treatment and control groups was “never” both prior to exposure to the ITS and at the conclusion of the study.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=0.80$, $p=0.43$) or after the
conclusion of the study ($z=1.24$, $p=0.21$). There was also no significant change in the self-reported behaviour over time ($z=-0.51$, $p=0.61$).

**p. Deliberately exceed the speed limit when overtaking**

<table>
<thead>
<tr>
<th></th>
<th>Percent</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before</td>
<td></td>
<td></td>
</tr>
<tr>
<td>After</td>
<td></td>
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</tr>
</tbody>
</table>

![Histograms of the percent of responses in each category, by group.](image)

*Figure 229. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*

The median rating for the treatment group was “rather seldom” both prior to, and after, ITS exposure. The median rating for the control group was “very seldom” at both times.

There was no significant difference between the behaviour reported by the participants in the treatment group compared with the control group ($F(1,17)=0.74$, $p=0.40$), or any significant change in reported behaviour over time ($F(1,17)=0.86$, $p=0.37$). Nor was there a significant interaction between group and questionnaire ($F(1,17)=0.02$, $p=0.89$).
q. Fail to notice a traffic sign telling you that the road is temporarily closed

The median rating for both the treatment and control groups was “never” both prior to exposure to the ITS and at the conclusion of the study.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=0.85$, $p=0.39$) or after the
conclusion of the study ($z=-0.23$, $p=0.82$). There was also no significant change in the self-reported behaviour over time ($z=-0.58$, $p=0.56$).

r. Intend to drive to destination A, only to suddenly find yourself on the road to destination B, perhaps because destination B is your more usual destination.

![Histograms of the percent of responses in each category, by group.](image)

*Figure 231. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*

The median rating for the treatment group was “never” both prior to, and after, ITS exposure. The median rating for the control group was “very seldom” at both times.
There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=-0.81$, $p=0.42$) or after the conclusion of the study ($z=-1.09$, $p=0.28$). There was also no significant change in the self-reported behaviour over time ($z=-1.36$, $p=0.17$).

**s. Miss your exit on a freeway and have to make a lengthy detour**

![Histograms of the percent of responses in each category, by group.](image)

*Figure 232. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*
The median rating for both the treatment and control groups was “very seldom” both prior to exposure to the ITS and at the conclusion of the study.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=0.92$, $p=0.36$) or after the conclusion of the study ($z=-0.61$, $p=0.55$). There was also no significant change in the self-reported behaviour over time ($z=-0.45$, $p=0.65$).

**t. Misjudge the road surface and when braking find that the distance needed to stop is longer than you expected.**

![Figure 233. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)](image-url)
The median rating for the treatment group was “very seldom” both prior to, and after, exposure to ITS. The median rating for the control group was halfway between “never” and “very seldom” prior to exposure to ITS, and “very seldom” after exposure to ITS.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=0.75, p=0.45$) or after the conclusion of the study ($z=-0.11, p=0.92$). There was also no significant change in the self-reported behaviour over time ($z=0.58, p=0.56$).

**u. Shift into the wrong gear while driving (answer only if applicable)**

*Figure 234. Histograms of the percent of responses in each category, by group.*
*(0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*
The median rating for both the treatment and control groups was “never” both prior to exposure to the ITS and at the conclusion of the study.

There was no significant difference between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=-0.33, p=0.74$) or after the conclusion of the study ($z=1.00, p=0.32$). There was also no significant change in the self-reported behaviour over time ($z=1.00, p=0.32$).

v. Switch on the wipers for example, when you meant to switch on something else, such as the headlights.

*Figure 235. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*
The median rating for the treatment group was “never” both prior to, and after, exposure to ITS. The median rating for the control group was halfway between “never” and “very seldom” prior to exposure to ITS, and “very seldom” after exposure to ITS.

There was no significant difference between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=-0.19, p=0.85$) or after the conclusion of the study ($z=-1.58, p=0.11$). There was also no significant change in the self-reported behaviour over time ($z=-0.30, p=0.76$).
w. Forget which gear you are currently in and have to check with your hand (answer only if applicable).

The median rating for the treatment group was “never” prior to ITS exposure, and “very seldom” after ITS exposure. The median rating for the control group was halfway between “never” and “very seldom” prior to exposure to ITS, and “never” after exposure to ITS.
There was no significant difference between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=-1.48, p=0.14$) or after the conclusion of the study ($z=1.55, p=0.12$). There was also no significant change in the self-reported behaviour over time ($z=-0.58, p=0.56$).

x. Deliberately turn onto a road just in front of an oncoming vehicle even though there is no other traffic behind the oncoming vehicle

![Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)](image-url)
The median rating for both the treatment and control groups was “never” both prior to exposure to the ITS and at the conclusion of the study. There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=0.81$, $p=0.42$) or after the conclusion of the study ($z=1.16$, $p=0.25$). There was also no significant change in the self-reported behaviour over time ($z=0.61$, $p=0.54$).

**y. Misjudge the gap to an oncoming vehicle (in the opposite lane) when overtaking and you are forced to just sweep in front of the vehicle you overtake**

![Histograms of the percent of responses in each category, by group.](image)

*Figure 238. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*
The median rating for both the treatment and control groups was “never” both prior to exposure to the ITS and at the conclusion of the study.

There was a significant difference between the self-reported behaviour of the treatment group and the control group prior to exposure to ITS ($z=2.15$, $p=0.03$). At that time, a much larger proportion of control group subjects reported never behaving this way (100% compared to 54.6% of the treatment group). However, after the conclusion of the study, there was no significant difference between the self-reported behaviour of the treatment group or the control group ($z=1.47$, $p=0.14$).

There was some evidence of a change in the self-reported behaviour over time for the treatment group ($z=1.73$, $p=0.08$), although this did not reach the conventional 5% level of significance. Over time the proportion of treatment group subjects who reported never misjudging the gap to an oncoming vehicle increased, from 54.6% to 72.7%. For participants in the control group, there was no change in ratings over time.
z. Turn right onto a road into the path of an oncoming vehicle that you hadn’t seen, or whose speed you misjudged

![Figure 239. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)](image)

The median rating for both the treatment and control groups was “never” both prior to exposure to the ITS and at the conclusion of the study.

There was some evidence of a difference between the self-reported behaviour of the treatment group and the control group prior to exposure to ITS ($z=1.87$, $p=0.06$). At that time, a much larger proportion of control group subjects reported never behaving this way (100% compared to 63.6% of the treatment group). However, after the conclusion of
the study, there was no significant difference between the self-reported behaviour of the treatment group or the control group ($z=0.11$, $p=0.91$).

There was no significant change in the self-reported behaviour over time for the treatment group ($z=0.45$, $p=0.65$) or the control group ($z=-1.41$, $p=0.16$).

**aa. Try to shift into a higher gear even though you’re already in the highest gear (answer only if applicable)**

![Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)](image)

*Figure 240. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*

The median rating for the treatment group was “never” both prior to exposure to the ITS and at the conclusion of the study. The median rating for the control group was halfway
between “never” and “very seldom” prior to exposure to ITS, and “never” after exposure to ITS.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=-1.37, p=0.17$) or after the conclusion of the study ($z=0.44, p=0.66$). There was also no significant change in the self-reported behaviour over time ($z=1.00, p=0.32$).

**ab. Park against parking rules because you can’t find a parking space**

*Figure 241. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*
The median rating for the treatment group was “never” both prior to exposure to the ITS and at the conclusion of the study. The median rating for the control group was “never” prior to exposure to ITS, and halfway between “never” and “very seldom” after exposure to ITS.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=-0.05, p=0.96$) or after the conclusion of the study ($z=-1.52, p=0.13$). There was also no significant change in the self-reported behaviour over time ($z=-0.45, p=0.65$).

ac. Misjudge your speed when turning from a road and have to slam on the brakes

![Histograms of the percent of responses in each category, by group.](image)

Figure 242. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)
The median rating for both the treatment and control groups was “never” both prior to exposure to the ITS and at the conclusion of the study.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=0.89$, $p=0.37$) or after the conclusion of the study ($z=0.33$, $p=0.74$). There was also no significant change in the self-reported behaviour over time ($z=1.63$, $p=0.10$).

ad. Cut corners and occasionally cut into the opposing lane when driving around sharp bends in rural areas

![Histograms of the percent of responses in each category, by group.](image)

*Figure 243. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*
The median rating for the treatment group was “never” both prior to, and after, exposure to ITS. The median rating for the control group was halfway between “never” and “very seldom” both prior to, and after, exposure to ITS.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=-0.52$, $p=0.61$) or after the conclusion of the study ($z=-0.05$, $p=0.96$). There was also no significant change in the self-reported behaviour over time ($z=0.27$, $p=0.78$).

**ae. Misjudge the gap to an oncoming vehicle when you are turning right and force the oncoming vehicle to slam on the brakes**

*Figure 244. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*
The median rating for both the treatment and control groups was “never” both prior to exposure to the ITS and at the conclusion of the study.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS (z=-0.23, p=0.82) or after the conclusion of the study (ratings were exactly the same, Mann Whitney test could not be computed). There was also no significant change in the self-reported behaviour over time (z=1.41, p=0.16).

**af. Underestimate the speed of an oncoming vehicle (in the opposite lane) when overtaking**

![Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)](image-url)

*Figure 245. Histograms of the percent of responses in each category, by group. (0=never, 1=very seldom, 2=rather seldom, 3=sometimes, 4=often, 5=very often)*
The median rating for the treatment group was “very seldom” prior to exposure to ITS, and “never” after exposure to ITS. The median rating for the control group was “never” for both questionnaires.

There was no significant different between the self-reported behaviour of the treatment group or the control group prior to exposure to ITS ($z=1.33$, $p=0.18$) or after the conclusion of the study ($z=-0.35$, $p=0.73$). There was some evidence for a change in the self-reported behaviour over time ($z=1.67$, $p=0.096$), however this did not reach the conventional level of significance. Overall, the proportion of participants who reported never underestimating the speed of an oncoming vehicle increased from 58% to 79%, while the proportion that "very seldom", or "rather seldom" underestimated the speed of an oncoming vehicle decreased from 42% to 21%.

**Awareness of road safety issues**

1a. According to the law, under which of the following circumstances is it okay NOT to wear a seatbelt (more than one response could be ticked)

<table>
<thead>
<tr>
<th>Circumstances under which it is OK not to wear a seatbelt</th>
<th>Prior to ITS experience</th>
<th>After ITS experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>Control</td>
</tr>
<tr>
<td>Never</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>72.7%</td>
<td>50%</td>
</tr>
<tr>
<td>When reversing</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>27.3%</td>
<td>37.5%</td>
</tr>
<tr>
<td>When travelling below 10km/h</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>18.2%</td>
<td>37.5%</td>
</tr>
<tr>
<td>If start and stop driving below 25km/h (e.g. garbage truck)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>9.1%</td>
<td>25%</td>
</tr>
<tr>
<td>On short trips</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

There was no difference between the proportion of the treatment group and control group participants that chose each of the response options ($p>0.05$). There was no significant change in the proportion of participants who chose each response option over time. There was, however, some evidence of a decrease in the proportion of participants who believed it was ok not to wear a seatbelt when travelling below 10km/h ($p=0.08$), although this did not reach the conventional level for statistical significance.
1b. When the road is dry, what is the minimum recommended following distance from a car in front (one response only)

The median response for both the treatment group and control groups, before and after exposure to ITS, was “2 seconds”.

There was no significant difference between the responses of the treatment group and the control group prior to exposure to ITS ($z=1.61$, $p=0.11$). After exposure to the ITS
however, there was some evidence of a difference between the treatment and control groups, although this did not reach the conventional level of significance ($z=-1.71$, $p=0.088$). At that time, 100% of the treatment group participants believed the recommended following distance was 2 seconds, compared to only 75% of the control group subjects. The remaining 25% of control group subjects chose “3 seconds” as their response.

There was a significant change in response over time for participants in the treatment group ($z=2.22$, $p=0.03$). Over time there was an increase in the proportion that responded “2 seconds”, from 54.6% to 100%. Prior to exposure to the ITS, 18.2% of the treatment group believed the recommended following distance was 3 seconds, while 27.3% believed it was 4 seconds.

There was no evidence of a change over time for the participants in the control group ($z=-0.58$, $p=0.56$).
c. When are you required to turn on your headlights? (One response only)

The most popular response was “at night and in hazardous weather conditions” (52.9% prior to exposure to ITS, 55.6% after exposure to ITS). The next most common response was “between sunset and sunrise” (41.2% prior to exposure to ITS and 44.4% after exposure to ITS). One participant chose the response “when the street lights are on”.

Figure 247. Percentage of responses in each category, by group (0=Only at night, 1=When the street lights are on, 2=When you see other cars with headlights on, 3=Between sunset and sunrise, 4=In poor weather conditions, 5=At night and in hazardous weather conditions)
There was no significant difference between the responses of the treatment and control groups at either time (Before exposure to ITS, \( p=0.77 \); After exposure to ITS, \( p=1.00 \)). There was also no significant change in responses over time (\( p=0.61 \)).

2. How often do you think each of the following factors contributes to road crashes?

a) Speeding

![Histograms of the percent of responses in each category, by group.](image)

*Figure 248. Histograms of the percent of responses in each category, by group.*

\( 0=\text{never}, 1=\text{rarely}, 2=\text{sometimes}, 3=\text{often}, 4=\text{very often} \)
The median response for both groups, both prior to and after exposure to ITS was that speeding “very often” contributes to road crashes.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=-0.10$, $p=0.92$) or after the conclusion of the study ($z=-0.10$, $p=0.92$). There was also no significant change in ratings over time ($z=-0.45$, $p=0.65$).

b. Drink driving

![Histograms of the percent of responses in each category, by group.](image)

Figure 249. Histograms of the percent of responses in each category, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)
The median response for both groups, both prior to and after exposure to ITS was that drink driving contributes to road crashes “very often”.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=-0.47$, $p=0.64$) or after the conclusion of the study ($z=0.24$, $p=0.81$). There was also no significant change in ratings over time ($z=-0.07$, $p=0.94$).

c. Drugs (other than alcohol)

Figure 250. Histograms of the percent of responses in each category, by group. ($0$=never, $1$=rarely, $2$=sometimes, $3$=often, $4$=very often)
The median rating for the treatment group was “very often” prior to exposure to ITS, and “often” after exposure to ITS. The median rating for the control group was “often” both prior to, and after, exposure to ITS.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS (z=0.81, p=0.42) or after the conclusion of the study (z=0.13, p=0.89). There was also no significant change in ratings over time (z=0.09, p=0.93).

d. Factors associated, in general, with old age (e.g. reduced visual acuity, slower reaction time)

Figure 251. Histograms of the percent of responses in each category, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)
The median ratings for both groups was “sometimes”, both prior to, and after, exposure to ITS.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=-0.54$, $p=0.59$) or after the conclusion of the study ($z=-0.67$, $p=0.50$). There was also no significant change in ratings over time ($z=0.00$, $p=1.00$).

e. Inattention/lack of concentration

![Histograms of the percent of responses in each category, by group.](image)

*Figure 252. Histograms of the percent of responses in each category, by group.*

(0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)
The mean rating for the treatment group lay just below “often” both prior to (mean=2.9, sd=0.68) and after (mean=2.9, sd=0.29) exposure to ITS. The mean ratings for the control group were just higher than “often”, prior to (mean=3.3, sd=0.45) and after (mean=3.1, sd=0.62) exposure to ITS.

There was no significant difference between the ratings of the participants in the treatment group compared with the control group (F(1,17)=1.81, p=0.20), or any significant change in reported behaviour over time (F(1,17)=0.17, p=0.68). Nor was there a significant interaction between group and questionnaire (F(1,17)=0.18, p=0.68).

f. Carelessness/negligent driving

![Histograms of the percent of responses in each category, by group.](image)

*Figure 253. Histograms of the percent of responses in each category, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)*
The mean ratings for the treatment group lay between “often” and “very often”, both prior to (mean=3.3, sd=0.79) and after (mean=3.3, sd=0.65) exposure to ITS. The mean ratings for the control group also lay between “often” and “very often”, both prior to (mean=3.4, sd=0.52) and after (mean=3.3, sd=0.89) exposure to ITS.

There was no significant difference between the ratings of the participants in the treatment group compared with the control group (F(1,17)=0.03, p=0.87), or any significant change in reported behaviour over time (F(1,17)=0.07, p=0.79). Nor was there a significant interaction between group and questionnaire (F(1,17)=0.07, p=0.79).

g. Lack of driver training/Insufficient training

Figure 254. Histograms of the percent of responses in each category, by group.
(0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)
The median ratings for the treatment group was “often” prior to exposure to ITS, and decreased to “sometimes” after exposure to ITS. The median rating for the control group increased from “often” prior to exposure to ITS to halfway between “often” and “very often” afterwards.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS (z=0.62, p=0.54). However, after experience with the ITS, there was some evidence for a difference between the ratings of the treatment group and the control group (z=-1.76, p=0.08). At this time, whereas most of the treatment group believed that lack of driving training “sometimes” contributes to road crashes (54.6%), most of the control group believed that it “very often” contributes to road crashes (50%).

There was no evidence of a change in ratings over time for the treatment group (z=1.30, p=0.19) or the control group (z=-1.14, p=0.25).
h. Driver fatigue

![Histograms showing percent of responses in each category, by group.](image)

*Figure 255. Histograms of the percent of responses in each category, by group.*

(0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)

The mean ratings for the treatment group lay between “often” and “very often”, both prior to (mean=3.4, sd=0.67) and after (mean=3.3, sd=0.65) exposure to ITS. The mean rating for the control group lay just below “often” prior to experience with the ITS (mean=2.9, p=0.84), and equalled “often” (mean=3.0, sd=0.76) afterwards.
There was no significant difference between the ratings of the participants in the treatment group compared with the control group ($F(1,17)=1.95, p=0.18$), or any significant change in reported behaviour over time ($F(1,17)=0.01, p=0.94$). Nor was there a significant interaction between group and questionnaire ($F(1,17)=0.31, p=0.58$).

### i. Disregard of road rules

![Histograms of percent of responses in each category, by group.](image)

*Figure 256. Histograms of the percent of responses in each category, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)*

The median ratings for both groups was “often”, both prior to, and after, exposure to ITS.

There was no evidence for a difference in ratings between groups prior to exposure to ITS ($z=-0.71, p=0.48$). However, after exposure to ITS, there was some evidence for a
difference in the ratings given by the treatment group compared to the control group ($z=-1.67$, $p=0.098$). At this time, the majority of the treatment group chose the response “often” (81.8%), with the remaining treatment group participants splitting their responses evenly between “sometimes” and “rarely”. In contrast, while half of the control group participants believed that disregard of the road rules “often” contributes to road crashes, 37.5% responded with the stronger “very often”, while the remaining 12.5% chose “sometimes.

There was no significant change in ratings over time for either the treatment group ($z=0.51$, $p=0.61$) or the control group ($z=0.00$, $p=1.00$).

**j. Ignorance of road rules**

*Figure 257. Histograms of the percent of responses in each category, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)*
The median rating for the treatment group was “often” prior to experience with the ITS, and this decreased to “sometimes” afterwards. In contrast, while the median rating for the control group was between “sometimes” and “often” prior to ITS experience, this changed to “often” after experience with the systems.

There was no evidence for a difference in ratings between groups prior to exposure to ITS ($z=0.40$, $p=0.69$). However, after exposure to ITS, there was some evidence for a difference in the ratings given by the treatment group compared to the control group ($z=-1.96$, $p=0.05$). At this time, the median rating for the treatment group was “sometimes” whereas the median rating for the control group was “often”.

There was no significant change in ratings over time for either the treatment group ($z=1.46$, $p=0.14$) or the control group ($z=-1.41$, $p=0.16$).
The mean ratings for both groups lay between “sometimes” and “often” both prior to (treatment group, mean=2.7, sd=0.91; control group, mean=2.8, sd=0.71) and after (treatment group, mean=2.5, sd=0.52; control group, mean=2.8, sd=1.04) experience with the ITS.
There was no significant difference between the ratings of the participants in the treatment group compared with the control group (F(1,17)=0.14, p=0.71), or any significant change in reported behaviour over time (F(1,17)=0.17, p=0.68). Nor was there a significant interaction between group and questionnaire (F(1,17)=0.17, p=0.69).

1. Poor road design/Poor road signage

Figure 259. Histograms of the percent of responses in each category, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)
The median ratings for both groups was “sometimes”, both prior to, and after, exposure to ITS.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=-0.91$, $p=0.37$) or after the conclusion of the study ($z=-1.13$, $p=0.26$). There was also no significant change in ratings over time ($z=0.98$, $p=0.32$).

**m. Road conditions/Traffic congestion**

![Histograms of the percent of responses in each category, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)](image-url)
The median ratings for the treatment group was “often” prior to exposure to the ITS, and “sometimes” after exposure to ITS. The median rating for the control group was “sometimes”, both prior to, and after, exposure to ITS.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS (z=0.55, p=0.58) or after the conclusion of the study (z=0.47, p=0.64). There was, however, a significant change in ratings over time (z=2.23, p=0.03). While the proportion of participants who chose the response “sometimes” remained similar over time (52.6% cf 57.9%), the proportion that chose “often” or “very often” decreased from 47.4% to 31.6%, and the proportion that responded “rarely” increased from 0% to 10.5% over time.
The mean ratings given by the treatment group decreased slightly over time, from 3.1 (sd=0.54) to 2.8 (sd=0.60), although both these values are close to the “often” response. The mean ratings for the control group also hovered around “often” (before ITS exposure, mean=3.1, sd=0.64; after ITS exposure, mean=2.8, sd=0.71).
There was no significant difference between the ratings of the participants in the treatment group compared with the control group ($F(1,17)=0.00$, $p=0.95$), nor was there a significant interaction between group and questionnaire ($F(1,17)=0.20$, $p=0.66$). However, there was an overall significant change in ratings over time ($F(1,17)=8.14$, $p=0.01$). The overall mean ratings significantly decreased, from 3.1 (sd=0.57) to 2.8 (0.63) over time. This means, that at the conclusion of the study, participants believed that weather conditions contributed less to road crashes than they believed at the start.

**o. Vehicle design**

![Figure 262. Histograms of the percent of responses in each category, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)](image)

The median rating for the treatment group was “rarely” both prior to and after exposure to ITS. The median rating for the control group was “sometimes” prior to exposure to ITS, and between “rarely” and “sometimes” afterwards.
There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=-1.41$, $p=0.16$) or after the conclusion of the study ($z=-0.76$, $p=0.45$). There was also no significant change in ratings over time ($z=0.80$, $p=0.42$).

**p. Failing to maintain vehicle/Lack of vehicle maintenance**

![Histograms of the percent of responses in each category, by group.](image)

*Figure 263. Histograms of the percent of responses in each category, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)*
The mean ratings given by the treatment group decreased slightly over time, from 2.3 (sd=0.90) to 1.9 (sd=0.54), although both these values are close to the “sometimes” response. The mean ratings for the control group also hovered around “sometimes” (before ITS exposure, mean=2.1, sd=0.99; after ITS exposure, mean=1.9, sd=0.83).

There was no significant difference in the ratings given by the participants in the treatment group compared with the control group (F(1,17)=0.09, p=0.77), or any significant change in ratings over time (F(1,17)=1.87, p=0.19). Nor was there a significant interaction between group and questionnaire (F(1,17)=0.06, p=0.80).

q. Too few police on road/Lack of police enforcement

![Histograms of the percent of responses in each category, by group.](image)

*Figure 264. Histograms of the percent of responses in each category, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)*
The median ratings for the treatment group were “rarely” both prior to, and after, experience with the ITS. The median ratings for the control group were “sometimes” prior to, and after, experience with ITS.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=-0.97$, $p=0.33$) or after the conclusion of the study ($z=-0.84$, $p=0.40$). There was also no significant change in ratings over time ($z=1.07$, $p=0.29$).

### r. Louts/Showing off/Risk taking

![Histograms of the percent of responses in each category, by group.](image)

*Figure 265. Histograms of the percent of responses in each category, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)*
The mean ratings for the treatment group were 2.4, both prior to (sd=0.81) and after (sd=0.67) experience with the ITS. The mean rating for the control group prior to experience with ITS was also 2.4 (sd=0.92), however this increased to 3.0 (sd=0.76) after experience with ITS.

There was a significant interaction between the ratings given by the treatment and control groups across the two questionnaires. To investigate this further, the change in ratings across time for both groups was determined separately. It was found that there was no change in ratings across time for the treatment group (t(10)=0.0, p=1.0), however there was a significant change in ratings across time for the control group (t(7)=-3.42, p=0.01).

s. Driving too close to other cars

![Figure 266. Histograms of the percent of responses in each category, by group. (0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)](image)
The mean of the ratings given by the treatment group lay between “sometimes” and “often” and were equal both prior to and after exposure to the ITS (mean=2.82, sd=0.75). The mean ratings for the control group were very similar, and also did not change at all over time (mean=2.88, sd=0.64).

There was no significant difference in the ratings given by the participants in the treatment group compared with the control group (F(1,17)=0.04, p=0.85), or any significant change in ratings over time (F(1,17)=0.00, p=1.00). Nor was there a significant interaction between group and questionnaire (F(1,17)=0.00, p=1.00).
t. Failure to turn on headlights

The mean ratings for the treatment group lay between “rarely” and “sometimes” (prior to exposure to ITS, mean=1.64, sd=0.92; after exposure to ITS, mean=1.82, sd=0.60). The mean ratings for the control group were closer to “sometimes” (prior to ITS exposure, mean=2.00, sd=0.93; after ITS exposure, mean=2.13, sd=0.64).

Figure 267. Histograms of the percent of responses in each category, by group.

(0=never, 1=rarely, 2=sometimes, 3=often, 4=very often)
There was no significant difference in the ratings given by the participants in the treatment group compared with the control group ($F(1,17)=1.05, p=0.32$), or any significant change in ratings over time ($F(1,17)=0.88, p=0.36$). Nor was there a significant interaction between group and questionnaire ($F(1,17)=0.03, p=0.86$).

**u. Factors associated, in general, with being young (e.g. inexperience, risk-taking)**

The median rating given by both groups was “often”, both prior to, and after, experience with the ITS.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=-0.70, p=0.49$) or after the conclusion of the
study \((z=-1.05, p=0.29)\). There was also no significant change in ratings over time \((z=0.42, p=0.67)\).

3. How safe or dangerous are each of the following situations?
   a. Travelling less than 10km/h without a seatbelt in the front seat of the car

![Histograms](image)

*Figure 269. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)*

The mean rating given by the treatment group was close to “dangerous” prior to exposure to ITS \((\text{mean}=0.91, \text{sd}=0.54)\), and after exposure to ITS \((\text{mean}=1.09, \text{sd}=0.54)\). The mean
ratings given by the control group were slightly higher, and lay between “dangerous” and “neither safe nor dangerous” (prior to ITS experience, mean=1.38, sd=0.92; after ITS experience, mean=1.13, sd=0.99).

There was no significant interaction between treatment group and questionnaire (F(1,17)=2.86, p=0.11). There was no significant difference between the ratings given by the treatment and control groups, (F(1,17)=0.62, p=0.44), nor was there any change in ratings across time (F(1,17)=0.06, p=0.81).

b. Driving short distances without wearing a seat belt

![Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)](image)

*Figure 270. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)*
The median rating given for this item was “very dangerous” for both the treatment group and control group, both prior to, and after, experience with ITS.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=-0.40, p=0.69$) or after the conclusion of the study ($z=-0.10, p=0.92$). There was also no significant change in ratings over time ($z=0.37, p=0.71$).

c. Travelling at 55km/h in a 50km/h zone

![Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)](image)

*Figure 271. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)*
The mean ratings given by each group lay between “dangerous” and “neither safe nor dangerous”, both prior to, and after, experience with ITS (Treatment group, prior, mean=1.45, sd=0.69, after, mean=1.27, sd=0.79; Control group, prior, mean=1.38, sd=0.74, After, mean=1.25, sd=0.71).

There was no significant interaction between treatment group and questionnaire (F(1,17)=0.02, p=0.88). There was no significant difference between the ratings given by the treatment and control groups, (F(1,17)=0.03, p=0.86), nor was there any change in ratings across time (F(1,17)=0.71, p=0.41).

d. Travelling more than 10km/h without a seatbelt in the front seat of the car

![Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)](image)

*Figure 272. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)*
The median rating given for this item was “very dangerous” for both the treatment group and control group, both prior to, and after, experience with ITS.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=-0.35, p=0.73$) or after the conclusion of the study ($z=0.34, p=0.74$). There was also no significant change in ratings over time ($z=-1.63, p=0.10$).

e. Travelling at 65km/h in a 60km/h zone

![Histograms of the percent of responses in each category, by group.](image)

Figure 273. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)
The median rating given for this item was “dangerous” for both the treatment group and control group, both prior to, and after, experience with ITS.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=1.51$, $p=0.13$) or after the conclusion of the study ($z=0.60$, $p=0.55$). There was also no significant change in ratings over time ($z=0.42$, $p=0.67$).

**f. Travelling more than 10km/h without a seatbelt in the back seat of the car**

![Histograms of the percent of responses in each category, by group.](image)

*Figure 274. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)*
The median rating given for this item was “dangerous” for the treatment group, both prior to, and after, experience with ITS. In contrast, the median rating that the control group gave was “very dangerous”, both prior to ITS exposure and afterwards.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=0.95$, $p=0.34$) or after the conclusion of the study ($z=1.10$, $p=0.27$). There was also no significant change in ratings over time ($z=-0.38$, $p=0.71$).

g. Travelling less than 2 seconds from the car in front in a 50km/h zone

![Histograms showing the percent of responses in each category, by group.](image)

*Figure 275. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)*
The median rating given for this item was “dangerous” for the treatment group, both prior to, and after, experience with ITS. In contrast, the median rating that the control group gave was “very dangerous” prior to ITS exposure and “dangerous” afterwards.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=1.30$, $p=0.19$) or after the conclusion of the study ($z=1.06$, $p=0.29$). There was also no significant change in ratings over time ($z=-1.63$, $p=0.10$).

h. Travelling at 105km/h in a 100km/h zone

![Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)](image)

Figure 276. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)
The median rating given by the treatment group at the beginning of the study was “neither safe nor dangerous”, and this changed to “dangerous” after experience with ITS. The median rating for the control group remained halfway between “dangerous” and “neither safe nor dangerous” regardless of experience with ITS.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=0.96$, $p=0.34$) or after the conclusion of the study ($z=0.00$, $p=1.00$). There was also no significant change in ratings over time ($z=0.82$, $p=0.41$).

i. Driving long distances without wearing a seatbelt

![Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)](image)

Figure 277. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)
The median rating was “very dangerous” for both the treatment group and the control group, regardless of ITS experience.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS \((z=-0.23, p=0.82)\) or after the conclusion of the study \((z=-0.35, p=0.73)\). There was also no significant change in ratings over time \((z=-1.41, p=0.16)\).

**j. Travelling at 60km/h in a 50km/h zone**

![Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)](image)

*Figure 278. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)*
The median rating was “very dangerous” for both the treatment group and the control group prior to experience with the ITS, and “dangerous” for both groups, after ITS experience.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=0.82$, $p=0.41$) or after the conclusion of the study ($z=0.05$, $p=0.96$). There was also no significant change in ratings over time ($z=-0.71$, $p=0.48$).

**k. Not turning your headlights on during the day when driving conditions are good**

![Figure 279. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)](image)
The mean ratings of the treatment group decreased from 2.36 (sd=0.92) to 1.91 (sd=0.54) after exposure to ITS. The mean ratings of the control group also decreased, from 2.63 (sd=0.74) to 2.25 (0.46).

The interaction between group and questionnaire was not significant (F(1,17)=0.06, p=0.81), and there was no significant difference between the ratings given by the treatment group and the control group (F(1,17)=1.14, p=0.30). There was however, a significant change in the overall ratings over time (F(1,17)=6.35, p=0.02). The mean ratings decreased significantly from 2.47 (sd=0.84) prior to ITS experience to 2.05 (sd=0.52) after ITS experience. Thus the ratings moved significantly closer to thinking this was “neither safe nor dangerous”.

1. Travelling at 70km/h in a 60km/h zone

Figure 280. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)
The median rating given by the treatment group was “dangerous”, both prior to and after ITS experience. The median rating given by the control group changed from “very dangerous” prior to exposure to ITS, to “dangerous” afterwards.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=1.16, p=0.25$) or after the conclusion of the study ($z=0.05, p=0.96$). There was also no significant change in ratings over time ($z=-0.59, p=0.55$).

**m. Travelling at 70km/h in a 50km/h zone**

![Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)](chart)

*Figure 281. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)*
The median rating given by each group was “very dangerous”, both prior to and after ITS experience.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=0.20, p=0.85$) or after the conclusion of the study ($z=0.76, p=0.45$). There was also no significant change in ratings over time ($z=0.00, p=1.00$).

**n. Travelling less than 10km/h without a seatbelt in the back seat of the car**

*Figure 282. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)*
The mean rating given by the treatment group was 1.18 both prior to (sd=0.60) and after (sd=0.75) experience with the ITS. The mean rating for the control group also remained constant at 1.13 both prior to (sd=1.13) and after (sd=0.83) experience with ITS.

There was no significant difference between the ratings given by the treatment group compared to the control group \((F(1,17)=0.03, p=0.87)\). There was no change in ratings across time \((F(1,17)=0.00, p=1.00)\), nor was there a significant interaction between treatment group and time \((F(1,17)=0.00, p=1.00)\).

**o. Travelling at 120km/h in a 100km/h zone**

*Figure 283. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)*
The median rating was “very dangerous” for both the treatment group and control group, regardless of experience with ITS.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=0.45$, $p=0.65$) or after the conclusion of the study ($z=-1.46$, $p=0.14$). There was also no significant change in ratings over time ($z=1.18$, $p=0.24$).

**p. Travelling less than 2 seconds from the car in front in a 60km/h zone**

![Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)](image)

*Figure 284. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)*
The median rating was “dangerous” for the treatment group, regardless of experience with ITS. The median rating for the control group changed from “very dangerous” prior to ITS experience to “dangerous” afterwards.

There was no significant difference between the ratings of the treatment group or the control group prior to exposure to ITS ($z=0.97$, $p=0.33$) or after the conclusion of the study ($z=1.30$, $p=0.19$). There was also no significant change in ratings over time ($z=-1.46$, $p=0.15$).

**q. Travelling at 110km/h in a 100km/h zone**

*Figure 285. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)*
The median rating was “dangerous” for both the treatment group and control group, regardless of experience with ITS.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=0.71$, $p=0.48$) or after the conclusion of the study ($z=-0.09$, $p=0.93$). There was also no significant change in ratings over time ($z=-0.17$, $p=0.86$).

r. Travelling less than 2 seconds from the car in front in a 100km/h zone

![Histograms showing percent responses in each category by group before and after ITS exposure.](image)

*Figure 286. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)*

The median ratings given by the treatment group changed over time, from “very dangerous” prior to ITS experience, to “dangerous” afterwards. The median ratings given by the control group remained “very dangerous” regardless of ITS experience.
There was no significant difference between the ratings of the treatment group or the control group prior to exposure to ITS ($z=-0.23, p=0.82$) or after the conclusion of the study ($z=1.10, p=0.27$). There was some evidence for a change in ratings over time ($z=-1.71, p=0.09$), although this did not reach the conventional level of significance. The overall median ratings did change from “very dangerous” to “dangerous” after exposure to the ITS.

s. Travelling at 80km/h in a 60km/h zone

![Histograms of the percent of responses in each category, by group.](image)

Figure 287. Histograms of the percent of responses in each category, by group. (0=very dangerous, 1=dangerous, 2=neither safe nor dangerous, 3=safe, 4=very safe)

The median rating was “very dangerous” for both the treatment group and control group, regardless of experience with ITS.
There was no significant difference between the ratings of the treatment group or the control group prior to exposure to ITS (z=0.58, p=0.56) or after the conclusion of the study (z=-0.35, p=0.73). There was also no significant change in ratings over time (z=0.38, p=0.71).

4. Regardless of what the law states, in a 50km/h zone how many km/h over the limit do you think you have to be before you are considered to be speeding?

![Histograms of the percent of responses in each category, by group.](image)

Figure 288. Histograms of the percent of responses in each category, by group. (0=anything over 50km/h, 1= 1-5km/h over the limit, 2= 6-10km/h over the limit)

Although other response options were available, all participants chose either “anything over 50km/h”, “1-5km/h over the limit” or “6-10km/h over the limit”. The other options listed 5 categories of speed over 10km/h, and a “don’t know” response.
The median response in the treatment group was “anything over 50km/h” prior to experience with ITS, and “1-5km/h over the limit” afterwards. The median response of the control group was “1-5km/h over the limit” regardless of ITS experience.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=-0.22$, $p=0.82$) or after the conclusion of the study ($z=0.00$, $p=1.00$). There was also no significant change in ratings over time ($z=-1.34$, $p=0.17$).

5. Regardless of what the law states, in a 60km/h zone how many km/h over the limit do you think you have to be before you are considered to be speeding?

![Histograms of the percent of responses in each category, by group. (0=anything over 60km/h, 1= 1-5km/h over the limit, 2= 6-10km/h over the limit)](image)

*Figure 289. Histograms of the percent of responses in each category, by group. (0=anything over 60km/h, 1= 1-5km/h over the limit, 2= 6-10km/h over the limit)*
Similar to the question regarding the 50km/h zone, the median response in the treatment group was “anything over 60km/h” prior to experience with ITS, and “1-5km/h over the limit” afterwards. The median response of the control group was “1-5km/h over the limit” regardless of ITS experience. Again, although other response options covering higher speed tolerance were available, none of the participants chose them.

There was no significant difference between the ratings of the treatment group or the control group prior to exposure to ITS (z=-0.22, p=0.82) or after the conclusion of the study (z=-0.31, p=0.76). There was also no significant change in ratings over time (z=-1.40, p=0.16).

6. Regardless of what the law states, in a 100km/h zone how many km/h over the limit do you think you have to be before you are considered to be speeding?

Figure 290. Histograms of the percent of responses in each category, by group. (0=anything over 100km/h, 1= 1-5km/h over the limit, 2= 6-10km/h over the limit, 3= 11-15km/h over the limit)
The median response of the treatment group changed after experience with ITS, from “6-10km/h over the limit” at the beginning of the project, to “1-5km/h over the limit” at the end. The median response for the control group remained constant across time, and lay halfway between “1-5km/h over the limit” and “6-10km/h over the limit”.

Participants chose a greater range of responses regarding the speed at which they believed they would be considered to be speeding in a 100km/h zone compared to the previous questions regarding 50km/h and 60km/h zones. For this item, some participants chose the higher speed, “11-15km/h over the limit”.

There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS (z=-0.09, p=0.93) or after the conclusion of the study (z=-0.78, p=0.44). There was also no significant change in ratings over time (z=-0.54, p=0.59).

7. Which are the top three factors influencing the speed at which you drive?

Table 20. Factors influencing the speed at which drivers drive.

<table>
<thead>
<tr>
<th>Factors influencing speed</th>
<th>Prior to ITS experience</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>Control</td>
<td>Total</td>
<td>Treatment</td>
<td>Control</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>The road and weather conditions</td>
<td>11 (100%)</td>
<td>7 (87.5%)</td>
<td>18 (94.7%)</td>
<td>9 (100%)</td>
<td>8 (100%)</td>
<td>17 (89.5%)</td>
<td></td>
</tr>
<tr>
<td>The speed limit</td>
<td>10 (90.9%)</td>
<td>6 (75%)</td>
<td>16 (84.2%)</td>
<td>11 (100%)</td>
<td>6 (75%)</td>
<td>17 (89.5%)</td>
<td></td>
</tr>
<tr>
<td>The volume of traffic on the particular road</td>
<td>6 (54.6%)</td>
<td>3 (37.5%)</td>
<td>9 (47.4%)</td>
<td>6 (54.6%)</td>
<td>4 (50%)</td>
<td>10 (52.6%)</td>
<td></td>
</tr>
<tr>
<td>The speed of other traffic</td>
<td>2 (18.2%)</td>
<td>3 (37.5%)</td>
<td>5 (26.3%)</td>
<td>3 (27.3%)</td>
<td>3 (37.5%)</td>
<td>6 (31.6%)</td>
<td></td>
</tr>
<tr>
<td>My chances of having a crash</td>
<td>1 (9.1%)</td>
<td>3 (37.5%)</td>
<td>4 (21.1%)</td>
<td>3 (27.3%)</td>
<td>3 (37.5%)</td>
<td>6 (31.6%)</td>
<td></td>
</tr>
<tr>
<td>My chances of being caught</td>
<td>2 (18.2%)</td>
<td>1 (12.5%)</td>
<td>3 (15.8%)</td>
<td>2 (18.2%)</td>
<td>0</td>
<td>2 (10.5%)</td>
<td></td>
</tr>
<tr>
<td>How much of a hurry I am in</td>
<td>1 (9.1%)</td>
<td>1 (12.5%)</td>
<td>2 (10.5%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Other factors</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

** Prior to ITS experience, all participants followed the instructions and chose three factors influencing the speed at which they drive. After ITS experience, all but one participant followed the instructions. The remaining participants chose four factors, rather than three. Each of these has been included, as there is no way of determining which three of these four were most important to this driver.

The proportion of the treatment group that chose each response was compared to the proportion of the control group that chose each response to determine if their were any differences between groups in terms of the factors that influence the speed at which they drive. There was no significant difference between the proportions of the treatment and control groups that chose any of the factors.
The proportion that chose each option prior to exposure to ITS was compared to the proportion that chose each option after exposure to ITS, to see if there were any changes over time, separately for the treatment and control groups. There was no significant change over time in the proportion of the treatment group or the control group that chose any of the responses.

8. What are the top three factors influencing how close you drive to the car in front?

Table 21. Factors influencing how close drivers drive to the car in front.

<table>
<thead>
<tr>
<th>Factors influencing distance to car in front</th>
<th>Prior to ITS experience</th>
<th>After ITS experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>Control</td>
</tr>
<tr>
<td>The road and weather conditions</td>
<td>11 (100%)</td>
<td>8 (100%)</td>
</tr>
<tr>
<td>Desire to keep a 2 second gap</td>
<td>8 (72.7%)</td>
<td>7 (87.5%)</td>
</tr>
<tr>
<td>My chances of having a crash</td>
<td>5 (45.5%)</td>
<td>6 (75%)</td>
</tr>
<tr>
<td>The gaps other drivers are adopting</td>
<td>4 (36.4%)</td>
<td>1 (12.5%)</td>
</tr>
<tr>
<td>How much of a hurry I am</td>
<td>2 (18.2%)</td>
<td>0</td>
</tr>
<tr>
<td>Other factors</td>
<td>2 (18.2%)</td>
<td>0</td>
</tr>
<tr>
<td>How good a driver I am</td>
<td>1 (9.1%)</td>
<td>1 (12.5%)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>My chances of being caught tailgating</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

** Prior to ITS experience, all but one of the participants followed the instructions and chose three factors influencing the speed at which they drive. The other participant only chose two factors. After ITS experience, two participants did not choose three factors; one only chose one factor, and the other chose only two factors.

The proportion of the treatment group that chose each response was compared to the proportion of the control group that chose each response to determine if there were any differences between groups in terms of the factors that influence how close they drive to the car in front. There was no significant difference between the proportions of the treatment and control groups that chose any of the factors.

The proportion that chose each option prior to exposure to ITS was compared to the proportion that chose each option after exposure to ITS, to see if there were any changes over time, separately for the treatment and control groups. There was no significant change over time in the proportion of the treatment group or the control group that chose
any of the responses. However, there was some evidence for a decrease in the proportion who chose “The Gaps Other Drivers Are Adopting” after experience with ITS (p=0.08), although this did not reach the conventional level of significance.

Participants who chose the “other” response were asked to specify what the other factors were. These other factors were:

- Traffic
- Night-time
- Traffic and speed
- Volume of traffic

9. What are the top three factors influencing when you turn on your headlights?

Table 22. Factors influencing when drivers turn on their headlights

<table>
<thead>
<tr>
<th>Factors influencing when headlights are turned</th>
<th>Prior to ITS experience</th>
<th>After ITS experience</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>Control</td>
<td>Total</td>
</tr>
<tr>
<td>It is night-time</td>
<td>11</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>(100%)</td>
<td>(75%)</td>
<td>(89.5%)</td>
</tr>
<tr>
<td>When I want other road users to see me</td>
<td>8</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>(72.7%)</td>
<td>(75%)</td>
<td>(73.7%)</td>
</tr>
<tr>
<td>When the street lights turn on</td>
<td>5</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>(45.5%)</td>
<td>(50%)</td>
<td>(47.4%)</td>
</tr>
<tr>
<td>When it becomes hard to see others</td>
<td>5</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>(45.5%)</td>
<td>(25%)</td>
<td>(36.8%)</td>
</tr>
<tr>
<td>When I can’t see the instrument panel</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(9.1%)</td>
<td>(37.5%)</td>
<td>(21.1%)</td>
</tr>
<tr>
<td>When I see other cars with headlights on</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(9.1%)</td>
<td>(37.5%)</td>
<td>(21.1%)</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(18.2%)</td>
<td>(10.5%)</td>
<td>(9.1%)</td>
</tr>
<tr>
<td>Passenger tells me to</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other cars flash me</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

* One participant only chose one response after exposure to ITS.

The proportion of the treatment group that chose each response was compared to the proportion of the control group that chose each response to determine if their were any differences between groups in terms of the factors that influence when they turn on their headlights. There was no significant difference between the proportions of the treatment and control groups that chose any of the factors.

The proportion that chose each option prior to exposure to ITS was compared to the proportion that chose each option after exposure to ITS, to see if there were any changes.
over time, separately for the treatment and control groups. There was no significant change over time in the proportion of the treatment group or the control group that chose any of the responses.

Participants who chose the “other” response were asked to specify what the other factors were. These other factors were:

- Poor weather conditions
- Just before dusk
- Poor weather conditions
- Poor weather conditions

10. Which of the following road safety advertising campaigns are you aware of?

Table 23. Awareness of road safety campaigns

<table>
<thead>
<tr>
<th>Road safety campaign</th>
<th>Prior to ITS experience</th>
<th></th>
<th>After ITS experience</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>Control</td>
<td>Total</td>
<td>Treatment</td>
</tr>
<tr>
<td>Wipe off 5</td>
<td>11 (100%)</td>
<td>8 (100%)</td>
<td>19 (100%)</td>
<td>11 (100%)</td>
</tr>
<tr>
<td>If you drink and drive you’re a bloody idiot</td>
<td>10 (90.9%)</td>
<td>8 (100%)</td>
<td>18 (94.7%)</td>
<td>11 (100%)</td>
</tr>
<tr>
<td>Stop, revive, survive</td>
<td>11 (100%)</td>
<td>7 (87.5%)</td>
<td>18 (94.7%)</td>
<td>11 (100%)</td>
</tr>
<tr>
<td>Don’t fool yourself, speed kills</td>
<td>9 (81.8%)</td>
<td>8 (100%)</td>
<td>17 (89.5%)</td>
<td>11 (100%)</td>
</tr>
<tr>
<td>A 15 minute powernap could save your life</td>
<td>10 (90.9%)</td>
<td>7 (87.5%)</td>
<td>17 (89.5%)</td>
<td>11 (100%)</td>
</tr>
<tr>
<td>Belt up or suffer the pain</td>
<td>10 (90.9%)</td>
<td>6 (75%)</td>
<td>16 (84.2%)</td>
<td>9 (81.8%)</td>
</tr>
<tr>
<td>Take a break, fatigue kills</td>
<td>8 (72.7%)</td>
<td>7 (87.5%)</td>
<td>15 (79.0%)</td>
<td>7 (63.6%)</td>
</tr>
<tr>
<td>Concentrate or Kill</td>
<td>3 (27.3%)</td>
<td>6 (75%)</td>
<td>9 (47.4%)</td>
<td>5 (45.5%)</td>
</tr>
<tr>
<td>Drive Safe</td>
<td>3 (27.3%)</td>
<td>4 (50%)</td>
<td>7 (36.8%)</td>
<td>6 (54.6%)</td>
</tr>
<tr>
<td>Operation Clampdown</td>
<td>0 (37.5%)</td>
<td>3 (15.8%)</td>
<td>3 (9.1%)</td>
<td>1 (12.5%)</td>
</tr>
<tr>
<td>Road Aware</td>
<td>1 (9.1%)</td>
<td>0 (5.3%)</td>
<td>1 (9.1%)</td>
<td>0 (5.3%)</td>
</tr>
</tbody>
</table>

The proportion of the treatment group that were aware of each campaign was compared to the proportion of the control group that were aware of each campaign to determine if there were any differences between groups in terms of their awareness of road safety campaigns. There was no significant difference between the proportions of the treatment and control groups who were aware of any of the road safety campaigns.
The proportion that recognised each road safety campaign prior to exposure to ITS was compared to the proportion that recognised each campaign after exposure to ITS, to see if there were any changes over time. There was no significant change over time in the proportion of the treatment group or the control group that recognised any of the campaigns.

11. By how much can you exceed the speed limit before being booked by the police?

![Figure 291. Histograms of the percent of responses in each category, by group. (0=1 km/h, 1= 5% of speed limit, 2= Don’t know, 3= 10% of speed limit, 4= Other)](image)

There was a range of responses to this question. Prior to exposure to ITS, the most chosen response was that the enforcement tolerance was 5% of the speed limit (31.6%). Just over
a quarter of participants (26.3%) believed that it was 1km/h, and an equal proportion chose the response “other”. Three participants (15.8%) did not know what the enforcement tolerance was. None of the participants believed it was 10% of the speed limit.

The five people who chose “other” were asked to specify what they believed the enforcement tolerance was. Their responses were as follows:

- Up to 10km/h over the limit
- 3km/h over the limit
- no excess
- 3km/h
- less than 3km/h

After experience with ITS, the most common response changed to “1km/h” (36.8%). The next most common response was “other” (26.3%). A small proportion of participants believed it was 5% of the speed limit (15.8%), even fewer participants believed it was 10% of the speed limit (10.5%), or didn’t know (10.53%).

Again, the five participants who chose the “other” response were asked to specify what they believed the enforcement tolerance to be.

- fixed speed camera - 2kph over. Other devices - 10% up to a maximum of 10kph
- 3km/h
- I think it is 3km/h
- 3km/h
- 3km/h

There was no significant difference between the treatment and control groups in terms of how much they believed the speed limit could be exceeded before being booked by the police, prior to (p=0.92), or after (p=0.88) ITS experience. There was also no significant change in opinion over time (p=0.32).
12. What is the likelihood of being caught by the police for…?
a. Travelling 5km/h over the speed limit

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<th>treatment</th>
<th>control</th>
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</table>

![Histograms of the percent of responses in each category, by group. (0=Very unlikely, 1=Unlikely, 2=Neither likely nor unlikely, 3=Likely, 4=Very likely)](image)

The median rating for the treatment group was “likely” both before and after experience with ITS. The median rating for the control group was between “neither likely nor unlikely” and “likely” prior to experience with ITS, and “likely” after experience with ITS. However, it can be seen that there was a fair proportion of participants who thought it was unlikely.
There was no significant difference between the ratings of the treatment group or the control group prior to exposure to ITS ($z=-0.65, p=0.52$) or after the conclusion of the study ($z=-0.61, p=0.54$). There was also no significant change in the ratings over time ($z=0.20, p=0.84$).

**b. Driving without your seat belt on**

*Figure 293. Histograms of the percent of responses in each category, by group. (0=Very unlikely, 1=Unlikely, 2=Neither likely nor unlikely, 3=Likely, 4=Very likely)*
The median rating for the treatment group was “likely” both before and after experience with ITS. The median rating for the control group was “likely” prior to experience with ITS, and between “likely” and “very likely” after experience with ITS.

There was no significant difference between the ratings of the treatment group or the control group prior to exposure to ITS (z=-0.09, p=0.93). However, after the conclusion of the study, there was some evidence of a difference between groups, although this did not reach the conventional 5% level of significance (z=-1.82, p=0.07). At that time, a greater proportion of control group participants believed it was likely or very likely to be caught by police for driving without your seatbelt on (87.5%) compared to 63.6% of the treatment group participants. In contrast, a higher proportion of treatment group participants believed it was unlikely (27.3% cf 12.5% of control group).

There was no significant change in the ratings over time for the treatment group (z=1.57, p=0.12) or the control group (z=-0.51, p=0.61).
None of the participants believed it was unlikely to be caught travelling 10km/h over the speed limit. The median rating for participants in the treatment group was “very likely” prior to ITS experience, and “likely” afterwards. For the control group, the median rating lay between “very likely” and “likely” prior to ITS experience and was “likely” afterwards.
There was no significant difference between the ratings of the treatment group or the control group prior to exposure to ITS ($z=0.56$, $p=0.57$) or after the conclusion of the study ($z=-0.05$, $p=0.96$). There was also no significant change in the ratings over time ($z=1.41$, $p=0.16$).

d. Travelling too close to the car in front

![Histograms of the percent of responses in each category, by group. (0=Very unlikely, 1=Unlikely, 2=Neither likely nor unlikely, 3=Likely, 4=Very likely)](image)

*Figure 295. Histograms of the percent of responses in each category, by group. (0=Very unlikely, 1=Unlikely, 2=Neither likely nor unlikely, 3=Likely, 4=Very likely)*
The responses to this question ranged from “very unlikely” to “very likely”. The mean rating for the treatment group was 2.27 (sd=1.42) prior to ITS experience, and decreased to 1.36 (sd=1.03) afterwards. In contrast, the mean rating for the control group increased from 1.88 (sd=0.99) to 2.25 (sd=1.16) after experience with ITS.

There was a significant interaction between treatment group and rating given across questionnaires (F(1,17)=7.74, p=0.01). This was investigated further by determine if there was a significant change in ratings across time for the treatment group separately from the control group. It was found that there was a significant decrease in ratings over time for the treatment group (t(10)=2.65, p=0.02), but no significant change in ratings over time for the control group (t(7)=-1.43, p=0.20). Thus, after experience with ITS (and probably the FDW system), the treatment group participants were less likely to believe they would be caught by police for travelling too close to the car in front. Perhaps this change in opinion is due to a greater awareness of how common it is for drivers to travel too close.
e. Reversing in an unsafe manner

The mean ratings for this question were fairly similar across groups and over time, and lay between “unlikely” and “neither likely nor unlikely” (Treatment group: prior to ITS, mean=1.45, sd=1.21, after ITS, mean=1.27, sd=0.90; Control group, prior to ITS, mean=1.5, sd=1.07, after ITS, mean=1.53, sd=1.12).

Figure 296. Histograms of the percent of responses in each category, by group. (0=Very unlikely, 1=Unlikely, 2=Neither likely nor unlikely, 3=Likely, 4=Very likely)
There was no significant difference between the behaviour reported by the participants in the treatment group compared with the control group (F(1,17)=0.49, p=0.49), or any significant change in reported behaviour over time (F(1,17)=0.17, p=0.68). Nor was there a significant interaction between group and questionnaire (F(1,17)=1.57, p=0.23).

f. Travelling 20km/h over the speed limit

![Histograms of the percent of responses in each category, by group. (0=Very unlikely, 1=Unlikely, 2=Neither likely nor unlikely, 3=Likely, 4=Very likely)](image)

The median rating for the treatment group decreased from “very likely” prior to ITS experience to “likely” afterwards. The control group’s mean rating was “very likely” regardless of ITS experience.
There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=0.46$, $p=0.64$) or after the conclusion of the study ($z=-0.74$, $p=0.46$). There was some evidence for a change in the ratings over time ($z=1.65$, $p=0.098$). There was a decrease in the overall median ratings from “very likely” to “likely” over time.

g. Driving without your headlights on when required

![Histograms of the percent of responses in each category, by group. (0=Very unlikely, 1=Unlikely, 2=Neither likely nor unlikely, 3=Likely, 4=Very likely)](image)

The median rating for both the treatment and control groups was “likely”, both prior to, and after, experience with ITS.
There was no significant different between the ratings of the treatment group or the control group prior to exposure to ITS ($z=-0.10, p=0.92$) or after the conclusion of the study ($z=0.09, p=0.93$). There was also no significant change in the ratings over time ($z=-0.35, p=0.72$).

13a. The current fine for a driver who is caught exceeding the speed limit by less than 10km/h is $125. Do you think that the current fine is...

Figure 299. Histograms of the percent of responses in each category, by group. (0=Far too low, 1= Too low, 2= Just right, 3= Too high, 4= Far too high)
The mean ratings all lay between “just right” and too high”. The mean ratings for the treatment group were 2.18 (sd=0.75) prior to, and 2.09 (sd=0.54) after, experience with ITS. The mean ratings for the control group were 2.14 (sd=0.69) prior to, and 2.29 (sd=0.76) after, experience with ITS.

There was no significant difference between the ratings of the participants in the treatment group compared with the control group (F(1,17)=0.08, p=0.79), or any significant change in ratings over time (F(1,17)=0.02, p=0.89). Nor was there a significant interaction between group and questionnaire (F(1,17)=0.48, p=0.50).
b. The current fine for a driver who is caught not wearing his/her seatbelt is $135. Do you think that the current fine is….

The median ratings for both groups were “just right” both prior to, and after, experience with ITS.

There was some evidence for a difference in the ratings of the treatment group and control group prior to experience with ITS ($z=-1.67$, $p=0.09$). At this time the majority of
both groups felt the fine was “just right” (54.6% treatment group, 62.5% control group). However, 25% of the control group thought the fine was “too high” compared to none of the treatment group. The rest of the control group (12.5%) thought the fine was “far too low”, while the other 45.5% of the treatment group thought the fine was “too low”.

After experience with ITS, there was no significant difference between the ratings of the treatment group and the control group (z=-0.81, p=0.42). There was also no significant change in ratings over time for either the treatment group (z=-1.38, p=0.17) or the control group (z=-1.00, p=0.32).
c. The current fine for a driver who is caught without his/her headlights on when they should be on is $135. Do you think that the current fine is...

![Histograms of the percent of responses in each category, by group. (0=Far too low, 1= Too low, 2= Just right, 3= Too high, 4= Far too high)](image)

The mean ratings were close to “just right” (Prior to ITS experience, mean=1.95, sd=0.97; After, mean=2.11, sd=0.74)

There was no significant difference between the ratings of the participants in the treatment group compared with the control group (F(1,17)=0.27, p=0.61), or any
significant change in ratings over time (F(1,17)=0.33, p=0.57). Nor was there a significant interaction between group and questionnaire (F(1,17)=0.32, p=0.58).

d. The current fine for a driver who is caught following too closely to the car in front is $135. Do you think that the current fine is…

Figure 302. Histograms of the percent of responses in each category, by group. (0=Far too low, 1= Too low, 2= Just right, 3= Too high, 4= Far too high)
The median ratings for the treatment group were “too low” both prior to, and after, experience with ITS. The median ratings for the control group were “just right” regardless of experience with ITS.

There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=-1.23$, $p=0.22$), or afterwards ($z=-1.14$, $p=0.25$). There was some evidence for change in ratings over time ($z=-1.73$, $p=0.08$). It is difficult to determine what is driving this, considering the median ratings did not change over time (2=just right), and the mean ratings also changed very little, from 1.53 (sd=0.77) to 1.68 (sd=0.67).

c. The current fine for a driver who is caught reversing when unsafe is $105. Do you think that the current fine is…

Figure 303. Histograms of the percent of responses in each category, by group. (0=Far too low, 1=Too low, 2=Just right, 3=Too high, 4=Far too high)
The median rating was “just right” for both the treatment and control groups, regardless of experience with ITS.

There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=0.28, p=0.78$), or afterwards ($z=0.99, p=0.32$). There was some evidence for change in ratings over time ($z=-1.67, p=0.096$). Although the median rating did not change over time, the mean rating did increase from 1.79 (sd=0.63) prior to experience with ITS to 2.06 (sd=0.64) afterwards.
Attitudes towards driving behaviours

1. To what extent do you agree or disagree with each of the following statements?
   a. I am comfortable driving close behind another car

   
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<td>Before</td>
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   Figure 304. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)

   The median rating for the treatment group was “disagree” regardless of experience with ITS. The median rating for the control group was “disagree” at the beginning of the project, and “strongly disagree” by the end.
There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=0.09$, $p=0.93$), or afterwards ($z=0.84$, $p=0.40$). There was also no significant change in ratings over time ($z=1.06$, $p=0.29$).

b. Speeding is always wrong

Figure 3.05. Histograms of the percent of responses in each category, by group. 
(0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)
The responses to this question ranged from strongly disagree to strongly agree. The mean ratings for the treatment group were close to “neither agree nor disagree” (prior to ITS mean=1.91, sd=1.22; after ITS mean=2.09, p=1.14). The mean ratings for the control group lay halfway between “neither agree nor disagree” and “agree” (prior to ITS mean=2.5, sd=0.93; after ITS mean=2.5, sd=0.93).

There was no significant interaction between treatment group and time (F(1,17)=0.34, p=0.57). There was no significant difference between the ratings of the treatment group and control group (F(1,17)=1.09, p=0.31), nor was there any significant change in ratings over time (F(1,17)=0.35, p=0.56).
c. It makes sense to exceed speed limits to get ahead of Sunday drivers

The median rating for the treatment group was “disagree” both prior to and after ITS experience. The median rating for the control group was between “strongly disagree” and “disagree” prior to ITS experience, and “disagree” afterwards.
There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS (z=0.61, p=0.54), or afterwards (z=0.68, p=0.50). There was also no significant change in ratings over time (z=0.45, p=0.65).

d. If you are a good driver it is acceptable to drive a little faster

![Histograms of the percent of responses in each category, by group.](image)

*Figure 307. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*

The median rating for the treatment group was “disagree” both prior to and after ITS experience. The median rating for the control group was “disagree” prior to ITS experience, and between “strongly disagree” and “disagree” afterwards.
There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=-0.29$, $p=0.77$), or afterwards ($z=0.14$, $p=0.89$). There was however, a significant change in ratings over time ($z=2.11$, $p=0.03$). Although the median rating did not decrease over time, and remained as “disagree”, there was a decrease in the mean rating, from 1.05 (sd=0.91) prior to ITS experience, to 0.68, (sd=0.82) after ITS experience. That is, the participants disagreed more strongly that it is acceptable for good drivers to drive a little faster, after they had used ITS.

e. When road conditions are good and nobody is around, driving in excess of 100km/h in an 80km/h zone is okay

![Figure 308. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)](image-url)
The median rating for the treatment group was “strongly disagree” both prior to and after ITS experience. The median rating for the control group was “strongly disagree” prior to ITS experience, and between “strongly disagree” and “disagree” afterwards.

There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=-0.05$, $p=0.96$), or afterwards ($z=-0.42$, $p=0.67$). There was also no significant change in ratings over time ($z=-1.63$, $p=0.10$).

f. I will ride as a passenger with someone who speed if others are also in the car

Figure 309. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)
The median rating for the treatment group was “strongly disagree” prior to ITS experience, and “disagree” afterwards. The median rating for the control group was “strongly disagree” both prior to ITS experience, and afterwards.

There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=1.31$, $p=0.19$), or afterwards ($z=1.12$, $p=0.26$). There was some evidence for a change in ratings over time ($z=-1.89$, $p=0.06$). There was an increase in the overall ratings over time, from “strongly disagree” prior to ITS experience, to “disagree” afterwards.

**g. I think it is okay to exceed the speed limit if you are driving safely**

![Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)](image-url)
The median ratings were “disagree” for both groups, both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=0.80$, $p=0.43$), or afterwards ($z=0.48$, $p=0.63$). There was also no significant change in ratings over time ($z=0.82$, $p=0.41$).

**h. If you increase your driving speed by 5km/h you are significantly more likely to be involved in a crash**

![Histograms showing the percent of responses in each category, by group.](image)

*Figure 311. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*

The median rating for the treatment group was “agree” both prior to and after ITS experience. The median rating for the control group was between “neither agree nor disagree” and “agree” prior to ITS experience, and was “agree” afterwards.
There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=0.83$, $p=0.41$), or afterwards ($z=-0.52$, $p=0.61$). There was also no significant change in ratings over time ($z=-0.58$, $p=0.56$).

i. A crash at 70km/h will be a lot more severe than a crash at 60km/h

Figure 312. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)
The median rating for the treatment group was “agree” both prior to and after ITS experience. The median rating for the control group was “agree” prior to ITS experience, and was “strongly agree” afterwards.

There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=0.34$, $p=0.74$), or afterwards ($z=-1.62$, $p=0.11$). There was also no significant change in ratings over time ($z=-0.71$, $p=0.48$).

j. It is easy to avoid being caught speeding

Figure 313. Histograms of the percent of responses in each category, by group. ($0=$ Strongly disagree, $1=$ Disagree, $2=$ Neither agree nor disagree, $3=$ Agree, $4=$ Strongly Agree)
The median rating for both the treatment group and the control group was “disagree” both prior to and after ITS experience.

There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=0.14$, $p=0.89$), or afterwards ($z=-0.15$, $p=0.88$). There was also no significant change in ratings over time ($z=-0.37$, $p=0.71$).

**k. Speeding enforcement is more for revenue raising than for safety**

*Figure 314. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*
The mean ratings for the treatment group increased from 1.27 (sd=1.01) prior to ITS experience to 1.91 (sd=1.04) afterwards. The mean ratings for the control group decreased slightly from 2.25 (sd=1.16) to 2.0 (sd=1.31).

There was some evidence for an interaction between group and questionnaire (F(1,17)=3.86, p=0.07), however there was no main effect of group (F(1,17)=1.30, p=0.27) or any overall change in ratings over time (F(1,17)=0.79, p=0.39).

The potential interaction was investigated further. There was some evidence of higher ratings in the control group compared to the treatment group prior to ITS experience (t(17)=-1.95, p=0.07), but no such difference was apparent after exposure to ITS (t(17)=-0.17, p=0.87). Interestingly, there was evidence for an increase in ratings over time for participants in the treatment group (t(10)=-2.06, p=0.07), but not for those in the control group (t(7)=0.80, p=0.45).
1. Speed limits are too low – it is usually safe to drive faster than the speed limit

![Histograms showing percent of responses in each category, by group.](image)

*Figure 315. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1=Disagree, 2=Neither agree nor disagree, 3=Agree, 4=Strongly Agree)*

The mean ratings for the treatment group lay between “disagree” and “neither agree nor disagree” (prior to ITS, mean=1.36, sd=0.92; after ITS, mean=1.55, p=0.82). The mean ratings for the control group also lay between these two response options (prior to ITS, mean=1.50, sd=0.93; after ITS, mean=1.38, p=0.92).
There was no significant interaction between group and questionnaire (F(1,17)=0.40, p=0.54). There was no significant difference between the ratings of the treatment and control groups (F(1,17)=0.00, p=0.96), nor was there any significant change in ratings over time (F(1,17)=0.02, p=0.90).

**m. It doesn’t bother me if other people speed**

![Figure 316. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)
The median rating was “disagree” for both the treatment and control groups, prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=-0.67$, $p=0.50$), or afterwards ($z=-0.37$, $p=0.71$). There was also no significant change in ratings over time ($z=-1.11$, $p=0.27$).

n. You don’t need to wear a seatbelt to be safe if you are sitting in the back seat

Figure 317. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)
The median rating was “strongly disagree” for both the treatment and control groups, prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS (z=0.33, p=0.74), or afterwards (z=-0.05, p=0.96). There was, however, a significant change in ratings over time (z=-2.00, p=0.046). Although the median rating did remain as “strongly disagree”, the increase in mean ratings from 0.16 (sd=0.37) to 0.37 (sd=0.50) does indicate that the participants disagreed less strongly with this statement after ITS experience.

o. It is safe to speed on roads that are familiar

![Histograms of the percent of responses in each category, by group.](image)

Figure 318. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)
The median rating was “disagree” for the treatment group, prior to, and after, ITS experience. The median rating for the control group was between “strongly disagree” and “disagree” prior to ITS experience, and was “disagree” afterwards.

There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=0.78$, $p=0.43$), or afterwards ($z=-0.05$, $p=0.96$). There was also no significant change in ratings over time ($z=0.38$, $p=0.71$).

**p. People who exceed speed limits are a major contributor to crashes**

*Figure 319. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*
The median rating was “agree” for the treatment group, prior to, and after, ITS experience. The median rating for the control group was “agree” prior to ITS experience, and was “strongly agree” afterwards.

There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=-0.68$, $p=0.50$), or afterwards ($z=-1.21$, $p=0.23$). There was also no significant change in ratings over time ($z=-1.13$, $p=0.26$).

**q. Wearing a seatbelt will significantly reduce my chances of serious injury in the even of crash**

![Histograms of the percent of responses in each category, by group.](image)

*Figure 320. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*
The median rating was “strongly agree” for the treatment group, prior to, and after, ITS experience. The median rating for the control group was “strongly agree” prior to ITS experience, and was “agree” afterwards.

There was no significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=0.46$, $p=0.64$), or afterwards ($z=0.19$, $p=0.85$). There was also no significant change in ratings over time ($z=1.34$, $p=0.18$).

r. I only wear a seatbelt because I am required to by law

![Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)](image-url)
The median rating was “disagree” for the treatment group, prior to, and after, ITS experience. The median rating for the control group was “strongly disagree” prior to ITS experience, and was halfway between “strongly disagree” and “disagree” afterwards.

There was a significant difference between the ratings of the treatment group compared to the control group prior to experience with ITS ($z=2.53$, $p=0.01$). Although participants in both groups only disagree or strongly disagreed, the proportions differed. The majority of the control group participants strongly disagreed (87.5%), whereas the majority of the treatment group disagreed (72.7%). After experience with ITS however, there was no significant difference between the groups ($z=0.19$, $p=0.85$).

There was no significant change in ratings over time for the treatment group ($z=1.41$, $p=0.16$), however there was some evidence of a change in ratings over time for the control group ($z=-1.73$, $p=0.08$). The proportion of control group participants that strongly disagreed decreased from 87.5% to 50% over time, with a corresponding increase who chose the option, disagree (12.5% increased to 50%).
s. If I am not wearing a seatbelt it is very likely that I will be pulled over by the police.

The mean ratings for the treatment group lay between “neither agree nor disagree” and “agree” (Prior to ITS mean=2.36, sd=1.03; After ITS mean=2.18, sd=1.08). The mean ratings for the control group also lay between these two responses, but were slightly higher (Prior to ITS mean=2.88, sd=0.99; After ITS mean=2.63, sd=0.92).
There was no significant interaction between group and questionnaire (F(1,17)=0.01, p=0.91). There was no significant difference between the ratings of the treatment and control groups (F(1,17)=1.60, p=0.22), nor was there any significant change in ratings over time (F(1,17)=0.58, p=0.46).

**t. It makes sense to tailgate when the driver in front is going too slowly**

![Histograms of the percent of responses in each category, by group.](image)

*Figure 323. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*

The median rating for the treatment group was “disagree” prior to ITS experience, and “strongly disagree” afterwards. The median rating for the control group was “strongly
disagree” regardless of ITS experience. None of the participants agreed or strongly agreed that it makes sense to tailgate when the driver in front is going too slowly.

There was a significant difference between the ratings of the treatment group and control group prior to ITS experience (z=2.18, p=0.03). At this time, 87.5% of the control group strongly disagreed, with the other 12.5% disagreeing. In contrast, only 36.4% of the treatment group strongly disagreed, 54.6% disagreed, and 9.1% neither agreed nor disagreed. After ITS experience however, there was no significant difference between the ratings of the treatment and control groups (z=-0.05, p=0.96).

There was a significant change in ratings over time for participants in the treatment group (z=2.00, p<.05). After ITS experience, the treatment group disagreed more strongly than they did prior to ITS experience. The proportion that disagreed strongly increased from 36.4% to 63.6%, while the remaining 36.4% at the end of the study disagreed. There was no such change in ratings over time for the control group (z=-1.41, p=0.16).
A 2 second gap from the car in front is too big

Figure 324. Histograms of the percent of responses in each category, by group.
(0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)

The median rating for participants in the treatment group was “disagree” both prior to, and after, ITS experience. The median rating for the control group was “strongly disagree” prior to ITS experience, and “disagree” afterwards. None of the participants agreed or strongly agreed that a 2 second gap from the car in front is far too big.

There was some evidence for a difference in the ratings of the treatment and control groups prior to ITS exposure ($z=1.68$, $p=0.09$), although this did not reach the conventional level of significance. At this time, 75% of the control group strongly
disagreed, with the other 25% disagreeing. In contrast, only 36.4% of the treatment group strongly disagreed, 54.6% disagreed, and 9.1% neither agreed nor disagreed. At the end of the project however, there was no evidence of a difference between the ratings of the treatment group and the control group ($z=0.68, p=0.50$).

There was no significant change in ratings over time for the treatment group participants ($z=-0.45, p=0.65$). There was however, some evidence for a change in ratings over time for the control group, although this did not reach the conventional level of significance ($z=-1.73, p=0.08$). The proportion of control group participants who strongly disagreed that a 2 second gap from the car in front is too big decreased from 75% to 37.5%, while the proportion who disagreed rose from 25% to 62.5%.

v. If you are a good driver it is acceptable to drive close behind another car

*Figure 325. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*
The median rating for participants in the treatment group was “strongly disagree” prior to ITS experience, and “disagree” afterwards. The median rating for the control group was “strongly disagree” both prior to, and after, ITS experience. None of the participants agreed or strongly agreed that a 2 second gap from the car in front is far too big.

Prior to ITS experience, there was no significant difference between the ratings of the treatment group and the control group ($z=0.97, p=0.33$). There was, however, some evidence for a difference in the ratings of the treatment and control groups after ITS exposure ($z=1.93, p=0.05$), although this did not reach the conventional level of significance. At this time, 62.5% of the control group strongly disagreed, with the other 37.5% disagreeing. In contrast, only 18.2% of the treatment group strongly disagreed, and 81.8% disagreed.

There was no significant change in ratings over time for participants in the treatment group ($z=-1.34, p=0.18$) or the control group ($z=-1.00, p=0.32$).
w. When road conditions are good it is okay to drive close to the car in front

The median rating for the treatment group and the control group was “strongly disagree” prior to ITS experience. After ITS experience, the median rating changed to “disagree” for both groups. No participant agreed or strongly agreed that it is okay to drive close to the car in front when road conditions are good.
There was no significant difference between the ratings of the treatment group and the control group prior to ($z=0.97$, $p=0.33$) or after ($z=1.16$, $p=0.26$) ITS experience. There was a significant change in ratings over time ($z=-2.12$, $p=0.03$). The overall proportion of participants who strongly disagreed that it is okay to drive close to the car in front decreased over time, from 63.2% to 26.3%, while the proportion who disagreed increased from 31.6% to 68.4%.

x. I will drive close to the car in front if everyone else is

![Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)]
The median rating for the treatment group was “disagree” both prior to, and after, ITS experience. The median rating for the control group was “strongly disagree” prior to ITS experience and halfway between “strongly disagree” and “disagree” afterwards. None of the participants agreed or strongly agreed that they would drive too close to the car in front if everyone else is.

Prior to ITS experience, there was no significant difference between the ratings of the treatment group and the control group ($z=1.33$, $p=0.18$). There was, however, some evidence for a difference in the ratings of the treatment and control groups after ITS exposure ($z=1.69$, $p=0.09$), although this did not reach the conventional level of significance. At this time, 50% of the control group strongly disagreed, with the other 50% disagreeing. In contrast, only 18.2% of the treatment group strongly disagreed, 63.6% disagreed, and 18.2% neither agreed nor disagreed.

There was no significant change in ratings over time for participants in the treatment group ($z=-1.38$, $p=0.17$) or the control group ($z=-1.041$, $p=0.16$).
y. The closer you are to the car in front, the more likely you are to be involved in a crash.

The median rating for the treatment group was “strongly agree” prior to ITS experience, and “agree” afterwards. The median rating for the control group lay between “agree” and “strongly agree” both prior to, and after, ITS experience.
There was no significant difference between the ratings of the treatment group and the control group prior to (z=0.00, p=1.00) or after (z=-1.14, p=0.26) ITS experience. There was also no significant change in ratings over time (z=1.00, p=0.32).

**z. People who tailgate are a major contributor to crashes**

![Histograms of the percent of responses in each category, by group.](image)

Figure 329. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)

The median rating for the treatment group participants was “agree” both prior to, and after, ITS experience. The median rating for the control group was “agree” prior to ITS experience, and halfway between “agree” and “strongly agree” afterwards.
There was no significant difference between the ratings of the treatment group and the control group prior to \((z=-1.49, p=0.14)\) or after \((z=-1.29, p=0.20)\) ITS experience. There was also no significant change in ratings over time \((z=-1.63, p=0.10)\).

**aa. I drive close to the car in front because I know I can get away with it**

![Histograms of the percent of responses in each category, by group.](image)

*Figure 330. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*
The median rating for the treatment group participants was “disagree” both prior to, and after, ITS experience. The median rating for the control group was “strongly disagree” prior to ITS experience, and “disagree” afterwards. None of the participants agreed or strongly agreed that they drove too close to the car in front because they knew they could get away with it.

There was no significant difference between the ratings of the treatment group and the control group prior to (z=0.72, p=0.47) or after (z=-0.51, p=0.61) ITS experience. There was a significant change in ratings over time (z=-2.12, p=0.03). The overall median rating increased from “strongly disagree” prior to ITS experience to “disagree” afterwards. There was a decrease in the proportion of participants that strongly disagreed, from 52.6% to 26.3%, with an increase in the proportion that disagreed, from 47.4% to 68.4%, and an increase in the proportion who neither agreed nor disagreed, from 0 to 5.3%.
ab. I think it is okay to drive close to the car in front if it is safe to do so

The median rating for the treatment group participants was “disagree” both prior to, and after, ITS experience. The median rating for the control group was “strongly disagree” prior to ITS experience, and “disagree” afterwards. Only one participant agreed that it is okay to drive close to the car in front if it is safe to do so.

There was a significant difference between the ratings of the treatment group and the control group prior to ITS experience ($z=1.99$, $p<0.05$). At this time, the majority of the control group strongly disagreed (62.5%) compared to 18.2% of the treatment group. The
majority of the treatment group disagreed (72.7%) compared with 37.5% of the control group. However, after experience with ITS, there was no significant difference between the ratings of the treatment group and control group ($z=1.61, p=0.11$).

There was no significant change in ratings over time for participants in the treatment group ($z=-1.00, p=0.32$) or the control group ($z=-1.00 p=0.32$).

**ac. It doesn’t bother me if other people drive close behind me**

Figure 332. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)
The median rating for the treatment group participants was “strongly disagree” prior to ITS experience, and “disagree” afterwards. The median rating for the control group was “strongly disagree” both prior to, and after, ITS experience. Only one participant agreed that it doesn’t bother them if other people drive close behind them.

There was no significant difference between the ratings of the treatment group and the control group prior to (z=0.97, p=0.33) or after (z=1.59, p=0.11) ITS experience. There was also no significant change in ratings over time (z=-1.08, p=0.28).

ad. On a sunny day there is no point turning your headlights on

![Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)](image)

*Figure 333. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*
There was a range of responses to this question, from strongly disagree to agree. The mean ratings for the treatment group lay between “disagree” and “neither agree nor disagree” (Prior to ITS, mean=1.82, sd=0.87; After ITS, mean=1.55, sd=0.82). The mean ratings for the control group also lay between these two options, but were slightly higher (Prior to ITS, mean=1.88, sd=0.83; After ITS, mean=1.75, sd=0.46).

There was no significant interaction between group and questionnaire (F(1,17)=0.13, p=0.72). There was no significant difference between the ratings of the treatment and control groups (F(1,17)=0.19, p=0.67), nor was there any significant change in ratings over time (F(1,17)=0.97, p=0.34).

ae. You are less likely to have a crash during the day if you have your headlights on

![Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)](image-url)

*Figure 334. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*
There was a range of responses to this question, from disagree to strongly agree. The mean ratings for the treatment group lay between “neither agree nor disagree” and “agree” (Prior to ITS, mean=2.55, sd=0.82; After ITS, mean=2.82, sd=0.75). The mean ratings for the control group also lay between these two options, but were slightly lower (Prior to ITS, mean=2.25, sd=0.46; After ITS, mean=2.25, sd=0.71).

There was no significant interaction between group and questionnaire (F(1,17)=0.95, p=0.34). There was no significant difference between the ratings of the treatment and control groups (F(1,17)=2.06, p=0.17), nor was there any significant change in ratings over time (F(1,17)=0.98, p=0.34).

**af. Other motorists are more likely to see you during the day if you have your headlights on**

![Histograms of the percent of responses in each category, by group.](image)

*Figure 335. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*
The responses to this question ranged from “disagree” to “strongly agree”. The median rating was “agree” for both the treatment and control groups, prior to, and after, ITS experience.

Prior to ITS experience, there was no significant difference between the ratings of the treatment group and the control group ($z=0.10, p=0.92$). There was, however, a significant difference in the ratings of the treatment and control groups after ITS exposure ($z=1.97, p<0.05$). At this time, 100% of the treatment group either agreed (81.8%) or strongly agreed (18.2%). In comparison, 75% of the control group agreed, while the other 25% neither agreed nor disagreed.

There was a significant change in ratings over time for participants in the treatment group ($z=-1.99, p<0.05$). Treatment group participants agreed more strongly after ITS experience, with the proportion that strongly agreed increasing from 9.1% to 18.2%, the proportion that agreed increasing from 63.6% to 81.8%, and the proportion that neither agreed nor disagreed decreasing from 18.2% to 0%. There was no change in the ratings of the control group over time (no change at all, therefore statistic not computable).
Attitude towards ITS technologies

1. I would like a car that:
   a. Automatically warns me if I am exceeding the speed limit

![Graphs showing attitude towards ITS technologies](image)

*Figure 3.6. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*

The median rating for participants in both the treatment and control groups was “agree” both prior to, and after, ITS experience.
There was no significant difference between the ratings of the treatment group and the control group prior to (z=0.38, p=0.70) or after (z=1.48, p=0.14) ITS experience. There was also no significant change in ratings over time (z=0.37, p=0.71).

b. Automatically warns me if I am following the car in front too closely

Figure 337. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)
The median rating for participants in the treatment group was “agree” both prior to, and after, ITS experience. The median rating for those in the control group was halfway between “neither agree nor disagree” and “agree” prior to ITS experience, and was “agree” afterwards.

There was no significant difference between the ratings of the treatment group and the control group prior to \( (z=0.44, p=0.66) \) or after \( (z=-0.19, p=0.85) \) ITS experience. There was also no significant change in ratings over time \( (z=1.36, p=0.17) \).

c. **Stops me from exceeding the speed limit**

*Figure 338. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*
The median rating for participants in the treatment group was “disagree” both prior to, and after, ITS experience. The median rating for those in the control group was halfway between “neither agree nor disagree” and “agree” prior to ITS experience, and was “disagree” afterwards.

There was a significant difference between the ratings of the treatment group and the control group prior to ITS experience ($z=-0.80$, $p=0.43$). At this time, 50% of the control group either agreed or strongly agreed that they would like a car that stops them from exceeding the speed limit, compared to only 9.1% of the treatment group. In contrast, 72.7% of the treatment group disagreed or strongly disagreed with this statement, compared to only 25% of the control group. However after ITS experience, there was no longer a significant difference between the ratings of the treatment group and control group ($z=-0.80$, $p=0.43$).

There was no significant change in ratings over time for treatment group participants ($z=1.00$, $p=0.32$). There was however, some evidence for a change in ratings over time for the control group ($z=1.72$, $p=0.08$), although this did not reach the conventional level for statistical significance. Over time, the proportion of control group participants who agreed or strongly agreed decreased from 50% to 25%, while the proportion that disagreed or strongly disagreed increased from 25% to 62.5%.
d. Automatically warns me if anyone in the car is not wearing their seatbelt

![Histograms of the percent of responses in each category, by group.](image)

*Figure 339. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*

The mean rating for the treatment group remained constant at 3.45 (sd=0.69 and sd=0.52) both prior to, and after, ITS experience. This mean rating lies between “agree” and “strongly agree”. The mean ratings for the control group also lay between these two options (Prior to ITS, mean=3.32, sd=0.67; After ITS, mean=3.37, sd=0.60).

There was no significant interaction between group and questionnaire (F(1,17)=0.18, p=0.68). There was no significant difference between the ratings of the treatment and
control groups (F(1,17)=1.08, p=0.31), nor was there any significant change in ratings over time (F(1,17)=0.17, p=0.68).

e. Stops me from following a car in front too closely

![Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)](image)

*Figure 340. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*
The median rating for the treatment group prior to ITS experience was “neither agree nor disagree”, and “disagree” afterwards. The median rating for the control group changed from “agree” prior to ITS experience, to “disagree” afterwards.

There was no significant difference between the ratings of the treatment group and the control group prior to (z=-1.26, p=0.21) or after (z=-1.39, p=0.17) ITS experience.

There was a significant change in ratings over time (z=2.66, p=<.01). The overall proportion who agreed or strongly agreed that they would like a car that stops them following a car in front too closely decreased from 52.6% to 15.8%, while the proportion that disagreed or strongly disagreed increased from 31.6% to 73.7%.
f. Automatically warns me if I am about to collide with a vehicle in front

The median rating for the treatment group “agree” both prior to and after ITS experience. The median rating for the control group changed from “strongly agree” prior to ITS experience, to “agree” afterwards.
There was no significant difference between the ratings of the treatment group and the control group prior to \((z=-0.34, p=0.73)\) or after \((z=1.02, p=0.31)\) ITS experience. There was also no significant change in ratings over time \((z=0.86, p=0.39)\).

g. Prevents me from starting the car if someone in the car does not have their seatbelt on

![Histograms of the percent of responses in each category, by group.](image)

\(0=\text{Strongly disagree}, \ 1=\text{Disagree}, \ 2=\text{Neither agree nor disagree}, \ 3=\text{Agree}, \ 4=\text{Strongly Agree})\)
The responses to this question ranged from strongly disagree to strongly agree. The median rating for the treatment group was “agree” prior to ITS experience, and “disagree” afterwards. The median rating for the control group was “neither agree nor disagree” prior to ITS experience, and “disagree” afterwards.

There was no significant difference between the ratings of the treatment group and the control group prior to (z=0.94, p=0.35) or after (z=0.18, p=0.86) ITS experience. There was however, a significant change in ratings over time (z=2.01, p<0.05). The proportion of participants who agreed or strongly agreed that they would like a car that prevented them from starting the car if someone in the car does not have their seatbelt on decreased from 52.6% to 31.6% over time. The proportion that disagreed increased from 31.6% to 52.6% and the proportion that strongly disagreed increased from 0% to 5.3%.
h. Automatically warns me if I am about to collide with an object while reversing

The median rating for the treatment group was “strongly agree” both prior to, and after, ITS experience. The median rating for the control group was between “agree” and “strongly agree” prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to ($z=0.38$, $p=0.70$) or after ($z=0.23$, $p=0.82$) ITS experience. There was also no significant change in ratings over time ($z=0.63$, $p=0.53$).
The mean ratings for the treatment group lay between “neither agree nor disagree” and “agree” (Prior to ITS, mean=2.27, sd=1.10; After ITS, mean=2.82, sd=0.98). The mean ratings for the control group also lay between these two options (Prior to ITS, mean=2.25, sd=1.04; After ITS, mean=2.38, sd=0.52).
There was no significant interaction between group and questionnaire (F(1, 17)=1.02, p=0.29). There was no significant difference between the ratings of the treatment and control groups (F(1, 17)=0.34, p=0.57). However, there was some evidence of a change in ratings over time (F(1, 17)=3.12, p<.10), although this did not reach the conventional level for statistical significance. There was a slight increase in the mean rating over time, from 2.26 (sd=1.05) to 2.63 (sd=0.83).

**j. Prevents me from colliding with a vehicle in front**

*Figure 345. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*
The responses to this question ranged from strongly disagree to strongly agree. The median rating for both the treatment and control groups was “agree” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to (z=0.04, p=0.96) or after (z=-0.14, p=0.89) ITS experience. There was, however, a significant change in ratings over time (z=2.49, p=0.01). Although the median rating did not change over time, the overall mean rating decreased from 3 (agree, sd=1.20) to 2.32 (sd=1.06) after experience with ITS.

k. Automatically warns me if I am becoming fatigued

![Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)](image-url)
The responses to this question ranged from “neither agree nor disagree” to “strongly agree”. The mean rating for the treatment was 3.45 (sd=0.69) prior to ITS experience and 2.91, sd=0.54) afterwards. The mean ratings for the control group were 3.25 (sd=0.46) prior to, and 2.88 (sd=0.64) after ITS experience.

There was no significant interaction between group and questionnaire (F(1,17)=0.35, p=0.56). There was no significant difference between the ratings of the treatment and control groups (F(1,17)=0.26, p=0.62). However, there was a significant change in ratings over time (F(1,17)=10.21, p=0.005). The mean rating decreased over time, from 3.37 (sd=0.60) to 2.89 (sd=0.57).

1. Automatically warns me if my Blood Alcohol Concentration is over 0.05.

![Histograms of the percent of responses in each category, by group.](image)

*Figure 347. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*
The median rating for participants in both groups prior to ITS experience was “strongly agree”, while after ITS experience, it was “agree”.

There was no significant difference between the ratings of the treatment group and the control group prior to ($z=-0.22$, $p=0.83$) or after ($z=-0.57$, $p=0.57$) ITS experience. There was, however, a significant change in ratings over time ($z=2.13$, $p=0.03$). There was a decrease in the median rating over time. The proportion that strongly agreed decreased from 73.7% to 33.3%, while the proportion that agreed increased from 21.1% to 61.1%.

**m. Prevents me from colliding with an object while reversing**

![Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)](image_url)
The median rating for participants in the treatment group both prior to, and after, ITS experience was “agree”. The median rating for participants in the control group lay halfway between “agree” and “strongly agree” prior to ITS experience, while after ITS experience, it was “agree”.

There was no significant difference between the ratings of the treatment group and the control group prior to (z=-0.31, p=0.75) or after (z=-0.47, p=0.64) ITS experience. There was, however, a significant change in ratings over time (z=2.24, p=0.02). Although there was no change in the median rating over time, the mean rating did decrease from 3.26 (sd=0.87) to 2.68 (sd=1.25). In particular, the proportion that strongly disagreed rose from 0% to 5.3%, and the proportion that disagreed increased from 5.3% to 15.8%. In contrast, the proportion that agreed or strongly agreed decreased from 84.2% to 63.2%.
n. Automatically warns me if I start drifting out of my lane

Figure 349. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)

The median rating for participants in both groups, prior to, and after, ITS experience was “agree”.

There was no significant difference between the ratings of the treatment group and the control group prior to \((z=0.32, p=0.75)\) or after \((z=-0.91, p=0.36)\) ITS experience. There was also no significant change in ratings over time \((z=1.11, p=0.27)\).

**o. Pulls over and parks itself if it detects I am becoming fatigued**

![Histograms](image)

*Figure 350. Histograms of the percent of responses in each category, by group. (0 = Strongly disagree, 1 = Disagree, 2 = Neither agree nor disagree, 3 = Agree, 4 = Strongly Agree)*

The responses to this question ranged from “strongly disagree” to “strongly agree”. The mean rating for the treatment was 2.27 (sd=1.19) prior to ITS experience and 1.27, sd=1.01) afterwards. The median rating for the control group was 2.29 (sd=1.25) prior to, and 1.88 (sd=1.46) after ITS experience.
There was no significant interaction between group and questionnaire (F(1,17)=0.94, p=0.35). There was no significant difference between the ratings of the treatment and control groups (F(1,17)=0.40, p=0.54). However, there was a significant change in ratings over time (F(1,17)=6.06, p=0.03). The mean rating decreased over time, from 2.28 (sd=1.18) to 1.53 (sd=1.22).

**p. Prevents me from starting the car if my Blood Alcohol Concentration is over 0.05**

*Figure 351. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*

In general, participants stated that they would like a car that prevented them from starting it if their BAC was over 0.05. Only one participant disagreed with this statement. The median rating was “strongly agree” for both the treatment and control groups, prior to
ITS experience. After ITS experience, the median rating for the treatment group was “agree”, while that of the control group was halfway between “agree” and “strongly agree”.

There was no significant difference between the ratings of the treatment group and the control group prior to (z=-0.51, p=0.61) or after (z=-0.10, p=0.92) ITS experience. There was, however, a significant change in ratings over time (z=2.23, p=0.03). The median rating decreased over time from “strongly agree” to “agree”, as a result of the reduction in the proportion of participants that strongly agreed, from 68.4% to 44.4%, and an increase in the proportion who agreed, from 31.6% to 50%.
q. Gives me turn-by-turn instructions on how to get from one location to another

There was a range of responses to this question, from strongly disagree to strongly agree. The median rating of treatment group participants was “agree”, regardless of ITS experience. The median rating for the control group was “neither agree nor disagree” prior to ITS experience, and “agree” afterwards.
There was no significant difference between the ratings of the treatment group and the control group prior to ($z=1.59$, $p=0.11$) or after ($z=-0.42$, $p=0.68$) ITS experience. There was also no significant change in ratings over time ($z=0.30$, $p=0.76$).

**r. Let me see pedestrians and road users more clearly at night**

![Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)](image)

*Figure 353. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)*
Most participants agreed or strongly agreed that they would like a car that lets them see pedestrians and road users more clearly at night. No participant disagreed with this statement. The median rating for both the treatment group and the control group was “agree”, regardless of ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to \((z=-0.05, p=0.96)\) or after \((z=-0.23, p=0.82)\) ITS experience. There was, however, some evidence of a change in ratings over time \((z=1.89, p=0.06)\), although this did not reach the conventional level for statistical significance. Although, the median ratings did not change over time, there was a decrease in the mean ratings, from 3.37 (sd=0.50) to 3.11 (sd=0.46). This was as a result of the reduction in the proportion of participants that strongly agreed, from 36.8% to 15.8%, and an increase in the proportion that agreed, from 63.2% to 79.0%.
The responses to this question ranged from “strongly disagree” to “strongly agree”. The mean rating for the treatment group was 2.0 (sd=1.0) prior to ITS experience, and 2.09 (sd=1.22) afterwards. The mean rating for the control group were a bit higher, at 2.63 (sd=1.19) prior to ITS experience and 2.5 (sd=1.20) afterwards.

There was no significant interaction between group and questionnaire (F(1,17)=0.15, p=0.70). There was no significant difference between the ratings of the treatment and
control groups (F(1,17)=1.28, p=0.27). There was also no significant change in ratings over time (F(1,17)=0.00, p=0.96).

**t. Automatically dials for, and sends, an ambulance to my location if I have a crash**

![Histograms](image)

Figure 355. Histograms of the percent of responses in each category, by group. (0=Strongly disagree, 1= Disagree, 2= Neither agree nor disagree, 3= Agree, 4= Strongly Agree)

The responses to this question ranged from “disagree” to “strongly agree”. The mean rating for the treatment group was 3.0 (sd=0.77) prior to ITS experience, and 2.73
The mean ratings for the control group were 2.50 (sd=0.93) prior to ITS experience and 3.0 (sd=0.76) afterwards.

There was some evidence for a group by questionnaire interaction (F(1,17)=3.32, p=0.09), although this did not reach the conventional level of significance. Further investigation of this did not reveal any significant change in ratings over time for the treatment group or the control group, or any significant difference between the ratings of the treatment and control groups at either time-point (p>0.10). It can be seen however, that the ratings of the treatment and control group differed in the way they changed over time (even though the changes were not significant). The ratings of the treatment group decreased over time, that is, they agreed less with the statement after ITS experience. Conversely, the ratings of the control group increased over time, that is, they agreed more with the statement over time.
The responses ranged from “strongly disagree” to “strongly agree”. The median rating for the treatment group was “agree” both prior to, and after, ITS experience. The median rating for the control group was “agree” prior to ITS experience and halfway between “agree” and “strongly agree” afterwards.
There was no significant difference between the ratings of the treatment group and the control group prior to (z=-0.49, p=0.63) ITS experience. However, there was some evidence for a difference between the ratings of the group afterwards (z=-1.89, p=0.06) At that time, the median rating for the control group was higher than that of the treatment group. None of the control group disagreed, half strongly agreed, and a further quarter agreed. In comparison 36.4% of the treatment group disagreed or strongly disagreed, approximately half agreed, and less than 10% strongly agreed.

There was no significant change in ratings over time for the treatment group (z=1.09, p=0.28) or the control group (z=-1.07, p=0.29).
Attitudes towards road safety measures

1. In your opinion, how effective are each of the following measures in helping you to keep to the speed limit?

a. Penalties (e.g. fines, demerit points)

Figure 357. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)

The responses ranged from “very ineffective” to “very effective”. The median rating for both groups was “effective” both prior to, and after, ITS experience.
There was no significant difference between the ratings of the treatment group and the control group prior to \((z=-0.10, p=0.92)\) or after \((z=-0.44, p=0.66)\) ITS experience. There was also no significant change in ratings over time \((z=-0.66, p=0.51)\).

**b. Speed cameras**

Figure 358. Histograms of the percent of responses in each category, by group. \((0= \text{Very ineffective}, 1= \text{Ineffective}, 2= \text{Neither effective nor ineffective}, 3= \text{Effective}, 4= \text{Very effective})\)
The responses ranged from “very ineffective” to “very effective”. The median rating for both groups was “effective” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to \((z=0.27, p=0.78)\) or after \((z=0.15, p=0.88)\) ITS experience. There was also no significant change in ratings over time \((z=-0.11, p=0.91)\).

c. Speed humps

*Figure 359. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)*
The responses ranged from “very ineffective” to “very effective”. The median rating for the treatment group was “effective” both prior to, and after, ITS experience. The median rating for the control group was halfway between “neither effective nor ineffective” and “effective” prior to ITS experience, and “effective” afterwards.

There was no significant difference between the ratings of the treatment group and the control group prior to (z=0.27, p=0.79) or after (z=-0.85, p=0.39) ITS experience. There was also no significant change in ratings over time (z=0.26, p=0.80).

d. Roundabouts

![Histograms of percent of responses in each category, by group.](image)

*Figure 360. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)*
The responses ranged from “very ineffective” to “very effective”. The median rating for both groups was “effective” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to ($z=-0.05$, $p=0.96$) or after ($z=-0.80$, $p=0.42$) ITS experience. There was also no significant change in ratings over time ($z=-0.03$, $p=0.98$).

c. Speed signs

*Figure 361. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)*
The responses ranged from “very ineffective” to “very effective”. The median rating for both groups was “effective” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to ITS experience ($z=-0.86, p=0.39$) There was some evidence for a difference in the ratings of the treatment and control groups after ITS experience ($z=1.76, p=0.08$), although this did not reach the conventional level of significance. At this time, 90.9% of the treatment group either agreed or strongly agreed, compared to 62.5% of the control group. All other participants neither agreed nor disagreed.

There was no significant change in ratings over time for the treatment group ($z=-1.30, p=0.19$) or the control group ($z=-1.30, p=0.19$).

**f. Advertising**

![Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)](image)

*Figure 362. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)*
The responses ranged from “ineffective” to “very effective”. The median rating for the
treatment group was “effective” both prior to, and after, ITS experience. The median
rating for the control group was also “effective” prior to ITS experience, but was halfway
between “neither effective nor ineffective” and “effective” afterwards.

There was no significant difference between the ratings of the treatment group and the
control group prior to \(z=0.40, p=0.69\) or after \(z=1.14, p=0.26\) ITS experience. There
was also no significant change in ratings over time \(z=-0.07, p=0.94\).

g. In-car technologies that warn you if you are exceeding the speed limit

Figure 363. Histograms of the percent of responses in each category, by group. (0= Very
ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very
effective)
The responses mostly ranged from “neither effective nor ineffective” to “very effective”. The median rating for both groups was “effective” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to ($z=0.16, p=0.87$) or after ($z=-0.22, p=0.83$) ITS experience. There was also no significant change in ratings over time ($z=0.82, p=0.41$).

### h. Speed guns

![Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)](image)

Figure 364. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)
The median rating for both groups was “effective” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to \((z=0.05, p=0.96)\) or after \((z=0.93, p=0.35)\) ITS experience. There was also no significant change in ratings over time \((z=-0.31, p=0.76)\).

i. **Police car presence**

![Graphs showing the percent of responses in each category, by group.](image)

*Figure 365. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)*
The responses mostly ranged from “effective” to “very effective”. The median rating for the treatment group was “effective” both prior to, and after, ITS experience. The median rating for the control group was also “effective” prior to ITS experience, but was “strongly effective” afterwards.

There was no significant difference between the ratings of the treatment group and the control group prior to (z=-0.05, p=0.96) or after (z=-1.21, p=0.23) ITS experience. There was also no significant change in ratings over time (z=-0.59, p=0.55).

j. Traffic islands

*Figure 366. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)*
The responses ranged from “very ineffective” to “very effective”. The median rating for both groups was “effective” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to (z=−0.11, p=0.92) or after (z=−1.11, p=0.27) ITS experience. There was also no significant change in ratings over time (z=−0.44, p=0.66).

2. In your opinion, how effective are each of the following measures in helping you travel at a safe distance from the car in front?

a. Penalties

![Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)](chart.png)

*Figure 367. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)*
The responses ranged from “very ineffective” to “very effective”. The mean rating for the treatment group was 2.18, both prior to (sd=1.17) and after (sd=1.25) ITS experience. The mean rating for the control group was 2.13 (sd=1.25) prior to ITS experience, and 2.38 (sd=0.92) afterwards.

There was no significant interaction between group and questionnaire (F(1,17)=0.66, p=0.43). There was no significant difference between the ratings of the treatment and control groups (F(1,17)=0.02, p=0.90). There was also no significant change in ratings over time (F(1,17)=0.64, p=0.44).

b. In-car technologies that warn you if you are travelling less than 2 seconds from the car in front

![Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)](chart)

Figure 368. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)
The responses ranged from “very ineffective” to “very effective”. The median rating for both groups was “effective” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to \((z=-0.81, p=0.42)\) or after \((z=0.19, p=0.85)\) ITS experience. There was also no significant change in ratings over time \((z=-0.33, p=0.74)\).

c. Chevrons on the road

![Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)](image)
The responses ranged from “ineffective” to “very effective”. The median rating for the treatment group was “effective” prior to ITS experience, and “neither effective nor ineffective” afterwards. The median rating for the control group was halfway between “neither effective nor ineffective” and “effective” prior to ITS experience, and “effective” afterwards.

There was no significant difference between the ratings of the treatment group and the control group prior to (z=−0.26, p=0.80) or after (z=−1.21, p=0.23) ITS experience. There was also no significant change in ratings over time (z=−0.31, p=0.76).

d. 2 second rule

Figure 370. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)
The responses ranged from “ineffective” to “very effective”. The median rating for both groups was “effective” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to \((z=-1.51, p=0.13)\) or after \((z=-0.19, p=0.85)\) ITS experience. There was also no significant change in ratings over time \((z=0.00, p=1.00)\).

e. Police car presence

![Histograms of the percent of responses in each category, by group.](image)

*Figure 371. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)*
The responses ranged from “very ineffective” to “very effective”. The median rating for both groups was “effective” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to (z=-0.53, p=0.60) or after (z=-0.38, p=0.70) ITS experience. There was also no significant change in ratings over time (z=-0.51, p=0.61).

f. Electronic sign that tells you if you are too close to the car ahead

![Figure 372. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)](image)
The responses ranged from “ineffective” to “very effective”. The median rating for both groups was “effective” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to ($z=-0.53$, $p=0.60$) or after ($z=-0.38$, $p=0.70$) ITS experience. There was also no significant change in ratings over time ($z=-0.51$, $p=0.61$).

3. In your opinion, how effective are each of the following measures in reminding you to wear your seatbelt?

a. In-car technologies that warn you if you or one of your passengers is not wearing his/her seatbelt

![Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)](image)

Figure 373. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)
The responses ranged from “neither ineffective nor effective” to “very effective”. The median rating for both groups was “effective” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to \( z=0.61, p=0.54 \) or after \( z=0.34, p=0.74 \) ITS experience. There was also no significant change in ratings over time \( z=-0.38, p=0.71 \).

**b. Advertising/Education**

![Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)](image)

*Figure 374.* Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)
The responses ranged from “neither ineffective nor effective” to “very effective”. The median rating for both groups was “effective” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to ($z=-0.32$, $p=0.75$) or after ($z=-1.29$, $p=0.20$) ITS experience. There was also no significant change in ratings over time ($z=0.63$, $p=0.53$).

c. Police car presence

Figure 375. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)
The responses ranged from “neither ineffective nor effective” to “very effective”. The mean rating for the treatment group was 3.27 (sd=0.65) prior to ITS experience, and 3.09 (sd=0.94) afterwards. The mean rating for the control group was 3.38 both prior to (sd=0.74) and after (sd=0.52) ITS experience.

There was no significant interaction between group and questionnaire (F(1,17)=0.17, p=0.69). There was no significant difference between the ratings of the treatment and control groups (F(1,17)=0.53, p=0.48). There was also no significant change in ratings over time (F(1,17)=0.17, p=0.68).

d. Penalties

![Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)](image)

*Figure 376. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)*
The responses ranged from “neither ineffective nor effective” to “very effective”. The mean rating for the treatment group was 3.27 (sd=0.65) prior to ITS experience, and 2.73 (sd=0.79) afterwards. The mean rating for the control group was 3.13 (sd=0.64) prior to ITS experience, and 3.0 after (sd=0.53) afterwards.

There was no significant interaction between group and questionnaire (F(1,17)=1.83, p=0.19). There was no significant difference between the ratings of the treatment and control groups (F(1,17)=0.05, p=0.82). There was, however, a significant change in ratings over time (F(1,17)=4.77, p=0.04). The overall mean rating decreased over time from 3.21 (sd=0.63) to 2.84 (sd=0.69), that is, the participants rated penalties as less effective over time, and after ITS experience.

e. Speed and red light cameras (that can see unbelted occupants)

![Histograms of the percent of responses in each category, by group.](image)

*Figure 377. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)*
The responses ranged from “ineffective” to “very effective”. The median rating for both groups was “effective” both prior to, and after, ITS experience.

There was no significant difference between the ratings of the treatment group and the control group prior to \( z=1.27, p=0.21 \) or after \( z=-0.62, p=0.53 \) ITS experience. There was some evidence for a change in ratings over time \( z=1.78, p=0.07 \), however this did not reach the conventional level for statistical significance. Although the median rating was “agree” at both times, the mean rating did decrease from 3.16 (sd=0.76) to 2.74 (sd=0.81) over time. This was due to a reduction in the proportion that rated it was effective or very effective, from 89.5% to 63.2%, and an increase in the proportion that rated it as neither effective nor ineffective, from 5.3% to 31.6%.
4. In your opinion, how effective are each of the following measures in helping you to reverse safely?

a. In-car technologies that issue more urgent warnings as you get closer to an object while reversing

The responses ranged from “neither effective nor ineffective” to “very effective”. The median rating for the treatment group was “very effective” prior to ITS experience, and
“effective” afterwards. The median rating for the control group was “effective” prior to ITS experience, and halfway between “effective” and “very effective” afterwards.

There was no significant difference between the ratings of the treatment group and the control group prior to (z=0.93, p=0.35) or after (z=-0.23, p=0.82) ITS experience. There was also no significant change in ratings over time (z=0.38, p=0.71).

b. Penalties (e.g. fines)

![Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)](image)

*Figure 379. Histograms of the percent of responses in each category, by group. (0= Very ineffective, 1= Ineffective, 2= Neither effective nor ineffective, 3= Effective, 4= Very effective)*
The responses ranged from “very ineffective” to “effective”. The median rating for the treatment group was “neither effective nor ineffective” prior to, and after, ITS experience. The median rating for the control group was “neither effective nor ineffective” prior to ITS experience, and “effective” afterwards.

There was no significant difference between the ratings of the treatment group and the control group prior to ITS experience ($z=-0.91, p=0.36$). There was however, a significant difference between the groups’ ratings after ITS experience ($z=-2.37, p=0.02$). At this time, the mean rating for the control group was “effective” while that for the treatment group was “neither effective nor ineffective”.

There was also no significant change in ratings over time for the treatment group participants ($z=0.38, p=0.71$). However, there was some evidence of a change over time for the control group ($z=-1.72, p=0.08$). The control group believed that penalties are more effective in helping you reverse safely at the end of the project, compared to the beginning.
Appendix Z  Preliminary Questionnaire
Time 1
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Preliminary Questionnaire Time 1

Thank you for your participation in this study. Your involvement is greatly appreciated. We would be grateful if you could take a few minutes to answer the following questions. We are interested in your honest opinion, and remember, all of the information that you provide will be kept confidential.

Part A - Personal Details

1. What is your age in years? 

2. Are you male or female? Male   Female

3. What is the name of the organization/company where you are currently employed?

4. What position do you currently hold?

5. For how many years or months have you held your current position?

6. What is the highest level of education you have so far completed?

   □ Year 11 or less  □ Associate diploma
   □ Year 12 or equivalent  □ Bachelor’s degree
   □ Trade certificate  □ Honours and/or Graduate diploma

   (more options over page)
☐ Other certificate ☐ Masters and/or PhD
☐ Other, Please specify

7. Are you required to wear corrective lenses to drive?
   ☐ Yes ☐ No

8. Are you colour-blind?
   ☐ Yes ☐ No

9. Do you currently have a diagnosed substance abuse disorder (e.g. alcohol, drugs)?
   ☐ Yes ☐ No

10. Are you hearing impaired?
    ☐ Yes ☐ No

   If YES, please specify type and degree of hearing impairment
   ___________________________________________________________

Part B – Driving Experience, Travel Patterns, and Driving Record

1. Do you hold a full and current car driver licence?
   ☐ Yes ☐ No

2. How old were you when you were first licensed to drive a car (i.e. when you received your probationary licence)?
   __________________________________________ years

3. Do you hold a licence/permit for a vehicle other than a car?
   ☐ Yes ☐ No
If YES, what types of vehicle?

- [ ] Motorcycle
- [ ] Heavy vehicle
- [ ] Other, Please specify __________

4. Approximately, how many kilometres did you drive over the last 12 months?

- [ ] Less than 20,000 km
- [ ] 20,000 to 29,000 km
- [ ] 30,000 to 39,000 km
- [ ] 40,000 to 49,000 km
- [ ] 50,000 km or more

5. Approximately, how many hours do you spend driving a car each week, including weekends?

__________ hours

6. Of the time that you spend driving a car each week, what percentage of that time is spent driving:

In **Melbourne CBD** __________ %

In **Urban** areas __________ %

In **Rural** areas __________ %

On **Freeways** __________ %

7. Of the time that you spend driving a car each week, what percentage of that time is spent driving:

To and from work __________ %

For work __________ %

For private purposes (e.g. run errands, recreation) __________ %
8. On **weekdays** (i.e. Monday to Friday), at what times during the day do you **usually** spend driving:?

To and from work (you can tick more than one category)

- [ ] 6:00am to 9:00am  
- [ ] 9:00am to 12:00 noon  
- [ ] 12:00 noon to 5:00pm  
- [ ] 5:00pm to 8:00pm  
- [ ] 8:00pm to 12:00 midnight  
- [ ] 12:00 midnight to 6:00 am

For work (you can tick more than one category)

- [ ] 6:00am to 9:00am  
- [ ] 9:00am to 12:00 noon  
- [ ] 12:00 noon to 5:00pm  
- [ ] 5:00pm to 8:00pm  
- [ ] 8:00pm to 12:00 midnight  
- [ ] 12:00 midnight to 6:00 am

For private purposes (you can tick more than one category)

- [ ] 6:00am to 9:00am  
- [ ] 9:00am to 12:00 noon  
- [ ] 12:00 noon to 5:00pm  
- [ ] 5:00pm to 8:00pm  
- [ ] 8:00pm to 12:00 midnight  
- [ ] 12:00 midnight to 6:00 am

9. On **weekends** (i.e. Saturday and Sunday), at what times during the day do you **usually** spend driving:?

To and from work (you can tick more than one category)

- [ ] 6:00am to 9:00am  
- [ ] 9:00am to 12:00 noon  
- [ ] 12:00 noon to 5:00pm  
- [ ] 5:00pm to 8:00pm  
- [ ] 8:00pm to 12:00 midnight  
- [ ] 12:00 midnight to 6:00 am

For work (you can tick more than one category)

- [ ] 6:00am to 9:00am  
- [ ] 9:00am to 12:00 noon  
- [ ] 12:00 noon to 5:00pm  
- [ ] 5:00pm to 8:00pm  
- [ ] 8:00pm to 12:00 midnight  
- [ ] 12:00 midnight to 6:00 am
For private purposes (you can tick more than one category)

☐ 6:00am to 9:00am    ☐ 5:00pm to 8:00pm
☐ 9:00am to 12:00 noon    ☐ 8:00pm to 12:00 midnight
☐ 12:00 noon to 5:00pm    ☐ 12:00 midnight to 6:00 am

10. Will you be the sole driver of the SafeCar, which will be assigned to you for the next 5 months?

☐ Yes    ☐ No

If NO, who else will drive your SafeCar (e.g. husband, daughter)?


Of the total time that your SafeCar will be driven, for what percentage of that time do you think that you will be the driver?

% 

11. Based on your current driving, will there be times over the next 5 months when you will carry passengers in your SafeCar while you are driving?

☐ Yes    ☐ No

If YES, of the total time that the car will be driven by you, for what percentage of that time do you think that you will be carrying passengers?

% 

Who will you carry as passengers (think about the people who you are most likely to carry as passengers; list up to 4; e.g. work colleague, friend, wife, husband, mother, son)?

Passenger 1: Relationship to you
Age  years
Gender    Male    Female
Passenger 2: Relationship to you

Age         years
Gender   Male   Female

Passenger 3: Relationship to you

Age         years
Gender   Male   Female

Passenger 4: Relationship to you

Age         years
Gender   Male   Female

If you identified more than one passenger, which passenger will you carry the most often?

12. In the last 12 months have you been caught/booked for:?

a. Speeding

Yes   No

If YES, on how many occasions?

b. Not wearing a seat belt

Yes   No

If YES, on how many occasions?

c. Other (e.g. reversing when unsafe; tailgating; not turning on your headlights; failing to stop at a stop sign; drink driving)

Yes   No

If YES, on how many occasions?
On each occasion, for what were you booked?

1. 

2. 

3. 

13. In the last 3 years, have you been involved in any crashes as a driver?

☐ Yes  ☐ No

If YES, on how many occasions? 

For each crash, what type of crash was it? (e.g. rear-end, head-on, lost control of vehicle on a bend)

1. 

2. 

3. 

14. To your knowledge, do you currently have any demerit points? (optional)

☐ Yes  ☐ No

If YES, how many points have you accrued? 

15. Of the time that you spend driving a car each week, what percentage of that time is spent driving:

A vehicle with **manual** transmission  

A vehicle with **automatic** transmission
## Part C – Driver Behaviour

1. Each of the statements below is a situation in everyday driving. Please indicate, by ticking one of the boxes, how often the described situation has happened to you while you were driving. The boxes give a scale from never on the left to very often on the right.

   (a) Deliberately disregard the speed limit to stay with the traffic flow

<table>
<thead>
<tr>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   (b) Overtake when the car in front is slowing down approaching an area with a lower speed limit

<table>
<thead>
<tr>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

   (c) Fail to notice a green arrow at a traffic light allowing you to turn

<table>
<thead>
<tr>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
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</table>

   (d) Forget to loosen the park brake when driving off

<table>
<thead>
<tr>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
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</table>

   (e) Drive especially close to the car in front as a signal to its driver to go faster or to get out of the way

<table>
<thead>
<tr>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
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</table>

   (f) Forget to dip the lights when driving at night and are reminded to do so by other drivers flashing their lights

<table>
<thead>
<tr>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
(g) Speed up to get through traffic lights when the lights are yellow or green

Never  Very seldom  Rather seldom  Sometimes  Often  Very often

(h) Deliberately park your car illegally in order to run an errand

Never  Very seldom  Rather seldom  Sometimes  Often  Very often

(i) Break a traffic rule because you hadn’t noticed the newly put up sign

Never  Very seldom  Rather seldom  Sometimes  Often  Very often

(j) Misread signs and find yourself lost

Never  Very seldom  Rather seldom  Sometimes  Often  Very often

(k) Fail to notice when a traffic light turns green

Never  Very seldom  Rather seldom  Sometimes  Often  Very often

(l) Deliberately exceed the speed limit on roads when there is little traffic

Never  Very seldom  Rather seldom  Sometimes  Often  Very often

(m) Find yourself driving in the second last gear even though you are driving fast enough to be in the highest gear (answer only if applicable)

Never  Very seldom  Rather seldom  Sometimes  Often  Very often
(n) Uncertain where you parked your car in a large car park

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(o) Intend to reverse but find that the car is moving forward because it is in the wrong gear (answer only if applicable)

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(p) Deliberately exceed the speed limit when overtaking

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(q) Fail to notice a traffic sign telling you that the road is temporarily closed

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(r) Intend to drive to destination A, only to suddenly find yourself on the road to destination B, perhaps because destination B is your more usual destination

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(s) Miss your exit on a freeway and have to make a lengthy detour

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(t) Misjudge the road surface and when braking find that the distance needed to stop is longer than you expected

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>
(u) Shift into the wrong gear while driving (answer only if applicable)

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
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</table>

(v) Switch on the wipers for example, when you meant to switch on something else, such as the head lights

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
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<th>Rather seldom</th>
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<th>Very often</th>
</tr>
</thead>
</table>

(w) Forget which gear you are currently in and have to check with your hand (answer only if applicable)

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(x) Deliberately turn onto a road just in front of an oncoming vehicle even though there is no other traffic behind the oncoming vehicle

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(y) Misjudge the gap to an oncoming vehicle (in the opposite lane) when overtaking and you are forced to just sweep in front of the vehicle you overtake

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(z) Turn right onto a road into the path of an oncoming vehicle that you hadn’t seen, or whose speed you misjudged

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(aa) Try to shift into a higher gear even though you’re already in the highest gear (answer only if applicable)

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>
(ab) Park against parking rules because you can’t find a parking space

☐ ☐ ☐ ☐ ☐ ☐ ☐
Never Very seldom Rather seldom Sometimes Often Very often

(ac) Misjudge your speed when turning from a road and have to slam on the brakes

☐ ☐ ☐ ☐ ☐ ☐ ☐
Never Very seldom Rather seldom Sometimes Often Very often

(ad) Cut corners and occasionally cut into the opposing lane when driving around sharp bends in rural areas

☐ ☐ ☐ ☐ ☐ ☐ ☐
Never Very seldom Rather seldom Sometimes Often Very often

(ae) Misjudge the gap to an oncoming vehicle when you are turning right and force the oncoming vehicle to slam on the brakes

☐ ☐ ☐ ☐ ☐ ☐ ☐
Never Very seldom Rather seldom Sometimes Often Very often

(af) Underestimate the speed of an oncoming vehicle (in the opposite lane) when overtaking

☐ ☐ ☐ ☐ ☐ ☐ ☐
Never Very seldom Rather seldom Sometimes Often Very often

Part D – Vehicle Purchase

1. If you were buying a car, how important would each of the following factors be in influencing your purchase? The boxes give a scale from very unimportant on the left to very important on the right.

(a) Price

☐ ☐ ☐ ☐ ☐ ☐ ☐
Very unimportant Unimportant Neutral Important Very important
(b) Manufacturer (e.g. Ford, Holden)

Very unimportant  Unimportant  Neutral  Important  Very important

(c) Type of vehicle (e.g. sports, hatchback, sedan, wagon)

Very unimportant  Unimportant  Neutral  Important  Very important

(d) Colour of the vehicle

Very unimportant  Unimportant  Neutral  Important  Very important

(e) Age of the vehicle

Very unimportant  Unimportant  Neutral  Important  Very important

(f) Size of the vehicle/Internal space

Very unimportant  Unimportant  Neutral  Important  Very important

(g) Engine capacity

Very unimportant  Unimportant  Neutral  Important  Very important

(h) Power

Very unimportant  Unimportant  Neutral  Important  Very important

(i) Look of the vehicle (i.e. style inside and out)

Very unimportant  Unimportant  Neutral  Important  Very important
(j) Fuel economy

Very unimportant Unimportant Neutral Important Very important

(k) Reliability

Very unimportant Unimportant Neutral Important Very important

(l) Air conditioning

Very unimportant Unimportant Neutral Important Very important

(m) CD player

Very unimportant Unimportant Neutral Important Very important

(n) Metallic paint

Very unimportant Unimportant Neutral Important Very important

(o) Cruise control

Very unimportant Unimportant Neutral Important Very important

(p) Alloy wheels

Very unimportant Unimportant Neutral Important Very important

(q) Safety

Very unimportant Unimportant Neutral Important Very important
2. If you responded IMPORTANT or VERY IMPORTANT for “Safety” in Question 1 above, how important would each of the following safety features be in influencing your car purchase? The boxes give a scale from very unimportant on the left to very important on the right.

(a) Driver’s airbag

(b) Front passenger’s airbag

(c) Side airbags

(d) ABS brakes

(e) Child restraint anchorage points

(f) High crash test results/safety rating

(g) Other, please specify
Part E – Experience with Technology

1. Of the following in-vehicle technologies, which ones have you used before (you can tick more than one response)?

☐ Route navigation
☐ Cruise control
☐ Reverse parking aid
☐ Speed alert
☐ Adaptive cruise control
☐ Daytime Running Lights
☐ Speed limiter
☐ Other, please specify ____________________________

Of the technologies that you have used, which ones would you like to use again?

__________________________

2. On average, how often do you access each of the following facilities:?

(a) Email

☐ Several times a day
☐ Once a day
☐ Once every two/three days
☐ Once a week
☐ Less than once a week
☐ Never
(b) Internet

☐ Several times a day
☐ Once a day
☐ Once every two/three days
☐ Once a week
☐ Less than once a week
☐ Never

(c) Telephone banking

☐ Several times a day
☐ Once a day
☐ Once every two/three days
☐ Once a week
☐ Less than once a week
☐ Never

(d) Automatic teller machine

☐ Several times a day
☐ Once a day
☐ Once every two/three days
☐ Once a week
☐ Less than once a week
☐ Never
(e) Cable television (e.g. Foxtel)?

- Several times a day
- Once a day
- Once every two/three days
- Once a week
- Less than once a week
- Never

7. Which of the following do you currently use (you can tick more than one response)?

- Personal computer/laptop
- Play station (or similar)
- Mobile phone
- WAP enabled mobile phone
- CD writer and/or Zip drive
- Digital camera
- PDA (e.g. Compaq iPAQ, Toshiba pocket pc, Palm)
- DVD player
-

Part F – Awareness of Road Safety Issues

1. (a) According to the law, under which of the following circumstances is it okay NOT to wear a seatbelt (you can tick more than one response)?

- Never
- On short trips
- When reversing
- When travelling below 10 km/h
- If start and stop driving below 25 km/h (e.g. garbage truck)
(b) When the road is dry, what is the minimum recommended following distance from a car in front (tick only one response)?

☐ 1 second
☐ 2 seconds
☐ 3 seconds
☐ 4 seconds

(c) When are you required to turn on your headlights (tick only one response)?

☐ Only at night
☐ When the street lights are on
☐ When you see other cars with headlights on
☐ Between sunset and sunrise
☐ In poor weather conditions
☐ At night and in hazardous weather conditions

2. How often do you think each of the following factors contributes to road crashes? The boxes give a scale from never on the left to very often on the right.

(a) Speeding

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Very often

(b) Drink driving

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Very often

(c) Drugs (other than alcohol)

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Very often
(d) Factors associated, in general, with old age (e.g. reduced visual acuity, slower reaction time)

Never | Rarely | Sometimes | Often | Very often
---|---|---|---|---

(e) Inattention/Lack of concentration

Never | Rarely | Sometimes | Often | Very often
---|---|---|---|---

(f) Carelessness/Negligent driving

Never | Rarely | Sometimes | Often | Very often
---|---|---|---|---

(g) Lack of driver training/Insufficient training

Never | Rarely | Sometimes | Often | Very often
---|---|---|---|---

(h) Driver fatigue

Never | Rarely | Sometimes | Often | Very often
---|---|---|---|---

(i) Disregard of road rules

Never | Rarely | Sometimes | Often | Very often
---|---|---|---|---

(j) Ignorance of road rules

Never | Rarely | Sometimes | Often | Very often
---|---|---|---|---

(k) Distraction

Never | Rarely | Sometimes | Often | Very often
---|---|---|---|---
<table>
<thead>
<tr>
<th></th>
<th>Poor road design/Poor road signage</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very often</td>
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<tr>
<td></td>
<td>Number of police officers on road/Lack of police enforcement</td>
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<tr>
<td></td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very often</td>
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<tr>
<td></td>
<td>Too few police on road/Lack of police enforcement</td>
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<td></td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very often</td>
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<td></td>
<td>Louts/Showing off/Risk taking</td>
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<td></td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very often</td>
</tr>
<tr>
<td></td>
<td>Driving too close to other cars</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very often</td>
</tr>
</tbody>
</table>
(t) Failure to turn on headlights

☐ ☐ ☐ ☐ ☐
Never Rarely Sometimes Often Very often

(u) Factors associated, in general, with being young (e.g. inexperience, risk taking)

☐ ☐ ☐ ☐ ☐
Never Rarely Sometimes Often Very often

3. In your opinion and regardless of what the law states, how safe or dangerous are each of these situations? The boxes give a scale from very dangerous on the left to very safe on the right.

(a) Travelling less than 10 km/h without a seatbelt in the front seat of the car

☐ ☐ ☐ ☐ ☐
Very dangerous Dangerous Neither safe nor dangerous Safe Very safe

(b) Driving short distances without wearing a seat belt

☐ ☐ ☐ ☐ ☐
Very dangerous Dangerous Neither safe nor dangerous Safe Very safe

(c) Travelling at 55 km/h in a 50 km/h zone

☐ ☐ ☐ ☐ ☐
Very dangerous Dangerous Neither safe nor dangerous Safe Very safe

(d) Travelling more than 10 km/h without a seatbelt in the front seat of the car

☐ ☐ ☐ ☐ ☐
Very dangerous Dangerous Neither safe nor dangerous Safe Very safe
(e) Travelling at 65 km/h in a 60 km/h zone

![Safety Rating]

Very dangerous    Dangerous    Neither safe nor dangerous    Safe    Very safe

(f) Travelling more than 10 km/h without a seatbelt in the back seat of the car

![Safety Rating]

Very dangerous    Dangerous    Neither safe nor dangerous    Safe    Very safe

(g) Travelling less than 2 seconds from the car in front in a 50 km/h zone

![Safety Rating]

Very dangerous    Dangerous    Neither safe nor dangerous    Safe    Very safe

(h) Travelling at 105 km/h in a 100 km/h zone

![Safety Rating]

Very dangerous    Dangerous    Neither safe nor dangerous    Safe    Very safe

(i) Driving long distances without wearing a seat belt

![Safety Rating]

Very dangerous    Dangerous    Neither safe nor dangerous    Safe    Very safe

(j) Travelling at 60 km/h in a 50 km/h zone

![Safety Rating]

Very dangerous    Dangerous    Neither safe nor dangerous    Safe    Very safe
(k) Not turning your headlights on during the day when driving conditions are good

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(l) Travelling at 70 km/h in a 60 km/h zone

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(m) Travelling at 70 km/h in a 50 km/h zone

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(n) Travelling **less** than 10 km/h without a seatbelt in the **back** seat of the car

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(o) Travelling at 120 km/h in a 100 km/h zone

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(p) Travelling less than 2 seconds from the car in front in a 60 km/h zone

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>
(q) Travelling at 110 km/h in a 100 km/h zone

- [ ] Very dangerous
- [ ] Dangerous
- [ ] Neither safe nor dangerous
- [ ] Safe
- [ ] Very safe

(r) Travelling less than 2 seconds from the car in front in a 100 km/h zone

- [ ] Very dangerous
- [ ] Dangerous
- [ ] Neither safe nor dangerous
- [ ] Safe
- [ ] Very safe

(s) Travelling at 80 km/h in a 60 km/h zone

- [ ] Very dangerous
- [ ] Dangerous
- [ ] Neither safe nor dangerous
- [ ] Safe
- [ ] Very safe

4. Regardless of what the law states, in a 50 km/h zone how many km/h over the limit do you think you have to be before you are considered to be speeding (tick only one response)?

- [ ] Anything over 50 km/h
- [ ] 1-5 km/h over the limit
- [ ] 6-10 km/h over the limit
- [ ] 11-15 km/h over the limit
- [ ] 16-20 km/h over the limit
- [ ] 21-25 km/h over the limit
- [ ] 26-30 km/h over the limit
- [ ] More the 30 km/h over the limit
- [ ] Don’t know
5. Regardless of what the law states, in a **60 km/h zone** how many km/h over the limit do you think you have to be before you are considered to be speeding (tick only one response)?

- [ ] Anything over 60 km/h
- [ ] 1-5 km/h over the limit
- [ ] 6-10 km/h over the limit
- [ ] 11-15 km/h over the limit
- [ ] 16-20 km/h over the limit
- [ ] 21-25 km/h over the limit
- [ ] 26-30 km/h over the limit
- [ ] More the 30 km/h over the limit
- [ ] Don’t know

6. Regardless of what the law states, in a **100 km/h zone** how many km/h over the limit do you think you have to be before you are considered to be speeding (tick only one response)?

- [ ] Anything over 100 km/h
- [ ] 1-5 km/h over the limit
- [ ] 6-10 km/h over the limit
- [ ] 11-15 km/h over the limit
- [ ] 16-20 km/h over the limit
- [ ] 21-25 km/h over the limit
- [ ] 26-30 km/h over the limit
- [ ] More the 30 km/h over the limit
- [ ] Don’t know
7. What are the **top three** factors influencing the speed at which you drive (tick three boxes only)?

- [ ] The road and weather conditions
- [ ] My chances of having a crash
- [ ] My chances of being caught
- [ ] The speed of other traffic
- [ ] The volume of traffic on the particular road
- [ ] The speed limit
- [ ] How much of a hurry I am in
- [ ] Other, Please specify
- [ ] Don’t Know

8. What are the **top three** factors influencing how close you drive to the car in front (tick three boxes only)?

- [ ] Desire to keep a 2 second gap
- [ ] The road and weather conditions
- [ ] My chances of being caught tailgating
- [ ] The gaps other drivers are adopting
- [ ] How much of a hurry I am in
- [ ] My chances of having a crash
- [ ] How good a driver I am
- [ ] Other, Please specify
- [ ] Don’t Know
9. What are the **top three** factors influencing when you turn on your head lights (tick three boxes only)?

- [ ] It is night-time
- [ ] When the street lights turn on
- [ ] When I see other cars with head lights on
- [ ] Other cars flash me
- [ ] When I want other road users to see me
- [ ] When it becomes hard to see others
- [ ] Passenger tells me to
- [ ] When I can’t see the instrument panel
- [ ] Other, Please specify ___________________________
- [ ] Don’t Know

10. Which of the following road safety advertising campaigns are you aware of (you can tick more than one response)?

- [ ] Wipe off 5
- [ ] If you drink and drive you’re a bloody idiot
- [ ] Road Aware
- [ ] Stop, revive, survive
- [ ] Don’t fool yourself, speed kills
- [ ] Drive Safe
- [ ] Take a break, fatigue kills
- [ ] Belt up or suffer the pain
- [ ] A 15 minute powernap could save your life
- [ ] Operation Clampdown

(more over page)
11. By how much can you exceed the speed limit before being booked by the police? (tick only one response)

- [ ] 1 km/h
- [ ] 5% of speed limit
- [ ] Don’t know
- [ ] 10% of speed limit
- [ ] Other, Please specify

12. What is the likelihood of being caught by the police for:?
(The boxes give a scale from very unlikely on the left to very likely on the right.)

(a) Travelling 5 km/h over the speed limit

- [ ] Very unlikely
- [ ] Unlikely
- [ ] Neither likely nor unlikely
- [ ] Likely
- [ ] Very likely

(b) Driving without your seat belt on

- [ ] Very unlikely
- [ ] Unlikely
- [ ] Neither likely nor unlikely
- [ ] Likely
- [ ] Very likely

(c) Travelling 10 km/h over the speed limit

- [ ] Very unlikely
- [ ] Unlikely
- [ ] Neither likely nor unlikely
- [ ] Likely
- [ ] Very likely

(d) Travelling too close to the car in front

- [ ] Very unlikely
- [ ] Unlikely
- [ ] Neither likely nor unlikely
- [ ] Likely
- [ ] Very likely
(e) Reversing in an unsafe manner

- Very unlikely
- Unlikely
- Neither likely nor unlikely
- Likely
- Very likely

(f) Travelling 20 km/h over the speed limit

- Very unlikely
- Unlikely
- Neither likely nor unlikely
- Likely
- Very likely

(g) Driving without your head lights on when required

- Very unlikely
- Unlikely
- Neither likely nor unlikely
- Likely
- Very likely

13. (a) The current fine for a driver who is caught exceeding the speed limit by less than 10 km/h is $125. Do you think that the current fine is:

- Far too low
- Too low
- Just right
- Too high
- Far too high

(b) The current fine for a driver who is caught not wearing his/her seat belt is $135. Do you think that the current fine is:

- Far too low
- Too low
- Just right
- Too high
- Far too high

(c) The current fine for a driver who is caught without his/her headlights on when they should be on is $135. Do you think that the current fine is:

- Far too low
- Too low
- Just right
- Too high
- Far too high
(d) The current fine for a driver who is caught following too closely to the car in front is $135. Do you think that the current fine is:

- [ ] Far too low
- [ ] Too low
- [ ] Just right
- [ ] Too high
- [ ] Far too high

(e) The current fine for a driver who is caught reversing when unsafe is $105. Do you think that the current fine is:

- [ ] Far too low
- [ ] Too low
- [ ] Just right
- [ ] Too high
- [ ] Far too high

Part G – Attitudes towards driving behaviours

1. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) I am comfortable driving close behind another car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(b) Speeding is always wrong

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) It makes sense to exceed speed limits to get ahead of Sunday drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(d) If you are a good driver it is acceptable to drive a little faster

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree

(e) When road conditions are good and nobody is around driving in excess of 100 km/h in an 80 km/h zone is okay

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree

(f) I will ride as a passenger with someone who speeds if others are also in the car

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree

(g) I think it is okay to exceed the speed limit if you are driving safely

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree

(h) If you increase your driving speed by 5 km/h you are significantly more likely to be involved in a crash

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree

(i) A crash at 70 km/h will be a lot more severe than a crash at 60 km/h

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
(j) It is easy to avoid being caught speeding

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(k) Speeding enforcement is more for revenue raising than for safety

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(l) Speed limits are too low – it is usually safe to drive faster than the speed limit

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(m) It doesn’t bother me if other people speed

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(n) You don’t need to wear a seat belt to be safe if you are sitting in the back seat

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(o) It is safe to speed on roads that are familiar

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(p) People who exceed speed limits are a major contributor to crashes

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(q) Wearing a seatbelt will significantly reduce my chances of serious injury in the event of crash

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(r) I only wear a seatbelt because I am required to by law

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(s) If I am not wearing a seatbelt it is very likely that I will be pulled over by the police

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(t) It makes sense to tailgate when the driver in front is going too slowly

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(u) A 2 second gap from the car in front is far too big

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(v) If you are a good driver it is acceptable to drive close behind another car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(w) When road conditions are good it is okay to drive close to the car in front

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(x) I will drive close to the car in front if everyone else is

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(y) The closer you are to the car in front, the more likely you are to be involved in a crash

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(z) People who tailgate are a major contributor to crashes

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(aa) I drive close to the car in front because I know I can get away with it

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(ab) I think it is okay to drive close to the car in front if it is safe to do so

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(ac) It doesn’t bother me if other people drive close behind me

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(ad) On a sunny day there is no point turning your headlights on

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(ae) You are less likely to have a crash during the day if you have your headlights on

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(af) Other motorists are more likely to see you during the day if you have your headlights on

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
Part H – Attitudes towards ITS technologies

1. I would like a car that: (The boxes give a scale from strongly disagree on the left to strongly agree on the right.)

(a) Automatically warns me if I am exceeding the speed limit

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(b) Automatically warns me if I am following a car in front too closely

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(c) Stops me from exceeding the speed limit

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(d) Automatically warns me if anyone in the car is not wearing their seat belt

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(e) Stops me from following a car in front too closely

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(f) Automatically warns me if I am about to collide with a vehicle in front

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(g) Prevents me from starting the car if someone in the car does not have their seat belt on

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) Automatically warns me if I am about to collide with an object while reversing

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) Automatically turns the headlights on for me during the day

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(j) Prevents me from colliding with a vehicle in front

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(k) Automatically warns me if I am becoming fatigued

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(l) Automatically warns me if my Blood Alcohol Concentration is over 0.05

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(m) Prevents me from colliding with an object while reversing

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(n) Automatically warns me if I start drifting out of my lane

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(o) Pulls over and parks itself if it detects I am becoming fatigued

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(p) Prevents me from starting the car if my Blood Alcohol Concentration is over 0.05

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(q) Gives me turn-by-turn instructions on how to get from one location to another

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(r) Let’s me see pedestrians and road users more clearly at night

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(s) Prevents me from drifting out of my lane

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(t) Automatically dials for, and sends, an ambulance to my location if I have a crash

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) Prevents me from starting the car if I am not licensed to drive it

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

Part I – Attitudes towards road safety measures

1. In your opinion, how effective are each of the following measures in helping you to keep to the speed limit? The boxes give a scale from very ineffective on the left to very effective on the right.

(a) Penalties (e.g. fines, demerit points)

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

(b) Speed cameras

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

(c) Speed humps

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

(d) Roundabouts

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective
(e) Speed signs

[ ] Very ineffective
[ ] Ineffective
[ ] Neither effective nor ineffective
[ ] Effective
[ ] Very effective

(f) Advertising

[ ] Very ineffective
[ ] Ineffective
[ ] Neither effective nor ineffective
[ ] Effective
[ ] Very effective

(g) In-car technologies that warn you if you are exceeding the speed limit

[ ] Very ineffective
[ ] Ineffective
[ ] Neither effective nor ineffective
[ ] Effective
[ ] Very effective

(h) Speed guns

[ ] Very ineffective
[ ] Ineffective
[ ] Neither effective nor ineffective
[ ] Effective
[ ] Very effective

(i) Police car presence

[ ] Very ineffective
[ ] Ineffective
[ ] Neither effective nor ineffective
[ ] Effective
[ ] Very effective

(j) Traffic islands

[ ] Very ineffective
[ ] Ineffective
[ ] Neither effective nor ineffective
[ ] Effective
[ ] Very effective
2. In your opinion, how effective are each of the following measures in helping you travel at a safe distance from the car in front? The boxes give a scale from very ineffective on the left to very effective on the right.

(a) Penalties (e.g. fines)

(b) In-car technologies that warn you if you are travelling less than 2 seconds from the car in front

(c) Chevrons on the road

(d) 2 second rule

(e) Police car presence

(f) Electronic sign that tells you if you are too close to the car ahead
3. In your opinion, how effective are each of the following measures in reminding you wear your seatbelt? The boxes give a scale from very ineffective on the left to very effective on the right.

(a) In-car technologies that warn you if you or one of your passengers is not wearing his/her seat belt

(b) Advertising/Education

(c) Police car presence

(d) Penalties (e.g. fines)

(e) Speed and red light cameras (that can see unbelted occupants)
4. In your opinion, how effective are each of the following measures in helping you to reverse safely? The boxes give a scale from very ineffective on the left to very effective on the right.

(a) In-car technologies that issue more urgent warnings as you get closer to an object while reversing

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

(b) Penalties (e.g. fines)

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

End of questionnaire
Appendix AA  Preliminary Questionnaire
Time 2
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Preliminary Questionnaire Time 2

Seat Belt Reminder System

1. When driving, how often do you wear a seat belt?

☐ Never  ☐ Rarely  ☐ Sometimes  ☐ Often  ☐ Always

2. If you responded “NEVER”, “RARELY”, “SOMETIMES” or “OFTEN” to Question 1, what is your main reason for not wearing a seat belt (select only one response)?

☐ I forget to put it on
☐ Seat belts are uncomfortable
☐ Few other cars on the road
☐ Seat belts are too fiddly to put on
☐ I don’t think wearing a seat belt in any situation makes me any safer
☐ I’m travelling at a low speed
☐ I’m reversing from a driveway or car park
☐ Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt
☐ I can’t be bothered putting my seat belt on
☐ I’m only travelling a short distance
☐ There is little chance of getting a fine for not wearing a seat belt
☐ Other, Please specify: ____________________________________________
3. To what extent do you feel that the Seat Belt Reminder System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<p>| | | | |</p>
<table>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>No use</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

4. If you gave a score of 0 to Question 3, why do you think the Seat Belt Reminder System will be of no use to you (select only one response):?

- I always wear my seat belt anyway
- I know when it is safe to drive without a seat belt
- There is little chance of getting a fine for not wearing a seat belt
- I don’t believe that wearing a seat belt in any situation will make me any safer
- Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt
- Seat belts are uncomfortable
- It would take away the enjoyment of driving
- Seat belts are too fiddly to put on
- I can’t be bothered putting my seat belt on
- Other, Please specify: __________________________

5. When you are driving, how often do you ensure that your passengers are wearing their seat belts?

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<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
</tr>
</tbody>
</table>

6. If you responded “NEVER”, “RARELY”, “SOMETIMES” or “OFTEN” to Question 5, what is your main reason for not ensuring your passengers are wearing their seat belts (select only one response)?

- I never carry passengers
- It is their responsibility, not mine

(more options over page)
7. To what extent do you think that the Seat Belt Reminder System will be of use to you in letting you know if any of your passengers are not wearing their seat belts? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

- [ ] 0  No use
- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5  Always of use

8. If you gave a score of 0 to Question 7, why do you think the Seat Belt Reminder System will be of no use to you in letting you know if any of your passengers are not wearing their seat belts (select only one response):?

- [ ] I never carry passengers
- [ ] I always check anyway that my passengers are wearing their seat belts
- [ ] It doesn’t matter if my passengers don’t wear their seat belts, because wearing a seat belt won’t make them any safer
- [ ] My passengers always wear their seat belts, so there is no need to have warnings for them
- [ ] I always drive safely so there is no need for passengers to have to wear a seat belt
- [ ] There is little chance of getting a fine for not wearing a seat belt
- [ ] It is up to my passengers whether they wear a seat belt – it is not my responsibility
- [ ] Other, Please specify:  

□ I don’t think about it
□ I assume that they will always put on their seat belts
□ I don’t care whether they wear their seat belt or not
□ Other, Please specify: 
9. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Warnings from the Seat Belt Reminder System are unnecessary when reversing out of a driveway or a parking spot

(b) The Seat Belt Reminder System will be of most benefit to drivers who forget to put their seat belts on

(c) The Seat Belt Reminder System is not necessary when there are hardly any other cars on the road

(d) There is no need for the Seat Belt Reminder System when travelling at speeds of less than 10 km/h

(e) There is no need for the Seat Belt Reminder System when travelling at speeds of greater than 10 km/h

(f) The Seat Belt Reminder System is a real necessity for people who do not put their seat belts on when travelling short distances
(g) The Seat Belt Reminder System will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(h) I will end up relying too strongly on the Seat Belt Reminder System to remind me to fasten my seat belt

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(i) I will end up relying too strongly on the Seat Belt Reminder System to let me know if any of my passengers are not wearing their seat belts

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</table>

(j) After having driven the car with the Seat Belt Reminder System, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a Seat Belt Reminder System

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(k) I will lose trust in the Seat Belt Reminder System if it does not issue warnings when it should issue warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(l) I will lose trust in the Seat Belt Reminder System if it issues false warnings

<table>
<thead>
<tr>
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<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(m) The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree

(n) The Seat Belt Reminder System should be compulsory for all drivers

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree

(o) The Seat Belt Reminder System should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree

(p) The Seat Belt Reminder System takes too much control away from the driver

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree

(q) I would prefer it if, rather than just warning the driver, the Seat Belt Reminder System prevented the driver from starting the car if someone in the car is not wearing a seat belt

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree

(r) The Seat Belt Reminder System will make it easier for me to encourage my passengers to fasten their seat belts

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree

(s) I will drive more safely with the Seat Belt Reminder System in my car

Strongly disagree
Disagree
Neither agree nor disagree
Agree
Strongly agree
(t) I will enjoy driving less as a result of having the Seat Belt Reminder System in my car

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(u) I would prefer a Seat Belt Reminder System that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers)

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

10. For most drivers, what effect on seat belt wearing will the Seat Belt Reminder System have in each of the following conditions/situations?:

- Reversing
  - Increase wearing
  - No change
  - Decrease wearing

- Driving short distances
  - Increase wearing
  - No change
  - Decrease wearing

- Low traffic levels
  - Increase wearing
  - No change
  - Decrease wearing

- Speeds less than 10km/h
  - Increase wearing
  - No change
  - Decrease wearing

- Speeds more than 10km/h
  - Increase wearing
  - No change
  - Decrease wearing

11. What effect on seat belt wearing will the Seat Belt Reminder System have on drivers who do not wear seat belts for the following reasons?:

- Forget to put seat belt on
  - Increase wearing
  - No change
  - Decrease wearing

- Believe that seat belts are uncomfortable to wear
  - Increase wearing
  - No change
  - Decrease wearing

- Believe that seat belts are too fiddly to put on
  - Increase wearing
  - No change
  - Decrease wearing

- Believe that wearing seat belts is a violation of freedom
  - Increase wearing
  - No change
  - Decrease wearing
Can’t be bothered putting their seat belt on
Believe that there is little chance of getting a fine for not wearing a seat belt
Believe that wearing seat belts does not enhance safety

12. What effect will the Seat Belt Reminder System have on each of the following?

- Incidence of crashes
- Crash severity
- Injury severity
- Probability of being fined

13. How much would you be willing to pay for the Seat Belt Reminder System if it were an optional feature in a new car?

- Purchase: $__________
- Maintenance/service: $__________ (assume yearly)

14. How much would you be willing to pay for the Seat Belt Reminder System if it were able to be retrofitted to an existing car?

- Purchase: $__________
- Installation: $__________
- Maintenance/service: $__________ (assume yearly)

15. Hypothetically, if you had the option of keeping the Seat Belt Reminder System in your vehicle at the end of the study (at no extra cost), would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.
If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Speed Warning System

1. When driving, how often would you exceed the speed limit by 3 km/h or more?

   - Never
   - Rarely
   - Sometimes
   - Often
   - Always

2. If you responded “RARELY”, “SOMETIMES”, “OFTEN” or “ALWAYS” to Question 1, what is your main reason for exceeding the speed limit by 3 km/h or more (select only one response)?

   - I don’t notice I’m speeding
   - It is fun
   - It doesn’t make any difference to my safety
   - I’m travelling at a low speed
   - I’m in a hurry
   - I won’t get caught/fined
   - There are few or no other cars around
   - It is my choice – I shouldn’t have to follow the speed limits
   - I am a good driver and I can control my car at any speed
   - Cars around me carry me over the speed limit
   - The speed limit is too low

   (more options over page)
I aim to travel at the speed limit, but occasionally I edge over before reducing my speed again

Other, Please specify:  

3. To what extent do you feel that the Speed Warning System **will be of use to you**? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No use</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Always of use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. If you gave a score of 0 to Question 3 above, why do you think the Speed Warning System **will be of no use to you** (select only one response):?

- [ ] I never exceed the speed limit
- [ ] It is my choice whether I speed or not
- [ ] I never get caught for exceeding the speed limit
- [ ] The speed limits are too low
- [ ] It is out of my control if cars around me carry me over the speed limit
- [ ] It would take away the enjoyment of driving
- [ ] I am a good driver anyway and I know when it is safe to exceed the speed limit
- [ ] Exceeding the speed limit does not make any difference to my safety
- [ ] Other, Please specify:  

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Receiving warnings from the Speed Warning System for exceeding the speed limit will be really helpful in areas where there are lots of pedestrians, such as in strip shopping centres or outside schools

(b) Warnings from the Speed Warning System are unnecessary in 60 km/h zones

(c) I will drive more safely with the Speed Warning System in my car

(d) There is no need for the Speed Warning System when travelling on the freeway

(e) There is no need for the Speed Warning System when travelling on rural roads

(f) Receiving warnings from the Speed Warning System for exceeding the speed limit in 100 km/h zones is unnecessary
(g) Warnings from the Speed Warning System are necessary in 50 km/h zones

Strongly disagree □ □ □ □ □
Disagree □ □ □ □ □
Neither agree nor disagree □ □ □ □ □
Agree □ □ □ □ □
Strongly agree □ □ □ □ □

(h) There is a need for the Speed Warning System when road conditions are poor (e.g. slippery road, poor visibility)

Strongly disagree □ □ □ □ □
Disagree □ □ □ □ □
Neither agree nor disagree □ □ □ □ □
Agree □ □ □ □ □
Strongly agree □ □ □ □ □

(i) The Speed Warning System is not necessary when there are hardly any other cars on the road

Strongly disagree □ □ □ □ □
Disagree □ □ □ □ □
Neither agree nor disagree □ □ □ □ □
Agree □ □ □ □ □
Strongly agree □ □ □ □ □

(j) The Speed Warning System will be of most benefit to drivers who repeatedly exceed the speed limit without realising it

Strongly disagree □ □ □ □ □
Disagree □ □ □ □ □
Neither agree nor disagree □ □ □ □ □
Agree □ □ □ □ □
Strongly agree □ □ □ □ □

(k) Warnings from the Speed Warning System are unnecessary in 80 km/h zones

Strongly disagree □ □ □ □ □
Disagree □ □ □ □ □
Neither agree nor disagree □ □ □ □ □
Agree □ □ □ □ □
Strongly agree □ □ □ □ □

(l) The Speed Warning System is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Ballarat and Bendigo

Strongly disagree □ □ □ □ □
Disagree □ □ □ □ □
Neither agree nor disagree □ □ □ □ □
Agree □ □ □ □ □
Strongly agree □ □ □ □ □

(m) The Speed Warning System will be wasted on drivers who speed intentionally – these drivers will ignore or override the warnings

Strongly disagree □ □ □ □ □
Disagree □ □ □ □ □
Neither agree nor disagree □ □ □ □ □
Agree □ □ □ □ □
Strongly agree □ □ □ □ □
(n) After having driven the car with the Speed Warning System, I will probably be less likely to exceed the speed limit when driving a car that is not fitted with a Speed Warning System

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(o) The enjoyment of driving will decrease as a result of driving with the Speed Warning System

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(p) I will be able to concentrate more on the traffic when the Speed Warning System is enabled than when it is not because I will not have to look out for speed signs

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(q) The warnings of the Speed Warning System could distract me from my driving, compromising my safety and that of any passengers that I might be carrying

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(r) The Speed Warning System will allow me to spend more time attending to the traffic because I will not have to look as much at the speedometer to monitor my speed

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(s) I will lose trust in the Speed Warning System if it issues false warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(t) I will end up relying too strongly on the Speed Warning System to let me know if I am exceeding the speed limit at the expense of my own judgement

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(u) I will lose faith in the Speed Warning System if it does not issue warnings when it should issue warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(v) The Speed Warning System should be compulsory for all drivers

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(w) The Speed Warning System should only be compulsory for drivers who have been booked on multiple occasions for exceeding the speed limit

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(x) The Speed Warning System takes too much control away from the driver

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(y) Rather than a system that simply warns the driver, I would prefer a Speed Warning System that made it impossible for the driver to exceed the speed limit

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(z) It would not bother me if the Speed Warning System were used as a device by authorities to monitor and track car speeds and locations on the road network

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

(aa) I would prefer a Speed Warning System that I could turn on or off as required depending on the situation (e.g. turn off if in a hurry, turn on if I am travelling on a road where I know that there are speed cameras)

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

6. For most drivers, what effect on travel speed will the Speed Warning System have in each of the following areas/conditions:?

<table>
<thead>
<tr>
<th>Area/Condition</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freeways</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low traffic levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor road conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. What effect on travel speed will the Speed Warning System have on drivers who exceed the speed limit for the following reasons:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed inadvertently increased speed</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Speed for fun increased speed</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Believe it is safe to speed increased speed</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>In a hurry increased speed</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Believe they won’t get caught/ fined for speeding increased speed</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Believe they shouldn’t have to follow speed limits increased speed</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Believe they can control their car safely at any speed increased speed</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Believe that the speed limit is too low increased speed</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Carried over the speed limit by other cars increased speed</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Aim to travel at the speed limit, but occasionally edge over before reducing speed again increased speed</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
</tbody>
</table>

8. What effect will the Speed Warning System have on each of the following:

<table>
<thead>
<tr>
<th>Influence</th>
<th>Increase</th>
<th>No change</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence of crashes</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Crash severity</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Fuel consumption</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Travel time</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Probability of being fined</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
</tbody>
</table>
9. How much would you be willing to pay for the Speed Warning System if it were an optional feature in a new car?

| Purchase | $            |
| Maintenance/service | $ (assume yearly) |

10. How much would you be willing to pay for the Speed Warning System if it were able to be retrofitted to an existing car?

| Purchase | $            |
| Installation | $          |
| Maintenance/service | $ (assume yearly) |

11. Hypothetically, if you had the option of keeping the Speed Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- [ ] Very Disinterested
- [ ] Disinterested
- [ ] Neither interested nor disinterested
- [ ] Interested
- [ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

---

**Daytime Running Lights**

1. When driving during the day and the weather is good, how often do you turn on your headlights?

- [ ] Never
- [ ] Rarely
- [ ] Sometimes
- [ ] Often
- [ ] Always
2. If you responded “NEVER”, “RARELY”, “SOMETIMES” or “OFTEN” to Question 1, what is your **main** reason for not turning on your headlights during the day when the weather is good (select only one response)?

- [ ] I forget to turn them on
- [ ] Headlights aren’t required to see other road users during the day when the weather is good
- [ ] Turning the headlights on will put strain on the car battery
- [ ] Other people can see me, even without my headlights on, when the weather is good
- [ ] Turning the headlights on will reduce the life of the headlamps
- [ ] There are few or no other cars on the road
- [ ] Can’t be bothered
- [ ] I have a light coloured car
- [ ] Other, Please specify: ____________________

3. To what extent do you feel that Daytime Running Lights **will be of use to you**? A score of 0 means that the Daytime Running Lights will be of no use to you while a score of 5 means that they will always be of use to you.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No use</td>
<td>Always of use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. If you gave a score of 0 to Question 3, why do you think the Daytime Running Lights **will be of no use to you** (select only one response)?

- [ ] I always turn on the headlights during the day anyway – even when the weather is good
- [ ] They would take away the enjoyment of driving
- [ ] Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users
- [ ] You can’t get fined for not turning on your headlights during the day
I have a light coloured car

Other, Please specify: 

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Daytime Running Lights are not needed when there are hardly any other cars or pedestrians on the road

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(b) Daytime Running Lights are a real necessity for drivers who forget to turn their headlights on during the day

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(c) Daytime Running Lights should be compulsory for all drivers

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(d) Daytime Running Lights will reduce my fuel economy

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(e) Daytime Running Lights will put extra strain on my car battery

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(f) I will need to change the headlamps more often because of the Daytime Running Lights

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(g) I will be safer with the Daytime Running Lights equipped to my car

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(h) Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(i) Driving will be less enjoyable with Daytime Running Lights in my car

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

6. What effect will Daytime Running Lights have on each of the following?:

- Incidence of crashes: [ ] Increase [ ] No change [ ] Decrease
- Crash severity: [ ] Increase [ ] No change [ ] Decrease
- Injury severity: [ ] Increase [ ] No change [ ] Decrease
- Probability of being fined: [ ] Increase [ ] No change [ ] Decrease

7. How much would you be willing to pay for Daytime Running Lights if they were an optional feature in a new car?

- Purchase $________
- Maintenance/service $________ (assume yearly)

8. How much would you be willing to pay for Daytime Running Lights if they were able to be retrofitted to an existing car?

- Purchase $________
- Installation $________
- Maintenance/service $________ (assume yearly)
9. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Reverse Collision Warning

1. To what extent do you feel that Reverse Collision Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

2. If you gave a score of 0 to Question 1, why do you think the Reverse Collision Warning System will be of no use to you (select only one response):?

I am always on the lookout anyway when I reverse

It would take away the enjoyment of driving

I prefer to use other methods to help me reverse without hitting objects behind me (e.g. reflection in shop window)

Other, Please specify:
3. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) I will lose trust in the Reverse Collision Warning System if it fails to issue warnings when it should issue warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(b) I will lose trust in the Reverse Collision Warning System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) I will end up relying more on the Reverse Collision Warning System than my own lookout while reversing

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) The Reverse Collision Warning System should be compulsory in all vehicles

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(e) The Reverse Collision Warning System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) I would prefer it if the Reverse Collision Warning System made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(g) The enjoyment of driving will increase as a result of having the Reverse Collision Warning System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) I will drive more safely with the Reverse Collision Warning System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) I would prefer a Reverse Collision Warning System that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. What effect will the Reverse Collision Warning System have on each of the following?:

- Incidence of crashes: [ ] Increase [ ] No change [ ] Decrease
- Crash severity: [ ] Increase [ ] No change [ ] Decrease

5. How much would you be willing to pay for the Reverse Collision Warning System if it were an optional feature in a new car?

- Purchase: $
- Maintenance/service: $(assume yearly)

6. How much would you be willing to pay for the Reverse Collision Warning System if it were able to be retrofitted to an existing car?

- Purchase: $
- Installation: $
- Maintenance/service: $(assume yearly)
7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- [ ] Very Disinterested
- [ ] Disinterested
- [ ] Neither interested nor disinterested
- [ ] Interested
- [ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

---

Speed Request Button

1. To what extent do you feel that Speed Request Button will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

- [ ] 0 No use
- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5 Always of use

2. If you gave a score of 0 to Question 1, why do you think the Speed Request Button will be of no use to you (select only one response):?

- [ ] I always know what the speed limits are anyway
- [ ] Knowing the speed limits won’t change the way I drive
- [ ] It would take away the enjoyment of driving
- [ ] I prefer to rely on my own judgement exclusively and look out for speed limit signs myself
- [ ] Other, Please specify: [ ]
3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Speed Request Button will be really helpful in areas where speed limit signs are displayed infrequently

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(b) The Speed Request Button will be really helpful in areas where I think there are speed cameras

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(c) I will not use the Speed Request Button if it issues inaccurate speed limit advice

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(d) The Speed Request Button is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Bendigo and Ballarat

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(e) I will drive more safely with the Speed Request Button in my car

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(f) The enjoyment of driving will decrease if I use the Speed Request Button

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
(g) The Speed Request Button should be compulsory in all vehicles

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. What effect will the Speed Request Facility have on each of the following:?

- Incidence of crashes
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease
- Crash severity
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease
- Probability of being fined
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease

5. How much would you be willing to pay for the Speed Request Button if it were an optional feature in a new car?

- Purchase $________
- Maintenance/service $________ (assume yearly)

6. How much would you be willing to pay for the Speed Request Button if it were able to be retrofitted to an existing car?

- Purchase $________
- Installation $________
- Maintenance/service $________ (assume yearly)

7. Hypothetically, if you had the option of keeping the Speed Request Button in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- [ ] Very Disinterested
- [ ] Disinterested
- [ ] Neither interested nor disinterested
- [ ] Interested
- [ ] Very interested
Following Distance Warning

1. When driving, how often would you travel less than 2 seconds from the car in front?

- [ ] Never
- [ ] Rarely
- [ ] Sometimes
- [ ] Often
- [ ] Always

2. If you responded “RARELY”, “SOMETIMES”, “OFTEN” or “ALWAYS” to Question 1, what is your **main** reason for travelling less than 2 seconds from the car in front (select only one response)?

- [ ] I don’t notice
- [ ] It is fun
- [ ] I don’t want other drivers to cut in front of me
- [ ] There is a lot of traffic
- [ ] It doesn’t make any difference to my safety
- [ ] The car in front is driving too slowly
- [ ] I’m in a hurry
- [ ] I won’t get caught/fined
- [ ] It is my choice – I can drive as close as I like to the car in front
- [ ] I am a good driver and I can control my car regardless of how close I am to the car in front

- [ ] Other, Please specify: ____________________________
3. To what extent do you feel that Following Distance Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

[ ] 0         [ ] 1                  [ ] 2                  [ ] 3                  [ ] 4                  [ ] 5
No use        Always of use

4. If you gave a score of 0 to Question 3 above, why do you think the Following Distance Warning System will be of no use to you (select only one response):

[ ] I never drive less than 2 seconds from the car in front
[ ] It is my choice as to how close I drive to the car in front
[ ] There is little chance of getting caught/fined for tailgating
[ ] It would take away the enjoyment of driving
[ ] I am a good driver anyway and I know when it is safe to drive less than 2 seconds from the car in front
[ ] I don’t believe that keeping a gap of at least 2 seconds from the car in front will make me any safer
[ ] Other, Please specify: ____________________________

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Following Distance Warning System will be helpful when travelling on the freeway

[ ] Strongly disagree    [ ] Disagree    [ ] Neither agree nor disagree    [ ] Agree    [ ] Strongly agree

(b) Warnings from the Following Distance Warning System will be more of a nuisance than a help in heavy traffic

[ ] Strongly disagree    [ ] Disagree    [ ] Neither agree nor disagree    [ ] Agree    [ ] Strongly agree
(c) The Following Distance Warning System will be helpful to drivers who do not have a clear view of the car ahead because of poor weather conditions (e.g. fog)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) There is no need for the Following Distance Warning System when travelling on rural roads

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(e) I will drive more safely with the Following Distance Warning System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) Warnings from the Following Distance Warning System are unnecessary in 50 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) Receiving warnings from the Following Distance Warning System will be really helpful in 100 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) Warnings from the Following Distance Warning System are necessary in 60 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(i) The Following Distance Warning System is of little use when there are few other cars on the road

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(j) Warnings from the Following Distance Warning System are unnecessary in 80 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(k) Following Distance Warnings will be useful for alerting distracted or fatigued drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(l) The Following Distance Warning System will be really helpful when approaching intersections or roundabouts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(m) The enjoyment of driving will decrease as a result of driving with the Following Distance Warning System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(n) As a result of driving a car with the Following Distance Warning System, I will be less likely to tailgate when driving a car that is not fitted with a Following Distance Warning System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(o) The warnings from the Following Distance Warning System could distract me from my driving, affecting my safety and my passengers’ safety

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(p) I will lose faith in the Following Distance Warning System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(q) I will lose trust in the Following Distance Warning System if it fails to issue warnings when it should issue warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(r) The Following Distance Warning System should be compulsory for all drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) Instead of using on my own judgement, I am likely to end up waiting until I hear warnings from the Following Distance Warning System before I back off from the car in front

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(t) The Following Distance Warning System should only be compulsory for drivers who have been booked on several occasions for tailgating and/or have had several rear-end collisions

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(u) The Following Distance Warning System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(v) I would prefer a Following Distance Warning System that made it impossible for the driver to get to within 2 seconds or less from the car in front

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(w) I would prefer a Following Distance Warning System that I could turn on or off as required depending on the traffic situation

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

6. For most drivers, what effect on following distance will the Following Distance Warning System have in each of the following areas/conditions?:

- 50 km/h zone
  - [ ] Increase following distance
  - [ ] No change
  - [ ] Decrease following distance

- 60 km/h zone
  - [ ] Increase following distance
  - [ ] No change
  - [ ] Decrease following distance

- 80 km/h zone
  - [ ] Increase following distance
  - [ ] No change
  - [ ] Decrease following distance

- 100 km/h zone
  - [ ] Increase following distance
  - [ ] No change
  - [ ] Decrease following distance

- Freeways
  - [ ] Increase following distance
  - [ ] No change
  - [ ] Decrease following distance

- Rural
  - [ ] Increase following distance
  - [ ] No change
  - [ ] Decrease following distance
<table>
<thead>
<tr>
<th>Scenario</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficult to see road ahead</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intersections/Round-a-bouts</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. What effect on following distance will the Following Distance Warning System have on drivers who follow cars too closely for the following reasons:?

- Don’t notice that they are following cars too closely
- Believe that following cars too closely is fun
- Believe that following cars too closely has no effect on safety
- In a hurry
- Believe that they won’t get caught/fined
- Believe that they can drive as close to cars as they like because it is their choice
Believe that they can control their car regardless of how close they are to the car in front

Car in front driving too slowly

Do not want other drivers cutting in front of them

8. What effect will the Following Distance Warning System have on each of the following:

Incidence of crashes
Crash severity
Probability of being fined

9. How much would you be willing to pay for the Following Distance Warning System if it were an optional feature in a new car?

Purchase $__________
Maintenance/service $__________ (assume yearly)

10. How much would you be willing to pay for the Following Distance Warning System if it were able to be retrofitted to an existing car?

Purchase $__________
Installation $__________
Maintenance/service $__________ (assume yearly)
11. Hypothetically, if you had the option of keeping the Following Distance Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested  Disinterested  Neither interested nor disinterested  Interested  Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

End of questionnaire
Appendix AB  Interim Questionnaire Time 1
Interim Questionnaire Time 1

Aims of the questionnaire

To measure the workload experienced by participants under the following conditions:
- while driving during the period before the SafeCar systems became active;
- while reversing during the period before the SafeCar systems became active;
- while driving and Seat Belt Reminder system warnings were being issued; and
- while reversing and Reverse Collision Warning system warnings were being issued.

To assess participants’ perceptions of the usability of the information/warnings issued by the following systems:
- Seat Belt Reminder; and
- Reverse Collision Warning.

To whom should this questionnaire be administered?

Interim Questionnaire Time 1 should be administered to all participants, regardless of whether they are in the treatment or control group.

When during the study should this questionnaire be administered?

Interim Questionnaire Time 1 should be administered at the point in the study sequence when 2,250 kilometres of driving have been accumulated (excluding the Familiarisation period). This corresponds to the point 750 kilometres into the Before 2 and Control 2 period (treatment and control groups, respectively).

How should this questionnaire be administered?

This questionnaire is designed to be completed by the participant in person. The questions on workload follow the format of the NASA – Raw Task Load Index (NASA-Raw TLX), which was designed for completion by the participant on his/her own. To my knowledge, the NASA – Raw TLX has not been validated for administration via any other method (e.g. telephone). Inspection of the questionnaire form serves to show that, given the type of task that the participant is asked to perform (i.e. place a line at the appropriate point on the scale), the questionnaire would indeed be difficult to undertake over the telephone. For this reason, it is important that all participants complete the questionnaire in person. We have chosen a “paper-and-pencil” format, although, there are studies that have asked participants to enter responses directly onto a computer. The “paper-and-pencil” format is the preferred option here, since it offers the flexibility of allowing participants to complete the questionnaire at a time during the day and at a location that is most suitable for them.
Arranging for administration of the questionnaire

Assuming participants drive, on average, 750 kilometres per week (based on 40,000 km/year), participants will be ready to undertake Interim Questionnaire Time 1 three weeks after having carried out their Briefing and Training session, which marks the first day of the study. However, a given participant may accumulate kilometres at a faster rate than expected. Consequently, for every participant, it is recommended that, after two weeks of having commenced the study, the experimenter contacts the participant in order to find out the current odometer reading of that participant’s SafeCar and whether there have been any instances of the flashing button being pressed. This information, plus previously determined knowledge of the initial odometer reading, will help to establish the rate at which the participant is accruing the kilometres and, therefore, when the participant will be ready to undertake the questionnaire.

During the phone call the experimenter should also explain to the participant that, shortly (e.g. few days, week) he/she will receive in the mail the next questionnaire, which needs to be completed within two days of its receipt. The experimenter should also check with the participant that he/she is happy to complete the questionnaire on his/her own and his/her own time.

Development of Interim Questionnaire Time 1

Measurement of Subjective Workload

The sections on subjective mental workload follow the NASA – Raw TLX. Unlike the NASA – TLX, the Raw TLX does not require participants to make paired comparisons of the workload dimensions in order to derive weights. Essentially, the Raw TLX is both easier to administer and complete and takes less time to complete than the traditional TLX. Critically, it has been found that the total workload measures of the TLX (based on paired comparison derived weights) and the Raw TLX (based on an average of the six dimensions) yield essentially equivalent outcomes (Byers, Bittner & Hill, 1989).

The scale for each workload dimension measures to 10 centimetres. Therefore, to determine the exact numerical score (out of 10), where 0 is “low” and 10 is “high”, requires use of a ruler. Each workload dimension in the NASA – Raw TLX is scored out of 100. Once we have determined the score for a given dimension out of 10, it would be a simple matter to multiply that score by 10 to give a score out of 100 for that dimension of workload.
Measurement of Usability

As defined in the current study, the usability of a system contributes to the overall acceptability of a system. Specifically, the usability of the system is determined by the user’s perception of the quality of the interface. To be usable a system must be:

- Easy to learn how to use and to remember how to use (users must be able to use the system given the level of training provided and they must be able to remember how to use the system after a period of not having used the system);
- Effective and easy to use (once they have learned how to use the system, users must find the system easy to use – users must be able to respond to the system efficiently and with few errors); and
- Satisfying to use (users must be happy with the look and feel of the system).

Each of these usability “dimensions” was captured in the questions developed to assess the usability of a system.

Structure of Interim Questionnaire Time 1

- **Part A – Baseline Driving:**
  - Measures the level of workload experienced by participants while driving during the period **before** the SafeCar systems became active; for comparison with the workload experienced by participants while driving and Seat Belt Reminder warnings were being issued (measured in Part C).

- **Part B – Baseline Reversing:**
  - Measures the level of workload experienced by participants while reversing during the period **before** the SafeCar systems became active; for comparison with the workload experienced by participants while reversing and Reverse Collision Warning system warnings were being issued (measured in Part D).

- **Part C – Seat Belt Reminder System:**
  - Question 1 – To establish that the participant has experienced the warnings of the Seat Belt Reminder System and is therefore in a position to comment on the level of workload experienced while driving and the warnings were being issued, and the usability of the system warnings
  - Question 2 – Measures the level of workload experienced by participants while driving and Seat Belt Reminder warnings were being issued
  - Question 3 – Usability of the Seat Belt Reminder interface/warnings:
    - a) Measures learnability and memorability
    - b) Measures ease of use of the visual warning
    - c) Measures satisfaction with the visual warning
    - d) Measures effectiveness of the visual warning
    - e) Measures ease of use of the audio warning
    - f) Measures satisfaction with the audio warning
    - g) Measures effectiveness of the audio warning
    - h) Measures effectiveness of graded audio warnings at high travel speeds (above 10 km/h)
i) Measures effectiveness and satisfaction with the Seat Belt Reminder warning sequence
j) k) l) Measure all attributes

- Part D – Reverse Collision Warning System:
  o Question 1 – To establish that the participant has experienced the warnings of the Reverse Collision Warning System and is therefore in a position to comment on the level of workload experienced while driving and the warnings were being issued, and the usability of the system warnings
  o Question 2 – Measures the level of workload experienced by participants while reversing and Reverse Collision warnings were being issued
  o Question 3 – Usability of the Reverse Collision Warning interface/warnings:
    a) Measures learnability and memorability
    b) Measures ease of use of the audio warning
    c) Measures satisfaction with the audio warning
    d) Measures effectiveness of the graded audio information
    e) Measures effectiveness and satisfaction with the distances at which the different levels of warning start to sound
    f) g) h) Measure all attributes

Eve Mitsopoulos
2nd April 2003
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 1

This questionnaire should take you about 10 to 15 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A - Baseline Driving

1. This question is designed to gauge your impression of how much workload you experienced, on average, when driving (not including reversing) in the period before SafeCar systems became active in your vehicle (i.e. before Seat Belt Reminder and Reverse Collision Warning systems turned on).

Six factors are known to contribute to the overall level of mental workload that people feel when they perform a task. Below are some questions that are designed to measure, for each of the six factors, the level of workload that you experienced.

For each of the six factors, please indicate, by placing a line at the appropriate point on the scale, the level of workload that you experienced while driving during the period before the SafeCar systems (i.e. Seat Belt Reminder and Reverse Collision Warning systems) started issuing warnings in your vehicle.

For example,
Mental demand:
On average, how much mental and perceptual activity was required? That is, how much thinking, deciding, calculating, remembering, looking, searching, etc was required when you were driving? Was the car driving task easy and simple (low) or demanding and complex (high)?

| Low | Neither high nor low | High |

Physical demand:
On average, how much physical activity was required? That is, how much controlling of the vehicle, operating the brake, etc was required when you were driving? Was the car driving task easy and restful (low) or demanding and laborious (high)?

| Low | Neither high nor low | High |

Time demand:
On average, how much time pressure did you feel when driving? Was the pace of driving slow and leisurely (low) or rapid and rushed (high)?

| Low | Neither high nor low | High |

Performance:
On average, how satisfied were you with your driving performance?

| Good | Neither good nor poor | Poor |

Effort:
On average, how hard did you have to work (mentally and physically) to drive? Was little effort (low) or a large amount of effort (high) required?

| Low | Neither high nor low | High |

Frustration level:
On average, did you feel secure, gratified, content, relaxed and complacent (low) when driving or did you feel insecure, discouraged, irritated, stressed and annoyed (high)?

| Low | Neither high nor low | High |
Part B - Baseline Reversing

1. This question is designed to gauge your impression of how much workload you experienced, on average, when **reversing** in the period **before** SafeCar systems became active in your vehicle (i.e. before Seat Belt Reminder and Reverse Collision Warning systems turned on).

Six factors are known to contribute to the overall level of mental workload that people feel when they perform a task. Below are some questions that are designed to measure, for each of the six factors, the level of workload that you experienced.

For each of the six factors, please indicate, **by placing a line at the appropriate point on the scale**, the level of workload that you experienced while **reversing** during the period **before** the SafeCar systems (i.e. Seat Belt Reminder and Reverse Collision Warning systems) started issuing warnings in your vehicle.

For example,

| Low | Neither high nor low | High |

**Mental demand:**
On average, how much mental and perceptual activity was required? That is, how much thinking, deciding, calculating, remembering, looking, searching, etc was required when you were **reversing**? Was the **car reversing** task easy and simple (low) or demanding and complex (high)?

| Low | Neither high nor low | High |

**Physical demand:**
On average, how much physical activity was required? That is, how much controlling of the vehicle, operating the brake, etc was required when you were **reversing**? Was the **car reversing** task easy and restful (low) or demanding and laborious (high)?

| Low | Neither high nor low | High |

**Time demand:**
On average, how much time pressure did you feel when **reversing**? Was the pace of **reversing** slow and leisurely (low) or rapid and rushed (high)?

| Low | Neither high nor low | High |
Performance:
On average, how satisfied were you with your reversing performance?

- Good
- Neither good nor poor
- Poor

Effort:
On average, how hard did you have to work (mentally and physically) to reverse? Was little effort (low) or a large amount of effort (high) required?

- Low
- Neither high nor low
- High

Frustration level:
On average, did you feel secure, gratified, content, relaxed and complacent (low) when reversing or did you feel insecure, discouraged, irritated, stressed and annoyed (high)?

- Low
- Neither high nor low
- High

Part C - Seat Belt Reminder System

1. Over the last few weeks, have you experienced warnings from the Seat Belt Reminder system?

- Yes
- No

If you responded “Yes”, go to Question 2.

If you responded “No”, go to Part D (page 11).

2. This question is designed to gauge your impression of how much mental workload you experienced when you were driving and Seat Belt Reminder system warnings were being issued.

Six factors are known to contribute to the overall level of mental workload that people feel when they perform a task. Below are some questions that are designed to measure, for each of the six factors, the level of workload that you experienced while the Seat Belt Reminder warnings were being issued.

For each of the six factors, please indicate, by placing a line at the appropriate point on the scale, the level of workload that you experienced while you were driving and the Seat Belt Reminder System was issuing warnings.
For example,

| Low | Neither high nor low | High |

**Mental demand:**
On average, how much mental and perceptual activity was required? That is, how much thinking, deciding, calculating, remembering, looking, searching, etc was required when you were driving and you were receiving warnings from the Seat Belt Reminder system? Was the car driving task easy and simple (low) or demanding and complex (high) when the warnings were being issued?

| Low | Neither high nor low | High |

**Physical demand:**
On average, how much physical activity was required? That is, how much controlling of the vehicle, operating the brake, etc was required when you were driving and you were receiving warnings from the Seat Belt Reminder system? Was the car driving task easy and restful (low) or demanding and laborious (high) when the warnings were being issued?

| Low | Neither high nor low | High |

**Time demand:**
On average, how much time pressure did you feel when driving while the Seat Belt Reminder system warnings were being issued? Was the pace of driving slow and leisurely (low) or rapid and rushed (high) when the warnings were being issued?

| Low | Neither high nor low | High |

**Performance:**
On average, how satisfied were you with your driving performance while the Seat Belt Reminder system warnings were being issued?

| Good | Neither good nor poor | Poor |
Effort:
On average, how hard did you have to work (mentally and physically) to drive while the Seat Belt Reminder system warnings were being issued? Was little effort (low) or a large amount of effort (high) required?

| Low | Neither high nor low | High |

Frustration level:
On average, did you feel secure, gratified, content, relaxed and complacent (low) when driving while the Seat Belt Reminder system warnings were being issued or did you feel insecure, discouraged, irritated, stressed and annoyed (high)?

| Low | Neither high nor low | High |

3. This next series of questions is designed to get a feel for how user friendly you found the Seat Belt Reminder system warnings. When answering these questions, think about the times over the last few weeks when you received Seat Belt Reminder system warnings.

(a) Thinking back to the first time the Seat Belt Reminder system issued warnings, how easy was it for you to judge what the warnings meant?

- [ ] Very difficult
- [ ] Difficult
- [ ] Neither easy nor difficult
- [ ] Easy
- [ ] Very easy

If you responded “Very easy”, go to Question (b).

If you DID NOT respond “Very easy”, did you find it easier to judge what the Seat Belt Reminder warnings meant after you had experienced them a few times?

- [ ] Yes
- [ ] No

If you responded “No”, why?
If you responded “Yes”, roughly how many times did you have to experience the Seat Belt Reminder system warnings before you were sure of what they meant?

☐ Twice
☐ 3 to 5 times
☐ Other, Please specify: 

(b) Did you have any difficulty seeing the Seat Belt Reminder system flashing visual icon (i.e. a person wearing a seat belt) and/or caption (“FASTEN SEATBELT”) on the Visual Warning Display?

☐ Yes ☐ No

If you responded “Yes”, was it because (you can tick more than one response):

☐ There was too much glare on the screen (regardless of the brightness and orientation of the Visual Warning Display)
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view
☐ The visual icon was too small
☐ The caption was too small
☐ The icon was blurry
☐ The caption was blurry
☐ The display had overheated
☐ The icon was flashing too quickly
☐ The icon was flashing too slowly
☐ Other, Please specify: 

(c) Were you satisfied with the look of the Seat Belt Reminder visual warning graphics – that is, the flashing visual icon (of a person wearing a seat belt) and caption “FASTEN SEATBELT”?

Yes  No

If you responded “No”, what didn’t you like about the look of the Seat Belt Reminder visual warning graphics and why?

(d) How effective was the visual warning by itself (i.e. without the audio warning) in alerting you that someone in your car was not wearing his/her seat belt?

Very ineffective  Ineffective  Neither effective nor ineffective  Effective  Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(e) Did you have any difficulty hearing the Seat Belt Reminder audio warning?

Yes  No  I have never experienced the audio warning

If you responded “I have never experienced the audio warning”, go to Question (i) on page 10.
If you responded “Yes”, was it because *(you can tick more than one response)*:

- [ ] The audio warning volume was too low
- [ ] The audio warning was muffled by other sounds in the vehicle (e.g. talking, radio)
- [ ] Other, Please specify:  

(f) Were you satisfied with the *sound* of the Seat Belt Reminder *audio warning*?

- [ ] Yes
- [ ] No

If you responded “No”, what *didn’t* you like about the sound of the Seat Belt Reminder *audio warning* and why?

[(g) How effective was the *audio warning* in alerting you that someone in your car was not wearing his/her seat belt?](#)

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?
(h) Did you hear the audio warnings occur at a progressively faster rate as you increased your speed?

☐ Yes     ☐ No

If you responded “Yes”, did the increased audio warning presentation rate make you feel like it was more urgent for you (or a passenger) to fasten your/his/her seat belt?

☐ Yes     ☐ No

(i) The Seat Belt Reminder warnings occur in two stages. Stage 1 occurs at vehicle speeds of between 0 and 10 km/h. There is a visual warning made up of a flashing visual icon and a static “FASTEN SEATBELT” caption. In Stage 2, when vehicle speed exceeds 10 km/h, there is also an audio warning. As speed increases further, the audio warnings occur at a faster rate.

Are you satisfied with the sequence in which the Seat Belt Reminder warnings activate?

☐ Yes     ☐ No

If you responded “No”, how would you re-design the Seat Belt Reminder warning sequence?

(j) What one thing do you like most about the Seat Belt Reminder system?


(k) What one thing do you like least about the Seat Belt Reminder system?


(l) What one thing about the Seat Belt Reminder system would you tell the designers to change?


Part D - Reverse Collision Warning System

1. Over the last few weeks, have you experienced warnings from the Reverse Collision Warning system?

   ☐ Yes ☐ No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to the End of the Questionnaire.

2. This question is designed to gauge your impression of how much mental workload you experienced when you were reversing and Reverse Collision Warning system warnings were being issued.

   Six factors are known to contribute to the overall level of mental workload that people feel when they perform a task. Below are some questions that are designed to measure, for each of the six factors, the level of workload that you experienced while the warnings of the Reverse Collision Warning system were being issued.

   For each of the six factors, please indicate, by placing a line at the appropriate point on the scale, the level of workload that you experienced while reversing and the Reverse Collision Warning system was issuing warnings.

   For example,

   Low                      Neither high nor low                   High
Mental demand:
On average, how much mental and perceptual activity was required? That is, how much thinking, deciding, calculating, remembering, looking, searching, etc was required when you were reversing and you were receiving warnings from the Reverse Collision Warning system? Was the car reversing task easy and simple (low) or demanding and complex (high) when the warnings were being issued?

Low | Neither high nor low | High

Physical demand:
On average, how much physical activity was required? That is, how much controlling of the vehicle, operating the brake, etc was required when you were reversing and you were receiving warnings from the Reverse Collision Warning system? Was the car reversing task easy and restful (low) or demanding and laborious (high) when the warnings were being issued?

Low | Neither high nor low | High

Time demand:
On average, how much time pressure did you feel when reversing while the Reverse Collision Warning system warnings were being issued? Was the pace of reversing slow and leisurely (low) or rapid and rushed (high) when the warnings were being issued?

Low | Neither high nor low | High

Performance:
On average, how satisfied were you with your reversing performance while Reverse Collision warnings were being issued?

Good | Neither good nor poor | Poor

Effort:
On average, how hard did you have to work (mentally and physically) to reverse when the Reverse Collision warnings were being issued? Was little effort (low) or a large amount of effort (high) required?

Low | Neither high nor low | High
**Frustration level:**
On average, did you feel secure, gratified, content, relaxed and complacent (low) **when reversing and while the Reverse Collision Warning system warnings were being issued** or did you feel insecure, discouraged, irritated, stressed and annoyed (high)?

| Low | Neither high nor low | High |

3. This next series of questions is designed to get a feel for how **user friendly** you found the warnings of the Reverse Collision Warning system. When answering these questions, think about the times over the last few weeks when you received Reverse Collision Warning system warnings.

(a) Thinking back to the first time the Reverse Collision Warning system issued warnings, how easy was it for you to judge what the warnings meant?

- [ ] Very difficult
- [ ] Difficult
- [ ] Neither easy nor difficult
- [ ] Easy
- [ ] Very easy

If you responded “Very easy”, go to Question (b).

If you **DID NOT** respond “Very easy”, did you find it easier to judge what the Reverse Collision Warning system warnings meant after you had experienced them a few times?

- [ ] Yes
- [ ] No

If you responded “No”, why?

If you responded “Yes”, roughly, how many times did you have to experience the Reverse Collision Warning system warnings before you were sure of what they meant?

- [ ] Twice
- [ ] 3 to 5 times
- [ ] Other, Please specify: [ ]
(b) Did you have any difficulty **hearing** the Reverse Collision Warning system audio warnings?

☐ Yes      ☐ No

If you responded “Yes”, was it because *(you can tick more than one response)*:

☐ The audio warning volume was too low  
☐ The audio warning was muffled by other sounds in the vehicle (e.g. talking, radio)  
☐ Other, Please specify: ____________________________

(c) Were you satisfied with the **sound** of the Reverse Collision Warning audio warnings?

☐ Yes      ☐ No

If you responded “No”, what **didn’t** you like about the sound of the Reverse Collision Warning system **audio warnings** and why?

______________________________

(d) How effective is the **graded warning information** (i.e. the warnings increasing in urgency as you get closer to the object/car behind you) in helping you to reverse?

☐ Very ineffective  ☐ Ineffective  ☐ Neither effective nor ineffective  ☐ Effective  ☐ Very effective

If you responded “Very ineffective” or “Ineffective”, why?

______________________________
(e) When you are reversing, audio warnings start to sound when you are within **one metre** from the rear object/car (1st level). The continuous tone sounds when your car is **30 centimetres** from the rear object/car (last level). Do you think that the first and last levels of audio warning are presented at the appropriate times (i.e. at an appropriate distance from the rear object/car)?

**1st Level:** 1 metre  
[ ] Yes  [ ] No

**Last Level:** 30 centimetres  
[ ] Yes  [ ] No

If you responded “No” for the 1st level, at what distance from the object/car should the Reverse Collision Warning system start to issue warnings?

[ ]

If you responded “No” for the last level, at what distance from the object/car should the Reverse Collision Warning system start to issue the continuous tone?

[ ]

(f) What one thing do you like **most** about the Reverse Collision Warning system?

[ ]

(g) What one thing do you like **least** about the Reverse Collision Warning system?

[ ]
(h) What one thing about the Reverse Collision Warning system would you tell the designers to change?

End of Questionnaire

Thank you for taking the time to complete this questionnaire.

*Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.*
Appendix AC   Interim Questionnaire Time 2
Interim Questionnaire Time 2

Aim of the questionnaire

To assess participants’ perceptions of the usability of the following systems/facilities:

- Intelligent Speed Adaptation (and Speed Request) or Following Distance Warning system or Intelligent Speed Adaptation (and Speed Request) and Following Distance Warning system;
- System Override;
- Master Volume Control; and
- Visual Warning Display.

To whom should this questionnaire be administered?

Interim Questionnaire Time 2 should be administered to TREATMENT participants only. There are three forms of the questionnaire available:

1. Comprises 6 parts:
   - Part A – Speed Warning system;
   - Part B – Following Distance Warning system;
   - Part C – Speed Request;
   - Part D – System Override;
   - Part E – Master Volume Control; and
   - Part F – Visual Warning Display

2. Comprises 4 parts:
   - Part A – Following Distance Warning system;
   - Part B – System Override;
   - Part C – Master Volume Control; and
   - Part D – Visual Warning Display

3. Comprises 5 parts:
   - Part A – Speed Warning system;
   - Part B – Speed Request;
   - Part C – System Override;
   - Part D – Master Volume Control; and
   - Part E – Visual Warning Display

The form of the questionnaire to be administered to a given participant will depend on whether that participant is receiving in During 1 Intelligent Speed Adaptation (and Speed Request), Following Distance Warning, or both Intelligent Speed Adaptation (and Speed Request) and Following Distance Warning. Therefore:
Treatment participants who are being exposed to both Following Distance Warning and Intelligent Speed Adaptation in During 1 should undertake Form 1. (Six participants in total.)

Treatment participants who are being exposed to Following Distance Warning in During 1 should undertake Form 2. (Seven participants in total.)

Treatment participants who are being exposed to Intelligent Speed Adaptation in During 1 should undertake Form 3. (Seven participants in total.)

A decision was made not to administer the sections on the System Override function, the Master Volume Control, and the Visual Warning Display to the participants in the Control group. It was considered that opportunity for the Control group participants to interact with these facilities is small relative to the Treatment group participants. That is, as a result of only interacting with two systems, one of which only issues audio warnings which cannot be adjusted using the Master Volume Control, control participants may be less likely to use the System Override, Master Volume Control and Visual Warning Display than the treatment participants. Therefore, in the interest of keeping the number of questionnaires administered to participants to a minimum, it was felt unnecessary to ask control participants to undertake an additional questionnaire just to assess the usability of these facilities. Usability information from 20 participants on the System Override, Master Volume Control and Visual Warning Display will be sufficient.

**When during the study should this questionnaire be administered?**

Interim Questionnaire Time 2 should be administered at the point in the study sequence when 3,750 kilometres of driving have been accumulated (excluding the Familiarisation period). This corresponds to the point 750 kilometres into the During 1 period.

**How should this questionnaire be administered?**

It is envisaged that this questionnaire would be less demanding for the participant if completed in person. Moreover, given that Interim Questionnaire Time 1, which assessed the usability of both the Seat Belt Reminder and Reverse Collision Warning systems, is being completed by all participants in person, it is desirable that Interim Questionnaire Time 2 also be completed in person. Given our experiences so far, it is reasonable to assume that participants will prefer to complete Interim Questionnaire Time 2 in person and at a time during the day and at a location that is most suitable for them. Nevertheless, it may be worth checking with participants whether they would like to complete the questionnaire as a telephone interview or on their own as they have done with all other questionnaires undertaken to date.
Arranging for administration of the questionnaire

Assuming participants drive, on average, 750 kilometres per week (based on 40,000 km/year), treatment participants will be ready to undertake Interim Questionnaire Time 2 five weeks after having carried out their Briefing and Training session, which marks the first day of the study for a given participant. However, a given participant may accumulate kilometres at a faster rate than expected. Consequently, for every treatment participant, it is recommended that, one and a half to two weeks after Interim Questionnaire Time 1 has been sent to the participant (exact timing will depend on how quickly the participant is accumulating the kilometres based on previous communication between the participant and the experimenter), the experimenter contacts the participant to find out the current odometer reading of the participant’s SafeCar, whether there have been any instances of the flashing button being pressed, and which systems are currently active in the SafeCar. This information will help to determine how soon after the phone call the experimenter needs to administer the Interim Questionnaire Time 2 to that participant.

During this phone call the experimenter should check whether the participant prefers to complete the questionnaire on his/her own. Assuming that this is the case, the experimenter should explain to the participant that shortly he/she will receive in the mail the next questionnaire, which needs to be completed within two days of its receipt. If the participant suggests another mode of questionnaire administration, the experimenter should make appropriate arrangements with the participant.

Development of Interim Questionnaire Time 2

Measurement of Usability

As defined in the current study, the usability of a system contributes to the overall acceptability of a system. Specifically, the usability of the system is determined by the user’s perception of the quality of the interface. To be usable a system must be:

- Easy to learn how to use and to remember how to use (users must be able to use the system given the level of training provided and they must be able to remember how to use the system after a period of not having used the system);
- Effective and easy to use (once they have learned how to use the system, users must find the system easy to use – users must be able to respond to the system efficiently and with few errors); and
- Satisfying to use (users must be happy with the look and feel of the system).

Each of these usability “dimensions” was captured in the questions developed to assess the usability of a system/facility, where appropriate.

Eve Mitsopoulos
Prepared 28th April 2003
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 2

This questionnaire should take you about 15 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A - Speed Warning System

1. Have you experienced warnings from the Speed Warning system?
   - Yes
   - No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Part B on page 9.

2. This next series of questions is designed to get a feel for how user friendly you found the warnings of the Speed Warning system. When answering these questions, think about the times when you received warnings from the Speed Warning system.

   (a) Thinking back to the very first time the Speed Warning system issued warnings, how easy was it for you to judge what the warnings meant?

      - Very difficult
      - Difficult
      - Neither easy nor difficult
      - Easy
      - Very easy

   If you responded “Very easy”, go to Question (b).
If you **DID NOT** respond “Very easy”, did you find it easier to judge what the warnings meant after you had experienced the warnings a few times?

- [ ] Yes
- [ ] No

If you responded “No”, why?


If you responded “Yes”, roughly how many times did you have to experience the Speed Warning system warnings before you were sure of what they meant?

- [ ] Twice
- [ ] 3 to 5 times
- [ ] Other, Please specify: __________

(b) Did you have any difficulty **seeing** the Speed Warning system **static** visual icon (i.e. miniature speed limit sign **without** flashing) on the Visual Warning Display?

- [ ] Yes
- [ ] No

If you responded “Yes”, was it because **(you can tick more than one response):**

- [ ] There was too much glare on the screen
- [ ] There was too much reflection on the screen
- [ ] The screen was too bright
- [ ] The screen was not bright enough
- [ ] The Visual Warning Display is too far over to the left, making the screen difficult to view
- [ ] The visual icon was too small
- [ ] The visual icon was blurry
- [ ] The static visual icon rarely attracted my attention

(more options over page)
(c) Were you satisfied with the look of the Speed Warning system **visual warning graphics** – that is, the miniature speed limit sign?

- Yes
- No

If you responded “No”, what didn’t you like about the look of the Speed Warning system **visual warning graphics** and why? What would you recommend instead?

- 

(d) How effective was the **static visual** warning (i.e. miniature speed limit sign **without** flashing) in alerting you that you were exceeding the speed limit by 3 km/h or more?

- Very ineffective
- Ineffective
- Neither effective nor ineffective
- Effective
- Very effective

If you responded “Very ineffective” or “Ineffective”, why?

- 

(e) Did you have any difficulty **hearing** the Speed Warning system audio chime (“bong”)?

- Yes
- No
If you responded “Yes”, was it because (you can tick more than one response):

- [ ] The audio volume was too low
- [ ] The sound was muffled by other sounds in the vehicle (e.g. talking, radio)
- [ ] Other, Please specify: 

(f) Were you satisfied with the sound of the Speed Warning system audio chime (“bong”)?

- [ ] Yes
- [ ] No

If you responded “No”, what didn’t you like about the sound of the Speed Warning system audio chime and why? What would you recommend instead?

(g) How effective was the audio chime (“bong”) in alerting you that you were exceeding the speed limit by 3 km/h or more?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(h) Have you experienced the second level of speed warning, that is, the flashing visual warning (i.e. miniature speed limit sign with flashing red circle) and upward pressure on the accelerator?

- [ ] Yes
- [ ] No

If you responded “Yes”, go to Question (i).
If you responded “No”, go to Question (n) on page 7.

(i) Did you have any difficulty seeing the Speed Warning system flashing visual icon (i.e. miniature speed limit sign with flashing red circle) on the Visual Warning Display?

☐ Yes  ☐ No

If you responded “Yes”, was it because (you can tick more than one response):

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The flashing visual icon rarely attracted my attention
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view
☐ The visual icon was too small
☐ The visual icon was blurry
☐ The display had overheated
☐ The red circle was flashing too quickly
☐ The red circle was flashing too slowly
☐ Other, Please specify:  

(j) How effective was the flashing visual warning (i.e. miniature speed limit sign with flashing red circle) in alerting you that you were still exceeding the speed limit by 3 km/h or more?

☐ Very ineffective
☐ Ineffective
☐ Neither effective nor ineffective
☐ Effective
☐ Very effective
If you responded “Very ineffective” or “Ineffective”, why?

(k) Did you have any difficulty feeling the upward pressure on the accelerator?

☐ Yes  ☐ No

If you responded “Yes”, what was the difficulty that you experienced?

(l) Were you satisfied with the degree of accelerator pressure?

☐ Yes  ☐ No

If you responded “No”, should there be more or less pressure?

☐ More  ☐ Less

(m) How effective was the upward pressure on the accelerator in alerting you that you were still exceeding the speed limit by 3 km/h or more?

☐ Very ineffective  ☐ Ineffective  ☐ Neither effective nor ineffective  ☐ Effective  ☐ Very effective

If you responded “Very ineffective” or “Ineffective”, why?
The Speed Warning system warnings occur in a two stage sequence. Stage 1 occurs when vehicle speed exceeds 3 km/h over the posted speed limit. A visual warning (i.e. miniature speed limit sign without flashing) is issued along with a single audio chime (“bong”). If speed has not dropped to below 3 km/h over the speed limit within 2 seconds of the Stage 1 warning being issued, Stage 2 occurs. In this stage, a flashing visual warning (i.e. miniature speed limit sign with flashing red circle) is issued along with upward pressure on the accelerator pedal. The warnings stop when speed drops to below 3 km/h over the posted speed limit.

Are you satisfied with the sequence in which the Speed Warning system warnings activate?

☐ Yes  ☐ No

If you responded “No”, how would you re-design the Speed Warning system warning sequence?

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(o) When you are driving outside the confines of the Speed Warning system digital map database, the message “Outside digital map zone” should appear on the Visual Warning Display. Have you ever seen this message on the Visual Warning Display?

☐ Yes  ☐ No

If you responded “Yes”, how effective was the message “Outside digital map zone” in letting you know that you were outside the digital map area?

☐ Very ineffective  ☐ Ineffective  ☐ Neither effective nor ineffective  ☐ Effective  ☐ Very effective

If you responded “Very ineffective” or “Ineffective”, why?


When the Speed Warning system temporarily loses GPS reception, the message “No GPS signal” will appear on the Visual Warning Display. Have you ever seen this message on the Visual Warning Display?

- Yes
- No

If you responded “Yes”, how effective was the message “No GPS signal” in letting you know that GPS reception had been lost?

- Very ineffective
- Ineffective
- Neither effective nor ineffective
- Effective
- Very effective

If you responded “Very ineffective” or “Ineffective”, why?

- 

What one thing do you like most about the Speed Warning system?

- 

What one thing do you like least about the Speed Warning system?

- 

What things about the Speed Warning system would you tell the designers to change (you can list up to 3)?

- 

Form 1
Part B - Following Distance Warning System

1. Have you experienced warnings from the Following Distance Warning system?

☐ Yes ☐ No

If you responded “Yes”, go to Question 2.

If you responded “No”, go to Part C on page 16.

2. This next series of questions is designed to get a feel for how user friendly you found the warnings of the Following Distance Warning system. When answering these questions, think about the times when you received warnings from the Following Distance Warning system.

(a) Thinking back to the very first time the Following Distance Warning system issued warnings, how easy was it for you to judge what the warnings meant?

☐ Very difficult ☐ Difficult ☐ Neither easy nor difficult ☐ Easy ☐ Very easy

If you responded “Very easy”, go to Question (b).

If you DID NOT respond “Very easy”, did you find it easier to judge what the warnings meant after you had experienced them a few times?

☐ Yes ☐ No

If you responded “No”, why?

[Blank space for response]

If you responded “Yes”, roughly how many times did you have to experience the Following Distance Warning system warnings before you were sure of what they meant?

☐ Twice
☐ 3 to 5 times
☐ Other, Please specify: [Blank space for response]
(b) Did you have any difficulty seeing the yellow bars of the Following Distance Warning visual warning ladder?

☐ Yes  ☐ No

If you responded “Yes”, was it because (you can tick more than one response):

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view
☐ The coloured bars and ladder were too small
☐ The coloured bars and ladder were blurry
☐ The yellow bars rarely attracted my attention
☐ The Visual Warning Display had overheated
☐ The colour “yellow” is not obvious enough – it is too similar to the screen background

☐ Other, Please specify:  

(c) How effective were the yellow bars of the visual warning ladder in alerting you that you were travelling too close to the car in front?

☐ Very ineffective  ☐ Ineffective  ☐ Neither effective nor ineffective  ☐ Effective  ☐ Very effective

If you responded “Very ineffective” or “Ineffective”, why?


(d) Did you have any difficulty **seeing** the red bars of the Following Distance Warning visual warning ladder?

☐ Yes  ☐ No  ☐ I have never experienced this visual warning

If you responded “I have never experienced this visual warning”, go to Question (h) on page 12.

If you responded “Yes”, was it because **(you can tick more than one response)**:

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The red bars rarely attracted my attention
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view
☐ The bars and ladder were too small
☐ The bars and ladder were too blurry
☐ The Visual Warning Display had overheated
☐ The colour “red” is not obvious enough – it is too similar to the screen background
☐ The colours “red” and “yellow” are too similar – so it was hard to distinguish between the two colours
☐ The visual warning ladder was flashing too quickly
☐ The visual warning ladder was flashing too slowly
☐ Other, Please specify: [ ]

(e) Did you have any difficulty **seeing** the visual warning ladder **flash**?

☐ Yes  ☐ No
If you responded “Yes”, was it because *(you can tick more than one response)*:

- [ ] There was too much glare on the screen
- [ ] There was too much reflection on the screen
- [ ] The screen was too bright
- [ ] The screen was not bright enough
- [ ] The Visual Warning Display is too far over to the left, making the screen difficult to view
- [ ] The visual warning ladder was too small
- [ ] The visual warning ladder was blurry
- [ ] The Visual Warning Display had overheated
- [ ] The flashing ladder rarely attracted my attention
- [ ] The visual warning ladder was flashing too quickly
- [ ] The visual warning ladder was flashing too slowly
- [ ] Other, Please specify: __________

(f) How effective were the **red** bars of the visual warning ladder in alerting you that you were travelling too close to the car in front?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

________________________________________________________________________

________________________________________________________________________

(g) How effective was the **flashing** visual warning ladder in alerting you that you were travelling too close to the car in front?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective
If you responded “Very ineffective” or “Ineffective”, why?

(h) Were you satisfied with the look of the Following Distance Warning system visual warning graphics (e.g. ladder display, coloured bars)?

□ Yes □ No

If you responded “No”, what didn’t you like about the look of the Following Distance Warning system visual warning graphics and why? What would you recommend instead?

(i) Did you have any difficulty hearing the Following Distance Warning system audio warning?

□ Yes □ No □ I have never experienced the audio warning

If you responded “I have never experienced the audio warning”, go to Question (m) on page 15.

If you responded “Yes”, was it because (you can tick more than one response):

□ The audio warning volume was too low
□ The audio warning was muffled by other sounds in the vehicle (e.g. talking, radio)
□ Other, Please specify: 

(j) Were you satisfied with the sound of the Following Distance Warning system audio warning?

□ Yes □ No
If you responded “No”, what **didn’t** you like about the sound of the Following Distance Warning system **audio warning** and why? What would you recommend instead?

(k) How effective was the **audio warning** in alerting you that you were travelling too close to the car in front?

- □ Very ineffective
- □ Ineffective
- □ Neither effective nor ineffective
- □ Effective
- □ Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(l) How effective was the **graded warning information** (i.e. yellow bars, red bars and flashing visual warning ladder, then audio) in letting you know that you are getting progressively closer to the car in front?

- □ Very ineffective
- □ Ineffective
- □ Neither effective nor ineffective
- □ Effective
- □ Very effective

If you responded “Very ineffective” or “Ineffective”, why?
The Following Distance Warning system warnings occur in several stages. Stage 1 occurs when the distance between your car and the one you are following is 2 seconds. The three bars at the top of the visual warning ladder display fill with yellow, one after the other, as following distance decreases. If you get closer to the car ahead, so that you are 1.3 seconds away, the bars below the yellow bars start to fill with red, one after the other. The entire ladder display starts to flash when the first red bar appears. The ladder keeps flashing unless following distance increases. If the distance between your car and the car in front reduces to 1.1 seconds, the bar at the bottom of the display fills with red and an audio warning sounds.

Are you satisfied with the sequence in which the Following Distance Warning system warnings activate?

☐ Yes  ☐ No

If you responded “No”, how would you re-design the Following Distance Warning system warning sequence?


(n) What one thing do you like most about the Following Distance Warning system?


(o) What one thing do you like least about the Following Distance Warning system?


Form 1
(p) What things about the Following Distance Warning system would you tell the designers to change (you can list up to 3)?

Part C – Speed Request Button

1. Have you used the Speed Request function?
   - [ ] Yes  
   - [ ] No  

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Part D on page 22.

2. This next series of questions is designed to get a feel for how user friendly you found the Speed Request function. When answering these questions think about the times when you requested the current speed limit by using the Speed Request facility.

   (a) Thinking back to the very first time you wanted to request the speed limit using the Speed Request function, how easy was it for you to use the Speed Request Button?

      - [ ] Very difficult  
      - [ ] Difficult  
      - [ ] Neither easy nor difficult  
      - [ ] Easy  
      - [ ] Very easy

   If you responded “Very easy” go to Question (b).

   If you DID NOT respond “Very easy”, what was the difficulty that you experienced in trying to use the Speed Request Button (you can tick more than one response)?

      - [ ] The Button was difficult to see during the day  
      - [ ] Couldn’t remember where the Button was located

      - [ ] The Button was obstructed by the steering wheel, making it difficult to see  
      - [ ] The Button is not labelled clearly enough
The Button was too stiff to press and so had to be pressed really hard in order to activate the Speed Request.

The Button was positioned too close to other buttons, making it difficult to press the Speed Request Button without unintentionally pressing other buttons at the same time.

The Button is hard to distinguish from other buttons, because they look too similar.

The Button was too difficult to see at night.

The Button was too far away to reach comfortably.

Other, Please specify: ____________________________

If you **DID NOT** respond “Very easy”, did you find it easier to use the Speed Request Button the next time you used it?

☐ Yes ☐ No ☐ I never used the Speed Request again because of the difficulty I experienced the first time I tried to use it ☐ I never used the Speed Request again because I never had the need to

If you responded “No”, why?

______________________________

(b) Were you satisfied with the *location* of the Speed Request Button?

☐ Yes ☐ No

If you responded “No”, what *didn’t* you like about the location of the Speed Request Button and why? What location would you recommend instead?

______________________________
(c) Were you satisfied with the look and feel of the Speed Request Button (e.g. colour, size, shape)?

☐ Yes  ☐ No

If you responded “No”, what didn’t you like about the look and feel of the Speed Request Button and why? What would you recommend instead?

(d) Thinking back to the very first time you requested the speed limit using the Speed Request function, how easy was it for you to judge what the speed limit was from the information that appeared on the Visual Warning Display?

☐ Very difficult  ☐ Difficult  ☐ Neither easy nor difficult  ☐ Easy  ☐ Very easy

If you responded “Very easy”, go to Question (e).

If you DID NOT respond “Very easy”, did you find it easier to judge what the speed limit was after you had used the Speed Request a few times?

☐ Yes  ☐ No  ☐ I never used the Speed Request again

If you responded “No”, why?

If you responded “Yes”, roughly how many times did you have to use the Speed Request before you were able to judge what the speed limit was from the information that appeared on the Visual Warning Display?

☐ Twice  ☐ 3 to 5 times  ☐ Other, Please specify:
(e) Did you have any difficulty **seeing** the Speed Request visual notification on the Visual Warning Display (i.e. miniature speed limit sign showing the current speed limit)?

- [ ] Yes
- [ ] No

If you responded “Yes”, was it because **(you can tick more than one response)**:

- [ ] There was too much glare on the screen
- [ ] There was too much reflection on the screen
- [ ] The screen was too bright
- [ ] The screen was not bright enough
- [ ] The Visual Warning Display is too far over to the left, making the screen difficult to view
- [ ] The visual icon was too small
- [ ] The visual icon was blurry
- [ ] The Visual Warning Display had overheated
- [ ] Other, Please specify: ___________________________________________________________________________

(f) Were you satisfied with the **look** of the Speed Request **visual notification graphics** – that is, the miniature speed limit sign showing the current speed limit)?

- [ ] Yes
- [ ] No

If you responded “No”, what **didn’t** you like about the look of the Speed Request **visual notification graphics** and why? What would you recommend instead?

___________________________________________________________________________________________

___________________________________________________________________________________________

___________________________________________________________________________________________

___________________________________________________________________________________________

___________________________________________________________________________________________
(g) How effective was the Speed Request function in providing you with speed limit information with minimal delay (i.e. from the time you pressed the Speed Request Button)?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?


(h) Did you have any difficulty hearing the Speed Request audio chime (“bong”)?

- [ ] Yes
- [ ] No

If you responded “Yes”, was it because (you can tick more than one response):

- [ ] The audio volume was too low
- [ ] The sound was muffled by other sounds in the vehicle (e.g. talking, radio)
- [ ] Other, Please specify: 

(i) Were you satisfied with the sound of the Speed Request audio chime (“bong”)?

- [ ] Yes
- [ ] No

If you responded “No”, what didn’t you like about the sound of the Speed Request audio chime (“bong”) and why? What would you recommend instead?


(j) How effective was the audio chime in alerting you that you had received speed limit information?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(k) The audio chime sometimes sounds before notification of the speed limit appears on the Visual Warning Display and other times it sounds at the same time as when the speed limit notification appears on the display? Is this inconsistency acceptable?

- [ ] Yes
- [ ] No

If you responded “No”, should the audio chime sound before or at the same time as when the speed limit is displayed?

(l) In response to pressing the Speed Request Button, the speed limit appears on the Visual Warning Display and remains there for 3 seconds. Is this amount of time acceptable?

- [ ] Yes
- [ ] No

If you responded “No”, for how long should the speed limit appear on the Visual Warning Display?
Part D – System Override Button

1. Have you used the System Override function?
   
   ☐ Yes  ☐ No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Part E on 26.

2. This next series of questions is designed to get a feel for how user friendly you found the System Override function. When answering these questions, think about the times when you used the system override function.

   (a) Thinking back to the very first time you wanted to temporarily turn off system warnings, how easy was it for you to use the System Override Button?

       ☐ Very difficult  ☐ Difficult  ☐ Neither easy nor difficult  ☐ Easy  ☐ Very easy

   If you responded “Very easy”, go to Question (b).

   If you DID NOT respond “Very easy”, what was the difficulty that you experienced in trying to use the System Override Button (you can tick more than one response)?

       ☐ Couldn’t remember where the Button was located
       ☐ The Button was obstructed by the steering wheel, making it difficult to see
       ☐ The Button was difficult to see during the day
       ☐ The Button was not labelled clearly enough
       ☐ The Button was too stiff to press and so had to be pressed really hard in order to activate the System Override
       ☐ The Button was hard to distinguish from other buttons, because they look too similar
       ☐ The Button was positioned too close to other buttons, making it difficult to press the System Override Button without unintentionally pressing other buttons at the same time
       ☐ The Button was difficult to see at night

   (more options over page)
The Button was too far away to reach comfortably
Other, Please specify: 

If you **DID NOT** respond “Very easy”, did you find it easier to use the System Override Button the next time you wanted to temporarily override system warnings using the System Override function?

- Yes
- No
- I never used the System Override again because of the difficulty I experienced the first time I tried to use it
- I never used the System Override again because I never had the need to

If you responded “No”, why?

If you responded “No”, why?

(b) Were you satisfied with the location of the System Override Button?

- Yes
- No

If you responded “No”, what **didn’t** you like about the location of the System Override Button and why? What location would you recommend instead?

(c) Were you satisfied with the **look and feel** of the System Override Button (e.g. colour, size, shape)?

- Yes
- No

If you responded “No”, what **didn’t** you like about the look and feel of the System Override Button and why? What would you recommend instead?
(d) Did you have any difficulty **seeing** or **reading** the System Override message on the Visual Warning Display stating that the system override was activated?

☐ Yes ☐ No

If you responded “Yes”, was it because **(you can tick more than one response)**:

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view
☐ The text was too small
☐ The contrast between the text and background was not great enough
☐ The text was blurry
☐ The font of the text message was not easy to read
☐ The Visual Warning Display had overheated
☐ Other, Please specify: ________________________________

(e) Were you satisfied with the **look** of the System Override **visual message** stating that the system override was activated?

☐ Yes ☐ No

If you responded “No”, what **didn’t** you like about the look of the System Override **visual message** and why? What would you recommend instead?

________________________________________________________________________

________________________________________________________________________
(f) How effective was the System Override visual message in confirming that you had successfully activated the system override?

[ ] Very ineffective
[ ] Ineffective
[ ] Neither effective nor ineffective
[ ] Effective
[ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(g) How effective was the System Override visual message in keeping you continually reminded that all system warnings were disabled?

[ ] Very ineffective
[ ] Ineffective
[ ] Neither effective nor ineffective
[ ] Effective
[ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(h) In response to pressing the System Override Button, the system warnings are disabled for a period of 1 to 2 minutes. Is this amount of time acceptable?

[ ] Yes
[ ] No

If you responded “No”, for how long should the system warnings be temporarily disabled?
Part E – Master Volume Control

1. Have you adjusted the volume of the audio warnings/messages using the Master Volume Control?
   □ Yes □ No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Part F on page 28.

2. This next series of questions is designed to get a feel for how user friendly you found the Master Volume Control function. When answering these questions, think about the times when you used the Master Volume Control.

   (a) Thinking back to the very first time you wanted to adjust the volume of the audio warnings and voice messages using the Master Volume Control, how easy was it for you to use the Master Volume Control?

   □ Very difficult □ Difficult □ Neither easy nor difficult □ Easy □ Very easy

   If you responded “Very easy”, go to Question (b).

   If you DID NOT respond “Very easy”, what was the difficulty that you experienced in trying to use the Master Volume Control (you can tick more than one response)?

   □ The Buttons were difficult to see during the day
   □ Couldn’t remember where the Buttons were located
   □ The Buttons were obstructed by the steering wheel, making them difficult to see
   □ The Buttons were not labelled clearly enough to show which button was for increasing volume and which one was for decreasing volume
   □ The Buttons were too stiff to press and so had to be pressed really hard in order to adjust the volume
   □ The Buttons were hard to distinguish from other buttons, because they looked too similar
   □ The Buttons were too sensitive – pressing a button just once increased/decreased the volume by too much

   (more options over page)
The Buttons were not sensitive enough – a button had to be pressed several times in order to detect a noticeable change in volume

The Buttons were positioned too close to other buttons, making it difficult to press the correct volume button without unintentionally pressing other buttons at the same time

The Buttons were difficult to see at night

The Buttons were too far away to reach comfortably

It was too difficult to tell whether the volume had been increased as a result of pressing the button for increasing volume or whether the volume had been decreased as a result of pressing the button for decreasing volume

After pressing a Button (to adjust the volume) there was no way of knowing the volume setting

Other, Please specify: 

If you **DID NOT** respond “Very easy”, did you find it easier to use the Master Volume Control the next time?

Yes    No  I never used the Master Volume Control again because of the difficulty I experienced the first time I tried to use it  I never used the Master Volume Control again because I never had the need to

If you responded “No”, why?

(b) Were you satisfied with the *location* of the Master Volume Control buttons?

Yes    No
If you responded “Yes”, what didn’t you like about the location of the Master Volume Control buttons and why? What location would you recommend instead?

(c) Were you satisfied with the look and feel of the Master Volume Control buttons (e.g. colour, size, shape)?

☐ Yes      ☐ No

If you responded “No”, what didn’t you like about the look and feel of the Master Volume Control buttons and why? What would you recommend instead?

Part F – Visual Warning Display

1. This next series of questions is designed to get a feel for how user friendly you have found the Visual Warning Display. When answering these questions think about the times when you have received warnings or messages on the Visual Warning Display.

(a) Did you have any difficulty seeing/reading the warnings/messages presented on the Visual Warning Display during the day?

☐ Yes      ☐ No

If you responded “Yes”, was it because (you can tick more than one response):

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view

(more options over page)
The Visual Warning Display is too small
The Visual Warning Display is positioned too high up on the dashboard
The Visual Warning Display had overheated
The Visual Warning Display is obstructed by the steering wheel (or some other object)
Other, Please specify:  

(b) Did you have any difficulty seeing/reading the warnings/messages presented on the Visual Warning Display at night?

Yes  No  

If you responded “Yes”, was it because (you can tick more than one response):

There was too much glare on the screen
There was too much reflection on the screen
The screen was too bright
The screen was not bright enough
The Visual Warning Display is too far over to the left, making the screen difficult to view
The Visual Warning Display is too small
The Visual Warning Display is positioned too high up on the dashboard
The Visual Warning Display had overheated
The Visual Warning Display is obstructed by the steering wheel (or some other object)
Other, Please specify:  

(c) Were you satisfied with the location of the Visual Warning Display?

Yes  No
If you responded “No”, what didn’t you like about the location of the Visual Warning Display and why? What location would you recommend instead?

(d) Were you satisfied with the look and feel of the Visual Warning Display (e.g. size, colour)?

- Yes  
- No

If you responded “No”, what didn’t you like about the look and feel of the Visual Warning Display and why? What would you recommend instead?

(e) Have you adjusted the brightness of the Visual Warning Display?

- Yes  
- No

If you responded “Yes” go to Question (f).

If you responded “No” go to Question (j) on page 32.

(f) Thinking back to the very first time you wanted to adjust the brightness of the display, how easy was it for you to use the brightness control?

- Very difficult
- Difficult
- Neither easy nor difficult
- Easy
- Very easy

If you responded “Very easy”, go to Question (g).

If you DID NOT respond “Very easy”, what was the difficulty that you experienced in trying to use the brightness control (you can tick more than one response)?

- The Control was difficult to see/find during the day
- Couldn’t remember where the Control was located
- The colour of the Control was too similar to the Visual Warning Display making it difficult to see/find

(more options over page)
The Control was too stiff to turn
Had to turn the Control a lot in order to have any effect on the Display’s brightness
The Control was too sensitive – turning it a small amount resulted in too great a change in brightness
The Control was difficult to see/find at night
The Control was too far away to reach comfortably
The Control was too small to turn
Other, Please specify: 

If you DID NOT respond “Very easy”, did you find it easier to use the brightness control the next time?

Yes  No   I never used the brightness control again because of the difficulty I experienced the first time I tried to use it  I never used the brightness control again because I never had the need to

If you responded “No”, why?

(g) Were you satisfied with the location of the brightness control on the Visual Warning Display?

Yes  No

If you responded “No”, what didn’t you like about the location of the brightness control and why? What location would you recommend instead?

(h) Were you satisfied with the look and feel of the brightness control (e.g. size, colour, thumbwheel mechanism)?

Yes  No
If you responded “No”, what didn’t you like about the look and feel of the Visual Warning Display and why? What would you recommend instead?

(i) How effective was the brightness control mechanism in adjusting the brightness of the Visual Warning Display by an appropriate amount?

- Very ineffective
- Ineffective
- Neither effective nor ineffective
- Effective
- Very effective

If you responded ”Very ineffective” or ”Ineffective”, why?

(j) Have you adjusted the orientation of the Visual Warning Display?

- Yes
- No

If you responded ”Yes” go to Question (k).

If you responded ”No” go to the End of the Questionnaire.

(k) Thinking back to the very first time you wanted to adjust the orientation of the display, how easy was it to do?

- Very difficult
- Difficult
- Neither easy nor difficult
- Easy
- Very easy

If you responded “Very easy”, go to the End of the Questionnaire.

If you DID NOT respond ”Very easy”, what was the difficulty that you experienced in trying to adjust the orientation of the display (you can tick more than one response)?

- The adjustable arm was too stiff to move
- The range of movement was too restrictive
- Other, Please specify:
End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
**On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems**

**Interim Questionnaire Time 2**

*This questionnaire should take you about 15 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.*

*Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.*

**Part A - Following Distance Warning System**

1. Have you experienced warnings from the Following Distance Warning system?

   □ Yes  □ No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Part B on page 8.

2. This next series of questions is designed to get a feel for how user friendly you found the warnings of the Following Distance Warning system. When answering these questions, think about the times when you received warnings from the Following Distance Warning system.

   (a) Thinking back to the very first time the Following Distance Warning system issued warnings, how easy was it for you to judge what the warnings meant?

   □ Very difficult  □ Difficult  □ Neither easy nor difficult  □ Easy  □ Very easy

   If you responded “Very easy”, go to Question (b).
If you **DID NOT** respond “Very easy”, did you find it easier to judge what the warnings meant after you had experienced them a few times?

☐ Yes  ☐ No

If you responded “No”, why?

If you responded “Yes”, roughly how many times did you have to experience the Following Distance Warning system warnings before you were sure of what they meant?

☐ Twice  ☐ 3 to 5 times  ☐ Other, Please specify:  

(b) Did you have any difficulty **seeing** the yellow bars of the Following Distance Warning visual warning ladder?

☐ Yes  ☐ No

If you responded “Yes”, was it because *(you can tick more than one response)*:

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view
☐ The coloured bars and ladder were too small
☐ The coloured bars and ladder were blurry
☐ The yellow bars rarely attracted my attention
☐ The Visual Warning Display had overheated

*(more options over page)*
The colour “yellow” is not obvious enough – it is too similar to the screen background

☐ Other, Please specify: ____________________________

(c) How effective were the yellow bars of the visual warning ladder in alerting you that you were travelling too close to the car in front?

☐ Very ineffective ☐ Ineffective ☐ Neither effective nor ineffective ☐ Effective ☐ Very effective

If you responded “Very ineffective” or “Ineffective”, why?

__________________________________________________________________________

(d) Did you have any difficulty seeing the red bars of the Following Distance Warning visual warning ladder?

☐ Yes ☐ No ☐ I have never experienced this visual warning

If you responded “I have never experienced this visual warning”, go to Question (h) on page 5.

If you responded “Yes”, was it because (you can tick more than one response):

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The red bars rarely attracted my attention
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view
☐ The bars and ladder were too small
☐ The bars and ladder were too blurry

(more options over page)
The Visual Warning Display had overheated

The colour “red” is not obvious enough – it is too similar to the screen background

The colours “red” and “yellow” are too similar – so it was hard to distinguish between the two colours

The visual warning ladder was flashing too quickly

The visual warning ladder was flashing too slowly

Other, Please specify: ____________________________________

(e) Did you have any difficulty seeing the visual warning ladder flash?

☐ Yes ☐ No

If you responded “Yes”, was it because (you can tick more than one response):

☐ There was too much glare on the screen

☐ There was too much reflection on the screen

☐ The screen was too bright

☐ The screen was not bright enough

☐ The Visual Warning Display is too far over to the left, making the screen difficult to view

☐ The visual warning ladder was too small

☐ The visual warning ladder was blurry

☐ The Visual Warning Display had overheated

☐ The flashing ladder rarely attracted my attention

☐ The visual warning ladder was flashing too quickly

☐ The visual warning ladder was flashing too slowly

☐ Other, Please specify: ____________________________________
(f) How effective were the **red** bars of the visual warning ladder in alerting you that you were travelling too close to the car in front?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded "Very ineffective" or "Ineffective", why?


(g) How effective was the **flashing** visual warning ladder in alerting you that you were travelling too close to the car in front?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?


(h) Were you satisfied with the *look* of the Following Distance Warning system **visual warning graphics** (e.g ladder display, coloured bars)?

- [ ] Yes
- [ ] No

If you responded “No”, what *didn’t* you like about the look of the Following Distance Warning system **visual warning graphics** and why? What would you recommend instead?


(i) Did you have any difficulty **hearing** the Following Distance Warning system audio warning?

- [ ] Yes
- [ ] No
- [ ] I have never experienced the audio warning
If you responded “I have never experienced the audio warning”, go to Question (m) on page 7.

If you responded “Yes”, was it because (you can tick more than one response):

☐ The audio warning volume was too low
☐ The audio warning was muffled by other sounds in the vehicle (e.g. talking, radio)
☐ Other, Please specify: __________________________

(j) Were you satisfied with the sound of the Following Distance Warning system audio warning?

☐ Yes ☐ No

If you responded “No”, what didn’t you like about the sound of the Following Distance Warning system audio warning and why? What would you recommend instead?

________________________________________________________________________________________

(k) How effective was the audio warning in alerting you that you were travelling too close to the car in front?

☐ Very ineffective ☐ Ineffective ☐ Neither effective nor ineffective ☐ Effective ☐ Very effective

If you responded “Very ineffective” or “Ineffective”, why?

________________________________________________________________________________________
(l) How effective was the **graded warning information** (i.e. yellow bars, red bars and flashing visual warning ladder, then audio) in letting you know that you are getting progressively closer to the car in front?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

- [ ]

(m) The Following Distance Warning system warnings occur in several stages. Stage 1 occurs when the distance between your car and the one you are following is 2 seconds. The three bars at the top of the visual warning ladder display fill with yellow, one after the other, as following distance decreases. If you get closer to the car ahead, so that you are 1.3 seconds away, the bars below the yellow bars start to fill with red, one after the other. The entire ladder display starts to flash when the first red bar appears. The ladder keeps flashing unless following distance increases. If the distance between your car and the car in front reduces to 1.1 seconds, the bar at the bottom of the display fills with red and an audio warning sounds.

Are you satisfied with the **sequence** in which the Following Distance Warning system warnings activate?

- [ ] Yes
- [ ] No

If you responded “No”, how would you re-design the Following Distance Warning system warning sequence?

- [ ]
(n) What one thing do you like **most** about the Following Distance Warning system?

(n) blank box

(o) What one thing do you like **least** about the Following Distance Warning system?

(o) blank box

(p) What things about the Following Distance Warning system would you tell the designers to change (you can list up to 3)?

(p) blank box

Part B – System Override Button

1. Have you used the System Override function?

   [ ] Yes  [ ] No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Part C on page 13.
2. This next series of questions is designed to get a feel for how user friendly you found the System Override function. When answering these questions, think about the times when you used the system override function.

(a) Thinking back to the very first time you wanted to temporarily turn off system warnings, how easy was it for you to use the System Override Button?

- [ ] Very difficult
- [ ] Difficult
- [ ] Neither easy nor difficult
- [ ] Easy
- [ ] Very easy

If you responded “Very easy”, go to Question (b).

If you DID NOT respond “Very easy”, what was the difficulty that you experienced in trying to use the System Override Button (you can tick more than one response)?

- [ ] Couldn’t remember where the Button was located
- [ ] The Button was obstructed by the steering wheel, making it difficult to see
- [ ] The Button was difficult to see during the day
- [ ] The Button was not labelled clearly enough
- [ ] The Button was too stiff to press and so had to be pressed really hard in order to activate the System Override
- [ ] The Button was hard to distinguish from other buttons, because they look too similar
- [ ] The Button was positioned too close to other buttons, making it difficult to press the System Override Button without unintentionally pressing other buttons at the same time
- [ ] The Button was difficult to see at night
- [ ] The Button was too far away to reach comfortably
- [ ] Other, Please specify: ___________________________
If you **DID NOT** respond “Very easy”, did you find it easier to use the System Override Button the next time you wanted to temporarily override system warnings using the System Override function?

- Yes
- No
- I never used the System Override again because of the difficulty I experienced the first time I tried to use it
- I never used the System Override again because I never had the need to

If you responded “No”, why?

(b) Were you satisfied with the location of the System Override Button?

- Yes
- No

If you responded “No”, what **didn’t** you like about the location of the System Override Button and why? What location would you recommend instead?

(c) Were you satisfied with the *look and feel* of the System Override Button (e.g. colour, size, shape)?

- Yes
- No

If you responded “No”, what **didn’t** you like about the look and feel of the System Override Button and why? What would you recommend instead?
(d) Did you have any difficulty seeing or reading the System Override message on the Visual Warning Display stating that the system override was activated?

☐ Yes  ☐ No

If you responded “Yes”, was it because (you can tick more than one response):

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view
☐ The text was too small
☐ The contrast between the text and background was not great enough
☐ The text was blurry
☐ The font of the text message was not easy to read
☐ The Visual Warning Display had overheated
☐ Other, Please specify: ____________________________

(e) Were you satisfied with the look of the System Override visual message stating that the system override was activated?

☐ Yes  ☐ No

If you responded “No”, what didn’t you like about the look of the System Override visual message and why? What would you recommend instead?

____________________________________________________________________________________

____________________________________________________________________________________
(f) How effective was the System Override visual message in confirming that you had successfully activated the system override?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(g) How effective was the System Override visual message in keeping you continually reminded that all system warnings were disabled?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(h) In response to pressing the System Override Button, the system warnings are disabled for a period of 1 to 2 minutes. Is this amount of time acceptable?

- [ ] Yes
- [ ] No

If you responded “No”, for how long should the system warnings be temporarily disabled?
Part C – Master Volume Control

1. Have you adjusted the volume of the audio warnings/messages using the Master Volume Control?
   - ☐ Yes
   - ☐ No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Part D on page 15.

2. This next series of questions is designed to get a feel for how user friendly you found the Master Volume Control function. When answering these questions, think about the times when you used the Master Volume Control.

   (a) Thinking back to the very first time you wanted to adjust the volume of the audio warnings and voice messages using the Master Volume Control, how easy was it for you to use the Master Volume Control?

      - ☐ Very difficult
      - ☐ Difficult
      - ☐ Neither easy nor difficult
      - ☐ Easy
      - ☐ Very easy

   If you responded “Very easy”, go to Question (b).

   If you DID NOT respond “Very easy”, what was the difficulty that you experienced in trying to use the Master Volume Control (you can tick more than one response)?

      - ☐ The Buttons were difficult to see during the day
      - ☐ Couldn’t remember where the Buttons were located
      - ☐ The Buttons were obstructed by the steering wheel, making them difficult to see
      - ☐ The Buttons were not labelled clearly enough to show which button was for increasing volume and which one was for decreasing volume
      - ☐ The Buttons were too stiff to press and so had to be pressed really hard in order to adjust the volume
      - ☐ The Buttons were hard to distinguish from other buttons, because they looked too similar
      - ☐ The Buttons were too sensitive – pressing a button just once increased/decreased the volume by too much

      (more options over page)
The Buttons were not sensitive enough – a button had to be pressed several times in order to detect a noticeable change in volume.

The Buttons were positioned too close to other buttons, making it difficult to press the correct volume button without unintentionally pressing other buttons at the same time.

The Buttons were difficult to see at night.

The Buttons were too far away to reach comfortably.

It was too difficult to tell whether the volume had been increased as a result of pressing the button for increasing volume or whether the volume had been decreased as a result of pressing the button for decreasing volume.

After pressing a Button (to adjust the volume) there was no way of knowing the volume setting.

Other, Please specify: ____________________________

If you DID NOT respond “Very easy”, did you find it easier to use the Master Volume Control the next time?

☐ Yes  ☐ No  ☐ I never used the Master Volume Control again because of the difficulty I experienced the first time I tried to use it  ☐ I never used the Master Volume Control again because I never had the need to

If you responded “No”, why?

________________________________________________________________________

(b) Were you satisfied with the location of the Master Volume Control buttons?

☐ Yes  ☐ No

Form 2
If you responded “No”, what didn’t you like about the location of the Master Volume Control buttons and why? What location would you recommend instead?

(c) Were you satisfied with the look and feel of the Master Volume Control buttons (e.g. colour, size, shape)?

☐ Yes  ☐ No

If you responded “No”, what didn’t you like about the look and feel of the Master Volume Control buttons and why? What would you recommend instead?

Part D – Visual Warning Display

1. This next series of questions is designed to get a feel for how user friendly you have found the Visual Warning Display. When answering these questions think about the times when you have received warnings or messages on the Visual Warning Display.

(a) Did you have any difficulty seeing/reading the warnings/messages presented on the Visual Warning Display during the day?

☐ Yes  ☐ No

If you responded “Yes”, was it because (you can tick more than one response):

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view

(more options over page)
(b) Did you have any difficulty seeing/reading the warnings/messages presented on the Visual Warning Display at night?

☐ Yes ☐ No

If you responded “Yes”, was it because (you can tick more than one response):

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough

☐ The Visual Warning Display is too far over to the left, making the screen difficult to view
☐ The Visual Warning Display is too small
☐ The Visual Warning Display is positioned too high up on the dashboard
☐ The Visual Warning Display had overheated
☐ The Visual Warning Display is obstructed by the steering wheel (or some other object)

☐ Other, Please specify:  

(c) Were you satisfied with the location of the Visual Warning Display?

☐ Yes ☐ No
If you responded “No”, what didn’t you like about the location of the Visual Warning Display and why? What location would you recommend instead?

(d) Were you satisfied with the look and feel of the Visual Warning Display (e.g. size, colour)?

[ ] Yes  [ ] No

If you responded “No”, what didn’t you like about the look and feel of the Visual Warning Display and why? What would you recommend instead?

(e) Have you adjusted the brightness of the Visual Warning Display?

[ ] Yes  [ ] No

If you responded “Yes” go to Question (f).

If you responded “No” go to Question (j) on page 19.

(f) Thinking back to the very first time you wanted to adjust the brightness of the display, how easy was it for you to use the brightness control?

[ ] Very difficult  [ ] Difficult  [ ] Neither easy nor difficult  [ ] Easy  [ ] Very easy

If you responded “Very easy”, go to Question (g).

If you DID NOT respond “Very easy”, what was the difficulty that you experienced in trying to use the brightness control (you can tick more than one response)?

[ ] The Control was difficult to see/find during the day
[ ] Couldn’t remember where the Control was located
[ ] The colour of the Control was too similar to the Visual Warning Display making it difficult to see/find

(more options over page)
The Control was too stiff to turn

Had to turn the Control a lot in order to have any effect on the Display’s brightness

The Control was too sensitive – turning it a small amount resulted in too great a change in brightness

The Control was difficult to see/find at night

The Control was too far away to reach comfortably

The Control was too small to turn

Other, Please specify: ____________________________

If you DID NOT respond “Very easy”, did you find it easier to use the brightness control the next time?

☐ Yes ☐ No ☐ I never used the brightness control again because of the difficulty I experienced the first time I tried to use it ☐ I never used the brightness control again because I never had the need to

If you responded “No”, why?

______________________________

(g) Were you satisfied with the location of the brightness control on the Visual Warning Display?

☐ Yes ☐ No

If you responded “No”, what didn’t you like about the location of the brightness control and why? What location would you recommend instead?

______________________________

(h) Were you satisfied with the look and feel of the brightness control (e.g. size, colour, thumbwheel mechanism)?

☐ Yes ☐ No
If you responded “No”, what didn’t you like about the look and feel of the Visual Warning Display and why? What would you recommend instead?

(i) How effective was the brightness control mechanism in adjusting the brightness of the Visual Warning Display by an appropriate amount?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(j) Have you adjusted the orientation of the Visual Warning Display?

- [ ] Yes
- [ ] No

If you responded “Yes” go to Question (k).

If you responded “No” go to the End of the Questionnaire.

(k) Thinking back to the very first time you wanted to adjust the orientation of the display, how easy was it to do?

- [ ] Very difficult
- [ ] Difficult
- [ ] Neither easy nor difficult
- [ ] Easy
- [ ] Very easy

If you responded “Very easy”, go to the End of the Questionnaire.

If you DID NOT respond “Very easy”, what was the difficulty that you experienced in trying to adjust the orientation of the display (you can tick more than one response)?

- [ ] The adjustable arm was too stiff to move
- [ ] The range of movement was too restrictive
- [ ] Other, Please specify: __________________________________________
End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 2

This questionnaire should take you about 15 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A - Speed Warning System

1. Have you experienced warnings from the Speed Warning system?
   
   □ Yes        □ No
   
   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Part B on page 9.

2. This next series of questions is designed to get a feel for how user friendly you found the warnings of the Speed Warning system. When answering these questions, think about the times when you received warnings from the Speed Warning system.

   (a) Thinking back to the very first time the Speed Warning system issued warnings, how easy was it for you to judge what the warnings meant?

   □ Very difficult    □ Difficult    □ Neither easy nor difficult    □ Easy    □ Very easy

   If you responded “Very easy”, go to Question (b).
If you **DID NOT** respond “Very easy”, did you find it easier to judge what the warnings meant after you had experienced the warnings a few times?

- [ ] Yes  
- [x] No

If you responded “No”, why?

[ ]

If you responded “Yes”, roughly how many times did you have to experience the Speed Warning system warnings before you were sure of what they meant?

- [ ] Twice
- [ ] 3 to 5 times
- [ ] Other, Please specify:  

(b) Did you have any difficulty **seeing** the Speed Warning system **static** visual icon (i.e. miniature speed limit sign **without** flashing) on the Visual Warning Display?

- [ ] Yes  
- [ ] No

If you responded “Yes”, was it because *(you can tick more than one response)*:

[ ] There was too much glare on the screen
[ ] There was too much reflection on the screen
[ ] The screen was too bright
[ ] The screen was not bright enough
[ ] The Visual Warning Display is too far over to the left, making the screen difficult to view
[ ] The visual icon was too small
[ ] The visual icon was blurry
[ ] The static visual icon rarely attracted my attention

(more options over page)
(c) Were you satisfied with the look of the Speed Warning system visual warning graphics – that is, the miniature speed limit sign?

Yes □ No □

If you responded “No”, what didn’t you like about the look of the Speed Warning system visual warning graphics and why? What would you recommend instead?

________________________________________________________________________

(d) How effective was the static visual warning (i.e. miniature speed limit sign without flashing) in alerting you that you were exceeding the speed limit by 3 km/h or more?

Very ineffective □ Ineffective □ Neither effective nor ineffective □ Effective □ Very effective □

If you responded “Very ineffective” or “Ineffective”, why?

________________________________________________________________________

(e) Did you have any difficulty hearing the Speed Warning system audio chime (“bong”)?

Yes □ No □
If you responded “Yes”, was it because (you can tick more than one response):

- [ ] The audio volume was too low
- [ ] The sound was muffled by other sounds in the vehicle (e.g. talking, radio)
- [ ] Other, Please specify: ___________________________________________

(f) Were you satisfied with the sound of the Speed Warning system audio chime (“bong“)?

- [ ] Yes  - [ ] No

If you responded “No”, what didn’t you like about the sound of the Speed Warning system audio chime and why? What would you recommend instead?

- [ ] Very ineffective  - [ ] Ineffective  - [ ] Neither effective nor ineffective  - [ ] Effective  - [ ] Very effective

If you responded “Very ineffective“ or “Ineffective“, why?

- [ ] Yes  - [ ] No

(h) Have you experienced the second level of speed warning, that is, the flashing visual warning (i.e. miniature speed limit sign with flashing red circle) and upward pressure on the accelerator?

- [ ] Yes  - [ ] No

If you responded “Yes”, go to Question (i).
If you responded “No”, go to Question (n) on page 7.

(i) Did you have any difficulty **seeing** the Speed Warning system **flashing** visual icon (i.e. miniature speed limit sign **with** flashing red circle) on the Visual Warning Display?

☐ Yes  ☐ No

If you responded “Yes”, was it because **(you can tick more than one response):**

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The flashing visual icon rarely attracted my attention
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view
☐ The visual icon was too small
☐ The visual icon was blurry
☐ The display had overheated
☐ The red circle was flashing too quickly
☐ The red circle was flashing too slowly
☐ Other, Please specify:    

(j) How effective was the **flashing visual** warning (i.e. miniature speed limit sign **with** flashing red circle) in alerting you that you were still exceeding the speed limit by 3 km/h or more?

☐ Very ineffective  ☐ Ineffective  ☐ Neither effective nor ineffective  ☐ Effective  ☐ Very effective
If you responded “Very ineffective” or “Ineffective”, why?

(k) Did you have any difficulty feeling the upward pressure on the accelerator?

☐ Yes ☐ No

If you responded “Yes”, what was the difficulty that you experienced?

(l) Were you satisfied with the degree of accelerator pressure?

☐ Yes ☐ No

If you responded “No”, should there be more or less pressure?

☐ More ☐ Less

(m) How effective was the upward pressure on the accelerator in alerting you that you were still exceeding the speed limit by 3 km/h or more?

☐ Very ineffective ☐ Ineffective ☐ Neither effective nor ineffective ☐ Effective ☐ Very effective

If you responded “Very ineffective” or “Ineffective”, why?
The Speed Warning system warnings occur in a two stage sequence. Stage 1 occurs when vehicle speed exceeds 3 km/h over the posted speed limit. A visual warning (i.e. miniature speed limit sign without flashing) is issued along with a single audio chime (“bong”). If speed has not dropped to below 3 km/h over the speed limit within 2 seconds of the Stage 1 warning being issued, Stage 2 occurs. In this stage, a flashing visual warning (i.e. miniature speed limit sign with flashing red circle) is issued along with upward pressure on the accelerator pedal. The warnings stop when speed drops to below 3 km/h over the posted speed limit.

Are you satisfied with the sequence in which the Speed Warning system warnings activate?

☐ Yes  ☐ No

If you responded “No”, how would you re-design the Speed Warning system warning sequence?


(o) When you are driving outside the confines of the Speed Warning system digital map database, the message “Outside digital map zone” should appear on the Visual Warning Display. Have you ever seen this message on the Visual Warning Display?

☐ Yes  ☐ No

If you responded “Yes”, how effective was the message “Outside digital map zone” in letting you know that you were outside the digital map area?

☐ Very ineffective  ☐ Ineffective  ☐ Neither effective nor ineffective  ☐ Effective  ☐ Very effective

If you responded “Very ineffective” or “Ineffective”, why?


(p) When the Speed Warning system temporarily loses GPS reception, the message “No GPS signal” will appear on the Visual Warning Display. Have you ever seen this message on the Visual Warning Display?

☐ Yes  ☐ No

If you responded “Yes”, how effective was the message “No GPS signal” in letting you know that GPS reception had been lost?

☐ Very ineffective  ☐ Ineffective  ☐ Neither effective nor ineffective  ☐ Effective  ☐ Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(q) What one thing do you like most about the Speed Warning system?

__________________________

(r) What one thing do you like least about the Speed Warning system?

__________________________

(s) What things about the Speed Warning system would you tell the designers to change (you can list up to 3)?

__________________________
Part B – Speed Request Button

1. Have you used the Speed Request function?
   □ Yes  □ No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Part C on page 14.

2. This next series of questions is designed to get a feel for how *user friendly* you found the Speed Request function. When answering these questions think about the times when you requested the current speed limit by using the Speed Request facility.

   (a) Thinking back to the very first time you wanted to request the speed limit using the Speed Request function, how easy was it for you to use the Speed Request Button?

   □ Very difficult  □ Difficult  □ Neither easy nor difficult  □ Easy  □ Very easy

   If you responded “Very easy” go to Question (b).

   If you **DID NOT** respond “Very easy”, what was the difficulty that you experienced in trying to use the Speed Request Button (*you can tick more than one response*)?

   □ The Button was difficult to see during the day

   □ Couldn’t remember where the Button was located

   □ The Button was obstructed by the steering wheel, making it difficult to see

   □ The Button is not labelled clearly enough

   □ The Button was too stiff to press and so had to be pressed really hard in order to activate the Speed Request

   □ The Button was positioned too close to other buttons, making it difficult to press the Speed Request Button without unintentionally pressing other buttons at the same time

   □ The Button is hard to distinguish from other buttons, because they look too similar

   (more options over page)
The Button was too difficult to see at night
☐  The Button was too far away to reach comfortably
☐  Other, Please specify:  

If you **DID NOT** respond “Very easy”, did you find it easier to use the Speed Request Button the next time you used it?
☐  Yes  ☐  No  ☐  I never used the Speed Request again because of the difficulty I experienced the first time I tried to use it
☐  I never used the Speed Request again because I never had the need to

If you responded “No”, why?

If you responded “No”, why?

(b) Were you satisfied with the location of the Speed Request Button?
☐  Yes  ☐  No

If you responded “No”, what didn’t you like about the location of the Speed Request Button and why? What location would you recommend instead?

(c) Were you satisfied with the look and feel of the Speed Request Button (e.g. colour, size, shape)?
☐  Yes  ☐  No

If you responded “No”, what didn’t you like about the look and feel of the Speed Request Button and why? What would you recommend instead?
(d) Thinking back to the very first time you requested the speed limit using the Speed Request function, how easy was it for you to judge what the speed limit was from the information that appeared on the Visual Warning Display?

- [ ] Very difficult
- [ ] Difficult
- [ ] Neither easy nor difficult
- [ ] Easy
- [ ] Very easy

If you responded “Very easy”, go to Question (e).

If you DID NOT respond “Very easy”, did you find it easier to judge what the speed limit was after you had used the Speed Request a few times?

- [ ] Yes
- [ ] No
- [ ] I never used the Speed Request again

If you responded “No”, why?

If you responded “Yes”, roughly how many times did you have to use the Speed Request before you were able to judge what the speed limit was from the information that appeared on the Visual Warning Display?

- [ ] Twice
- [ ] 3 to 5 times
- [ ] Other, Please specify: __________________________

(e) Did you have any difficulty seeing the Speed Request visual notification on the Visual Warning Display (i.e. miniature speed limit sign showing the current speed limit)?

- [ ] Yes
- [ ] No
If you responded “Yes”, was it because *(you can tick more than one response)*:

- [ ] There was too much glare on the screen
- [ ] There was too much reflection on the screen
- [ ] The screen was too bright
- [ ] The screen was not bright enough
- [ ] The Visual Warning Display is too far over to the left, making the screen difficult to view
- [ ] The visual icon was too small
- [ ] The visual icon was blurry
- [ ] The Visual Warning Display had overheated
- [ ] Other, Please specify:

(f) Were you satisfied with the *look* of the Speed Request **visual notification graphics** – that is, the miniature speed limit sign showing the current speed limit)?

- [ ] Yes
- [ ] No

If you responded “No”, what **didn’t** you like about the look of the Speed Request **visual notification graphics** and why? What would you recommend instead?

(g) How effective was the Speed Request function in providing you with speed limit information with minimal delay (i.e. from the time you pressed the Speed Request Button)?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective
If you responded “Very ineffective” or “Ineffective”, why?

(h) Did you have any difficulty hearing the Speed Request audio chime (“bong”)?

☐ Yes          ☐ No

If you responded “Yes”, was it because (you can tick more than one response):

☐ The audio volume was too low
☐ The sound was muffled by other sounds in the vehicle (e.g. talking, radio)
☐ Other, Please specify: ____________________________

(i) Were you satisfied with the sound of the Speed Request audio chime (“bong”)?

☐ Yes          ☐ No

If you responded “No”, what didn’t you like about the sound of the Speed Request audio chime (“bong”) and why? What would you recommend instead?

(j) How effective was the audio chime in alerting you that you had received speed limit information?

☐ Very ineffective          ☐ Ineffective          ☐ Neither effective nor ineffective
☐ Effective          ☐ Very effective
If you responded “Very ineffective” or “Ineffective”, why?

(k) The audio chime sometimes sounds before notification of the speed limit appears on the Visual Warning Display and other times it sounds at the same time as when the speed limit notification appears on the display? Is this inconsistency acceptable?

☐ Yes ☐ No

If you responded “No”, should the audio chime sound before or at the same time as when the speed limit is displayed?

(l) In response to pressing the Speed Request Button, the speed limit appears on the Visual Warning Display and remains there for 3 seconds. Is this amount of time acceptable?

☐ Yes ☐ No

If you responded “No”, for how long should the speed limit appear on the Visual Warning Display?

Part C – System Override Button

1. Have you used the System Override function?

☐ Yes ☐ No

If you responded “Yes”, go to Question 2.

If you responded “No”, go to Part D on page 19.
2. This next series of questions is designed to get a feel for how *user friendly* you found the System Override function. When answering these questions, think about the times when you used the system override function.

(a) Thinking back to the **very** first time you wanted to temporarily turn off system warnings, how easy was it for you to use the System Override Button?

- [ ] Very difficult
- [ ] Difficult
- [ ] Neither easy nor difficult
- [ ] Easy
- [ ] Very easy

If you responded “Very easy”, go to Question (b).

If you **DID NOT** respond “Very easy”, what was the difficulty that you experienced in trying to use the System Override Button (**you can tick more than one response**)?

- [ ] Couldn’t remember where the Button was located
- [ ] The Button was obstructed by the steering wheel, making it difficult to see
- [ ] The Button was difficult to see during the day
- [ ] The Button was not labelled clearly enough
- [ ] The Button was too stiff to press and so had to be pressed really hard in order to activate the System Override
- [ ] The Button was hard to distinguish from other buttons, because they look too similar
- [ ] The Button was positioned too close to other buttons, making it difficult to press the System Override Button without unintentionally pressing other buttons at the same time
- [ ] The Button was difficult to see at night
- [ ] The Button was too far away to reach comfortably
- [ ] Other, Please specify:  

If you **DID NOT** respond “Very easy”, did you find it easier to use the System Override Button the next time you wanted to temporarily override system warnings using the System Override function?

☐ Yes ☐ No ☐ I never used the System Override again because of the difficulty I experienced the first time I tried to use it ☐ I never used the System Override again because I never had the need to

If you responded “No”, why?

☐ ☐ ☐

(b) Were you satisfied with the *location* of the System Override Button?

☐ Yes ☐ No

If you responded “No”, what *didn’t* you like about the location of the System Override Button and why? What location would you recommend instead?

☐ ☐

(c) Were you satisfied with the *look and feel* of the System Override Button (e.g. colour, size, shape)?

☐ Yes ☐ No

If you responded “No”, what *didn’t* you like about the look and feel of the System Override Button and why? What would you recommend instead?

☐ ☐

(d) Did you have any difficulty **seeing** or **reading** the System Override message on the Visual Warning Display stating that the system override was activated?

☐ Yes ☐ No
If you responded “Yes”, was it because (you can tick more than one response):

- [ ] There was too much glare on the screen
- [ ] There was too much reflection on the screen
- [ ] The screen was too bright
- [ ] The screen was not bright enough
- [ ] The Visual Warning Display is too far over to the left, making the screen difficult to view
- [ ] The text was too small
- [ ] The contrast between the text and background was not great enough
- [ ] The text was blurry
- [ ] The font of the text message was not easy to read
- [ ] The Visual Warning Display had overheated
- [ ] Other, Please specify: 

(e) Were you satisfied with the look of the System Override visual message stating that the system override was activated?

- [ ] Yes
- [ ] No

If you responded “No”, what didn’t you like about the look of the System Override visual message and why? What would you recommend instead?

(f) How effective was the System Override visual message in confirming that you had successfully activated the system override?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective
If you responded “Very ineffective” or “Ineffective”, why?

(g) How effective was the System Override visual message in keeping you continually reminded that all system warnings were disabled?

- Very ineffective
- Ineffective
- Neither effective nor ineffective
- Effective
- Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(h) In response to pressing the System Override Button, the system warnings are disabled for a period of 1 to 2 minutes. Is this amount of time acceptable?

- Yes
- No

If you responded “No”, for how long should the system warnings be temporarily disabled?
Part D – Master Volume Control

1. Have you adjusted the volume of the audio warnings/messages using the Master Volume Control?

☐ Yes ☐ No

If you responded “Yes”, go to Question 2.

If you responded “No”, go to Part E on page 21.

2. This next series of questions is designed to get a feel for how user friendly you found the Master Volume Control function. When answering these questions, think about the times when you used the Master Volume Control.

(a) Thinking back to the very first time you wanted to adjust the volume of the audio warnings and voice messages using the Master Volume Control, how easy was it for you to use the Master Volume Control?

☐ Very difficult ☐ Difficult ☐ Neither easy nor difficult ☐ Easy ☐ Very easy

If you responded “Very easy”, go to Question (b).

If you DID NOT respond “Very easy”, what was the difficulty that you experienced in trying to use the Master Volume Control (you can tick more than one response)?

☐ The Buttons were difficult to see during the day

☐ Couldn’t remember where the Buttons were located

☐ The Buttons were obstructed by the steering wheel, making them difficult to see

☐ The Buttons were not labelled clearly enough to show which button was for increasing volume and which one was for decreasing volume

☐ The Buttons were too stiff to press and so had to be pressed really hard in order to adjust the volume

☐ The Buttons were hard to distinguish from other buttons, because they looked too similar

☐ The Buttons were too sensitive – pressing a button just once increased/decreased the volume by too much

(more options over page)
The Buttons were not sensitive enough – a button had to be pressed several times in order to detect a noticeable change in volume

The Buttons were positioned too close to other buttons, making it difficult to press the correct volume button without unintentionally pressing other buttons at the same time

The Buttons were difficult to see at night

The Buttons were too far away to reach comfortably

It was too difficult to tell whether the volume had been increased as a result of pressing the button for increasing volume or whether the volume had been decreased as a result of pressing the button for decreasing volume

After pressing a Button (to adjust the volume) there was no way of knowing the volume setting

Other, Please specify:  

If you DID NOT respond “Very easy”, did you find it easier to use the Master Volume Control the next time?

Yes  No  I never used the Master Volume Control again because of the difficulty I experienced the first time I tried to use it  I never used the Master Volume Control again because I never had the need to

If you responded “No”, why?

(b) Were you satisfied with the location of the Master Volume Control buttons?

Yes  No
If you responded “No”, what **didn’t** you like about the location of the Master Volume Control buttons and why? What location would you recommend instead?

(c) Were you satisfied with the *look and feel* of the Master Volume Control buttons (e.g. colour, size, shape)?

☐ Yes  ☐ No

If you responded “No”, what **didn’t** you like about the look and feel of the Master Volume Control buttons and why? What would you recommend instead?

Part E – Visual Warning Display

1. This next series of questions is designed to get a feel for how *user friendly* you have found the Visual Warning Display. When answering these questions think about the times when you have received warnings or messages on the Visual Warning Display.

(a) Did you have any difficulty **seeing/reading** the warnings/messages presented on the Visual Warning Display during the **day**?

☐ Yes  ☐ No

If you responded “Yes”, was it because *(you can tick more than one response)*:

☐ There was too much glare on the screen

☐ There was too much reflection on the screen

☐ The screen was too bright

☐ The screen was not bright enough

☐ The Visual Warning Display is too far over to the left, making the screen difficult to view

(more options over page)
The Visual Warning Display is too small
The Visual Warning Display is positioned too high up on the dashboard
The Visual Warning Display had overheated
The Visual Warning Display is obstructed by the steering wheel (or some other object)
Other, Please specify: 

(b) Did you have any difficulty seeing/reading the warnings/messages presented on the Visual Warning Display at night?

☐ Yes        ☐ No

If you responded “Yes”, was it because (you can tick more than one response):

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view
☐ The Visual Warning Display is too small
☐ The Visual Warning Display is positioned too high up on the dashboard
☐ The Visual Warning Display had overheated
☐ The Visual Warning Display is obstructed by the steering wheel (or some other object)
Other, Please specify: 

(c) Were you satisfied with the location of the Visual Warning Display?

☐ Yes        ☐ No
If you responded “No”, what didn’t you like about the location of the Visual Warning Display and why? What location would you recommend instead?

(d) Were you satisfied with the look and feel of the Visual Warning Display (e.g. size, colour)?

☐ Yes       ☐ No

If you responded “No”, what didn’t you like about the look and feel of the Visual Warning Display and why? What would you recommend instead?

(e) Have you adjusted the brightness of the Visual Warning Display?

☐ Yes       ☐ No

If you responded “Yes” go to Question (f).

If you responded “No” go to Question (j) on page 25.

(f) Thinking back to the very first time you wanted to adjust the brightness of the display, how easy was it for you to use the brightness control?

☐ Very difficult         ☐ Difficult         ☐ Neither easy nor difficult         ☐ Easy         ☐ Very easy

If you responded “Very easy”, go to Question (g).

If you DID NOT respond “Very easy”, what was the difficulty that you experienced in trying to use the brightness control (you can tick more than one response)?

☐ The Control was difficult to see/find during the day
☐ Couldn’t remember where the Control was located
☐ The colour of the Control was too similar to the Visual Warning Display making it difficult to see/find

(more options over page)
The Control was too stiff to turn
Had to turn the Control a lot in order to have any effect on the Display’s brightness
The Control was too sensitive – turning it a small amount resulted in too great a change in brightness
The Control was difficult to see/find at night
The Control was too far away to reach comfortably
The Control was too small to turn
Other, Please specify:

If you DID NOT respond “Very easy”, did you find it easier to use the brightness control the next time?
Yes  No  I never used the brightness control again because of the difficulty I experienced the first time I tried to use it
I never used the brightness control again because I never had the need to

If you responded “No”, why?

(g) Were you satisfied with the location of the brightness control on the Visual Warning Display?
Yes  No

If you responded “No”, what didn’t you like about the location of the brightness control and why? What location would you recommend instead?

(h) Were you satisfied with the look and feel of the brightness control (e.g. size, colour, thumbwheel mechanism)?
Yes  No
If you responded “No”, what didn’t you like about the look and feel of the Visual Warning Display and why? What would you recommend instead?

(i) How effective was the brightness control mechanism in adjusting the brightness of the Visual Warning Display by an appropriate amount?

☐ Very ineffective  ☐ Ineffective  ☐ Neither effective nor ineffective  ☐ Effective  ☐ Very effective

If you responded ”Very ineffective” or ”Ineffective”, why?

(j) Have you adjusted the orientation of the Visual Warning Display?

☐ Yes  ☐ No

If you responded ”Yes” go to Question (k).

If you responded “No” go to the End of the Questionnaire.

(k) Thinking back to the very first time you wanted to adjust the orientation of the display, how easy was it to do?

☐ Very difficult  ☐ Difficult  ☐ Neither easy nor difficult  ☐ Easy  ☐ Very easy

If you responded “Very easy”, go to the End of the Questionnaire.

If you DID NOT respond ”Very easy”, what was the difficulty that you experienced in trying to adjust the orientation of the display (you can tick more than one response)?

☐ The adjustable arm was too stiff to move
☐ The range of movement was too restrictive
☐ Other, Please specify:
End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
Appendix AD  Interim Questionnaire Time 3
Interim Questionnaire Time 3

Aim of the questionnaire

Control Participants:

1. To assess participants’ acceptability towards the following systems:
   - Seat Belt Reminder;
   - Daytime Running Lights; and
   - Reverse Collision Warning.

Treatment Participants, who were exposed to ISA in During 1:

1. To measure the workload experienced by participants under the following conditions:
   - While driving behind another car during the period before the SafeCar systems became active; and
   - While driving and warnings of the Intelligent Speed Adaptation system were being issued.

2. To measure participants’ acceptability towards the following systems:
   - Seat Belt Reminder;
   - Daytime Running Lights;
   - Reverse Collision Warning;
   - Intelligent Speed Adaptation;
   - Speed Request; and
   - Following Distance Warning.

Treatment Participants, who were exposed to FDW in During 1:

1. To measure the workload experienced by participants under the following conditions:
   - While driving behind another car during the period before the SafeCar systems became active; and
   - While driving and warnings of the Following Distance Warning system were being issued.

2. To measure participants’ acceptability towards the following systems:
   - Seat Belt Reminder;
   - Daytime Running Lights;
   - Reverse Collision Warning;
   - Intelligent Speed Adaptation;
   - Speed Request; and
   - Following Distance Warning.
Treatment Participants, who were exposed to ISA and FDW in During 1:

1. To measure the workload experienced by participants while driving behind another car during the period before the SafeCar systems became active.

2. To determine whether participants experienced any confusion, overload, etc. as a result of receiving warnings from multiple systems at the same time.

3. To measure participants’ acceptability towards the following systems:
   - Seat Belt Reminder;
   - Daytime Running Lights;
   - Reverse Collision Warning;
   - Intelligent Speed Adaptation;
   - Speed Request; and
   - Following Distance Warning.

**To whom should this questionnaire be administered?**

Interim Questionnaire Time 3 should be administered to ALL participants. There are four forms of the questionnaire available:

1. Comprises 3 parts:
   - Part A – Seat Belt Reminder System;
   - Part B – Daytime Running Lights; and
   - Part C – Reverse Collision Warning System.

2. Comprises 7 parts:
   - Part A – Baseline Following;
   - Part B – Speed Warning System;
   - Part C – Seat Belt Reminder System;
   - Part D – Daytime Running Lights;
   - Part E – Reverse Collision Warning System;
   - Part F – Speed Request; and
   - Part G – Following Distance Warning System.

3. Comprises 7 parts:
   - Part A – Baseline Following;
   - Part B – Following Distance Warning System;
   - Part C – Seat Belt Reminder System;
   - Part D – Daytime Running Lights;
   - Part E – Reverse Collision Warning System;
   - Part F – Speed Warning System; and
   - Part G – Speed Request.

4. Comprises 8 parts:
   - Part A – Baseline Following;
   - Part B – Multiple Systems;
The form of the questionnaire to be administered to a given participant will depend on whether that participant is in the control or the treatment group and, if the participant is in the treatment group, whether he/she was exposed in During 1 to Intelligent Speed Adaptation, Following Distance Warning, or both Intelligent Speed Adaptation and Following Distance Warning. Therefore:

Control participants should undertake Form 1. (10 participants in total.)

Treatment participants who are being exposed to Intelligent Speed Adaptation in During 1 should undertake Form 2. (Seven participants in total.)

Treatment participants who are being exposed to Following Distance Warning in During 1 should undertake Form 3. (Seven participants in total.)

Treatment participants who are being exposed to both Following Distance Warning and Intelligent Speed Adaptation in During 1 should undertake Form 4. (Six participants in total.)

When during the study should this questionnaire be administered?

Interim Questionnaire Time 3 should be administered at the point in the study sequence when 6,750 kilometres of driving have been accumulated (excluding the Familiarisation period). For the treatment participants, this corresponds to the point 750 kilometres into the After 1 period.

How should this questionnaire be administered?

Refer Notes for Interim Questionnaire Times 1 and 2.

Arranging for administration of the questionnaire

Assuming participants drive, on average, 750 kilometres per week (based on 40,000 km/year), participants will be ready to undertake Interim Questionnaire Time 3 nine weeks after having carried out their Briefing and Training session, which marks the first day of the study for a given participant. However, a given participant may accumulate kilometres at a faster or a slower rate than expected. Consequently, it is recommended that, for every treatment participant, three to four weeks after Interim Questionnaire Time 2 has been sent to the participant and, for every control participant, five to six weeks after Interim Questionnaire Time 1 has been sent to the
participant (exact timing will depend on how quickly the participant is accumulating the kilometres based on previous communication between the participant and the experimenter), the experimenter contacts the participant to find out the current odometer reading of the participant’s SafeCar, whether there have been any instances of the flashing button being pressed, and which systems are currently active in the SafeCar. This information will help to determine how soon after the phone call the experimenter needs to administer the Interim Questionnaire Time 3 to that participant.

As with all previous questionnaires, during the phone call the experimenter should check whether the participant is happy to complete the questionnaire on his/her own. Assuming that this is the case, the experimenter should explain to the participant that shortly he/she will receive in the mail the next questionnaire, which needs to be completed within two days of its receipt. If the participant suggests another mode of questionnaire administration, the experimenter should make appropriate arrangements with the participant.

**Development of Interim Questionnaire Time 3**

**Measurement of Subjective Workload**

Refer Notes for Interim Questionnaire Time 1.

The “Baseline Following” workload measurements will be compared with those for the Following Distance Warning system. Please note that the workload measurements for the Following Distance Warning system will not take place until the After 2 period for those treatment participants who will be exposed to FDW in During 2 and the After 3 period for those treatment participants who will be exposed to FDW in During 3. However, since there were no prerequisites for measurement of “Baseline Following” workload it was decided that, in the interests of consistency, all treatment participants complete the section on “Baseline Following” workload as part of Interim Questionnaire Time 3.

The “Baseline” workload measure for comparison with the Intelligent Speed Adaptation workload measurements is the “Baseline Driving” measure collected as part of Interim Questionnaire Time 1.

**Measurement of Acceptability**

As defined in the current study, for a system to be “acceptable” it must be:

- Perceived to be useful – this is the degree to which a person believes that using a particular system will enhance his/her performance
- Perceived to be effective – this is the degree to which a person believes that a particular system does what it is designed to do
- Affordable – this dimension addresses the issue of how much users are willing to pay for the system
- Socially acceptable – this is the question of whether the system empowers users, whether it respects users’ freedom and privacy, and perceptions of
whether the system should be available to all who wish to have the system or whether it should only be available to those who have the greatest need for the system.

The objectives of acceptability measurement in this study are to:
1. track changes in acceptability of the SafeCar systems over time by comparing participants’ responses to the questionnaire items before system use with those after system use (and to determine which attributes of acceptability change over time); and
2. identify barriers to acceptance of the systems before and after system use, especially barriers that make the system less effective in producing the desired behavioural effects.

The key theme is whether participants’ acceptance of a system changes because of experience with the technology. Therefore, for the most part, the questions that were administered to participants as part of Preliminary Questionnaire Time 2, which provided baseline data on acceptability for each dimension, are being readministered as part of Interim Questionnaire Time 3. Questions have been kept in future tense for consistency. Therefore, in contrast with participants’ responses to questions in Preliminary Questionnaire Time 2, responses to the acceptability questions in Interim Questionnaire Time 3 will have been shaped by experience with the systems. This is the critical difference between the two questionnaires.

Please note that control participants are only being administered the sections on Seat Belt Reminder System, Daytime Running Lights and Reverse Collision Warning System. It was considered unnecessary to administer the sections on the other systems to the control participants at this stage. However, control participants will be asked to undertake the sections on all systems as part of Interim Questionnaire Time 6 in order to determine whether their perceived acceptability towards Intelligent Speed Adaptation, Following Distance Warning and the Speed Request has remained static over time or, whether exposure to other systems has had either a positive or negative impact on the level of acceptance towards the systems to which they were not exposed.

Eve Mitsopoulos
Prepared 13th May 2003
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 3

This questionnaire should take you about 10 to 15 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. You will probably recognise many of the questions that are in this questionnaire. This is because we are interested in finding out whether there have been any changes in how people feel about the systems under study.

In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A - Seat Belt Reminder System

1. To what extent do you feel that the Seat Belt Reminder System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

   0         1                  2                  3                  4                  5
   No use        Always of use

2. If you gave a score of 0 to Question 1, why do you think the Seat Belt Reminder System will be of no use to you (select only one response):?

   □ I always wear my seat belt anyway
   □ I know when it is safe to drive without a seat belt
   □ There is little chance of getting a fine for not wearing a seat belt

   (more options over page)
I don’t believe that wearing a seat belt in any situation will make me any safer

☐ Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt

☐ Seat belts are uncomfortable

☐ It would take away the enjoyment of driving

☐ Seat belts are too fiddly to put on

☐ I can’t be bothered putting my seat belt on

☐ Other, Please specify: __________________________

Form 1

3. To what extent do you think that the Seat Belt Reminder System will be of use to you in letting you know if any of your passengers are not wearing their seat belts? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

No use Always of use

4. If you gave a score of 0 to Question 3, why do you think the Seat Belt Reminder System will be of no use to you in letting you know if any of your passengers are not wearing their seat belts (select only one response):?

☐ I never carry passengers

☐ I always check anyway that my passengers are wearing their seat belts

☐ It doesn’t matter if my passengers don’t wear their seat belts, because wearing a seat belt won’t make them any safer

☐ My passengers always wear their seat belts, so there is no need to have warnings for them

☐ I always drive safely so there is no need for passengers to have to wear a seat belt

☐ There is little chance of getting a fine for not wearing a seat belt

☐ It is up to my passengers whether they wear a seat belt – it is not my responsibility

☐ Other, Please specify: __________________________
5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Warnings from the Seat Belt Reminder System are unnecessary when reversing out of a driveway or a parking spot

(b) The Seat Belt Reminder System will be of most benefit to drivers who forget to put their seat belts on

(c) The Seat Belt Reminder System is not necessary when there are hardly any other cars on the road

(d) There is no need for the Seat Belt Reminder System when travelling at speeds of less than 10 km/h

(e) There is no need for the Seat Belt Reminder System when travelling at speeds of greater than 10 km/h

(f) The Seat Belt Reminder System is a real necessity for people who do not put their seat belts on when travelling short distances
(g) The Seat Belt Reminder System will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(h) I will end up relying too strongly on the Seat Belt Reminder System to remind me to fasten my seat belt

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(i) I will end up relying too strongly on the Seat Belt Reminder System to let me know if any of my passengers are not wearing their seat belts

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(j) After having driven the car with the Seat Belt Reminder System, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a Seat Belt Reminder System

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(k) I will lose trust in the Seat Belt Reminder System if it does not issue warnings when it should issue warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(l) I will lose trust in the Seat Belt Reminder System if it issues false warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(m) The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(n) The Seat Belt Reminder System should be compulsory for all drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(o) The Seat Belt Reminder System should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(p) The Seat Belt Reminder System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(q) I would prefer it if, rather than just warning the driver, the Seat Belt Reminder System prevented the driver from starting the car if someone in the car is not wearing a seat belt

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(r) The Seat Belt Reminder System will make it easier for me to encourage my passengers to fasten their seat belts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) I will drive more safely with the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(t) I will enjoy driving less as a result of having the Seat Belt Reminder System in my car

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

(u) I would prefer a Seat Belt Reminder System that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers)

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

6. For most drivers, what effect on seat belt wearing will the Seat Belt Reminder System have in each of the following conditions/situations?

- Reversing
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing
- Driving short distances
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing
- Low traffic levels
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing
- Speeds less than 10km/h
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing
- Speeds more than 10km/h
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

7. What effect on seat belt wearing will the Seat Belt Reminder System have on drivers who do not wear seat belts for the following reasons?

- Forget to put seat belt on
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing
- Believe that seat belts are uncomfortable to wear
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing
- Believe that seat belts are too fiddly to put on
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing
- Believe that wearing seat belts is a violation of freedom
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

(more over page)
<table>
<thead>
<tr>
<th>Option</th>
<th>Increase</th>
<th>No change</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can’t be bothered putting their seat belt on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that there is little chance of getting a fine for not wearing a seat belt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that wearing seat belts does not enhance safety</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. What effect will the Seat Belt Reminder System have on each of the following:?

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Increase</th>
<th>No change</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence of crashes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injury severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability of being fined</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. How much would you be willing to pay for the Seat Belt Reminder System if it were an optional feature in a new car?

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase</td>
<td></td>
</tr>
<tr>
<td>Maintenance/service</td>
<td></td>
</tr>
</tbody>
</table>

10. How much would you be willing to pay for the Seat Belt Reminder System if it were able to be retrofitted to an existing car?

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase</td>
<td></td>
</tr>
<tr>
<td>Installation</td>
<td></td>
</tr>
<tr>
<td>Maintenance/service</td>
<td></td>
</tr>
</tbody>
</table>

11. Hypothetically, if you had the option of keeping the Seat Belt Reminder System in your vehicle at the end of the study (at no extra cost), would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

<table>
<thead>
<tr>
<th>Interest Level</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Disinterested</td>
<td></td>
</tr>
<tr>
<td>Disinterested</td>
<td></td>
</tr>
<tr>
<td>Neither interested nor disinterested</td>
<td></td>
</tr>
<tr>
<td>Interested</td>
<td></td>
</tr>
<tr>
<td>Very interested</td>
<td></td>
</tr>
</tbody>
</table>
If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part B - Daytime Running Lights

1. To what extent do you feel that Daytime Running Lights will be of use to you? A score of 0 means that the Daytime Running Lights will be of no use to you while a score of 5 means that they will always be of use to you.

0         1                  2                  3                  4                  5
No use         Always of use

2. If you gave a score of 0 to Question 1, why do you think the Daytime Running Lights will be of no use to you (select only one response)?

- I always turn on the headlights during the day anyway – even when the weather is good
- They would take away the enjoyment of driving
- Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users
- You can’t get fined for not turning on your headlights during the day
- I have a light coloured car
- Other, Please specify: _______________________________
3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Daytime Running Lights are not needed when there are hardly any other cars or pedestrians on the road

(b) Daytime Running Lights are a real necessity for drivers who forget to turn their headlights on during the day

(c) Daytime Running Lights should be compulsory for all drivers

(d) Daytime Running Lights will reduce my fuel economy

(e) Daytime Running Lights will put extra strain on my car battery

(f) I will need to change the headlamps more often because of the Daytime Running Lights

(g) I will be safer with the Daytime Running Lights equipped to my car
(h) Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(i) Driving will be less enjoyable with Daytime Running Lights in my car

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

4. What effect will Daytime Running Lights have on each of the following?

- Incidence of crashes
  [ ] Increase [ ] No change [ ] Decrease

- Crash severity
  [ ] Increase [ ] No change [ ] Decrease

- Injury severity
  [ ] Increase [ ] No change [ ] Decrease

- Probability of being fined
  [ ] Increase [ ] No change [ ] Decrease

5. How much would you be willing to pay for Daytime Running Lights if they were an optional feature in a new car?

  Purchase $ 
  Maintenance/service $ (assume yearly)

6. How much would you be willing to pay for Daytime Running Lights if they were able to be retrofitted to an existing car?

  Purchase $ 
  Installation $ 
  Maintenance/service $ (assume yearly)

7. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

[ ] Very Disinterested [ ] Disinterested [ ] Neither interested nor disinterested [ ] Interested [ ] Very interested
If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part C - Reverse Collision Warning

1. To what extent do you feel that Reverse Collision Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No use</td>
<td>Always of use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. If you gave a score of 0 to Question 1, why do you think the Reverse Collision Warning System will be of no use to you (select only one response):?

   - I am always on the lookout anyway when I reverse
   - It would take away the enjoyment of driving
   - I prefer to use other methods to help me reverse without hitting objects behind me (e.g. reflection in shop window)
   - Other, Please specify:

3. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

   (a) I will lose trust in the Reverse Collision Warning System if it fails to issue warnings when it should issue warnings

      | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
      |-------------------|---------|----------------------------|-------|---------------|
      |                   |         |                            |       |               |
(b) I will lose trust in the Reverse Collision Warning System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) I will end up relying more on the Reverse Collision Warning System than my own lookout while reversing

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) The Reverse Collision Warning System should be compulsory in all vehicles

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(e) The Reverse Collision Warning System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) I would prefer it if the Reverse Collision Warning System made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) The enjoyment of driving will increase as a result of having the Reverse Collision Warning System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(h) I will drive more safely with the Reverse Collision Warning System in my car

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(i) I would prefer a Reverse Collision Warning System that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

4. What effect will the Reverse Collision Warning System have on each of the following:

- Incidence of crashes  
  - Increase  No change  Decrease
- Crash severity  
  - Increase  No change  Decrease

5. How much would you be willing to pay for the Reverse Collision Warning System if it were an optional feature in a new car?

Purchase $______
Maintenance/service $______ (assume yearly)

6. How much would you be willing to pay for the Reverse Collision Warning System if it were able to be retrofitted to an existing car?

Purchase $______
Installation $______
Maintenance/service $______ (assume yearly)

7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested  Disinterested  Neither interested nor disinterested  Interested  Very interested
If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 3

This questionnaire should take you about 25 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. You will probably recognise many of the questions that are in this questionnaire. This is because we are interested in finding out whether there have been any changes in how people feel about the systems under study.

In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A – Baseline Following

1. This question is designed to gauge your impression of how much workload you experienced, on average, when driving and there was a car in front of you (i.e. about 2 seconds or less away from you) in the period before the SafeCar systems became active in your vehicle.

Six factors are known to contribute to the overall level of mental workload that people feel when they perform a task. Below are some questions that are designed to measure, for each of the six factors, the level of workload that you experienced.

For each of the six factors, please indicate, by placing a line at the appropriate point on the scale, the level of workload that you experienced while driving and there was a car in front of you (i.e. about 2 seconds or less away from you) during the period before the SafeCar systems became active in your vehicle.
For example, 

| Low | Neither high nor low | High |

**Mental demand:**
On average, how much mental and perceptual activity was required? That is, how much thinking, deciding, calculating, remembering, looking, searching, etc was required when you were driving and there was a car in front of you? Was the car driving task easy and simple (low) or demanding and complex (high)?

| Low | Neither high nor low | High |

**Physical demand:**
On average, how much physical activity was required? That is, how much controlling of the vehicle, operating the brake, etc was required when you were driving and there was a car in front of you? Was the car driving task easy and restful (low) or demanding and laborious (high)?

| Low | Neither high nor low | High |

**Time demand:**
On average, how much time pressure did you feel when driving and there was a car in front of you? Was the pace of driving slow and leisurely (low) or rapid and rushed (high)?

| Low | Neither high nor low | High |

**Performance:**
On average, how satisfied were you with your performance in driving while there was a car in front of you?

| Good | Neither good nor poor | Poor |

**Effort:**
On average, how hard did you have to work (mentally and physically) to drive while there was a car in front of you? Was little effort (low) or a large amount of effort (high) required?

| Low | Neither high nor low | High |
**Frustration level:**
On average, did you feel secure, gratified, content, relaxed and complacent (low) when driving and there was a car in front of you or did you feel insecure, discouraged, irritated, stressed and annoyed (high)?

| Low | Neither high nor low | High |

**Part B - Speed Warning System**

1. Over the last few weeks, have you experienced warnings from the Speed Warning system?
   - [ ] Yes
   - [ ] No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Question 3 (page 5).

2. This question is designed to gauge your impression of how much mental workload you experienced when you were driving and warnings from the Speed Warning system were being issued.

   Six factors are known to contribute to the overall level of mental workload that people feel when they perform a task. Below are some questions that are designed to measure, for each of the six factors, the level of workload that you experienced while the speed warnings were being issued.

   For each of the six factors, please indicate, by placing a line at the appropriate point on the scale, the level of workload that you experienced while you were driving and the Speed Warning system was issuing warnings.

   For example,

   | Low | Neither high nor low | High |

   **Mental demand:**
   On average, how much mental and perceptual activity was required? That is, how much thinking, deciding, calculating, remembering, looking, searching, etc was required when you were driving and you were receiving warnings from the Speed Warning system? Was the car driving task easy and simple (low) or demanding and complex (high) when the warnings were being issued?

   | Low | Neither high nor low | High |
**Physical demand:**
On average, how much physical activity was required? That is, how much controlling of the vehicle, operating the brake, etc was required when you were driving and you were receiving warnings from the Speed Warning system? Was the car driving task easy and restful (low) or demanding and laborious (high) when the warnings were being issued?

Low | Neither high nor low | High

**Time demand:**
On average, how much time pressure did you feel when driving while the Speed Warning system warnings were being issued? Was the pace of driving slow and leisurely (low) or rapid and rushed (high) when the warnings were being issued?

Low | Neither high nor low | High

**Performance:**
On average, how satisfied were you with your driving performance while the Speed Warning system warnings were being issued?

Good | Neither good nor poor | Poor

**Effort:**
On average, how hard did you have to work (mentally and physically) to drive while the Speed Warning system warnings were being issued? Was little effort (low) or a large amount of effort (high) required?

Low | Neither high nor low | High

**Frustration level:**
On average, did you feel secure, gratified, content, relaxed and complacent (low) when driving while the Speed Warning system warnings were being issued or did you feel insecure, discouraged, irritated, stressed and annoyed (high)?

Low | Neither high nor low | High
3. To what extent do you feel that the Speed Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No use</td>
<td>Always of use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. If you gave a score of 0 to Question 3 above, why do you think the Speed Warning System will be of no use to you (select only one response):

- I never exceed the speed limit
- It is my choice whether I speed or not
- I never get caught for exceeding the speed limit
- The speed limits are too low
- It is out of my control if cars around me carry me over the speed limit
- It would take away the enjoyment of driving
- I am a good driver anyway and I know when it is safe to exceed the speed limit
- Exceeding the speed limit does not make any difference to my safety
- Other, Please specify: ____________________________

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Receiving warnings from the Speed Warning System for exceeding the speed limit will be really helpful in areas where there are lots of pedestrians, such as in strip shopping centres or outside schools

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(b) Warnings from the Speed Warning System are unnecessary in 60 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) I will drive more safely with the Speed Warning System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) There is no need for the Speed Warning System when travelling on the freeway

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(e) There is no need for the Speed Warning System when travelling on rural roads

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) Receiving warnings from the Speed Warning System for exceeding the speed limit in 100 km/h zones is unnecessary

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) Warnings from the Speed Warning System are necessary in 50 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) There is a need for the Speed Warning System when road conditions are poor (e.g. slippery road, poor visibility)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(i) The Speed Warning System is not necessary when there are hardly any other cars on the road

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(j) The Speed Warning System will be of most benefit to drivers who repeatedly exceed the speed limit without realising it

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(k) Warnings from the Speed Warning System are unnecessary in 80 km/h zones

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(l) The Speed Warning System is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Ballarat and Bendigo

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(m) The Speed Warning System will be wasted on drivers who speed intentionally – these drivers will ignore or override the warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(n) After having driven the car with the Speed Warning System, I will probably be less likely to exceed the speed limit when driving a car that is not fitted with a Speed Warning System

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(o) The enjoyment of driving will decrease as a result of driving with the Speed Warning System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(p) I will be able to concentrate more on the traffic when the Speed Warning System is enabled than when it is not because I will not have to look out for speed signs

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(q) The warnings of the Speed Warning System could distract me from my driving, compromising my safety and that of any passengers that I might be carrying

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(r) The Speed Warning System will allow me to spend more time attending to the traffic because I will not have to look as much at the speedometer to monitor my speed

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) I will lose trust in the Speed Warning System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(t) I will end up relying too strongly on the Speed Warning System to let me know if I am exceeding the speed limit at the expense of my own judgement

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(u) I will lose faith in the Speed Warning System if it does not issue warnings when it should issue warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(v) The Speed Warning System should be compulsory for all drivers

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(w) The Speed Warning System should only be compulsory for drivers who have been booked on multiple occasions for exceeding the speed limit

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(x) The Speed Warning System takes too much control away from the driver

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(y) Rather than a system that simply warns the driver, I would prefer a Speed Warning System that made it impossible for the driver to exceed the speed limit

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(z) It would not bother me if the Speed Warning System were used as a device by authorities to monitor and track car speeds and locations on the road network

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(aa) I would prefer a Speed Warning System that I could turn on or off as required depending on the situation (e.g. turn off if in a hurry, turn on if I am travelling on a road where I know that there are speed cameras)

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

6. For most drivers, what effect on travel speed will the Speed Warning System have in each of the following areas/conditions?

<table>
<thead>
<tr>
<th>Area/Condition</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freeways</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low traffic levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor road conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. What effect on travel speed will the Speed Warning System have on drivers who exceed the speed limit for the following reasons:?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed inadvertently</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed for fun</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe it is safe to speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a hurry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they won’t get caught/ fined for speeding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they shouldn’t have to follow speed limits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they can control their car safely at any speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that the speed limit is too low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carried over the speed limit by other cars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aim to travel at the speed limit, but occasionally edge over before reducing speed again</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. What effect will the Speed Warning System have on each of the following:?

<table>
<thead>
<tr>
<th>Effect</th>
<th>Increase</th>
<th>No change</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence of crashes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability of being fined</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. How much would you be willing to pay for the Speed Warning System if it were an optional feature in a new car?

Purchase $__________
Maintenance/service $__________ (assume yearly)

10. How much would you be willing to pay for the Speed Warning System if it were able to be retrofitted to an existing car?

Purchase $__________
Installation $__________
Maintenance/service $__________ (assume yearly)

11. Hypothetically, if you had the option of keeping the Speed Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested  Disinterested  Neither interested nor disinterested  Interested  Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part C - Seat Belt Reminder System

1. To what extent do you feel that the Seat Belt Reminder System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

0 1 2 3 4 5
No use Always of use
2. If you gave a score of 0 to Question 1, why do you think the Seat Belt Reminder System will be of no use to you (select only one response):?

- [ ] I always wear my seat belt anyway
- [ ] I know when it is safe to drive without a seat belt
- [ ] There is little chance of getting a fine for not wearing a seat belt
- [ ] I don’t believe that wearing a seat belt in any situation will make me any safer
- [ ] Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt
- [ ] Seat belts are uncomfortable
- [ ] It would take away the enjoyment of driving
- [ ] Seat belts are too fiddly to put on
- [ ] I can’t be bothered putting my seat belt on
- [ ] Other, Please specify: ______________________________

3. To what extent do you think that the Seat Belt Reminder System will be of use to you in letting you know if any of your passengers are not wearing their seat belts? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No use</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Always of use</td>
</tr>
</tbody>
</table>

4. If you gave a score of 0 to Question 3, why do you think the Seat Belt Reminder System will be of no use to you in letting you know if any of your passengers are not wearing their seat belts (select only one response):?

- [ ] I never carry passengers
- [ ] I always check anyway that my passengers are wearing their seat belts
- [ ] It doesn’t matter if my passengers don’t wear their seat belts, because wearing a seat belt won’t make them any safer

(more options over page)
My passengers always wear their seat belts, so there is no need to have warnings for them

I always drive safely so there is no need for passengers to have to wear a seat belt

There is little chance of getting a fine for not wearing a seat belt

It is up to my passengers whether they wear a seat belt – it is not my responsibility

Other, Please specify: _______________________________

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Warnings from the Seat Belt Reminder System are unnecessary when reversing out of a driveway or a parking spot

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(b) The Seat Belt Reminder System will be of most benefit to drivers who forget to put their seat belts on

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(c) The Seat Belt Reminder System is not necessary when there are hardly any other cars on the road

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(d) There is no need for the Seat Belt Reminder System when travelling at speeds of less than 10 km/h

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree
(e) There is no need for the Seat Belt Reminder System when travelling at speeds of **greater than** 10 km/h

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) The Seat Belt Reminder System is a real necessity for people who do not put their seat belts on when travelling short distances

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) The Seat Belt Reminder System will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) I will end up relying too strongly on the Seat Belt Reminder System to remind me to fasten my seat belt

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) I will end up relying too strongly on the Seat Belt Reminder System to let me know if any of my passengers are not wearing their seat belts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(j) After having driven the car with the Seat Belt Reminder System, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a Seat Belt Reminder System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(k) I will lose trust in the Seat Belt Reminder System if it does not issue warnings when it should issue warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(l) I will lose trust in the Seat Belt Reminder System if it issues false warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(m) The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(n) The Seat Belt Reminder System should be compulsory for all drivers

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(o) The Seat Belt Reminder System should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(p) The Seat Belt Reminder System takes too much control away from the driver

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(q) I would prefer it if, rather than just warning the driver, the Seat Belt Reminder System prevented the driver from starting the car if someone in the car is not wearing a seat belt

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(r) The Seat Belt Reminder System will make it easier for me to encourage my passengers to fasten their seat belts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) I will drive more safely with the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(t) I will enjoy driving less as a result of having the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) I would prefer a Seat Belt Reminder System that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

6. For most drivers, what effect on seat belt wearing will the Seat Belt Reminder System have in each of the following conditions/situations?

- Reversing
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

- Driving short distances
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

(more over page)
<table>
<thead>
<tr>
<th>Traffic Condition</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low traffic levels</td>
<td>Increase</td>
<td>No change</td>
<td>Decrease</td>
<td></td>
</tr>
<tr>
<td>Speeds less than 10km/h</td>
<td>Increase</td>
<td>No change</td>
<td>Decrease</td>
<td></td>
</tr>
<tr>
<td>Speeds more than 10km/h</td>
<td>Increase</td>
<td>No change</td>
<td>Decrease</td>
<td></td>
</tr>
</tbody>
</table>

7. What effect on seat belt wearing will the Seat Belt Reminder System have on drivers who do not wear seat belts for the following reasons:

- Forget to put seat belt on
- Believe that seat belts are uncomfortable to wear
- Believe that seat belts are too fiddly to put on
- Believe that wearing seat belts is a violation of freedom
- Can’t be bothered putting their seat belt on
- Believe that there is little chance of getting a fine for not wearing a seat belt
- Believe that wearing seat belts does not enhance safety

8. What effect will the Seat Belt Reminder System have on each of the following:

- Incidence of crashes
- Crash severity
- Injury severity
- Probability of being fined
9. How much would you be willing to pay for the Seat Belt Reminder System if it were an optional feature in a new car?

Purchase $  
Maintenance/service $ (assume yearly)

10. How much would you be willing to pay for the Seat Belt Reminder System if it were able to be retrofitted to an existing car?

Purchase $  
Installation $  
Maintenance/service $ (assume yearly)

11. Hypothetically, if you had the option of keeping the Seat Belt Reminder System in your vehicle at the end of the study (at no extra cost), would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested  Disinterested  Neither interested nor disinterested  Interested  Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part D - Daytime Running Lights

1. To what extent do you feel that Daytime Running Lights will be of use to you? A score of 0 means that the Daytime Running Lights will be of no use to you while a score of 5 means that they will always be of use to you.

0 1 2 3 4 5
No use Always of use
2. If you gave a score of 0 to Question 1, why do you think the Daytime Running Lights will be of no use to you (select only one response)?

- I always turn on the headlights during the day anyway – even when the weather is good
- They would take away the enjoyment of driving
- Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users
- You can’t get fined for not turning on your headlights during the day
- I have a light coloured car
- Other, Please specify: ____________________________

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Daytime Running Lights are not needed when there are hardly any other cars or pedestrians on the road

- Strongly disagree  - Disagree  - Neither agree nor disagree  - Agree  - Strongly agree

(b) Daytime Running Lights are a real necessity for drivers who forget to turn their headlights on during the day

- Strongly disagree  - Disagree  - Neither agree nor disagree  - Agree  - Strongly agree

(c) Daytime Running Lights should be compulsory for all drivers

- Strongly disagree  - Disagree  - Neither agree nor disagree  - Agree  - Strongly agree

(d) Daytime Running Lights will reduce my fuel economy

- Strongly disagree  - Disagree  - Neither agree nor disagree  - Agree  - Strongly agree
(e) Daytime Running Lights will put extra strain on my car battery


Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(f) I will need to change the headlamps more often because of the Daytime Running Lights


Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(g) I will be safer with the Daytime Running Lights equipped to my car


Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(h) Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights


Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(i) Driving will be less enjoyable with Daytime Running Lights in my car


Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

4. What effect will Daytime Running Lights have on each of the following:

   Incidence of crashes  
   
   Crash severity  
   
   Injury severity  
   
   Probability of being fined  

   Increase  No change  Decrease

5. How much would you be willing to pay for Daytime Running Lights if they were an optional feature in a new car?

  Purchase  $
  
  Maintenance/service  $ (assume yearly)
6. How much would you be willing to pay for Daytime Running Lights if they were able to be retrofitted to an existing car?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase</td>
<td>$</td>
</tr>
<tr>
<td>Installation</td>
<td>$</td>
</tr>
<tr>
<td>Maintenance/service</td>
<td>$ (assume yearly)</td>
</tr>
</tbody>
</table>

7. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- Very Disinterested
- Disinterested
- Neither interested nor disinterested
- Interested
- Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part E - Reverse Collision Warning

1. To what extent do you feel that Reverse Collision Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No use</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Always of use</td>
</tr>
</tbody>
</table>
2. If you gave a score of 0 to Question 1, why do you think the Reverse Collision Warning System will be of no use to you (select only one response):?

- I am always on the lookout anyway when I reverse
- It would take away the enjoyment of driving
- I prefer to use other methods to help me reverse without hitting objects behind me (e.g. reflection in shop window)
- Other, Please specify: ________________________________

3. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) I will lose trust in the Reverse Collision Warning System if it fails to issue warnings when it should issue warnings

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(b) I will lose trust in the Reverse Collision Warning System if it issues false warnings

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(c) I will end up relying more on the Reverse Collision Warning System than my own lookout while reversing

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(d) The Reverse Collision Warning System should be compulsory in all vehicles

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(e) The Reverse Collision Warning System takes too much control away from the driver

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(f) I would prefer it if the Reverse Collision Warning System made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(g) The enjoyment of driving will increase as a result of having the Reverse Collision Warning System in my car

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(h) I will drive more safely with the Reverse Collision Warning System in my car

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(i) I would prefer a Reverse Collision Warning System that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

4. What effect will the Reverse Collision Warning System have on each of the following?

Incidence of crashes  [ ] Increase  [ ] No change  [ ] Decrease
Crash severity  [ ] Increase  [ ] No change  [ ] Decrease
5. How much would you be willing to pay for the Reverse Collision Warning System if it were an optional feature in a new car?

<table>
<thead>
<tr>
<th>Category</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase</td>
<td>$</td>
</tr>
<tr>
<td>Maintenance/service</td>
<td>$</td>
</tr>
</tbody>
</table>

6. How much would you be willing to pay for the Reverse Collision Warning System if it were able to be retrofitted to an existing car?

<table>
<thead>
<tr>
<th>Category</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase</td>
<td>$</td>
</tr>
<tr>
<td>Installation</td>
<td>$</td>
</tr>
<tr>
<td>Maintenance/service</td>
<td>$</td>
</tr>
</tbody>
</table>

7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

<table>
<thead>
<tr>
<th>Interest Level</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Disinterested</td>
<td></td>
</tr>
<tr>
<td>Disinterested</td>
<td></td>
</tr>
<tr>
<td>Neither interested nor disinterested</td>
<td></td>
</tr>
<tr>
<td>Interested</td>
<td></td>
</tr>
<tr>
<td>Very interested</td>
<td></td>
</tr>
</tbody>
</table>

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

---

Part F - Speed Request Button

1. To what extent do you feel that Speed Request Button will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No use</td>
</tr>
<tr>
<td>1</td>
<td>Disinterested</td>
</tr>
<tr>
<td>2</td>
<td>Neither interested nor disinterested</td>
</tr>
<tr>
<td>3</td>
<td>Interested</td>
</tr>
<tr>
<td>4</td>
<td>Very interested</td>
</tr>
<tr>
<td>5</td>
<td>Always of use</td>
</tr>
</tbody>
</table>
2. If you gave a score of 0 to Question 1, why do you think the Speed Request Button **will be of no use to you** (select only one response):?

- [ ] I always know what the speed limits are anyway
- [ ] Knowing the speed limits won’t change the way I drive
- [ ] It would take away the enjoyment of driving
- [ ] I prefer to rely on my own judgement exclusively and look out for speed limit signs myself
- [ ] Other, Please specify: __________________________________________

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Speed Request Button will be really helpful in areas where speed limit signs are displayed infrequently

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(b) The Speed Request Button will be really helpful in areas where I think there are speed cameras

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) I will not use the Speed Request Button if it issues inaccurate speed limit advice

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) The Speed Request Button is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Bendigo and Ballarat

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(e) I will drive more safely with the Speed Request Button in my car

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(f) The enjoyment of driving will decrease if I use the Speed Request Button

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(g) The Speed Request Button should be compulsory in all vehicles

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

4. What effect will the Speed Request Facility have on each of the following:
   Incidence of crashes [ ] Increase [ ] No change [ ] Decrease
   Crash severity [ ] Increase [ ] No change [ ] Decrease
   Probability of being fined [ ] Increase [ ] No change [ ] Decrease

5. How much would you be willing to pay for the Speed Request Button if it were an optional feature in a new car?
   Purchase $______
   Maintenance/service $______ (assume yearly)

6. How much would you be willing to pay for the Speed Request Button if it were able to be retrofitted to an existing car?
   Purchase $______
   Installation $______
   Maintenance/service $______ (assume yearly)
7. Hypothetically, if you had the option of keeping the Speed Request Button in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part G - Following Distance Warning

1. To what extent do you feel that Following Distance Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

2. If you gave a score of 0 to Question 1 above, why do you think the Following Distance Warning System will be of no use to you (select only one response):?

I never drive less than 2 seconds from the car in front
It is my choice as to how close I drive to the car in front
There is little chance of getting caught/fined for tailgating
It would take away the enjoyment of driving
I am a good driver anyway and I know when it is safe to drive less than 2 seconds from the car in front
I don’t believe that keeping a gap of at least 2 seconds from the car in front will make me any safer
3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Following Distance Warning System will be helpful when travelling on the freeway

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(b) Warnings from the Following Distance Warning System will be more of a nuisance than a help in heavy traffic

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) The Following Distance Warning System will be helpful to drivers who do not have a clear view of the car ahead because of poor weather conditions (e.g. fog)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) There is no need for the Following Distance Warning System when travelling on rural roads

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(e) I will drive more safely with the Following Distance Warning System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) Warnings from the Following Distance Warning System are unnecessary in 50 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(g) Receiving warnings from the Following Distance Warning System will be really helpful in 100 km/h zones

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(h) Warnings from the Following Distance Warning System are necessary in 60 km/h zones

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(i) The Following Distance Warning System is of little use when there are few other cars on the road

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(j) Warnings from the Following Distance Warning System are unnecessary in 80 km/h zones

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(k) Following Distance Warnings will be useful for alerting distracted or fatigued drivers

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(l) The Following Distance Warning System will be really helpful when approaching intersections or roundabouts

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(m) The enjoyment of driving will decrease as a result of driving with the Following Distance Warning System

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree
(n) As a result of driving a car with the Following Distance Warning System, I will be less likely to tailgate when driving a car that is not fitted with a Following Distance Warning System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(o) The warnings from the Following Distance Warning System could distract me from my driving, affecting my safety and my passengers’ safety

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(p) I will lose faith in the Following Distance Warning System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(q) I will lose trust in the Following Distance Warning System if it fails to issue warnings when it should issue warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(r) The Following Distance Warning System should be compulsory for all drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) Instead of using on my own judgement, I am likely to end up waiting until I hear warnings from the Following Distance Warning System before I back off from the car in front

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(t) The Following Distance Warning System should only be compulsory for drivers who have been booked on several occasions for tailgating and/or have had several rear-end collisions

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) The Following Distance Warning System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(v) I would prefer a Following Distance Warning System that made it impossible for the driver to get to within 2 seconds or less from the car in front

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(w) I would prefer a Following Distance Warning System that I could turn on or off as required depending on the traffic situation

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. For most drivers, what effect on following distance will the Following Distance Warning System have in each of the following areas/conditions:

<table>
<thead>
<tr>
<th>Speed Zone</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 km/h</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>60 km/h</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>80 km/h</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>100 km/h</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

(more over page)
<table>
<thead>
<tr>
<th>Freeways</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>Residential</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>Little traffic</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>Difficult to see road ahead</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>Heavy traffic</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>Intersections/ Round-a-bouts</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
</tbody>
</table>

5. What effect on following distance will the Following Distance Warning System have on drivers who follow cars too closely for the following reasons?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t notice that they are following cars too closely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that following cars too closely is fun</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that following cars too closely has no effect on safety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a hurry</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Believe that they won’t get caught/fined

Increase following distance
No change
Decrease following distance

Believe that they can drive as close to cars as they like because it is their choice

Increase following distance
No change
Decrease following distance

Believe that they can control their car regardless of how close they are to the car in front

Increase following distance
No change
Decrease following distance

Car in front driving too slowly

Increase following distance
No change
Decrease following distance

Do not want other drivers cutting in front of them

Increase following distance
No change
Decrease following distance

6. What effect will the Following Distance Warning System have on each of the following?:

Incidence of crashes

Increase
No change
Decrease

Crash severity

Increase
No change
Decrease

Probability of being fined

Increase
No change
Decrease

7. How much would you be willing to pay for the Following Distance Warning System if it were an optional feature in a new car?

Purchase $_______

Maintenance/service $_______ (assume yearly)

8. How much would you be willing to pay for the Following Distance Warning System if it were able to be retrofitted to an existing car?

Purchase $_______

Installation $_______

Maintenance/service $_______ (assume yearly)
9. Hypothetically, if you had the option of keeping the Following Distance Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

[ ] Very Disinterested  [ ] Disinterested  [ ] Neither interested nor disinterested  [ ] Interested  [ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

[ ]

If you responded “INTERESTED” or “VERY INTERESTED”, why?

[ ]

*End of Questionnaire*

*Thank you for taking the time to complete this questionnaire.*

*Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.*
This questionnaire should take you about 25 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. You will probably recognise many of the questions that are in this questionnaire. This is because we are interested in finding out whether there have been any changes in how people feel about the systems under study.

In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A – Baseline Following

1. This question is designed to gauge your impression of how much workload you experienced, on average, when driving and there was a car in front of you (i.e. about 2 seconds or less away from you) in the period before the SafeCar systems became active in your vehicle.

Six factors are known to contribute to the overall level of mental workload that people feel when they perform a task. Below are some questions that are designed to measure, for each of the six factors, the level of workload that you experienced.

For each of the six factors, please indicate, by placing a line at the appropriate point on the scale, the level of workload that you experienced while driving and there was a car in front of you (i.e. about 2 seconds or less away from you) during the period before the SafeCar systems became active in your vehicle.
For example,

| Low | Neither high nor low | High |

**Mental demand:**
On average, how much mental and perceptual activity was required? That is, how much thinking, deciding, calculating, remembering, looking, searching, etc was required when you were driving and there was a car in front of you? Was the car driving task easy and simple (low) or demanding and complex (high)?

| Low | Neither high nor low | High |

**Physical demand:**
On average, how much physical activity was required? That is, how much controlling of the vehicle, operating the brake, etc was required when you were driving and there was a car in front of you? Was the car driving task easy and restful (low) or demanding and laborious (high)?

| Low | Neither high nor low | High |

**Time demand:**
On average, how much time pressure did you feel when driving and there was a car in front of you? Was the pace of driving slow and leisurely (low) or rapid and rushed (high)?

| Low | Neither high nor low | High |

**Performance:**
On average, how satisfied were you with your performance in driving while there was a car in front of you?

| Good | Neither good nor poor | Poor |

**Effort:**
On average, how hard did you have to work (mentally and physically) to drive while there was a car in front of you? Was little effort (low) or a large amount of effort (high) required?

| Low | Neither high nor low | High |
**Frustration level:**
On average, did you feel secure, gratified, content, relaxed and complacent (low) when **driving and there was a car in front of you** or did you feel insecure, discouraged, irritated, stressed and annoyed (high)?

| Low | Neither high nor low | High |

**Part B - Following Distance Warning System**

1. Over the last few weeks, have you experienced warnings from the Following Distance Warning system?

   [ ] Yes    [ ] No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Question 3 (page 5).

2. This question is designed to gauge your impression of how much mental workload you experienced **when you were driving and warnings from the Following Distance Warning system were being issued**.

   Six factors are known to contribute to the overall level of mental workload that people feel when they perform a task. Below are some questions that are designed to measure, for each of the six factors, the level of workload that you experienced while the Following Distance warnings were being issued.

   For each of the six factors, please indicate, by placing a line at the appropriate point on the scale, the level of workload that you experienced **while you were driving and the Following Distance Warning system was issuing warnings**.

   For example,
Mental demand:
On average, how much mental and perceptual activity was required? That is, how much thinking, deciding, calculating, remembering, looking, searching, etc was required when you were driving and you were receiving warnings from the Following Distance Warning system? Was the car driving task easy and simple (low) or demanding and complex (high) when the warnings were being issued?

- Low
- Neither high nor low
- High

Physical demand:
On average, how much physical activity was required? That is, how much controlling of the vehicle, operating the brake, etc was required when you were driving and you were receiving warnings from the Following Distance Warning system? Was the car driving task easy and restful (low) or demanding and laborious (high) when the warnings were being issued?

- Low
- Neither high nor low
- High

Time demand:
On average, how much time pressure did you feel when driving while the Following Distance Warning system warnings were being issued? Was the pace of driving slow and leisurely (low) or rapid and rushed (high) when the warnings were being issued?

- Low
- Neither high nor low
- High

Performance:
On average, how satisfied were you with your driving performance while the Following Distance Warning system warnings were being issued?

- Good
- Neither good nor poor
- Poor

Effort:
On average, how hard did you have to work (mentally and physically) to drive while the Following Distance Warning system warnings were being issued? Was little effort (low) or a large amount of effort (high) required?

- Low
- Neither high nor low
- High
**Frustration level:**
On average, did you feel secure, gratified, content, relaxed and complacent (low) when driving while the Following Distance Warning system warnings were being issued or did you feel insecure, discouraged, irritated, stressed and annoyed (high)?

<table>
<thead>
<tr>
<th>Low</th>
<th>Neither high nor low</th>
<th>High</th>
</tr>
</thead>
</table>

3. To what extent do you feel that Following Distance Warning System **will be of use to you**? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No use</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Always of use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. If you gave a score of 0 to Question 3 above, why do you think the Following Distance Warning System **will be of no use to you** (select only one response):?

- [ ] I never drive less than 2 seconds from the car in front
- [ ] It is my choice as to how close I drive to the car in front
- [ ] There is little chance of getting caught/fined for tailgating
- [ ] It would take away the enjoyment of driving
- [ ] I am a good driver anyway and I know when it is safe to drive less than 2 seconds from the car in front
- [ ] I don’t believe that keeping a gap of at least 2 seconds from the car in front will make me any safer
- [ ] Other, Please specify: _______________________

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Following Distance Warning System will be helpful when travelling on the freeway

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>
(b) Warnings from the Following Distance Warning System will be more of a nuisance than a help in heavy traffic

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(c) The Following Distance Warning System will be helpful to drivers who do not have a clear view of the car ahead because of poor weather conditions (e.g. fog)

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(d) There is no need for the Following Distance Warning System when travelling on rural roads

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(e) I will drive more safely with the Following Distance Warning System in my car

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(f) Warnings from the Following Distance Warning System are unnecessary in 50 km/h zones

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(g) Receiving warnings from the Following Distance Warning System will be really helpful in 100 km/h zones

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(h) Warnings from the Following Distance Warning System are necessary in 60 km/h zones

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(i) The Following Distance Warning System is of little use when there are few other cars on the road

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(j) Warnings from the Following Distance Warning System are unnecessary in 80 km/h zones

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(k) Following Distance Warnings will be useful for alerting distracted or fatigued drivers

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(l) The Following Distance Warning System will be really helpful when approaching intersections or roundabouts

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(m) The enjoyment of driving will decrease as a result of driving with the Following Distance Warning System

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(n) As a result of driving a car with the Following Distance Warning System, I will be less likely to tailgate when driving a car that is not fitted with a Following Distance Warning System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(o) The warnings from the Following Distance Warning System could distract me from my driving, affecting my safety and my passengers’ safety

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(p) I will lose faith in the Following Distance Warning System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(q) I will lose trust in the Following Distance Warning System if it fails to issue warnings when it should issue warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(r) The Following Distance Warning System should be compulsory for all drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) Instead of using on my own judgement, I am likely to end up waiting until I hear warnings from the Following Distance Warning System before I back off from the car in front

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(t) The Following Distance Warning System should only be compulsory for drivers who have been booked on several occasions for tailgating and/or have had several rear-end collisions

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) The Following Distance Warning System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(v) I would prefer a Following Distance Warning System that made it impossible for the driver to get to within 2 seconds or less from the car in front

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(w) I would prefer a Following Distance Warning System that I could turn on or off as required depending on the traffic situation

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

6. For most drivers, what effect on following distance will the Following Distance Warning System have in each of the following areas/conditions:

<table>
<thead>
<tr>
<th>Speed Zone</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 km/h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 km/h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 km/h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 km/h</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(more over page)
<table>
<thead>
<tr>
<th>Situation</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeways</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficult to see road ahead</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intersections/Round-a-bouts</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. **What effect on following distance will the Following Distance Warning System have on drivers who follow cars too closely for the following reasons?:**

- Don’t notice that they are following cars too closely
- Believe that following cars too closely is fun
- Believe that following cars too closely has no effect on safety
- In a hurry

(more over page)
| Belief that they won’t get caught/fined | Increase following distance | No change | Decrease following distance |
| Belief that they can drive as close to cars as they like because it is their choice | Increase following distance | No change | Decrease following distance |
| Believe that they can control their car regardless of how close they are to the car in front | Increase following distance | No change | Decrease following distance |
| Car in front driving too slowly | Increase following distance | No change | Decrease following distance |
| Do not want other drivers cutting in front of them | Increase following distance | No change | Decrease following distance |

8. What effect will the Following Distance Warning System have on each of the following?

| Incidence of crashes | Increase | No change | Decrease |
| Crash severity | Increase | No change | Decrease |
| Probability of being fined | Increase | No change | Decrease |

9. How much would you be willing to pay for the Following Distance Warning System if it were an optional feature in a new car?

| Purchase | $ |
| Maintenance/service | $ (assume yearly) |

10. How much would you be willing to pay for the Following Distance Warning System if it were able to be retrofitted to an existing car?

| Purchase | $ |
| Installation | $ |
| Maintenance/service | $ (assume yearly) |
11. Hypothetically, if you had the option of keeping the Following Distance Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part C - Seat Belt Reminder System

1. To what extent do you feel that the Seat Belt Reminder System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

If you gave a score of 0 to Question 1, why do you think the Seat Belt Reminder System will be of no use to you (select only one response):?

- I always wear my seat belt anyway
- I know when it is safe to drive without a seat belt
- There is little chance of getting a fine for not wearing a seat belt
- I don’t believe that wearing a seat belt in any situation will make me any safer
- Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt
- Seat belts are uncomfortable

(more options over page)
It would take away the enjoyment of driving
Seat belts are too fiddly to put on
I can’t be bothered putting my seat belt on
Other, Please specify: ________________________________

3. To what extent do you think that the Seat Belt Reminder System will be of use to you in letting you know if any of your passengers are not wearing their seat belts? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

0  1  2  3  4  5
No use  Always of use

4. If you gave a score of 0 to Question 3, why do you think the Seat Belt Reminder System will be of no use to you in letting you know if any of your passengers are not wearing their seat belts (select only one response):?

I never carry passengers
I always check anyway that my passengers are wearing their seat belts
It doesn’t matter if my passengers don’t wear their seat belts, because wearing a seat belt won’t make them any safer
My passengers always wear their seat belts, so there is no need to have warnings for them
I always drive safely so there is no need for passengers to have to wear a seat belt
There is little chance of getting a fine for not wearing a seat belt
It is up to my passengers whether they wear a seat belt – it is not my responsibility
Other, Please specify: ________________________________
5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Warnings from the Seat Belt Reminder System are unnecessary when reversing out of a driveway or a parking spot

(b) The Seat Belt Reminder System will be of most benefit to drivers who forget to put their seat belts on

(c) The Seat Belt Reminder System is not necessary when there are hardly any other cars on the road

(d) There is no need for the Seat Belt Reminder System when travelling at speeds of less than 10 km/h

(e) There is no need for the Seat Belt Reminder System when travelling at speeds of greater than 10 km/h

(f) The Seat Belt Reminder System is a real necessity for people who do not put their seat belts on when travelling short distances
(g) The Seat Belt Reminder System will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) I will end up relying too strongly on the Seat Belt Reminder System to remind me to fasten my seat belt

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) I will end up relying too strongly on the Seat Belt Reminder System to let me know if any of my passengers are not wearing their seat belts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(j) After having driven the car with the Seat Belt Reminder System, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a Seat Belt Reminder System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(k) I will lose trust in the Seat Belt Reminder System if it does not issue warnings when it should issue warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(l) I will lose trust in the Seat Belt Reminder System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(m) The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(n) The Seat Belt Reminder System should be compulsory for all drivers

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(o) The Seat Belt Reminder System should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(p) The Seat Belt Reminder System takes too much control away from the driver

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(q) I would prefer it if, rather than just warning the driver, the Seat Belt Reminder System prevented the driver from starting the car if someone in the car is not wearing a seat belt

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(r) The Seat Belt Reminder System will make it easier for me to encourage my passengers to fasten their seat belts

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(s) I will drive more safely with the Seat Belt Reminder System in my car

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(t) I will enjoy driving less as a result of having the Seat Belt Reminder System in my car

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(u) I would prefer a Seat Belt Reminder System that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers)

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

6. For most drivers, what effect on seat belt wearing will the Seat Belt Reminder System have in each of the following conditions/situations:

<table>
<thead>
<tr>
<th>Reversing</th>
<th>Increase wearing</th>
<th>No change</th>
<th>Decrease wearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driving short distances</td>
<td>Increase wearing</td>
<td>No change</td>
<td>Decrease wearing</td>
</tr>
<tr>
<td>Low traffic levels</td>
<td>Increase wearing</td>
<td>No change</td>
<td>Decrease wearing</td>
</tr>
<tr>
<td>Speeds less than 10km/h</td>
<td>Increase wearing</td>
<td>No change</td>
<td>Decrease wearing</td>
</tr>
<tr>
<td>Speeds more than 10km/h</td>
<td>Increase wearing</td>
<td>No change</td>
<td>Decrease wearing</td>
</tr>
</tbody>
</table>

7. What effect on seat belt wearing will the Seat Belt Reminder System have on drivers who do not wear seat belts for the following reasons:

<table>
<thead>
<tr>
<th>Forget to put seat belt on</th>
<th>Increase wearing</th>
<th>No change</th>
<th>Decrease wearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Believe that seat belts are uncomfortable to wear</td>
<td>Increase wearing</td>
<td>No change</td>
<td>Decrease wearing</td>
</tr>
<tr>
<td>Believe that seat belts are too fiddly to put on</td>
<td>Increase wearing</td>
<td>No change</td>
<td>Decrease wearing</td>
</tr>
<tr>
<td>Believe that wearing seat belts is a violation of freedom</td>
<td>Increase wearing</td>
<td>No change</td>
<td>Decrease wearing</td>
</tr>
</tbody>
</table>

(more over page)
Can’t be bothered putting their seat belt on  

Believe that there is little chance of getting a fine for not wearing a seat belt  

Believe that wearing seat belts does not enhance safety  

8. What effect will the Seat Belt Reminder System have on each of the following?:

Incidence of crashes  
Crash severity  
Injury severity  
Probability of being fined  

9. How much would you be willing to pay for the Seat Belt Reminder System if it were an optional feature in a new car?

Purchase $  
Maintenance/service $ (assume yearly)  

10. How much would you be willing to pay for the Seat Belt Reminder System if it were able to be retrofitted to an existing car?

Purchase $  
Installation $  
Maintenance/service $ (assume yearly)  

11. Hypothetically, if you had the option of keeping the Seat Belt Reminder System in your vehicle at the end of the study (at no extra cost), would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested  
Disinterested  
Neither interested nor disinterested  
Interested  
Very interested
Part D - Daytime Running Lights

1. To what extent do you feel that Daytime Running Lights will be of use to you? A score of 0 means that the Daytime Running Lights will be of no use to you while a score of 5 means that they will always be of use to you.

   0         1                  2                  3                  4                  5
   No use         Always of use

2. If you gave a score of 0 to Question 1, why do you think the Daytime Running Lights will be of no use to you (select only one response)?

   I always turn on the headlights during the day anyway – even when the weather is good
   They would take away the enjoyment of driving
   Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users
   You can’t get fined for not turning on your headlights during the day
   I have a light coloured car
   Other, Please specify: 
3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Daytime Running Lights are not needed when there are hardly any other cars or pedestrians on the road

(b) Daytime Running Lights are a real necessity for drivers who forget to turn their headlights on during the day

(c) Daytime Running Lights should be compulsory for all drivers

(d) Daytime Running Lights will reduce my fuel economy

(e) Daytime Running Lights will put extra strain on my car battery

(f) I will need to change the headlamps more often because of the Daytime Running Lights

(g) I will be safer with the Daytime Running Lights equipped to my car
(h) Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) Driving will be less enjoyable with Daytime Running Lights in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. What effect will Daytime Running Lights have on each of the following?

- Incidence of crashes: [ ] Increase, [ ] No change, [ ] Decrease
- Crash severity: [ ] Increase, [ ] No change, [ ] Decrease
- Injury severity: [ ] Increase, [ ] No change, [ ] Decrease
- Probability of being fined: [ ] Increase, [ ] No change, [ ] Decrease

5. How much would you be willing to pay for Daytime Running Lights if they were an optional feature in a new car?

- Purchase: $
- Maintenance/service: $(assume yearly)

6. How much would you be willing to pay for Daytime Running Lights if they were able to be retrofitted to an existing car?

- Purchase: $
- Installation: $
- Maintenance/service: $(assume yearly)

7. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- [ ] Very Disinterested
- [ ] Disinterested
- [ ] Neither interested nor disinterested
- [ ] Interested
- [ ] Very interested
If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part E - Reverse Collision Warning

1. To what extent do you feel that Reverse Collision Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

2. If you gave a score of 0 to Question 1, why do you think the Reverse Collision Warning System will be of no use to you (select only one response):

   - I am always on the lookout anyway when I reverse
   - It would take away the enjoyment of driving
   - I prefer to use other methods to help me reverse without hitting objects behind me (e.g. reflection in shop window)
   - Other, Please specify:

3. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

   (a) I will lose trust in the Reverse Collision Warning System if it fails to issue warnings when it should issue warnings

   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly agree
(b) I will lose trust in the Reverse Collision Warning System if it issues false warnings

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(c) I will end up relying more on the Reverse Collision Warning System than my own lookout while reversing

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(d) The Reverse Collision Warning System should be compulsory in all vehicles

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(e) The Reverse Collision Warning System takes too much control away from the driver

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(f) I would prefer it if the Reverse Collision Warning System made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(g) The enjoyment of driving will increase as a result of having the Reverse Collision Warning System in my car

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
(h) I will drive more safely with the Reverse Collision Warning System in my car

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(i) I would prefer a Reverse Collision Warning System that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

4. What effect will the Reverse Collision Warning System have on each of the following?:

   Incidence of crashes: (Increase) (No change) (Decrease)
   Crash severity: (Increase) (No change) (Decrease)

5. How much would you be willing to pay for the Reverse Collision Warning System if it were an optional feature in a new car?

   Purchase: $__________________
   Maintenance/service: $__________________ (assume yearly)

6. How much would you be willing to pay for the Reverse Collision Warning System if it were able to be retrofitted to an existing car?

   Purchase: $__________________
   Installation: $__________________
   Maintenance/service: $__________________ (assume yearly)

7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

   (Very Disinterested) (Disinterested) (Neither interested nor disinterested) (Interested) (Very interested)
If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part F – Speed Warning System

1. To what extent do you feel that the Speed Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No use</td>
<td>Always of use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. If you gave a score of 0 to Question 1 above, why do you think the Speed Warning System will be of no use to you (select only one response):?

   - [ ] I never exceed the speed limit
   - [ ] It is my choice whether I speed or not
   - [ ] I never get caught for exceeding the speed limit
   - [ ] The speed limits are too low
   - [ ] It is out of my control if cars around me carry me over the speed limit
   - [ ] It would take away the enjoyment of driving
   - [ ] I am a good driver anyway and I know when it is safe to exceed the speed limit
   - [ ] Exceeding the speed limit does not make any difference to my safety
   - [ ] Other, Please specify: ________
3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Receiving warnings from the Speed Warning System for exceeding the speed limit will be really helpful in areas where there are lots of pedestrians, such as in strip shopping centres or outside schools

(b) Warnings from the Speed Warning System are unnecessary in 60 km/h zones

(c) I will drive more safely with the Speed Warning System in my car

(d) There is no need for the Speed Warning System when travelling on the freeway

(e) There is no need for the Speed Warning System when travelling on rural roads

(f) Receiving warnings from the Speed Warning System for exceeding the speed limit in 100 km/h zones is unnecessary
(g) Warnings from the Speed Warning System are necessary in 50 km/h zones

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(h) There is a need for the Speed Warning System when road conditions are poor (e.g. slippery road, poor visibility)

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(i) The Speed Warning System is not necessary when there are hardly any other cars on the road

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(j) The Speed Warning System will be of most benefit to drivers who repeatedly exceed the speed limit without realising it

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(k) Warnings from the Speed Warning System are unnecessary in 80 km/h zones

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(l) The Speed Warning System is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Ballarat and Bendigo

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(m) The Speed Warning System will be wasted on drivers who speed intentionally – these drivers will ignore or override the warnings

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)
(n) After having driven the car with the Speed Warning System, I will probably be less likely to exceed the speed limit when driving a car that is not fitted with a Speed Warning System

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(o) The enjoyment of driving will decrease as a result of driving with the Speed Warning System

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(p) I will be able to concentrate more on the traffic when the Speed Warning System is enabled than when it is not because I will not have to look out for speed signs

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(q) The warnings of the Speed Warning System could distract me from my driving, compromising my safety and that of any passengers that I might be carrying

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(r) The Speed Warning System will allow me to spend more time attending to the traffic because I will not have to look as much at the speedometer to monitor my speed

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(s) I will lose trust in the Speed Warning System if it issues false warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(t) I will end up relying too strongly on the Speed Warning System to let me know if I am exceeding the speed limit at the expense of my own judgement

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(u) I will lose faith in the Speed Warning System if it does not issue warnings when it should issue warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(v) The Speed Warning System should be compulsory for all drivers

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(w) The Speed Warning System should only be compulsory for drivers who have been booked on multiple occasions for exceeding the speed limit

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(x) The Speed Warning System takes too much control away from the driver

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(y) Rather than a system that simply warns the driver, I would prefer a Speed Warning System that made it impossible for the driver to exceed the speed limit

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(z) It would not bother me if the Speed Warning System were used as a device by authorities to monitor and track car speeds and locations on the road network

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(aa) I would prefer a Speed Warning System that I could turn on or off as required depending on the situation (e.g. turn off if in a hurry, turn on if I am travelling on a road where I know that there are speed cameras)

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

4. For most drivers, what effect on travel speed will the Speed Warning System have in each of the following areas/conditions?

- 50 km/h zone
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- 60 km/h zone
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- 80 km/h zone
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- 100 km/h zone
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- Freeways
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- Rural
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- Residential
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- Low traffic levels
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- Poor road conditions
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed
5. What effect on travel speed will the Speed Warning System have on drivers who exceed the speed limit for the following reasons:?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed inadvertently</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed for fun</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe it is safe to speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a hurry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they won't get caught/ fined for speeding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they shouldn't have to follow speed limits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they can control their car safely at any speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that the speed limit is too low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carried over the speed limit by other cars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aim to travel at the speed limit, but occasionally edge over before reducing speed again</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. What effect will the Speed Warning System have on each of the following:?

<table>
<thead>
<tr>
<th>Effect</th>
<th>Increase</th>
<th>No change</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence of crashes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability of being fined</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. How much would you be willing to pay for the Speed Warning System if it were an optional feature in a new car?

Purchase $   
Maintenance/service $   (assume yearly) 

8. How much would you be willing to pay for the Speed Warning System if it were able to be retrofitted to an existing car?

Purchase $   
Installation $   
Maintenance/service $   (assume yearly) 

9. Hypothetically, if you had the option of keeping the Speed Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested  Disinterested  Neither interested nor disinterested  Interested  Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part G - Speed Request Button

1. To what extent do you feel that Speed Request Button will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

0 1 2 3 4 5
No use Always of use
2. If you gave a score of 0 to Question 1, why do you think the Speed Request Button will be of no use to you (select only one response):?

- [ ] I always know what the speed limits are anyway
- [ ] Knowing the speed limits won’t change the way I drive
- [ ] It would take away the enjoyment of driving
- [ ] I prefer to rely on my own judgement exclusively and look out for speed limit signs myself
- [ ] Other, Please specify:  

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Speed Request Button will be really helpful in areas where speed limit signs are displayed infrequently

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(b) The Speed Request Button will be really helpful in areas where I think there are speed cameras

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) I will not use the Speed Request Button if it issues inaccurate speed limit advice

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) The Speed Request Button is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Bendigo and Ballarat

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(e) I will drive more safely with the Speed Request Button in my car

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(f) The enjoyment of driving will decrease if I use the Speed Request Button

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(g) The Speed Request Button should be compulsory in all vehicles

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

4. What effect will the Speed Request Facility have on each of the following?:

Incidence of crashes
[ ] Increase [ ] No change [ ] Decrease

Crash severity
[ ] Increase [ ] No change [ ] Decrease

Probability of being fined
[ ] Increase [ ] No change [ ] Decrease

5. How much would you be willing to pay for the Speed Request Button if it were an optional feature in a new car?

Purchase $________

Maintenance/service $________ (assume yearly)

6. How much would you be willing to pay for the Speed Request Button if it were able to be retrofitted to an existing car?

Purchase $________

Installation $________

Maintenance/service $________ (assume yearly)
7. Hypothetically, if you had the option of keeping the Speed Request Button in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
This questionnaire should take you about 25 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. You will probably recognise many of the questions that are in this questionnaire. This is because we are interested in finding out whether there have been any changes in how people feel about the systems under study.

In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A – Baseline Following

1. This question is designed to gauge your impression of how much workload you experienced, on average, when driving and there was a car in front of you (i.e. about 2 seconds or less away from you) in the period before the SafeCar systems became active in your vehicle.

Six factors are known to contribute to the overall level of mental workload that people feel when they perform a task. Below are some questions that are designed to measure, for each of the six factors, the level of workload that you experienced.

For each of the six factors, please indicate, by placing a line at the appropriate point on the scale, the level of workload that you experienced while driving and there was a car in front of you (i.e. about 2 seconds or less away from you) during the period before the SafeCar systems became active in your vehicle.
For example,

Low               Neither high nor low                High

**Mental demand:**
On average, how much mental and perceptual activity was required? That is, how much thinking, deciding, calculating, remembering, looking, searching, etc was required when you were driving and there was a car in front of you? Was the car driving task easy and simple (low) or demanding and complex (high)?

Low               Neither high nor low                High

**Physical demand:**
On average, how much physical activity was required? That is, how much controlling of the vehicle, operating the brake, etc was required when you were driving and there was a car in front of you? Was the car driving task easy and restful (low) or demanding and laborious (high)?

Low               Neither high nor low                High

**Time demand:**
On average, how much time pressure did you feel when driving and there was a car in front of you? Was the pace of driving slow and leisurely (low) or rapid and rushed (high)?

Low               Neither high nor low                High

**Performance:**
On average, how satisfied were you with your performance in driving while there was a car in front of you?

Good               Neither good nor poor                Poor

**Effort:**
On average, how hard did you have to work (mentally and physically) to drive while there was a car in front of you? Was little effort (low) or a large amount of effort (high) required?

Low               Neither high nor low                High
**Frustration level:**
On average, did you feel secure, gratified, content, relaxed and complacent (low) when **driving and there was a car in front of you** or did you feel insecure, discouraged, irritated, stressed and annoyed (high)?

<table>
<thead>
<tr>
<th>Low</th>
<th>Neither high nor low</th>
<th>High</th>
</tr>
</thead>
</table>

**Part B - Multiple Systems**

1. The SafeCars were designed so that, if warnings are triggered by more than one SafeCar system at the same time, only the most urgent warning is issued to the driver. There are some situations, however, where warnings can be issued at the same time by two or more SafeCar systems.

Listed below are four scenarios. Each scenario describes a situation where warnings from two or more SafeCar systems are issued at the same time. For each scenario, please indicate whether you have experienced that situation and, if you felt, confused, overloaded, etc. when the multiple warnings were being issued.

(a) Have you experienced Following Distance Warning system visual warnings only (i.e. no audio warning) **and** Seat Belt Reminder system audio and visual warnings at the same time?

Yes ☐  No ☐

If you responded “Yes”, did you feel:?

Confused ☐ Yes ☐ No ☐

Overloaded ☐ Yes ☐ No ☐

Other ☐ Yes ☐ No ☐

If you responded “Yes” for “Other”, please explain

(b) Have you experienced Speed Warning system upward accelerator pressure **and** Seat Belt Reminder system audio and visual warnings at the same time?

Yes ☐  No ☐
If you responded “Yes”, did you feel:?

Confused   Yes   No
Overloaded   Yes   No
Other      Yes   No

If you responded “Yes” for “Other”, please explain

(c) Have you experienced Following Distance Warning system visual warnings only (i.e. no audio warning) and Speed Warning system visual warnings and upward accelerator pressure at the same time?

Yes   No

If you responded “Yes”, did you feel:?

Confused   Yes   No
Overloaded   Yes   No
Other      Yes   No

If you responded “Yes” for “Other”, please explain

(d) Have you experienced Following Distance Warning system visual warnings only (i.e. no audio warning), Speed Warning system upward accelerator pressure, and Seat Belt Reminder system audio and visual warnings at the same time?

Yes   No

If you responded “Yes”, did you feel:?

Confused   Yes   No
Overloaded   Yes   No
Other      Yes   No

If you responded “Yes” for “Other”, please explain
Part C – Speed Warning System

1. To what extent do you feel that the Speed Warning System **will be of use to you**? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

   0         1                  2                  3                  4                  5

   No use        Always of use

2. If you gave a score of **0** to Question 1 above, why do you think the Speed Warning System **will be of no use to you** (select only one response):?

   - [ ] I never exceed the speed limit
   - [ ] It is my choice whether I speed or not
   - [ ] I never get caught for exceeding the speed limit
   - [ ] The speed limits are too low
   - [ ] It is out of my control if cars around me carry me over the speed limit
   - [ ] It would take away the enjoyment of driving
   - [ ] I am a good driver anyway and I know when it is safe to exceed the speed limit
   - [ ] Exceeding the speed limit does not make any difference to my safety
   - [ ] Other, Please specify: ____________________________________________________________________________

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

   (a) Receiving warnings from the Speed Warning System for exceeding the speed limit will be really helpful in areas where there are lots of pedestrians, such as in strip shopping centres or outside schools

   - [ ] Strongly disagree
   - [ ] Disagree
   - [ ] Neither agree nor disagree
   - [ ] Agree
   - [ ] Strongly agree
(b) Warnings from the Speed Warning System are unnecessary in 60 km/h zones

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

(c) I will drive more safely with the Speed Warning System in my car

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

(d) There is no need for the Speed Warning System when travelling on the freeway

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

(e) There is no need for the Speed Warning System when travelling on rural roads

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

(f) Receiving warnings from the Speed Warning System for exceeding the speed limit in 100 km/h zones is unnecessary

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

(g) Warnings from the Speed Warning System are necessary in 50 km/h zones

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

(h) There is a need for the Speed Warning System when road conditions are poor (e.g. slippery road, poor visibility)

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree
(i) The Speed Warning System is not necessary when there are hardly any other cars on the road

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(j) The Speed Warning System will be of most benefit to drivers who repeatedly exceed the speed limit without realising it

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(k) Warnings from the Speed Warning System are unnecessary in 80 km/h zones

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(l) The Speed Warning System is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Ballarat and Bendigo

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(m) The Speed Warning System will be wasted on drivers who speed intentionally – these drivers will ignore or override the warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(n) After having driven the car with the Speed Warning System, I will probably be less likely to exceed the speed limit when driving a car that is not fitted with a Speed Warning System

| Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
(o) The enjoyment of driving will decrease as a result of driving with the Speed Warning System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(p) I will be able to concentrate more on the traffic when the Speed Warning System is enabled than when it is not because I will not have to look out for speed signs

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(q) The warnings of the Speed Warning System could distract me from my driving, compromising my safety and that of any passengers that I might be carrying

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(r) The Speed Warning System will allow me to spend more time attending to the traffic because I will not have to look as much at the speedometer to monitor my speed

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) I will lose trust in the Speed Warning System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(t) I will end up relying too strongly on the Speed Warning System to let me know if I am exceeding the speed limit at the expense of my own judgement

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(u) I will lose faith in the Speed Warning System if it does not issue warnings when it should issue warnings

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>

(v) The Speed Warning System should be compulsory for all drivers

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>

(w) The Speed Warning System should only be compulsory for drivers who have been booked on multiple occasions for exceeding the speed limit

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>

(x) The Speed Warning System takes too much control away from the driver

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>

(y) Rather than a system that simply warns the driver, I would prefer a Speed Warning System that made it impossible for the driver to exceed the speed limit

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>

(z) It would not bother me if the Speed Warning System were used as a device by authorities to monitor and track car speeds and locations on the road network

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>
I would prefer a Speed Warning System that I could turn on or off as required depending on the situation (e.g. turn off if in a hurry, turn on if I am travelling on a road where I know that there are speed cameras)

Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree

4. For most drivers, what effect on travel speed will the Speed Warning System have in each of the following areas/conditions?:

<table>
<thead>
<tr>
<th>Area/Condition</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freeways</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low traffic levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor road conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. What effect on travel speed will the Speed Warning System have on drivers who exceed the speed limit for the following reasons?:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed inadvertently</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed for fun</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe it is safe to speed</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(more over page)
<table>
<thead>
<tr>
<th>Context</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>In a hurry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they won’t get caught/ fined for speeding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they shouldn’t have to follow speed limits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they can control their car safely at any speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that the speed limit is too low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carried over the speed limit by other cars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aim to travel at the speed limit, but occasionally edge over before reducing speed again</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. What effect will the Speed Warning System have on each of the following:?

<table>
<thead>
<tr>
<th>Effect</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence of crashes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability of being fined</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. How much would you be willing to pay for the Speed Warning System if it were an optional feature in a new car?

<table>
<thead>
<tr>
<th>Cost Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase</td>
<td>$</td>
</tr>
<tr>
<td>Maintenance/service</td>
<td>$              (assume yearly)</td>
</tr>
</tbody>
</table>
8. How much would you be willing to pay for the Speed Warning System if it were able to be retrofitted to an existing car?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase</td>
<td>$</td>
</tr>
<tr>
<td>Installation</td>
<td>$</td>
</tr>
<tr>
<td>Maintenance/service</td>
<td>$ (assume yearly)</td>
</tr>
</tbody>
</table>

9. Hypothetically, if you had the option of keeping the Speed Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- Very Disinterested
- Disinterested
- Neither interested nor disinterested
- Interested
- Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part D - Seat Belt Reminder System

1. To what extent do you feel that the Seat Belt Reminder System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No use</td>
<td>Always of use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. If you gave a score of 0 to Question 1, why do you think the Seat Belt Reminder System will be of no use to you (select only one response)?

- I always wear my seat belt anyway
- I know when it is safe to drive without a seat belt

(more options over page)
There is little chance of getting a fine for not wearing a seat belt
I don’t believe that wearing a seat belt in any situation will make me any safer
Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt
Seat belts are uncomfortable
It would take away the enjoyment of driving
Seat belts are too fiddly to put on
I can’t be bothered putting my seat belt on
Other, Please specify:  

3. To what extent do you think that the Seat Belt Reminder System will be of use to you in letting you know if any of your passengers are not wearing their seat belts? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

   0         1                  2                  3                  4                  5
   No use     Always of use

4. If you gave a score of 0 to Question 3, why do you think the Seat Belt Reminder System will be of no use to you in letting you know if any of your passengers are not wearing their seat belts (select only one response):?

   I never carry passengers
   I always check anyway that my passengers are wearing their seat belts
   It doesn’t matter if my passengers don’t wear their seat belts, because wearing a seat belt won’t make them any safer
   My passengers always wear their seat belts, so there is no need to have warnings for them
   I always drive safely so there is no need for passengers to have to wear a seat belt
   There is little chance of getting a fine for not wearing a seat belt

   (more options over page)
It is up to my passengers whether they wear a seat belt – it is not my responsibility

Other, Please specify:  

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Warnings from the Seat Belt Reminder System are unnecessary when reversing out of a driveway or a parking spot

(b) The Seat Belt Reminder System will be of most benefit to drivers who forget to put their seat belts on

(c) The Seat Belt Reminder System is not necessary when there are hardly any other cars on the road

(d) There is no need for the Seat Belt Reminder System when travelling at speeds of less than 10 km/h

(e) There is no need for the Seat Belt Reminder System when travelling at speeds of greater than 10 km/h
(f) The Seat Belt Reminder System is a real necessity for people who do not put their seat belts on when travelling short distances

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(g) The Seat Belt Reminder System will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(h) I will end up relying too strongly on the Seat Belt Reminder System to remind me to fasten my seat belt

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(i) I will end up relying too strongly on the Seat Belt Reminder System to let me know if any of my passengers are not wearing their seat belts

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(j) After having driven the car with the Seat Belt Reminder System, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a Seat Belt Reminder System

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(k) I will lose trust in the Seat Belt Reminder System if it does not issue warnings when it should issue warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(l) I will lose trust in the Seat Belt Reminder System if it issues false warnings

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(m) The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(n) The Seat Belt Reminder System should be compulsory for all drivers

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(o) The Seat Belt Reminder System should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(p) The Seat Belt Reminder System takes too much control away from the driver

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(q) I would prefer it if, rather than just warning the driver, the Seat Belt Reminder System prevented the driver from starting the car if someone in the car is not wearing a seat belt

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(r) The Seat Belt Reminder System will make it easier for me to encourage my passengers to fasten their seat belts

Neither agree nor disagree

Agree

Strongly agree

Strongly disagree

Disagree

(s) I will drive more safely with the Seat Belt Reminder System in my car

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly agree

(t) I will enjoy driving less as a result of having the Seat Belt Reminder System in my car

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly agree

(u) I would prefer a Seat Belt Reminder System that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers)

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly agree

6. For most drivers, what effect on seat belt wearing will the Seat Belt Reminder System have in each of the following conditions/situations?:

Reversing

Increase wearing

No change

Decrease wearing

Driving short distances

Increase wearing

No change

Decrease wearing

Low traffic levels

Increase wearing

No change

Decrease wearing

Speeds less than 10km/h

Increase wearing

No change

Decrease wearing

Speeds more than 10km/h

Increase wearing

No change

Decrease wearing
7. What effect on seat belt wearing will the Seat Belt Reminder System have on drivers who do not wear seat belts for the following reasons?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase wearing</th>
<th>No change</th>
<th>Decrease wearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forget to put seat belt on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that seat belts are uncomfortable to wear</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that seat belts are too fiddly to put on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that wearing seat belts is a violation of freedom</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can’t be bothered putting their seat belt on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that there is little chance of getting a fine for not wearing a seat belt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that wearing seat belts does not enhance safety</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. What effect will the Seat Belt Reminder System have on each of the following?

<table>
<thead>
<tr>
<th>Effect</th>
<th>Increase</th>
<th>No change</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence of crashes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injury severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability of being fined</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. How much would you be willing to pay for the Seat Belt Reminder System if it were an optional feature in a new car?

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase</td>
<td>$</td>
</tr>
<tr>
<td>Maintenance/service</td>
<td>$        (assume yearly)</td>
</tr>
</tbody>
</table>
10. How much would you be willing to pay for the Seat Belt Reminder System if it were able to be retrofitted to an existing car?

Purchase $ 
Installation $ 
Maintenance/service $ (assume yearly)

11. Hypothetically, if you had the option of keeping the Seat Belt Reminder System in your vehicle at the end of the study (at no extra cost), would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested Disinterested Neither interested nor disinterested Interested Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part E - Daytime Running Lights

1. To what extent do you feel that Daytime Running Lights will be of use to you? A score of 0 means that the Daytime Running Lights will be of no use to you while a score of 5 means that they will always be of use to you.

No use Always of use

2. If you gave a score of 0 to Question 1, why do you think the Daytime Running Lights will be of no use to you (select only one response)?

I always turn on the headlights during the day anyway – even when the weather is good

They would take away the enjoyment of driving

(more options over page)
Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users

You can’t get fined for not turning on your headlights during the day

I have a light coloured car

Other, Please specify:  

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Daytime Running Lights are not needed when there are hardly any other cars or pedestrians on the road

(b) Daytime Running Lights are a real necessity for drivers who forget to turn their headlights on during the day

(c) Daytime Running Lights should be compulsory for all drivers

(d) Daytime Running Lights will reduce my fuel economy

(e) Daytime Running Lights will put extra strain on my car battery

<table>
<thead>
<tr>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
<th>(d)</th>
<th>(e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neither agree nor disagree</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neither agree nor disagree</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neither agree nor disagree</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neither agree nor disagree</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neither agree nor disagree</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>
(f) I will need to change the headlamps more often because of the Daytime Running Lights

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(g) I will be safer with the Daytime Running Lights equipped to my car

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(h) Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(i) Driving will be less enjoyable with Daytime Running Lights in my car

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

4. What effect will Daytime Running Lights have on each of the following?

- Incidence of crashes  
  - Increase  
  - No change  
  - Decrease

- Crash severity  
  - Increase  
  - No change  
  - Decrease

- Injury severity  
  - Increase  
  - No change  
  - Decrease

- Probability of being fined  
  - Increase  
  - No change  
  - Decrease

5. How much would you be willing to pay for Daytime Running Lights if they were an optional feature in a new car?

Purchase $ ________

Maintenance/service $ ________ (assume yearly)
6. How much would you be willing to pay for Daytime Running Lights if they were able to be retrofitted to an existing car?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase</td>
<td>$</td>
</tr>
<tr>
<td>Installation</td>
<td>$</td>
</tr>
<tr>
<td>Maintenance/service</td>
<td>$     (assume yearly)</td>
</tr>
</tbody>
</table>

7. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- Very Disinterested
- Disinterested
- Neither interested nor disinterested
- Interested
- Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

---

Part F - Reverse Collision Warning

1. To what extent do you feel that Reverse Collision Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

No use                 | Always of use
2. If you gave a score of 0 to Question 1, why do you think the Reverse Collision Warning System will be of no use to you (select only one response):?

- I am always on the lookout anyway when I reverse
- It would take away the enjoyment of driving
- I prefer to use other methods to help me reverse without hitting objects behind me (e.g. reflection in shop window)
- Other, Please specify: 

3. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) I will lose trust in the Reverse Collision Warning System if it fails to issue warnings when it should issue warnings

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(b) I will lose trust in the Reverse Collision Warning System if it issues false warnings

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(c) I will end up relying more on the Reverse Collision Warning System than my own lookout while reversing

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(d) The Reverse Collision Warning System should be compulsory in all vehicles

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(e) The Reverse Collision Warning System takes too much control away from the driver

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(f) I would prefer it if the Reverse Collision Warning System made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(g) The enjoyment of driving will increase as a result of having the Reverse Collision Warning System in my car

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(h) I will drive more safely with the Reverse Collision Warning System in my car

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(i) I would prefer a Reverse Collision Warning System that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

4. What effect will the Reverse Collision Warning System have on each of the following?

- Incidence of crashes: Increase, No change, Decrease
- Crash severity: Increase, No change, Decrease
5. How much would you be willing to pay for the Reverse Collision Warning System if it were an optional feature in a new car?

- Purchase: $_________
- Maintenance/service: $_________ (assume yearly)

6. How much would you be willing to pay for the Reverse Collision Warning System if it were able to be retrofitted to an existing car?

- Purchase: $_________
- Installation: $_________
- Maintenance/service: $_________ (assume yearly)

7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- Very Disinterested
- Disinterested
- Neither interested nor disinterested
- Interested
- Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

- ___________________________

If you responded “INTERESTED” or “VERY INTERESTED”, why?

- ___________________________

### Part G - Speed Request Button

1. To what extent do you feel that Speed Request Button will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

- 0: No use
- 1
- 2
- 3
- 4
- 5: Always of use
2. If you gave a score of 0 to Question 1, why do you think the Speed Request Button will be of no use to you (select only one response):

- [ ] I always know what the speed limits are anyway
- [ ] Knowing the speed limits won’t change the way I drive
- [ ] It would take away the enjoyment of driving
- [ ] I prefer to rely on my own judgement exclusively and look out for speed limit signs myself
- [ ] Other, Please specify:  

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Speed Request Button will be really helpful in areas where speed limit signs are displayed infrequently

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(b) The Speed Request Button will be really helpful in areas where I think there are speed cameras

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) I will not use the Speed Request Button if it issues inaccurate speed limit advice

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) The Speed Request Button is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Bendigo and Ballarat

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(e) I will drive more safely with the Speed Request Button in my car

Strongly disagree □  Disagree □  Neither agree nor disagree □  Agree □  Strongly agree □

(f) The enjoyment of driving will decrease if I use the Speed Request Button

Strongly disagree □  Disagree □  Neither agree nor disagree □  Agree □  Strongly agree □

(g) The Speed Request Button should be compulsory in all vehicles

Strongly disagree □  Disagree □  Neither agree nor disagree □  Agree □  Strongly agree □

4. What effect will the Speed Request Facility have on each of the following?:

Incidence of crashes  □ Increase  □ No change  □ Decrease
Crash severity  □ Increase  □ No change  □ Decrease
Probability of being fined  □ Increase  □ No change  □ Decrease

5. How much would you be willing to pay for the Speed Request Button if it were an optional feature in a new car?

Purchase $ □
Maintenance/service $ □ (assume yearly)

6. How much would you be willing to pay for the Speed Request Button if it were able to be retrofitted to an existing car?

Purchase $ □
Installation $ □
Maintenance/service $ □ (assume yearly)
7. Hypothetically, if you had the option of keeping the Speed Request Button in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

[Selection boxes for Very Disinterested, Disinterested, Neither interested nor disinterested, Interested, Very interested]

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part H - Following Distance Warning

1. To what extent do you feel that Following Distance Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

[Selection boxes for 0, 1, 2, 3, 4, 5]

No use Always of use

2. If you gave a score of 0 to Question 1 above, why do you think the Following Distance Warning System will be of no use to you (select only one response):

[Selection boxes for I never drive less than 2 seconds from the car in front, It is my choice as to how close I drive to the car in front, There is little chance of getting caught/fined for tailgating, It would take away the enjoyment of driving, I am a good driver anyway and I know when it is safe to drive less than 2 seconds from the car in front]

(more options over page)
I don’t believe that keeping a gap of at least 2 seconds from the car in front will make me any safer

Other, Please specify: _______________________

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Following Distance Warning System will be helpful when travelling on the freeway

   [ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(b) Warnings from the Following Distance Warning System will be more of a nuisance than a help in heavy traffic

   [ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(c) The Following Distance Warning System will be helpful to drivers who do not have a clear view of the car ahead because of poor weather conditions (e.g. fog)

   [ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(d) There is no need for the Following Distance Warning System when travelling on rural roads

   [ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(e) I will drive more safely with the Following Distance Warning System in my car

   [ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree
(f) Warnings from the Following Distance Warning System are unnecessary in 50 km/h zones

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(g) Receiving warnings from the Following Distance Warning System will be really helpful in 100 km/h zones

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(h) Warnings from the Following Distance Warning System are necessary in 60 km/h zones

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(i) The Following Distance Warning System is of little use when there are few other cars on the road

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(j) Warnings from the Following Distance Warning System are unnecessary in 80 km/h zones

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(k) Following Distance Warnings will be useful for alerting distracted or fatigued drivers

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(l) The Following Distance Warning System will be really helpful when approaching intersections or roundabouts

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(m) The enjoyment of driving will decrease as a result of driving with the Following Distance Warning System

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(n) As a result of driving a car with the Following Distance Warning System, I will be less likely to tailgate when driving a car that is not fitted with a Following Distance Warning System

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(o) The warnings from the Following Distance Warning System could distract me from my driving, affecting my safety and my passengers’ safety

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(p) I will lose faith in the Following Distance Warning System if it issues false warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(q) I will lose trust in the Following Distance Warning System if it fails to issue warnings when it should issue warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(r) The Following Distance Warning System should be compulsory for all drivers

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(s) Instead of using on my own judgement, I am likely to end up waiting until I hear warnings from the Following Distance Warning System before I back off from the car in front

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(t) The Following Distance Warning System should only be compulsory for drivers who have been booked on several occasions for tailgating and/or have had several rear-end collisions

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(u) The Following Distance Warning System takes too much control away from the driver

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(v) I would prefer a Following Distance Warning System that made it impossible for the driver to get to within 2 seconds or less from the car in front

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(w) I would prefer a Following Distance Warning System that I could turn on or off as required depending on the traffic situation

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree
4. For most drivers, what effect on following distance will the Following Distance Warning System have in each of the following areas/conditions?:

<table>
<thead>
<tr>
<th>Area/Condition</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freeways</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficult to see road ahead</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intersections/ Round-a-bouts</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. What effect on following distance will the Following Distance Warning System have on drivers who follow cars too closely for the following reasons?

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t notice that they are following cars too closely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that following cars too closely is fun</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that following cars too closely has no effect on safety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a hurry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that they won’t get caught/fined</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that they can drive as close to cars as they like because it is their choice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that they can control their car regardless of how close they are to the car in front</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Car in front driving too slowly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not want other drivers cutting in front of them</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. What effect will the Following Distance Warning System have on each of the following?

<table>
<thead>
<tr>
<th>Incidence of crashes</th>
<th>Increase</th>
<th>No change</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crash severity</td>
<td>Increase</td>
<td>No change</td>
<td>Decrease</td>
</tr>
<tr>
<td>Probability of being fined</td>
<td>Increase</td>
<td>No change</td>
<td>Decrease</td>
</tr>
</tbody>
</table>
7. How much would you be willing to pay for the Following Distance Warning System if it were an optional feature in a new car?

Purchase $ ____________________

Maintenance/service $ ____________________ (assume yearly)

8. How much would you be willing to pay for the Following Distance Warning System if it were able to be retrofitted to an existing car?

Purchase $ ____________________

Installation $ ____________________

Maintenance/service $ ____________________ (assume yearly)

9. Hypothetically, if you had the option of keeping the Following Distance Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested  Disinterested  Neither interested nor disinterested  Interested  Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

________________________________________________________________________

If you responded “INTERESTED” or “VERY INTERESTED”, why?

________________________________________________________________________

End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
Interim Questionnaire Time 4

Aim of the questionnaire

To assess participants’ perceptions of the usability of the following systems/facilities:

- Intelligent Speed Adaptation (and Speed Request) or Following Distance Warning system

To whom should this questionnaire be administered?

Interim Questionnaire Time 4 should be administered only to TREATMENT participants who did not receive BOTH ISA and FDW in During 1. There are two forms of the questionnaire:

1. Comprises 2 parts:
   - Part A – Speed Warning system; and
   - Part B – Speed Request

2. Comprises 1 part:
   - Part A – Following Distance Warning system

The form of the questionnaire to be administered to a given participant will depend on whether that participant received only Intelligent Speed Adaptation (and Speed Request) warnings in During 1 and, therefore, is receiving Following Distance warnings either on their own or with Intelligent Speed Adaptation warnings in During 2, or received only Following Distance warnings in During 1 and, therefore, is receiving Intelligent Speed Adaptation warnings either on their own or with Following Distance warnings in During 2.

Therefore:

Treatment participants who were not exposed to Intelligent Speed Adaptation in During 1, but are being exposed to this system in During 2 (either on its own or with the Following Distance Warning system) should undertake Form 1. (Seven participants in total.)

Treatment participants who were not exposed to the Following Distance Warning system in During 1, but are being exposed to this system in During 2 (either on its own or with Intelligent Speed Adaptation) should undertake Form 2. (Seven participants in total.)

When during the study should this questionnaire be administered?

Interim Questionnaire Time 4 should be administered at the point in the study sequence when 8,250 kilometres of driving have been accumulated (excluding the
Familiarisation period). This corresponds to the point 750 kilometres into the During 2 period.

**How should this questionnaire be administered?**

Refer Notes for Interim Questionnaire Times 1 and 2.

**Arranging for administration of the questionnaire**

Assuming participants drive, on average, 750 kilometres per week (based on 40,000 km/year), participants will be ready to undertake Interim Questionnaire Time 4 eleven weeks after having carried out their Briefing and Training session, which marks the first day of the study for a given participant. However, a given participant may accumulate kilometres at a faster or a slower rate than expected. Consequently, for every treatment participant, who needs to complete Interim Questionnaire Time 4, it is recommended that, one and a half to two weeks after Interim Questionnaire Time 3 has been sent to the participant (exact timing will depend on how quickly the participant is accumulating the kilometres based on previous communication between the participant and the experimenter), the experimenter contacts the participant to find out the current odometer reading of the participant’s SafeCar, whether there have been any instances of the flashing button being pressed, and which systems are currently active in the SafeCar. This information will help to determine how soon after the phone call the experimenter needs to administer the Interim Questionnaire Time 4 to that participant.

As with all previous questionnaires, during the phone call the experimenter should check whether the participant is happy to complete the questionnaire on his/her own. Assuming that this is the case, the experimenter should explain to the participant that shortly he/she will receive in the mail the next questionnaire, which needs to be completed within two days of its receipt. If the participant suggests another mode of questionnaire administration, the experimenter should make appropriate arrangements with the participant.

**Eve Mitsopoulos**
Prepared 6 May 2003
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 4

This questionnaire should take you about 10 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A - Speed Warning System

1. Have you experienced warnings from the Speed Warning system?
   [ ] Yes       [ ] No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Part B on page 9.

2. This next series of questions is designed to get a feel for how user friendly you found the warnings of the Speed Warning system. When answering these questions, think about the times when you received warnings from the Speed Warning system.

   (a) Thinking back to the very first time the Speed Warning system issued warnings, how easy was it for you to judge what the warnings meant?

   [ ] Very difficult  [ ] Difficult  [ ] Neither easy nor difficult  [ ] Easy  [ ] Very easy

   If you responded “Very easy”, go to Question (b).
If you **DID NOT** respond “Very easy”, did you find it easier to judge what the warnings meant after you had experienced the warnings a few times?

- [ ] Yes
- [ ] No

If you responded “No”, why?

If you responded “Yes”, roughly how many times did you have to experience the Speed Warning system warnings before you were sure of what they meant?

- [ ] Twice
- [ ] 3 to 5 times
- [ ] Other, Please specify: __________________________

(b) Did you have any difficulty **seeing** the Speed Warning system **static** visual icon (i.e. miniature speed limit sign **without** flashing) on the Visual Warning Display?

- [ ] Yes
- [ ] No

If you responded “Yes”, was it because (you can tick more than one response):

- [ ] There was too much glare on the screen
- [ ] There was too much reflection on the screen
- [ ] The screen was too bright
- [ ] The screen was not bright enough
- [ ] The Visual Warning Display is too far over to the left, making the screen difficult to view
- [ ] The visual icon was too small
- [ ] The visual icon was blurry
- [ ] The static visual icon rarely attracted my attention

(more options over page)
(c) Were you satisfied with the look of the Speed Warning system **visual warning graphics** – that is, the miniature speed limit sign?

- [x] Yes
- [ ] No

If you responded “No”, what **didn’t** you like about the look of the Speed Warning system **visual warning graphics** and why? What would you recommend instead?

(If applicable, provide feedback.)

(d) How effective was the **static visual** warning (i.e. miniature speed limit sign **without** flashing) in alerting you that you were exceeding the speed limit by 3 km/h or more?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(If applicable, provide feedback.)

(e) Did you have any difficulty **hearing** the Speed Warning system audio chime (“bong”)?

- [ ] Yes
- [ ] No
If you responded “Yes”, was it because (you can tick more than one response):

- [ ] The audio volume was too low
- [ ] The sound was muffled by other sounds in the vehicle (e.g. talking, radio)
- [ ] Other, Please specify: 

(f) Were you satisfied with the sound of the Speed Warning system audio chime (“bong”)?

- [ ] Yes  
- [ ] No

If you responded “No”, what didn’t you like about the sound of the Speed Warning system audio chime and why? What would you recommend instead?

(g) How effective was the audio chime (“bong”) in alerting you that you were exceeding the speed limit by 3 km/h or more?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(h) Have you experienced the second level of speed warning, that is, the flashing visual warning (i.e. miniature speed limit sign with flashing red circle) and upward pressure on the accelerator?

- [ ] Yes  
- [ ] No

If you responded “Yes”, go to Question (i).
If you responded “No”, go to Question (n) on page 7.

(i) Did you have any difficulty seeing the Speed Warning system flashing visual icon (i.e. miniature speed limit sign with flashing red circle) on the Visual Warning Display?

☐ Yes ☐ No

If you responded “Yes”, was it because (you can tick more than one response):

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The flashing visual icon rarely attracted my attention
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view
☐ The visual icon was too small
☐ The visual icon was blurry
☐ The display had overheated
☐ The red circle was flashing too quickly
☐ The red circle was flashing too slowly
☐ Other, Please specify: ____________________________

(j) How effective was the flashing visual warning (i.e. miniature speed limit sign with flashing red circle) in alerting you that you were still exceeding the speed limit by 3 km/h or more?

☐ Very ineffective ☐ Ineffective ☐ Neither effective nor ineffective ☐ Effective ☐ Very effective
If you responded “Very ineffective” or “Ineffective”, why?

(k) Did you have any difficulty feeling the upward pressure on the accelerator?

☐ Yes  ☐ No

If you responded “Yes”, what was the difficulty that you experienced?

(l) Were you satisfied with the degree of accelerator pressure?

☐ Yes  ☐ No

If you responded “No”, should there be more or less pressure?

☐ More  ☐ Less

(m) How effective was the upward pressure on the accelerator in alerting you that you were still exceeding the speed limit by 3 km/h or more?

☐ Very ineffective  ☐ Ineffective  ☐ Neither effective nor ineffective  ☐ Effective  ☐ Very effective

If you responded “Very ineffective” or “Ineffective”, why?
(n) The Speed Warning system warnings occur in a two stage sequence. Stage 1 occurs when vehicle speed exceeds 3 km/h over the posted speed limit. A visual warning (i.e. miniature speed limit sign without flashing) is issued along with a single audio chime (“bong”). If speed has not dropped to below 3 km/h over the speed limit within 2 seconds of the Stage 1 warning being issued, Stage 2 occurs. In this stage, a flashing visual warning (i.e. miniature speed limit sign with flashing red circle) is issued along with upward pressure on the accelerator pedal. The warnings stop when speed drops to below 3 km/h over the posted speed limit.

Are you satisfied with the **sequence** in which the Speed Warning system warnings activate?

- [ ] Yes
- [ ] No

If you responded “No”, how would you re-design the Speed Warning system warning sequence?

(o) When you are driving outside the confines of the Speed Warning system digital map database, the message “Outside digital map zone” should appear on the Visual Warning Display. Have you ever seen this message on the Visual Warning Display?

- [ ] Yes
- [ ] No

If you responded “Yes”, how effective was the message “Outside digital map zone” in letting you know that you were outside the digital map area?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?
(p) When the Speed Warning system temporarily loses GPS reception, the message “No GPS signal” will appear on the Visual Warning Display. Have you ever seen this message on the Visual Warning Display?

☐ Yes  ☐ No

If you responded “Yes”, how effective was the message “No GPS signal” in letting you know that GPS reception had been lost?

☐ Very ineffective  ☐ Ineffective  ☐ Neither effective nor ineffective  ☐ Effective  ☐ Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(q) What one thing do you like most about the Speed Warning system?

(r) What one thing do you like least about the Speed Warning system?

(s) What things about the Speed Warning system would you tell the designers to change (you can list up to 3)?

Form 1
Part B – Speed Request Button

1. Have you used the Speed Request function?
   
   □ Yes     □ No
   
   If you responded “Yes”, go to Question 2.
   
   If you responded “No”, go to the End of the Questionnaire.
   
2. This next series of questions is designed to get a feel for how user friendly you found the Speed Request function. When answering these questions think about the times when you requested the current speed limit by using the Speed Request facility.

   (a) Thinking back to the very first time you wanted to request the speed limit using the Speed Request function, how easy was it for you to use the Speed Request Button?
   
   □ Very difficult     □ Difficult     □ Neither easy nor difficult     □ Easy     □ Very easy
   
   If you responded “Very easy” go to Question (b).
   
   If you DID NOT respond “Very easy”, what was the difficulty that you experienced in trying to use the Speed Request Button (you can tick more than one response)?
   
   □ The Button was difficult to see during the day
   
   □ Couldn’t remember where the Button was located
   
   □ The Button was obstructed by the steering wheel, making it difficult to see
   
   □ The Button is not labelled clearly enough
   
   □ The Button was too stiff to press and so had to be pressed really hard in order to activate the Speed Request
   
   □ The Button was positioned too close to other buttons, making it difficult to press the Speed Request Button without unintentionally pressing other buttons at the same time
   
   □ The Button is hard to distinguish from other buttons, because they look too similar

   (more options over page)
The Button was too difficult to see at night
The Button was too far away to reach comfortably
Other, Please specify: 

If you **DID NOT** respond “Very easy”, did you find it easier to use the Speed Request Button the next time you used it?

Yes    No    I never used the Speed Request again because of the difficulty I experienced the first time I tried to use it
I never used the Speed Request again because I never had the need to

If you responded “No”, why?

(b) Were you satisfied with the location of the Speed Request Button?

Yes    No

If you responded “No”, what **didn’t** you like about the location of the Speed Request Button and why? What location would you recommend instead?

(c) Were you satisfied with the look and feel of the Speed Request Button (e.g. colour, size, shape)?

Yes    No
If you responded “No”, what didn’t you like about the look and feel of the Speed Request Button and why? What would you recommend instead?

(d) Thinking back to the very first time you requested the speed limit using the Speed Request function, how easy was it for you to judge what the speed limit was from the information that appeared on the Visual Warning Display?

- [ ] Very difficult
- [ ] Difficult
- [ ] Neither easy nor difficult
- [ ] Easy
- [ ] Very easy

If you responded “Very easy”, go to Question (e).

If you DID NOT respond “Very easy”, did you find it easier to judge what the speed limit was after you had used the Speed Request a few times?

- [ ] Yes
- [ ] No
- [ ] I never used the Speed Request again

If you responded “No”, why?

If you responded “Yes”, roughly how many times did you have to use the Speed Request before you were able to judge what the speed limit was from the information that appeared on the Visual Warning Display?

- [ ] Twice
- [ ] 3 to 5 times
- [ ] Other, Please specify: 
(e) Did you have any difficulty **seeing** the Speed Request visual notification on the Visual Warning Display (i.e. miniature speed limit sign showing the current speed limit)?

☐ Yes  ☐ No

If you responded “Yes”, was it because **(you can tick more than one response)**:

☐ There was too much glare on the screen
☐ There was too much reflection on the screen
☐ The screen was too bright
☐ The screen was not bright enough
☐ The Visual Warning Display is too far over to the left, making the screen difficult to view
☐ The visual icon was too small
☐ The visual icon was blurry
☐ The Visual Warning Display had overheated
☐ Other, Please specify: ________________________

(f) Were you satisfied with the **look** of the Speed Request **visual notification graphics** – that is, the miniature speed limit sign showing the current speed limit)?

☐ Yes  ☐ No

If you responded “No”, what **didn’t** you like about the look of the Speed Request **visual notification graphics** and why? What would you recommend instead?

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________
(g) How effective was the Speed Request function in providing you with speed limit information with minimal delay (i.e. from the time you pressed the Speed Request Button)?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

- [ ]

(h) Did you have any difficulty hearing the Speed Request audio chime (“bong”)?

- [ ] Yes
- [ ] No

If you responded “Yes”, was it because (you can tick more than one response):

- [ ] The audio volume was too low
- [ ] The sound was muffled by other sounds in the vehicle (e.g. talking, radio)
- [ ] Other, Please specify: 

(i) Were you satisfied with the sound of the Speed Request audio chime (“bong”)?

- [ ] Yes
- [ ] No

If you responded “No”, what didn’t you like about the sound of the Speed Request audio chime (“bong”) and why? What would you recommend instead?

- [ ]
(j) How effective was the audio chime in alerting you that you had received speed limit information?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded "Very ineffective" or "Ineffective", why?

[k] The audio chime sometimes sounds before notification of the speed limit appears on the Visual Warning Display and other times it sounds at the same time as when the speed limit notification appears on the display? Is this inconsistency acceptable?

- [ ] Yes
- [ ] No

If you responded “No”, should the audio chime sound before or at the same time as when the speed limit is displayed?

(l) In response to pressing the Speed Request Button, the speed limit appears on the Visual Warning Display and remains there for 3 seconds. Is this amount of time acceptable?

- [ ] Yes
- [ ] No

If you responded “No”, for how long should the speed limit appear on the Visual Warning Display?
End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 4

This questionnaire should take you about 5 to 10 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A - Following Distance Warning System

1. Have you experienced warnings from the Following Distance Warning system?
   
   [ ] Yes      [ ] No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to the End of the Questionnaire

2. This next series of questions is designed to get a feel for how user friendly you found the warnings of the Following Distance Warning system. When answering these questions, think about the times when you received warnings from the Following Distance Warning system.

   (a) Thinking back to the very first time the Following Distance Warning system issued warnings, how easy was it for you to judge what the warnings meant?

   [ ] Very difficult  [ ] Difficult  [ ] Neither easy nor difficult  [ ] Easy  [ ] Very easy

   If you responded “Very easy”, go to Question (b).
If you **DID NOT** respond “Very easy”, did you find it easier to judge what the warnings meant after you had experienced them a few times?

- Yes
- No

If you responded “No”, why?

If you responded “Yes”, roughly how many times did you have to experience the Following Distance Warning system warnings before you were sure of what they meant?

- Twice
- 3 to 5 times
- Other, Please specify: 

(b) Did you have any difficulty seeing the **yellow** bars of the Following Distance Warning visual warning ladder?

- Yes
- No

If you responded “Yes”, was it because (you can tick more than one response):

- There was too much glare on the screen
- There was too much reflection on the screen
- The screen was too bright
- The screen was not bright enough
- The Visual Warning Display is too far over to the left, making the screen difficult to view
- The coloured bars and ladder were too small
- The coloured bars and ladder were blurry
- The yellow bars rarely attracted my attention

(more options over page)
(c) How effective were the **yellow bars** of the visual warning ladder in alerting you that you were travelling too close to the car in front?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

- [ ] There was too much glare on the screen
- [ ] There was too much reflection on the screen
- [ ] The screen was too bright
- [ ] The screen was not bright enough
- [ ] The red bars rarely attracted my attention
- [ ] The Visual Warning Display is too far over to the left, making the screen difficult to view

(d) Did you have any difficulty **seeing** the **red** bars of the Following Distance Warning visual warning ladder?

- [ ] Yes
- [ ] No
- [ ] I have never experienced this visual warning

If you responded “I have never experienced this visual warning”, go to Question (h) on page 5.

If you responded “Yes”, was it because *(you can tick more than one response)*:

- [ ] There was too much glare on the screen
- [ ] There was too much reflection on the screen
- [ ] The screen was too bright
- [ ] The screen was not bright enough
- [ ] The red bars rarely attracted my attention
- [ ] The Visual Warning Display is too far over to the left, making the screen difficult to view
The bars and ladder were too small
The bars and ladder were too blurry
The Visual Warning Display had overheated
The colour “red” is not obvious enough – it is too similar to the screen background
The colours “red” and “yellow” are too similar – so it was hard to distinguish between the two colours
The visual warning ladder was flashing too quickly
The visual warning ladder was flashing too slowly
Other, Please specify:

(e) Did you have any difficulty seeing the visual warning ladder flash?
Yes                  No

If you responded “Yes”, was it because (you can tick more than one response):

- There was too much glare on the screen
- There was too much reflection on the screen
- The screen was too bright
- The screen was not bright enough
- The Visual Warning Display is too far over to the left, making the screen difficult to view
- The visual warning ladder was too small
- The visual warning ladder was blurry
- The Visual Warning Display had overheated
- The flashing ladder rarely attracted my attention
- The visual warning ladder was flashing too quickly
- The visual warning ladder was flashing too slowly
Other, Please specify:
(f) How effective were the red bars of the visual warning ladder in alerting you that you were travelling too close to the car in front?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(g) How effective was the flashing visual warning ladder in alerting you that you were travelling too close to the car in front?

- [ ] Very ineffective
- [ ] Ineffective
- [ ] Neither effective nor ineffective
- [ ] Effective
- [ ] Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(h) Were you satisfied with the look of the Following Distance Warning system visual warning graphics (e.g ladder display, coloured bars)?

- [ ] Yes
- [ ] No

If you responded “No”, what didn’t you like about the look of the Following Distance Warning system visual warning graphics and why? What would you recommend instead?
(i) Did you have any difficulty hearing the Following Distance Warning system audio warning?

☐ Yes    ☐ No    ☐ I have never experienced the audio warning

If you responded “I have never experienced the audio warning”, go to Question (m) on page 7.

If you responded “Yes”, was it because (you can tick more than one response):

☐ The audio warning volume was too low
☐ The audio warning was muffled by other sounds in the vehicle (e.g. talking, radio)
☐ Other, Please specify:

(j) Were you satisfied with the sound of the Following Distance Warning system audio warning?

☐ Yes    ☐ No

If you responded “No”, what didn’t you like about the sound of the Following Distance Warning system audio warning and why? What would you recommend instead?


(k) How effective was the audio warning in alerting you that you were travelling too close to the car in front?

☐ Very ineffective    ☐ Ineffective    ☐ Neither effective nor ineffective    ☐ Effective    ☐ Very effective

If you responded “Very ineffective” or “Ineffective”, why?


(l) How effective was the **graded warning information** (i.e. yellow bars, red bars and flashing visual warning ladder, then audio) in letting you know that you are getting progressively closer to the car in front?

☐ Very ineffective  ☐ Ineffective  ☐ Neither effective nor ineffective  ☐ Effective  ☐ Very effective

If you responded “Very ineffective” or “Ineffective”, why?

(m) The Following Distance Warning system warnings occur in several stages. Stage 1 occurs when the distance between your car and the one you are following is 2 seconds. The three bars at the top of the visual warning ladder display fill with yellow, one after the other, as following distance decreases. If you get closer to the car ahead, so that you are 1.3 seconds away, the bars below the yellow bars start to fill with red, one after the other. The entire ladder display starts to flash when the first red bar appears. The ladder keeps flashing unless following distance increases. If the distance between your car and the car in front reduces to 1.1 seconds, the bar at the bottom of the display fills with red and an audio warning sounds.

Are you satisfied with the **sequence** in which the Following Distance Warning system warnings activate?

☐ Yes  ☐ No

If you responded “No”, how would you re-design the Following Distance Warning system warning sequence?

Form 2
(n) What one thing do you like **most** about the Following Distance Warning system?


(o) What one thing do you like **least** about the Following Distance Warning system?


(p) What things about the Following Distance Warning system would you tell the designers to change (you can list up to 3)?


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**End of Questionnaire**

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
Appendix AF  Interim Questionnaire Time 5
Interim Questionnaire Time 5

Aim of the questionnaire

Control Participants:

1. To assess participants’ acceptability towards the following systems:
   - Seat Belt Reminder;
   - Daytime Running Lights; and
   - Reverse Collision Warning.

Treatment Participants, who were exposed to ISA in During 2:

1. To measure the workload experienced by participants under the following condition:
   - While driving and warnings of the Intelligent Speed Adaptation system were being issued.

2. To measure participants’ acceptability towards the following systems:
   - Seat Belt Reminder;
   - Daytime Running Lights;
   - Reverse Collision Warning;
   - Intelligent Speed Adaptation;
   - Speed Request; and
   - Following Distance Warning.

Treatment Participants, who were exposed to FDW in During 2:

1. To measure the workload experienced by participants under the following condition:
   - While driving and warnings of the Following Distance Warning system were being issued.

2. To measure participants’ acceptability towards the following systems:
   - Seat Belt Reminder;
   - Daytime Running Lights;
   - Reverse Collision Warning;
   - Intelligent Speed Adaptation;
   - Speed Request; and
   - Following Distance Warning.
Treatment Participants, who were exposed to **ISA and FDW** in During 2:

1. To determine whether participants experienced any confusion, overload, etc. as a result of receiving warnings from multiple systems at the same time.

2. To measure participants’ acceptability towards the following systems:
   - Seat Belt Reminder;
   - Daytime Running Lights;
   - Reverse Collision Warning;
   - Intelligent Speed Adaptation;
   - Speed Request; and
   - Following Distance Warning.

**To whom should this questionnaire be administered?**

Interim Questionnaire Time 5 should be administered to ALL participants. There are four forms of the questionnaire available:

1. Comprises 3 parts:
   - Part A – Seat Belt Reminder System;
   - Part B – Daytime Running Lights; and
   - Part C – Reverse Collision Warning System.

2. Comprises 6 parts:
   - Part A – Speed Warning System;
   - Part B – Seat Belt Reminder System;
   - Part C – Daytime Running Lights;
   - Part D – Reverse Collision Warning System;
   - Part E – Speed Request; and
   - Part F – Following Distance Warning System.

3. Comprises 6 parts:
   - Part A – Following Distance Warning System;
   - Part B – Seat Belt Reminder System;
   - Part C – Daytime Running Lights;
   - Part D – Reverse Collision Warning System;
   - Part E – Speed Warning System; and
   - Part F – Speed Request.

4. Comprises 7 parts:
   - Part A – Multiple Systems;
   - Part B – Speed Warning System;
   - Part C – Seat Belt Reminder System;
   - Part D – Daytime Running Lights;
   - Part E – Reverse Collision Warning System;
   - Part F – Speed Request; and
   - Part G – Following Distance Warning System.
The form of the questionnaire to be administered to a given participant will depend on whether that participant is in the control or the treatment group and, if the participant is in the treatment group, whether he/she was exposed in During 2 to Intelligent Speed Adaptation, Following Distance Warning, or both Intelligent Speed Adaptation and Following Distance Warning. Therefore:

**Control** participants should undertake **Form 1**. (10 participants in total.)

**Treatment** participants who are being exposed to **Intelligent Speed Adaptation** in **During 2** should undertake **Form 2**. (Seven participants in total.)

**Treatment** participants who are being exposed to **Following Distance Warning** in **During 2** should undertake **Form 3**. (Six participants in total.)

**Treatment** participants who are being exposed to both **Following Distance Warning** and **Intelligent Speed Adaptation** in **During 2** should undertake **Form 4**. (Seven participants in total.)

**When during the study should this questionnaire be administered?**

Interim Questionnaire Time 5 should be administered at the point in the study sequence when 11,250 kilometres of driving have been accumulated (excluding the Familiarisation period). For the treatment participants, this corresponds to the point 750 kilometres into the After 2 period.

**Eve Mitsopoulos**
Prepared 2\textsuperscript{nd} June 2003
On-Road Study into the Effects on Driving of
In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 5

This questionnaire should take you about 10 to 15 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. You will probably recognise many of the questions that are in this questionnaire. This is because we are interested in finding out whether there have been any changes in how people feel about the systems under study.

In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A - Seat Belt Reminder System

1. To what extent do you feel that the Seat Belt Reminder System **will be of use to you**? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No use</td>
<td>Always of use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. If you gave a score of **0 to Question 1**, why do you think the Seat Belt Reminder System **will be of no use to you** (select only one response):?

   - [ ] I always wear my seat belt anyway
   - [ ] I know when it is safe to drive without a seat belt
   - [ ] There is little chance of getting a fine for not wearing a seat belt

   (more options over page)
I don’t believe that wearing a seat belt in any situation will make me any safer

☐ Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt

☐ Seat belts are uncomfortable

☐ It would take away the enjoyment of driving

☐ Seat belts are too fiddly to put on

☐ I can’t be bothered putting my seat belt on

☐ Other, Please specify: ____________________________________________

3. To what extent do you think that the Seat Belt Reminder System will be of use to you in letting you know if any of your passengers are not wearing their seat belts? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

☐ 0 No use

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5 Always of use

4. If you gave a score of 0 to Question 3, why do you think the Seat Belt Reminder System will be of no use to you in letting you know if any of your passengers are not wearing their seat belts (select only one response):?

☐ I never carry passengers

☐ I always check anyway that my passengers are wearing their seat belts

☐ It doesn’t matter if my passengers don’t wear their seat belts, because wearing a seat belt won’t make them any safer

☐ My passengers always wear their seat belts, so there is no need to have warnings for them

☐ I always drive safely so there is no need for passengers to have to wear a seat belt

☐ There is little chance of getting a fine for not wearing a seat belt

☐ It is up to my passengers whether they wear a seat belt – it is not my responsibility

☐ Other, Please specify: ____________________________________________
5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Warnings from the Seat Belt Reminder System are unnecessary when reversing out of a driveway or a parking spot

(b) The Seat Belt Reminder System will be of most benefit to drivers who forget to put their seat belts on

(c) The Seat Belt Reminder System is not necessary when there are hardly any other cars on the road

(d) There is no need for the Seat Belt Reminder System when travelling at speeds of **less than** 10 km/h

(e) There is no need for the Seat Belt Reminder System when travelling at speeds of **greater than** 10 km/h

(f) The Seat Belt Reminder System is a real necessity for people who do not put their seat belts on when travelling short distances
(g) The Seat Belt Reminder System will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(h) I will end up relying too strongly on the Seat Belt Reminder System to remind me to fasten my seat belt

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(i) I will end up relying too strongly on the Seat Belt Reminder System to let me know if any of my passengers are not wearing their seat belts

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(j) After having driven the car with the Seat Belt Reminder System, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a Seat Belt Reminder System

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(k) I will lose trust in the Seat Belt Reminder System if it does not issue warnings when it should issue warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(l) I will lose trust in the Seat Belt Reminder System if it issues false warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(m) The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(n) The Seat Belt Reminder System should be compulsory for all drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(o) The Seat Belt Reminder System should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(p) The Seat Belt Reminder System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(q) I would prefer it if, rather than just warning the driver, the Seat Belt Reminder System prevented the driver from starting the car if someone in the car is not wearing a seat belt

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(r) The Seat Belt Reminder System will make it easier for me to encourage my passengers to fasten their seat belts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) I will drive more safely with the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(t) I will enjoy driving less as a result of having the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) I would prefer a Seat Belt Reminder System that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

6. For most drivers, what effect on seat belt wearing will the Seat Belt Reminder System have in each of the following conditions/situations?

- **Reversing**
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

- **Driving short distances**
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

- **Low traffic levels**
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

- **Speeds less than 10km/h**
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

- **Speeds more than 10km/h**
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

7. What effect on seat belt wearing will the Seat Belt Reminder System have on drivers who do not wear seat belts for the following reasons?

- **Forget to put seat belt on**
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

- **Believe that seat belts are uncomfortable to wear**
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

- **Believe that seat belts are too fiddly to put on**
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

- **Believe that wearing seat belts is a violation of freedom**
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

(more over page)
Can’t be bothered putting their seat belt on
Believe that there is little chance of getting a fine for not wearing a seat belt
Believe that wearing seat belts does not enhance safety

8. What effect will the Seat Belt Reminder System have on each of the following?:

- Incidence of crashes
- Crash severity
- Injury severity
- Probability of being fined

9. How much would you be willing to pay for the Seat Belt Reminder System if it were an optional feature in a new car?

- Purchase
- Maintenance/service (assume yearly)

10. How much would you be willing to pay for the Seat Belt Reminder System if it were able to be retrofitted to an existing car?

- Purchase
- Installation
- Maintenance/service (assume yearly)

11. Hypothetically, if you had the option of keeping the Seat Belt Reminder System in your vehicle at the end of the study (at no extra cost), would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- Very Disinterested
- Disinterested
- Neither interested nor disinterested
- Interested
- Very interested
If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part B - Daytime Running Lights

1. To what extent do you feel that Daytime Running Lights will be of use to you? A score of 0 means that the Daytime Running Lights will be of no use to you while a score of 5 means that they will always be of use to you.

0         1                  2                  3                  4                  5
No use         Always of use

2. If you gave a score of 0 to Question 1, why do you think the Daytime Running Lights will be of no use to you (select only one response)?

I always turn on the headlights during the day anyway – even when the weather is good

They would take away the enjoyment of driving

Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users

You can’t get fined for not turning on your headlights during the day

I have a light coloured car

Other, Please specify:
3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Daytime Running Lights are not needed when there are hardly any other cars or pedestrians on the road

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(b) Daytime Running Lights are a real necessity for drivers who forget to turn their headlights on during the day

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) Daytime Running Lights should be compulsory for all drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) Daytime Running Lights will reduce my fuel economy

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(e) Daytime Running Lights will put extra strain on my car battery

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) I will need to change the headlamps more often because of the Daytime Running Lights

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) I will be safer with the Daytime Running Lights equipped to my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(h) Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(i) Driving will be less enjoyable with Daytime Running Lights in my car

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

4. What effect will Daytime Running Lights have on each of the following?

- Incidence of crashes
  - Increase
  - No change
  - Decrease

- Crash severity
  - Increase
  - No change
  - Decrease

- Injury severity
  - Increase
  - No change
  - Decrease

- Probability of being fined
  - Increase
  - No change
  - Decrease

5. How much would you be willing to pay for Daytime Running Lights if they were an optional feature in a new car?

- Purchase: $________
- Maintenance/service: $________ (assume yearly)

6. How much would you be willing to pay for Daytime Running Lights if they were able to be retrofitted to an existing car?

- Purchase: $________
- Installation: $________
- Maintenance/service: $________ (assume yearly)

7. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- Very Disinterested
- Disinterested
- Neither interested nor disinterested
- Interested
- Very interested
If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part C - Reverse Collision Warning

1. To what extent do you feel that Reverse Collision Warning System **will be of use to you**? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

   0         1                  2                  3                  4                  5
   No use        Always of use

2. If you gave a score of 0 to Question 1, why do you think the Reverse Collision Warning System **will be of no use to you** (select only one response):?

   - I am always on the lookout anyway when I reverse
   - It would take away the enjoyment of driving
   - I prefer to use other methods to help me reverse without hitting objects behind me (e.g. reflection in shop window)
   - Other, Please specify: ___________________________

3. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

   (a) I will lose trust in the Reverse Collision Warning System if it fails to issue warnings when it should issue warnings

   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly agree

Form 1
(b) I will lose trust in the Reverse Collision Warning System if it issues false warnings

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(c) I will end up relying more on the Reverse Collision Warning System than my own lookout while reversing

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(d) The Reverse Collision Warning System should be compulsory in all vehicles

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(e) The Reverse Collision Warning System takes too much control away from the driver

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(f) I would prefer it if the Reverse Collision Warning System made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(g) The enjoyment of driving will increase as a result of having the Reverse Collision Warning System in my car

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree
(h) I will drive more safely with the Reverse Collision Warning System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) I would prefer a Reverse Collision Warning System that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. What effect will the Reverse Collision Warning System have on each of the following?:

- Incidence of crashes
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease

- Crash severity
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease

5. How much would you be willing to pay for the Reverse Collision Warning System if it were an optional feature in a new car?

- Purchase: $ __________
- Maintenance/service: $ __________ (assume yearly)

6. How much would you be willing to pay for the Reverse Collision Warning System if it were able to be retrofitted to an existing car?

- Purchase: $ __________
- Installation: $ __________
- Maintenance/service: $ __________ (assume yearly)

7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- [ ] Very Disinterested
- [ ] Disinterested
- [ ] Neither interested nor disinterested
- [ ] Interested
- [ ] Very interested
If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 5

This questionnaire should take you about 25 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. You will probably recognise many of the questions that are in this questionnaire. This is because we are interested in finding out whether there have been any changes in how people feel about the systems under study.

In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A - Speed Warning System

1. Have you experienced warnings from the Speed Warning system?

☐ Yes ☐ No

If you responded “Yes”, go to Question 2.

If you responded “No”, go to Question 3 (page 3).

2. This question is designed to gauge your impression of how much mental workload you experienced when you were driving and warnings from the Speed Warning system were being issued.

Six factors are known to contribute to the overall level of mental workload that people feel when they perform a task. Below are some questions that are designed to measure, for each of the six factors, the level of workload that you experienced while the speed warnings were being issued.
For each of the six factors, please indicate, by placing a line at the appropriate point on the scale, the level of workload that you experienced while you were driving and the Speed Warning system was issuing warnings.

For example,

Low          Neither high          High

Mental demand:
On average, how much mental and perceptual activity was required? That is, how much thinking, deciding, calculating, remembering, looking, searching, etc was required when you were driving and you were receiving warnings from the Speed Warning system? Was the car driving task easy and simple (low) or demanding and complex (high) when the warnings were being issued?

Low          Neither high          High

Physical demand:
On average, how much physical activity was required? That is, how much controlling of the vehicle, operating the brake, etc was required when you were driving and you were receiving warnings from the Speed Warning system? Was the car driving task easy and restful (low) or demanding and laborious (high) when the warnings were being issued?

Low          Neither high          High

Time demand:
On average, how much time pressure did you feel when driving while the Speed Warning system warnings were being issued? Was the pace of driving slow and leisurely (low) or rapid and rushed (high) when the warnings were being issued?

Low          Neither high          High

Performance:
On average, how satisfied were you with your driving performance when the Speed Warning system warnings were being issued?

Good          Neither good          Poor

nor poor
**Effort:**
On average, how hard did you have to work (mentally and physically) to drive while the Speed Warning system warnings were being issued? Was little effort (low) or a large amount of effort (high) required?

<table>
<thead>
<tr>
<th>Low</th>
<th>Neither high nor low</th>
<th>High</th>
</tr>
</thead>
</table>

**Frustration level:**
On average, did you feel secure, gratified, content, relaxed and complacent (low) when driving while the Speed Warning system warnings were being issued or did you feel insecure, discouraged, irritated, stressed and annoyed (high)?

<table>
<thead>
<tr>
<th>Low</th>
<th>Neither high nor low</th>
<th>High</th>
</tr>
</thead>
</table>

3. To what extent do you feel that the Speed Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Always of use</td>
</tr>
</tbody>
</table>

4. If you gave a score of 0 to Question 3 above, why do you think the Speed Warning System will be of no use to you (select only one response):?

- [ ] I never exceed the speed limit
- [ ] It is my choice whether I speed or not
- [ ] I never get caught for exceeding the speed limit
- [ ] The speed limits are too low
- [ ] It is out of my control if cars around me carry me over the speed limit
- [ ] It would take away the enjoyment of driving
- [ ] I am a good driver anyway and I know when it is safe to exceed the speed limit
- [ ] Exceeding the speed limit does not make any difference to my safety
- [ ] Other, Please specify:
5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Receiving warnings from the Speed Warning System for exceeding the speed limit will be really helpful in areas where there are lots of pedestrians, such as in strip shopping centres or outside schools

(b) Warnings from the Speed Warning System are unnecessary in 60 km/h zones

(c) I will drive more safely with the Speed Warning System in my car

(d) There is no need for the Speed Warning System when travelling on the freeway

(e) There is no need for the Speed Warning System when travelling on rural roads

(f) Receiving warnings from the Speed Warning System for exceeding the speed limit in 100 km/h zones is unnecessary
(g) Warnings from the Speed Warning System are necessary in 50 km/h zones

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(h) There is a need for the Speed Warning System when road conditions are poor (e.g. slippery road, poor visibility)

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(i) The Speed Warning System is not necessary when there are hardly any other cars on the road

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(j) The Speed Warning System will be of most benefit to drivers who repeatedly exceed the speed limit without realising it

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(k) Warnings from the Speed Warning System are unnecessary in 80 km/h zones

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(l) The Speed Warning System is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Ballarat and Bendigo

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(m) The Speed Warning System will be wasted on drivers who speed intentionally – these drivers will ignore or override the warnings

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(n) After having driven the car with the Speed Warning System, I will probably be less likely to exceed the speed limit when driving a car that is not fitted with a Speed Warning System

Strongly disagree □ Disagree □ Neither agree nor disagree □ Agree □ Strongly agree □

(o) The enjoyment of driving will decrease as a result of driving with the Speed Warning System

Strongly disagree □ Disagree □ Neither agree nor disagree □ Agree □ Strongly agree □

(p) I will be able to concentrate more on the traffic when the Speed Warning System is enabled than when it is not because I will not have to look out for speed signs

Strongly disagree □ Disagree □ Neither agree nor disagree □ Agree □ Strongly agree □

(q) The warnings of the Speed Warning System could distract me from my driving, compromising my safety and that of any passengers that I might be carrying

Strongly disagree □ Disagree □ Neither agree nor disagree □ Agree □ Strongly agree □

(r) The Speed Warning System will allow me to spend more time attending to the traffic because I will not have to look as much at the speedometer to monitor my speed

Strongly disagree □ Disagree □ Neither agree nor disagree □ Agree □ Strongly agree □

(s) I will lose trust in the Speed Warning System if it issues false warnings

Strongly disagree □ Disagree □ Neither agree nor disagree □ Agree □ Strongly agree □
(t) I will end up relying too strongly on the Speed Warning System to let me know if I am exceeding the speed limit at the expense of my own judgement

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) I will lose faith in the Speed Warning System if it does not issue warnings when it should issue warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(v) The Speed Warning System should be compulsory for all drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(w) The Speed Warning System should only be compulsory for drivers who have been booked on multiple occasions for exceeding the speed limit

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(x) The Speed Warning System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(y) Rather than a system that simply warns the driver, I would prefer a Speed Warning System that made it impossible for the driver to exceed the speed limit

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(z) It would not bother me if the Speed Warning System were used as a
device by authorities to monitor and track car speeds and locations on the
road network

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(aa) I would prefer a Speed Warning System that I could turn on or off as
required depending on the situation (e.g. turn off if in a hurry, turn on if
I am travelling on a road where I know that there are speed cameras)

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

6. For most drivers, what effect on travel speed will the Speed Warning
System have in each of the following areas/conditions:?

<table>
<thead>
<tr>
<th>Area/Condition</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freeways</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low traffic levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor road conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. What effect on travel speed will the Speed Warning System have on drivers who exceed the speed limit for the following reasons:?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed inadvertently</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed for fun</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe it is safe to speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a hurry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they won’t get caught/ fined for speeding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they shouldn’t have to follow speed limits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they can control their car safely at any speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that the speed limit is too low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carried over the speed limit by other cars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aim to travel at the speed limit, but occasionally edge over before reducing speed again</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. What effect will the Speed Warning System have on each of the following:?

<table>
<thead>
<tr>
<th>Effect</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence of crashes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability of being fined</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. How much would you be willing to pay for the Speed Warning System if it were an optional feature in a new car?

Purchase $ __________

Maintenance/service $ __________ (assume yearly)

10. How much would you be willing to pay for the Speed Warning System if it were able to be retrofitted to an existing car?

Purchase $ __________

Installation $ __________

Maintenance/service $ __________ (assume yearly)

11. Hypothetically, if you had the option of keeping the Speed Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested | Disinterested | Neither interested nor disinterested | Interested | Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part B - Seat Belt Reminder System

1. To what extent do you feel that the Seat Belt Reminder System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

0 | 1 | 2 | 3 | 4 | 5

No use | Always of use
2. If you gave a score of 0 to Question 1, why do you think the Seat Belt Reminder System will be of no use to you (select only one response):?

☐ I always wear my seat belt anyway
☐ I know when it is safe to drive without a seat belt
☐ There is little chance of getting a fine for not wearing a seat belt
☐ I don’t believe that wearing a seat belt in any situation will make me any safer
☐ Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt
☐ Seat belts are uncomfortable
☐ It would take away the enjoyment of driving
☐ Seat belts are too fiddly to put on
☐ I can’t be bothered putting my seat belt on
☐ Other, Please specify: ________________

3. To what extent do you think that the Seat Belt Reminder System will be of use to you in letting you know if any of your passengers are not wearing their seat belts? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

☐ 0 1 2 3 4 5

No use Always of use

4. If you gave a score of 0 to Question 3, why do you think the Seat Belt Reminder System will be of no use to you in letting you know if any of your passengers are not wearing their seat belts (select only one response):?

☐ I never carry passengers
☐ I always check anyway that my passengers are wearing their seat belts
☐ It doesn’t matter if my passengers don’t wear their seat belts, because wearing a seat belt won’t make them any safer

(more options over page)
My passengers always wear their seat belts, so there is no need to have warnings for them

I always drive safely so there is no need for passengers to have to wear a seat belt

There is little chance of getting a fine for not wearing a seat belt

It is up to my passengers whether they wear a seat belt – it is not my responsibility

Other, Please specify: 

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Warnings from the Seat Belt Reminder System are unnecessary when reversing out of a driveway or a parking spot

(b) The Seat Belt Reminder System will be of most benefit to drivers who forget to put their seat belts on

(c) The Seat Belt Reminder System is not necessary when there are hardly any other cars on the road

(d) There is no need for the Seat Belt Reminder System when travelling at speeds of less than 10 km/h
(e) There is no need for the Seat Belt Reminder System when travelling at speeds of **greater than** 10 km/h

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(f) The Seat Belt Reminder System is a real necessity for people who do not put their seat belts on when travelling short distances

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(g) The Seat Belt Reminder System will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(h) I will end up relying too strongly on the Seat Belt Reminder System to remind me to fasten my seat belt

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(i) I will end up relying too strongly on the Seat Belt Reminder System to let me know if any of my passengers are not wearing their seat belts

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(j) After having driven the car with the Seat Belt Reminder System, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a Seat Belt Reminder System

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(k) I will lose trust in the Seat Belt Reminder System if it does not issue warnings when it should issue warnings

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

(l) I will lose trust in the Seat Belt Reminder System if it issues false warnings

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

(m) The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

(n) The Seat Belt Reminder System should be compulsory for all drivers

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

(o) The Seat Belt Reminder System should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree

(p) The Seat Belt Reminder System takes too much control away from the driver

Strongly disagree    Disagree    Neither agree nor disagree    Agree    Strongly agree
(q) I would prefer it if, rather than just warning the driver, the Seat Belt Reminder System prevented the driver from starting the car if someone in the car is not wearing a seat belt

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(r) The Seat Belt Reminder System will make it easier for me to encourage my passengers to fasten their seat belts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) I will drive more safely with the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(t) I will enjoy driving less as a result of having the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) I would prefer a Seat Belt Reminder System that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

6. For most drivers, what effect on seat belt wearing will the Seat Belt Reminder System have in each of the following conditions/situations:?

Reversing

- [ ] Increase wearing
- [ ] No change
- [ ] Decrease wearing

Driving short distances

- [ ] Increase wearing
- [ ] No change
- [ ] Decrease wearing

(more over page)
<table>
<thead>
<tr>
<th>Traffic Conditions</th>
<th>Increase wearing</th>
<th>No change</th>
<th>Decrease wearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low traffic levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speeds less than 10km/h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speeds more than 10km/h</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. What effect on seat belt wearing will the Seat Belt Reminder System have on drivers who do not wear seat belts for the following reasons:

- Forget to put seat belt on: Increase wearing / No change / Decrease wearing
- Believe that seat belts are uncomfortable to wear: Increase wearing / No change / Decrease wearing
- Believe that seat belts are too fiddly to put on: Increase wearing / No change / Decrease wearing
- Believe that wearing seat belts is a violation of freedom: Increase wearing / No change / Decrease wearing
- Can’t be bothered putting their seat belt on: Increase wearing / No change / Decrease wearing
- Believe that there is little chance of getting a fine for not wearing a seat belt: Increase wearing / No change / Decrease wearing
- Believe that wearing seat belts does not enhance safety: Increase wearing / No change / Decrease wearing

8. What effect will the Seat Belt Reminder System have on each of the following:

- Incidence of crashes: Increase / No change / Decrease
- Crash severity: Increase / No change / Decrease
- Injury severity: Increase / No change / Decrease
- Probability of being fined: Increase / No change / Decrease
9. How much would you be willing to pay for the Seat Belt Reminder System if it were an optional feature in a new car?

<table>
<thead>
<tr>
<th>Purchase</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance/service</td>
<td>$   (assume yearly)</td>
</tr>
</tbody>
</table>

10. How much would you be willing to pay for the Seat Belt Reminder System if it were able to be retrofitted to an existing car?

<table>
<thead>
<tr>
<th>Purchase</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation</td>
<td>$</td>
</tr>
<tr>
<td>Maintenance/service</td>
<td>$   (assume yearly)</td>
</tr>
</tbody>
</table>

11. Hypothetically, if you had the option of keeping the Seat Belt Reminder System in your vehicle at the end of the study (at no extra cost), would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

| Very Disinterested | Disinterested | Neither interested nor disinterested | Interested | Very interested |

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

---

Part C- Daytime Running Lights

1. To what extent do you feel that Daytime Running Lights **will be of use to you**? A score of 0 means that the Daytime Running Lights will be of no use to you while a score of 5 means that they will always be of use to you.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No use</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>Always of use</td>
</tr>
</tbody>
</table>
2. If you gave a score of 0 to Question 1, why do you think the Daytime Running Lights will be of no use to you (select only one response)?

- I always turn on the headlights during the day anyway – even when the weather is good
- They would take away the enjoyment of driving
- Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users
- You can’t get fined for not turning on your headlights during the day
- I have a light coloured car
- Other, Please specify: ____________________________

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Daytime Running Lights are not needed when there are hardly any other cars or pedestrians on the road

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(b) Daytime Running Lights are a real necessity for drivers who forget to turn their headlights on during the day

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(c) Daytime Running Lights should be compulsory for all drivers

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(d) Daytime Running Lights will reduce my fuel economy

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(e) Daytime Running Lights will put extra strain on my car battery

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(f) I will need to change the headlamps more often because of the Daytime Running Lights

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(g) I will be safer with the Daytime Running Lights equipped to my car

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(h) Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(i) Driving will be less enjoyable with Daytime Running Lights in my car

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

4. What effect will Daytime Running Lights have on each of the following:

- Incidence of crashes:  
  - Increase  
  - No change  
  - Decrease

- Crash severity:  
  - Increase  
  - No change  
  - Decrease

- Injury severity:  
  - Increase  
  - No change  
  - Decrease

- Probability of being fined:  
  - Increase  
  - No change  
  - Decrease

5. How much would you be willing to pay for Daytime Running Lights if they were an optional feature in a new car?

  Purchase $   
  Maintenance/service $   (assume yearly)
6. How much would you be willing to pay for Daytime Running Lights if they were able to be retrofitted to an existing car?

- Purchase: $
- Installation: $
- Maintenance/service: $ (assume yearly)

7. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- Very Disinterested
- Disinterested
- Neither interested nor disinterested
- Interested
- Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part D - Reverse Collision Warning

1. To what extent do you feel that Reverse Collision Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

- $0$: No use
- $1$: $2$: $3$: $4$: $5$: Always of use
2. If you gave a score of 0 to Question 1, why do you think the Reverse Collision Warning System will be of no use to you (select only one response):?

- [ ] I am always on the lookout anyway when I reverse
- [ ] It would take away the enjoyment of driving
- [ ] I prefer to use other methods to help me reverse without hitting objects behind me (e.g. reflection in shop window)
- [ ] Other, Please specify: ____________

3. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) I will lose trust in the Reverse Collision Warning System if it fails to issue warnings when it should issue warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(b) I will lose trust in the Reverse Collision Warning System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) I will end up relying more on the Reverse Collision Warning System than my own lookout while reversing

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) The Reverse Collision Warning System should be compulsory in all vehicles

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(e) The Reverse Collision Warning System takes too much control away from the driver

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(f) I would prefer it if the Reverse Collision Warning System made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(g) The enjoyment of driving will increase as a result of having the Reverse Collision Warning System in my car

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(h) I will drive more safely with the Reverse Collision Warning System in my car

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(i) I would prefer a Reverse Collision Warning System that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

4. What effect will the Reverse Collision Warning System have on each of the following:

   Incidence of crashes  Increase  No change  Decrease
   Crash severity  Increase  No change  Decrease
5. How much would you be willing to pay for the Reverse Collision Warning System if it were an optional feature in a new car?

Purchase $ ____________

Maintenance/service $ ____________ (assume yearly)

6. How much would you be willing to pay for the Reverse Collision Warning System if it were able to be retrofitted to an existing car?

Purchase $ ____________

Installation $ ____________

Maintenance/service $ ____________ (assume yearly)

7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested   Disinterested   Neither interested nor disinterested   Interested   Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part E - Speed Request Button

1. To what extent do you feel that Speed Request Button will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

0 1 2 3 4 5
No use Always of use
2. If you gave a score of 0 to Question 1, why do you think the Speed Request Button **will be of no use to you** (select only one response):?

- [ ] I always know what the speed limits are anyway
- [ ] Knowing the speed limits won’t change the way I drive
- [ ] It would take away the enjoyment of driving
- [ ] I prefer to rely on my own judgement exclusively and look out for speed limit signs myself
- [ ] Other, Please specify:

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Speed Request Button will be really helpful in areas where speed limit signs are displayed infrequently

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(b) The Speed Request Button will be really helpful in areas where I think there are speed cameras

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) I will not use the Speed Request Button if it issues inaccurate speed limit advice

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) The Speed Request Button is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Bendigo and Ballarat

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(e) I will drive more safely with the Speed Request Button in my car

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(f) The enjoyment of driving will decrease if I use the Speed Request Button

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(g) The Speed Request Button should be compulsory in all vehicles

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

4. What effect will the Speed Request Facility have on each of the following?:

- Incidence of crashes
  - Increase
  - No change
  - Decrease
- Crash severity
  - Increase
  - No change
  - Decrease
- Probability of being fined
  - Increase
  - No change
  - Decrease

5. How much would you be willing to pay for the Speed Request Button if it were an optional feature in a new car?

- Purchase $
- Maintenance/service $

(assume yearly)

6. How much would you be willing to pay for the Speed Request Button if it were able to be retrofitted to an existing car?

- Purchase $
- Installation $
- Maintenance/service $

(assume yearly)
7. Hypothetically, if you had the option of keeping the Speed Request Button in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part F - Following Distance Warning

1. To what extent do you feel that Following Distance Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

2. If you gave a score of 0 to Question 1 above, why do you think the Following Distance Warning System will be of no use to you (select only one response):?

   - I never drive less than 2 seconds from the car in front
   - It is my choice as to how close I drive to the car in front
   - There is little chance of getting caught/fined for tailgating
   - It would take away the enjoyment of driving
   - I am a good driver anyway and I know when it is safe to drive less than 2 seconds from the car in front
   - I don’t believe that keeping a gap of at least 2 seconds from the car in front will make me any safer

(more options over page)
3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Following Distance Warning System will be helpful when travelling on the freeway

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(b) Warnings from the Following Distance Warning System will be more of a nuisance than a help in heavy traffic

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) The Following Distance Warning System will be helpful to drivers who do not have a clear view of the car ahead because of poor weather conditions (e.g. fog)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) There is no need for the Following Distance Warning System when travelling on rural roads

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(e) I will drive more safely with the Following Distance Warning System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) Warnings from the Following Distance Warning System are unnecessary in 50 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(g) Receiving warnings from the Following Distance Warning System will be really helpful in 100 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) Warnings from the Following Distance Warning System are necessary in 60 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) The Following Distance Warning System is of little use when there are few other cars on the road

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(j) Warnings from the Following Distance Warning System are unnecessary in 80 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(k) Following Distance Warnings will be useful for alerting distracted or fatigued drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(l) The Following Distance Warning System will be really helpful when approaching intersections or roundabouts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(m) The enjoyment of driving will decrease as a result of driving with the Following Distance Warning System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(n) As a result of driving a car with the Following Distance Warning System, I will be less likely to tailgate when driving a car that is not fitted with a Following Distance Warning System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(o) The warnings from the Following Distance Warning System could distract me from my driving, affecting my safety and my passengers’ safety

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(p) I will lose faith in the Following Distance Warning System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(q) I will lose trust in the Following Distance Warning System if it fails to issue warnings when it should issue warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(r) The Following Distance Warning System should be compulsory for all drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) Instead of using on my own judgement, I am likely to end up waiting until I hear warnings from the Following Distance Warning System before I back off from the car in front

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(t) The Following Distance Warning System should only be compulsory for drivers who have been booked on several occasions for tailgating and/or have had several rear-end collisions

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) The Following Distance Warning System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(v) I would prefer a Following Distance Warning System that made it impossible for the driver to get to within 2 seconds or less from the car in front

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(w) I would prefer a Following Distance Warning System that I could turn on or off as required depending on the traffic situation

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. For most drivers, what effect on following distance will the Following Distance Warning System have in each of the following areas/conditions?:

- [ ] Increase following distance
- [ ] No change
- [ ] Decrease following distance

50 km/h zone

- [ ] Increase following distance
- [ ] No change
- [ ] Decrease following distance

60 km/h zone

- [ ] Increase following distance
- [ ] No change
- [ ] Decrease following distance

80 km/h zone

- [ ] Increase following distance
- [ ] No change
- [ ] Decrease following distance

100 km/h zone

- [ ] Increase following distance
- [ ] No change
- [ ] Decrease following distance

(more over page)
Freeways  Increase  No change  Decrease  following distance
Rural  Increase  No change  Decrease  following distance
Residential  Increase  No change  Decrease  following distance
Little traffic  Increase  No change  Decrease  following distance
Difficult to see  Increase  No change  Decrease  road ahead  following distance
Heavy traffic  Increase  No change  Decrease  following distance
Intersections/ Round-a-bouts  Increase  No change  Decrease  following distance

5. What effect on following distance will the Following Distance Warning System have on drivers who follow cars too closely for the following reasons:?

Don’t notice that they Increase  No change  Decrease  following distance  are following cars too closely
Believe that following Increase  No change  Decrease  distance cars too closely is fun
Believe that following Increase  No change  Decrease  distance cars too closely has no effect on safety
In a hurry  Increase  No change  Decrease  following distance

(more over page)
Believe that they won’t get caught/fined

Increase  | No change  | Decrease
---|---|---

Increase following distance | No change following distance | Decrease following distance

Believe that they can drive as close to cars as they like because it is their choice

Increase  | No change  | Decrease
---|---|---

Increase following distance | No change following distance | Decrease following distance

Believe that they can control their car regardless of how close they are to the car in front

Increase  | No change  | Decrease
---|---|---

Increase following distance | No change following distance | Decrease following distance

Car in front driving too slowly

Increase  | No change  | Decrease
---|---|---

Increase following distance | No change following distance | Decrease following distance

Do not want other drivers cutting in front of them

Increase  | No change  | Decrease
---|---|---

Increase following distance | No change following distance | Decrease following distance

6. What effect will the Following Distance Warning System have on each of the following?

Incidence of crashes

Increase  | No change  | Decrease
---|---|---

Increase | No change | Decrease

Crash severity

Increase  | No change  | Decrease
---|---|---

Increase | No change | Decrease

Probability of being fined

Increase  | No change  | Decrease
---|---|---

Increase | No change | Decrease

7. How much would you be willing to pay for the Following Distance Warning System if it were an optional feature in a new car?

Purchase $ 

Maintenance/service $ (assume yearly)

8. How much would you be willing to pay for the Following Distance Warning System if it were able to be retrofitted to an existing car?

Purchase $ 

Installation $ 

Maintenance/service $ (assume yearly)
9. Hypothetically, if you had the option of keeping the Following Distance Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- [ ] Very Disinterested
- [ ] Disinterested
- [ ] Neither interested nor disinterested
- [ ] Interested
- [ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

[ ] _______________________________________________________________________

If you responded “INTERESTED” or “VERY INTERESTED”, why?

[ ] _______________________________________________________________________

End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 5

This questionnaire should take you about 25 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. You will probably recognise many of the questions that are in this questionnaire. This is because we are interested in finding out whether there have been any changes in how people feel about the systems under study.

In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A - Following Distance Warning System

1. Have you experienced warnings from the Following Distance Warning system?

☐ Yes ☐ No

If you responded “Yes”, go to Question 2.

If you responded “No”, go to Question 3 (page 3).

2. This question is designed to gauge your impression of how much mental workload you experienced when you were driving and warnings from the Following Distance Warning system were being issued.

Six factors are known to contribute to the overall level of mental workload that people feel when they perform a task. Below are some questions that are designed to measure, for each of the six factors, the level of workload that you experienced while the Following Distance warnings were being issued.
For each of the six factors, please indicate, by placing a line at the appropriate point on the scale, the level of workload that you experienced while you were driving and the Following Distance Warning system was issuing warnings.

For example,

| Low | Neither high nor low | High |

**Mental demand:**
On average, how much mental and perceptual activity was required? That is, how much thinking, deciding, calculating, remembering, looking, searching, etc was required when you were driving and you were receiving warnings from the Following Distance Warning system? Was the car driving task easy and simple (low) or demanding and complex (high) when the warnings were being issued?

| Low | Neither high nor low | High |

**Physical demand:**
On average, how much physical activity was required? That is, how much controlling of the vehicle, operating the brake, etc was required when you were driving and you were receiving warnings from the Following Distance Warning system? Was the car driving task easy and restful (low) or demanding and laborious (high) when the warnings were being issued?

| Low | Neither high nor low | High |

**Time demand:**
On average, how much time pressure did you feel when driving while the Following Distance Warning system warnings were being issued? Was the pace of driving slow and leisurely (low) or rapid and rushed (high) when the warnings were being issued?

| Low | Neither high nor low | High |
Performance:
On average, how satisfied were you with your driving performance while the Following Distance Warning system warnings were being issued?

| Good | Neither good nor poor | Poor |

Effort:
On average, how hard did you have to work (mentally and physically) to drive while the Following Distance Warning system warnings were being issued? Was little effort (low) or a large amount of effort (high) required?

| Low | Neither high nor low | High |

Frustration level:
On average, did you feel secure, gratified, content, relaxed and complacent (low) when driving while the Following Distance Warning system warnings were being issued or did you feel insecure, discouraged, irritated, stressed and annoyed (high)?

| Low | Neither high nor low | High |

3. To what extent do you feel that Following Distance Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

[ ] 0  [ ] 1  [ ] 2  [ ] 3  [ ] 4  [ ] 5

No use  Always of use

4. If you gave a score of 0 to Question 3 above, why do you think the Following Distance Warning System will be of no use to you (select only one response):?

[ ] I never drive less than 2 seconds from the car in front
[ ] It is my choice as to how close I drive to the car in front
[ ] There is little chance of getting caught/fined for tailgating
[ ] It would take away the enjoyment of driving
[ ] I am a good driver anyway and I know when it is safe to drive less than 2 seconds from the car in front

(more options over page)
I don’t believe that keeping a gap of at least 2 seconds from the car in front will make me any safer

Other, Please specify: ____________________________

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Following Distance Warning System will be helpful when travelling on the freeway

Strongly disagree        Disagree        Neither agree nor disagree        Agree        Strongly agree

(b) Warnings from the Following Distance Warning System will be more of a nuisance than a help in heavy traffic

Strongly disagree        Disagree        Neither agree nor disagree        Agree        Strongly agree

(c) The Following Distance Warning System will be helpful to drivers who do not have a clear view of the car ahead because of poor weather conditions (e.g. fog)

Strongly disagree        Disagree        Neither agree nor disagree        Agree        Strongly agree

(d) There is no need for the Following Distance Warning System when travelling on rural roads

Strongly disagree        Disagree        Neither agree nor disagree        Agree        Strongly agree

(e) I will drive more safely with the Following Distance Warning System in my car

Strongly disagree        Disagree        Neither agree nor disagree        Agree        Strongly agree
(f) Warnings from the Following Distance Warning System are unnecessary in 50 km/h zones

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(g) Receiving warnings from the Following Distance Warning System will be really helpful in 100 km/h zones

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(h) Warnings from the Following Distance Warning System are necessary in 60 km/h zones

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(i) The Following Distance Warning System is of little use when there are few other cars on the road

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(j) Warnings from the Following Distance Warning System are unnecessary in 80 km/h zones

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(k) Following Distance Warnings will be useful for alerting distracted or fatigued drivers

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(l) The Following Distance Warning System will be really helpful when approaching intersections or roundabouts

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)
(m) The enjoyment of driving will decrease as a result of driving with the Following Distance Warning System

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(n) As a result of driving a car with the Following Distance Warning System, I will be less likely to tailgate when driving a car that is not fitted with a Following Distance Warning System

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(o) The warnings from the Following Distance Warning System could distract me from my driving, affecting my safety and my passengers’ safety

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(p) I will lose faith in the Following Distance Warning System if it issues false warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(q) I will lose trust in the Following Distance Warning System if it fails to issue warnings when it should issue warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(r) The Following Distance Warning System should be compulsory for all drivers

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(s) Instead of using on my own judgement, I am likely to end up waiting until I hear warnings from the Following Distance Warning System before I back off from the car in front

□ Strongly disagree □ Disagree □ Neither agree nor disagree □ Agree □ Strongly agree

(t) The Following Distance Warning System should only be compulsory for drivers who have been booked on several occasions for tailgating and/or have had several rear-end collisions

□ Strongly disagree □ Disagree □ Neither agree nor disagree □ Agree □ Strongly agree

(u) The Following Distance Warning System takes too much control away from the driver

□ Strongly disagree □ Disagree □ Neither agree nor disagree □ Agree □ Strongly agree

(v) I would prefer a Following Distance Warning System that made it impossible for the driver to get to within 2 seconds or less from the car in front

□ Strongly disagree □ Disagree □ Neither agree nor disagree □ Agree □ Strongly agree

(w) I would prefer a Following Distance Warning System that I could turn on or off as required depending on the traffic situation

□ Strongly disagree □ Disagree □ Neither agree nor disagree □ Agree □ Strongly agree

6. For most drivers, what effect on following distance will the Following Distance Warning System have in each of the following areas/conditions:?

□ 50 km/h zone □ Increase following distance □ No change □ Decrease following distance

(more over page)
<table>
<thead>
<tr>
<th>Scenario</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 km/h zone</td>
<td></td>
<td></td>
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<tr>
<td>100 km/h zone</td>
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<tr>
<td>Freeways</td>
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<tr>
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<td></td>
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<tr>
<td>Residential</td>
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<td></td>
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<tr>
<td>Little traffic</td>
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<td></td>
<td></td>
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<tr>
<td>Difficult to see road ahead</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intersections/Round-a-bouts</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. What effect on following distance will the Following Distance Warning System have on drivers who follow cars too closely for the following reasons:

Don’t notice that they are following cars too closely

(more over page)
Believe that following cars too closely is fun  
☐ Increase following distance  ☐ No change  ☐ Decrease following distance

Believe that following cars too closely has no effect on safety  
☐ Increase following distance  ☐ No change  ☐ Decrease following distance

In a hurry  
☐ Increase following distance  ☐ No change  ☐ Decrease following distance

Believe that they won’t get caught/fined  
☐ Increase following distance  ☐ No change  ☐ Decrease following distance

Believe that they can drive as close to cars as they like because it is their choice  
☐ Increase following distance  ☐ No change  ☐ Decrease following distance

Believe that they can control their car regardless of how close they are to the car in front  
☐ Increase following distance  ☐ No change  ☐ Decrease following distance

Car in front driving too slowly  
☐ Increase following distance  ☐ No change  ☐ Decrease following distance

Do not want other drivers cutting in front of them  
☐ Increase following distance  ☐ No change  ☐ Decrease following distance

8. What effect will the Following Distance Warning System have on each of the following?

Incidence of crashes  
☐ Increase  ☐ No change  ☐ Decrease

Crash severity  
☐ Increase  ☐ No change  ☐ Decrease

Probability of being fined  
☐ Increase  ☐ No change  ☐ Decrease

9. How much would you be willing to pay for the Following Distance Warning System if it were an optional feature in a new car?

Purchase $  

Maintenance/service $ (assume yearly)
10. How much would you be willing to pay for the Following Distance Warning System if it were able to be retrofitted to an existing car?

**Purchase:** $ 

**Installation:** $ 

**Maintenance/service:** $ (assume yearly)

11. Hypothetically, if you had the option of keeping the Following Distance Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- [ ] Very Disinterested
- [ ] Disinterested
- [ ] Neither interested nor disinterested
- [ ] Interested
- [ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

---

**Part B - Seat Belt Reminder System**

1. To what extent do you feel that the Seat Belt Reminder System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

   - [ ] 0  
   - [ ] 1  
   - [ ] 2  
   - [ ] 3  
   - [ ] 4  
   - [ ] 5  

   **No use**   **Always of use**

2. If you gave a score of 0 to Question 1, why do you think the Seat Belt Reminder System will be of no use to you (select only one response):?

   - [ ] I always wear my seat belt anyway
   - [ ] I know when it is safe to drive without a seat belt

   (more options over page)
There is little chance of getting a fine for not wearing a seat belt
I don’t believe that wearing a seat belt in any situation will make me any safer
Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt
Seat belts are uncomfortable
It would take away the enjoyment of driving
Seat belts are too fiddly to put on
I can’t be bothered putting my seat belt on
Other, Please specify: 

3. To what extent do you think that the Seat Belt Reminder System will be of use to you in letting you know if any of your passengers are not wearing their seat belts? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No use</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Always of use</td>
</tr>
</tbody>
</table>

4. If you gave a score of 0 to Question 3, why do you think the Seat Belt Reminder System will be of no use to you in letting you know if any of your passengers are not wearing their seat belts (select only one response):?

I never carry passengers
I always check anyway that my passengers are wearing their seat belts
It doesn’t matter if my passengers don’t wear their seat belts, because wearing a seat belt won’t make them any safer
My passengers always wear their seat belts, so there is no need to have warnings for them
I always drive safely so there is no need for passengers to have to wear a seat belt
There is little chance of getting a fine for not wearing a seat belt
It is up to my passengers whether they wear a seat belt – it is not my responsibility

Other, Please specify: 

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Warnings from the Seat Belt Reminder System are unnecessary when reversing out of a driveway or a parking spot

(b) The Seat Belt Reminder System will be of most benefit to drivers who forget to put their seat belts on

(c) The Seat Belt Reminder System is not necessary when there are hardly any other cars on the road

(d) There is no need for the Seat Belt Reminder System when travelling at speeds of **less than** 10 km/h

(e) There is no need for the Seat Belt Reminder System when travelling at speeds of **greater than** 10 km/h
(f) The Seat Belt Reminder System is a real necessity for people who do not put their seat belts on when travelling short distances

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(g) The Seat Belt Reminder System will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(h) I will end up relying too strongly on the Seat Belt Reminder System to remind me to fasten my seat belt

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(i) I will end up relying too strongly on the Seat Belt Reminder System to let me know if any of my passengers are not wearing their seat belts

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(j) After having driven the car with the Seat Belt Reminder System, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a Seat Belt Reminder System

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(k) I will lose trust in the Seat Belt Reminder System if it does not issue warnings when it should issue warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(l) I will lose trust in the Seat Belt Reminder System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(m) The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(n) The Seat Belt Reminder System should be compulsory for all drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(o) The Seat Belt Reminder System should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(p) The Seat Belt Reminder System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(q) I would prefer it if, rather than just warning the driver, the Seat Belt Reminder System prevented the driver from starting the car if someone in the car is not wearing a seat belt

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(r) The Seat Belt Reminder System will make it easier for me to encourage my passengers to fasten their seat belts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) I will drive more safely with the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(t) I will enjoy driving less as a result of having the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) I would prefer a Seat Belt Reminder System that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

6. For most drivers, what effect on seat belt wearing will the Seat Belt Reminder System have in each of the following conditions/situations:?

- Reversing:  
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

- Driving short distances:  
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

- Low traffic levels:  
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

- Speeds less than 10km/h:  
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

- Speeds more than 10km/h:  
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing
7. What effect on seat belt wearing will the Seat Belt Reminder System have on drivers who do not wear seat belts for the following reasons?:

- Forget to put seat belt on:  □ Increase  □ No change  □ Decrease wearing
- Believe that seat belts are uncomfortable to wear:  □ Increase wearing  □ No change  □ Decrease wearing
- Believe that seat belts are too fiddly to put on:  □ Increase wearing  □ No change  □ Decrease wearing
- Believe that wearing seat belts is a violation of freedom:  □ Increase wearing  □ No change  □ Decrease wearing
- Can’t be bothered putting their seat belt on:  □ Increase wearing  □ No change  □ Decrease wearing
- Believe that there is little chance of getting a fine for not wearing a seat belt:  □ Increase wearing  □ No change  □ Decrease wearing
- Believe that wearing seat belts does not enhance safety:  □ Increase wearing  □ No change  □ Decrease wearing

8. What effect will the Seat Belt Reminder System have on each of the following?:

- Incidence of crashes:  □ Increase  □ No change  □ Decrease
- Crash severity:  □ Increase  □ No change  □ Decrease
- Injury severity:  □ Increase  □ No change  □ Decrease
- Probability of being fined:  □ Increase  □ No change  □ Decrease

9. How much would you be willing to pay for the Seat Belt Reminder System if it were an optional feature in a new car?

- Purchase:  $ □
- Maintenance/service:  $ □ (assume yearly)
10. How much would you be willing to pay for the Seat Belt Reminder System if it were able to be retrofitted to an existing car?

<table>
<thead>
<tr>
<th>Purchase</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation</td>
<td>$</td>
</tr>
<tr>
<td>Maintenance/service</td>
<td>$ (assume yearly)</td>
</tr>
</tbody>
</table>

11. Hypothetically, if you had the option of keeping the Seat Belt Reminder System in your vehicle at the end of the study (at no extra cost), would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- Very Disinterested
- Disinterested
- Neither interested nor disinterested
- Interested
- Very interested

If you responded "VERY DISINTERESTED" or "DISINTERESTED", why?

If you responded "INTERESTED" or "VERY INTERESTED", why?

Part C - Daytime Running Lights

1. To what extent do you feel that Daytime Running Lights will be of use to you? A score of 0 means that the Daytime Running Lights will be of no use to you while a score of 5 means that they will always be of use to you.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No use</td>
<td>Always of use</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

2. If you gave a score of 0 to Question 1, why do you think the Daytime Running Lights will be of no use to you (select only one response)?

- I always turn on the headlights during the day anyway – even when the weather is good

(more options over page)
They would take away the enjoyment of driving

Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users

You can’t get fined for not turning on your headlights during the day

I have a light coloured car

Other, Please specify:

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Daytime Running Lights are not needed when there are hardly any other cars or pedestrians on the road

( ) Strongly disagree ( ) Disagree ( ) Neither agree nor disagree ( ) Agree ( ) Strongly agree

(b) Daytime Running Lights are a real necessity for drivers who forget to turn their headlights on during the day

( ) Strongly disagree ( ) Disagree ( ) Neither agree nor disagree ( ) Agree ( ) Strongly agree

(c) Daytime Running Lights should be compulsory for all drivers

( ) Strongly disagree ( ) Disagree ( ) Neither agree nor disagree ( ) Agree ( ) Strongly agree

(d) Daytime Running Lights will reduce my fuel economy

( ) Strongly disagree ( ) Disagree ( ) Neither agree nor disagree ( ) Agree ( ) Strongly agree

(e) Daytime Running Lights will put extra strain on my car battery

( ) Strongly disagree ( ) Disagree ( ) Neither agree nor disagree ( ) Agree ( ) Strongly agree
(f) I will need to change the headlamps more often because of the Daytime Running Lights

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) I will be safer with the Daytime Running Lights equipped to my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) Driving will be less enjoyable with Daytime Running Lights in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. What effect will Daytime Running Lights have on each of the following:

- Incidence of crashes
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease

- Crash severity
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease

- Injury severity
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease

- Probability of being fined
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease

5. How much would you be willing to pay for Daytime Running Lights if they were an optional feature in a new car?

- Purchase $__________
- Maintenance/service $__________ (assume yearly)
6. How much would you be willing to pay for Daytime Running Lights if they were able to be retrofitted to an existing car?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Purchase</td>
<td>$</td>
</tr>
<tr>
<td>Installation</td>
<td>$</td>
</tr>
<tr>
<td>Maintenance/service</td>
<td>$ (assume yearly)</td>
</tr>
</tbody>
</table>

7. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

[ ] Very Disinterested
[ ] Disinterested
[ ] Neither interested nor disinterested
[ ] Interested
[ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part D - Reverse Collision Warning

1. To what extent do you feel that Reverse Collision Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

   [ ] 0
   [ ] 1
   [ ] 2
   [ ] 3
   [ ] 4
   [ ] 5

No use  Always of use

2. If you gave a score of 0 to Question 1, why do you think the Reverse Collision Warning System will be of no use to you (select only one response):

   [ ] I am always on the lookout anyway when I reverse

   (more options over page)
It would take away the enjoyment of driving

I prefer to use other methods to help me reverse without hitting objects behind me (e.g. reflection in shop window)

Other, Please specify: 

3. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) I will lose trust in the Reverse Collision Warning System if it fails to issue warnings when it should issue warnings

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(b) I will lose trust in the Reverse Collision Warning System if it issues false warnings

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(c) I will end up relying more on the Reverse Collision Warning System than my own lookout while reversing

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(d) The Reverse Collision Warning System should be compulsory in all vehicles

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(e) The Reverse Collision Warning System takes too much control away from the driver

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree
(f) I would prefer it if the Reverse Collision Warning System made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) The enjoyment of driving will increase as a result of having the Reverse Collision Warning System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) I will drive more safely with the Reverse Collision Warning System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) I would prefer a Reverse Collision Warning System that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. What effect will the Reverse Collision Warning System have on each of the following:?

- Incidence of crashes: [ ] Increase [ ] No change [ ] Decrease
- Crash severity: [ ] Increase [ ] No change [ ] Decrease

5. How much would you be willing to pay for the Reverse Collision Warning System if it were an optional feature in a new car?

- Purchase: $________
- Maintenance/service: $________ (assume yearly)
6. How much would you be willing to pay for the Reverse Collision Warning System if it were able to be retrofitted to an existing car?

Purchase $ 
Installation $ 
Maintenance/service $ (assume yearly)

7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested  Disinterested  Neither interested nor disinterested  Interested  Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part E – Speed Warning System

1. To what extent do you feel that the Speed Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

0 1 2 3 4 5
No use Always of use

2. If you gave a score of 0 to Question 1 above, why do you think the Speed Warning System will be of no use to you (select only one response):?

I never exceed the speed limit
It is my choice whether I speed or not

(more options over page)
I never get caught for exceeding the speed limit
The speed limits are too low
It is out of my control if cars around me carry me over the speed limit
It would take away the enjoyment of driving
I am a good driver anyway and I know when it is safe to exceed the speed limit
Exceeding the speed limit does not make any difference to my safety
Other, Please specify:

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Receiving warnings from the Speed Warning System for exceeding the speed limit will be really helpful in areas where there are lots of pedestrians, such as in strip shopping centres or outside schools

   [ ] Strongly disagree   [ ] Disagree   [ ] Neither agree nor disagree   [ ] Agree   [ ] Strongly agree

(b) Warnings from the Speed Warning System are unnecessary in 60 km/h zones

   [ ] Strongly disagree   [ ] Disagree   [ ] Neither agree nor disagree   [ ] Agree   [ ] Strongly agree

(c) I will drive more safely with the Speed Warning System in my car

   [ ] Strongly disagree   [ ] Disagree   [ ] Neither agree nor disagree   [ ] Agree   [ ] Strongly agree

(d) There is no need for the Speed Warning System when travelling on the freeway

   [ ] Strongly disagree   [ ] Disagree   [ ] Neither agree nor disagree   [ ] Agree   [ ] Strongly agree
(e) There is no need for the Speed Warning System when travelling on rural roads

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) Receiving warnings from the Speed Warning System for exceeding the speed limit in 100 km/h zones is unnecessary

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) Warnings from the Speed Warning System are necessary in 50 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) There is a need for the Speed Warning System when road conditions are poor (e.g. slippery road, poor visibility)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) The Speed Warning System is not necessary when there are hardly any other cars on the road

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(j) The Speed Warning System will be of most benefit to drivers who repeatedly exceed the speed limit without realising it

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(k) Warnings from the Speed Warning System are unnecessary in 80 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(l) The Speed Warning System is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Ballarat and Bendigo

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(m) The Speed Warning System will be wasted on drivers who speed intentionally – these drivers will ignore or override the warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(n) After having driven the car with the Speed Warning System, I will probably be less likely to exceed the speed limit when driving a car that is not fitted with a Speed Warning System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(o) The enjoyment of driving will decrease as a result of driving with the Speed Warning System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(p) I will be able to concentrate more on the traffic when the Speed Warning System is enabled than when it is not because I will not have to look out for speed signs

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(q) The warnings of the Speed Warning System could distract me from my driving, compromising my safety and that of any passengers that I might be carrying

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(r) The Speed Warning System will allow me to spend more time attending to the traffic because I will not have to look as much at the speedometer to monitor my speed

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) I will lose trust in the Speed Warning System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(t) I will end up relying too strongly on the Speed Warning System to let me know if I am exceeding the speed limit at the expense of my own judgement

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) I will lose faith in the Speed Warning System if it does not issue warnings when it should issue warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(v) The Speed Warning System should be compulsory for all drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(w) The Speed Warning System should only be compulsory for drivers who have been booked on multiple occasions for exceeding the speed limit

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(x) The Speed Warning System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(y) Rather than a system that simply warns the driver, I would prefer a Speed Warning System that made it impossible for the driver to exceed the speed limit

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(z) It would not bother me if the Speed Warning System were used as a device by authorities to monitor and track car speeds and locations on the road network

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(aa) I would prefer a Speed Warning System that I could turn on or off as required depending on the situation (e.g. turn off if in a hurry, turn on if I am travelling on a road where I know that there are speed cameras)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. For most drivers, what effect on travel speed will the Speed Warning System have in each of the following areas/conditions:

- [ ] Increase speed
- [ ] No change
- [ ] Decrease speed

50 km/h zone

60 km/h zone

80 km/h zone

100 km/h zone

Freeways

Rural

Residential

(more options over page)
5. What effect on travel speed will the Speed Warning System have on drivers who exceed the speed limit for the following reasons:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed inadvertently</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed for fun</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe it is safe to speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a hurry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they won’t get caught/ fined for speeding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they shouldn’t have to follow speed limits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they can control their car safely at any speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that the speed limit is too low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carried over the speed limit by other cars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aim to travel at the speed limit, but occasionally edge over before reducing speed again</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. What effect will the Speed Warning System have on each of the following?

- Incidence of crashes
  - Increase
  - No change
  - Decrease

- Crash severity
  - Increase
  - No change
  - Decrease

- Fuel consumption
  - Increase
  - No change
  - Decrease

- Travel time
  - Increase
  - No change
  - Decrease

- Probability of being fined
  - Increase
  - No change
  - Decrease

7. How much would you be willing to pay for the Speed Warning System if it were an optional feature in a new car?

   Purchase: $________

   Maintenance/service: $________ (assume yearly)

8. How much would you be willing to pay for the Speed Warning System if it were able to be retrofitted to an existing car?

   Purchase: $________

   Installation: $________

   Maintenance/service: $________ (assume yearly)

9. Hypothetically, if you had the option of keeping the Speed Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

   - Very Disinterested
   - Disinterested
   - Neither interested nor disinterested
   - Interested
   - Very interested

   If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

   _______________________________________________________________________

   If you responded “INTERESTED” or “VERY INTERESTED”, why?

   _______________________________________________________________________
Part F - Speed Request Button

1. To what extent do you feel that Speed Request Button will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No use</td>
</tr>
<tr>
<td>1</td>
<td>Always of use</td>
</tr>
</tbody>
</table>

2. If you gave a score of 0 to Question 1, why do you think the Speed Request Button will be of no use to you (select only one response):?

- [ ] I always know what the speed limits are anyway
- [ ] Knowing the speed limits won’t change the way I drive
- [ ] It would take away the enjoyment of driving
- [ ] I prefer to rely on my own judgement exclusively and look out for speed limit signs myself
- [ ] Other, Please specify: [ ]

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Speed Request Button will be really helpful in areas where speed limit signs are displayed infrequently

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(b) The Speed Request Button will be really helpful in areas where I think there are speed cameras

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(c) I will not use the Speed Request Button if it issues inaccurate speed limit advice

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(d) The Speed Request Button is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Bendigo and Ballarat

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(e) I will drive more safely with the Speed Request Button in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) The enjoyment of driving will decrease if I use the Speed Request Button

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) The Speed Request Button should be compulsory in all vehicles

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. What effect will the Speed Request Facility have on each of the following?

- Incidence of crashes
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease

- Crash severity
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease

- Probability of being fined
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease

5. How much would you be willing to pay for the Speed Request Button if it were an optional feature in a new car?

- Purchase
  - $ __________

- Maintenance/service $ __________ (assume yearly)

6. How much would you be willing to pay for the Speed Request Button if it were able to be retrofitted to an existing car?

- Purchase
  - $ __________

- Installation
  - $ __________

- Maintenance/service $ __________ (assume yearly)
7. Hypothetically, if you had the option of keeping the Speed Request Button in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

[ ] Very Disinterested [ ] Disinterested [ ] Neither interested nor disinterested [ ] Interested [ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

[ ]

If you responded “INTERESTED” or “VERY INTERESTED”, why?

[ ]

End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
On-Road Study into the Effects on Driving of
In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 5

This questionnaire should take you about 25 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. You will probably recognise many of the questions that are in this questionnaire. This is because we are interested in finding out whether there have been any changes in how people feel about the systems under study.

In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A - Multiple Systems

1. The SafeCars were designed so that, if warnings are triggered by more than one SafeCar system at the same time, only the most urgent warning is issued to the driver. There are some situations, however, where warnings can be issued at the same time by two or more SafeCar systems.

Listed below are four scenarios. Each scenario describes a situation where warnings from two or more SafeCar systems are issued at the same time. For each scenario, please indicate whether you have experienced that situation and, if you felt, confused, overloaded, etc. when the multiple warnings were being issued.

(a) Have you experienced Following Distance Warning system visual warnings only (i.e. no audio warning) and Seat Belt Reminder system audio and visual warnings at the same time?

[ ] Yes  [ ] No
If you responded “Yes”, did you feel:?

Confused    ☐ Yes    ☐ No
Overloaded  ☐ Yes    ☐ No
Other      ☐ Yes    ☐ No

If you responded “Yes” for “Other”, please explain

(b) Have you experienced Speed Warning system upward accelerator pressure and Seat Belt Reminder system audio and visual warnings at the same time?

☐ Yes    ☐ No

If you responded “Yes”, did you feel:?

Confused    ☐ Yes    ☐ No
Overloaded  ☐ Yes    ☐ No
Other      ☐ Yes    ☐ No

If you responded “Yes” for “Other”, please explain

(c) Have you experienced Following Distance Warning system visual warnings only (i.e. no audio warning) and Speed Warning system visual warnings and upward accelerator pressure at the same time?

☐ Yes    ☐ No

If you responded “Yes”, did you feel:?

Confused    ☐ Yes    ☐ No
Overloaded  ☐ Yes    ☐ No
Other      ☐ Yes    ☐ No

If you responded “Yes” for “Other”, please explain
(d) Have you experienced Following Distance Warning system visual warnings only (i.e. no audio warning), Speed Warning system upward accelerator pressure, and Seat Belt Reminder system audio and visual warnings at the same time?

☐ Yes ☐ No

If you responded “Yes”, did you feel:?

Confused ☐ Yes ☐ No
Overloaded ☐ Yes ☐ No
Other ☐ Yes ☐ No

If you responded “Yes” for “Other”, please explain

Part B – Speed Warning System

1. To what extent do you feel that the Speed Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

☐ 0  ☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

No use Always of use

2. If you gave a score of 0 to Question 1 above, why do you think the Speed Warning System will be of no use to you (select only one response):?

☐ I never exceed the speed limit
☐ It is my choice whether I speed or not
☐ I never get caught for exceeding the speed limit
☐ The speed limits are too low
☐ It is out of my control if cars around me carry me over the speed limit
☐ It would take away the enjoyment of driving
☐ I am a good driver anyway and I know when it is safe to exceed the speed limit

(more options over page)
Exceeding the speed limit does not make any difference to my safety

Other, Please specify: ____________________________

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Receiving warnings from the Speed Warning System for exceeding the speed limit will be really helpful in areas where there are lots of pedestrians, such as in strip shopping centres or outside schools

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(b) Warnings from the Speed Warning System are unnecessary in 60 km/h zones

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(c) I will drive more safely with the Speed Warning System in my car

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(d) There is no need for the Speed Warning System when travelling on the freeway

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(e) There is no need for the Speed Warning System when travelling on rural roads

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(f) Receiving warnings from the Speed Warning System for exceeding the speed limit in 100 km/h zones is unnecessary

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(g) Warnings from the Speed Warning System are necessary in 50 km/h zones

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(h) There is a need for the Speed Warning System when road conditions are poor (e.g. slippery road, poor visibility)

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(i) The Speed Warning System is not necessary when there are hardly any other cars on the road

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(j) The Speed Warning System will be of most benefit to drivers who repeatedly exceed the speed limit without realising it

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(k) Warnings from the Speed Warning System are unnecessary in 80 km/h zones

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(l) The Speed Warning System is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Ballarat and Bendigo

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
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(m) The Speed Warning System will be wasted on drivers who speed intentionally – these drivers will ignore or override the warnings

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(n) After having driven the car with the Speed Warning System, I will probably be less likely to exceed the speed limit when driving a car that is not fitted with a Speed Warning System

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(o) The enjoyment of driving will decrease as a result of driving with the Speed Warning System

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(p) I will be able to concentrate more on the traffic when the Speed Warning System is enabled than when it is not because I will not have to look out for speed signs

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<th>Agree</th>
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(q) The warnings of the Speed Warning System could distract me from my driving, compromising my safety and that of any passengers that I might be carrying

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(r) The Speed Warning System will allow me to spend more time attending to the traffic because I will not have to look as much at the speedometer to monitor my speed

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</table>
(s) I will lose trust in the Speed Warning System if it issues false warnings

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(t) I will end up relying too strongly on the Speed Warning System to let me know if I am exceeding the speed limit at the expense of my own judgement

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(u) I will lose faith in the Speed Warning System if it does not issue warnings when it should issue warnings

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(v) The Speed Warning System should be compulsory for all drivers

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(w) The Speed Warning System should only be compulsory for drivers who have been booked on multiple occasions for exceeding the speed limit

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(x) The Speed Warning System takes too much control away from the driver

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(y) Rather than a system that simply warns the driver, I would prefer a Speed Warning System that made it impossible for the driver to exceed the speed limit

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)
(z) It would not bother me if the Speed Warning System were used as a device by authorities to monitor and track car speeds and locations on the road network

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(aa) I would prefer a Speed Warning System that I could turn on or off as required depending on the situation (e.g. turn off if in a hurry, turn on if I am travelling on a road where I know that there are speed cameras)

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

4. For most drivers, what effect on travel speed will the Speed Warning System have in each of the following areas/conditions:

- 50 km/h zone
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- 60 km/h zone
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- 80 km/h zone
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- 100 km/h zone
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- Freeways
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- Rural
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- Residential
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- Low traffic levels
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- Poor road conditions
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed
5. What effect on travel speed will the Speed Warning System have on drivers who exceed the speed limit for the following reasons?

- Speed inadvertently increased speed
- Speed for fun increased speed
- Believe it is safe to speed increased speed
- In a hurry increased speed
- Believe they won’t get caught/ fined for speeding increased speed
- Believe they shouldn’t have to follow speed limits increased speed
- Believe they can control their car safely at any speed increased speed
- Believe that the speed limit is too low increased speed
- Carried over the speed limit by other cars increased speed
- Aim to travel at the speed limit, but occasionally edge over before reducing speed again increased speed

6. What effect will the Speed Warning System have on each of the following?

- Incidence of crashes increased
- Crash severity increased
- Fuel consumption increased
- Travel time increased
- Probability of being fined increased
7. How much would you be willing to pay for the Speed Warning System if it were an optional feature in a new car?

Purchase $ 

Maintenance/service $ (assume yearly)

8. How much would you be willing to pay for the Speed Warning System if it were able to be retrofitted to an existing car?

Purchase $ 

Installation $ 

Maintenance/service $ (assume yearly)

9. Hypothetically, if you had the option of keeping the Speed Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part C - Seat Belt Reminder System

1. To what extent do you feel that the Seat Belt Reminder System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

No use Always of use
2. If you gave a score of 0 to Question 1, why do you think the Seat Belt Reminder System will be of no use to you (select only one response):?

- I always wear my seat belt anyway
- I know when it is safe to drive without a seat belt
- There is little chance of getting a fine for not wearing a seat belt
- I don’t believe that wearing a seat belt in any situation will make me any safer
- Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt
- Seat belts are uncomfortable
- It would take away the enjoyment of driving
- Seat belts are too fiddly to put on
- I can’t be bothered putting my seat belt on
- Other, Please specify: ___

3. To what extent do you think that the Seat Belt Reminder System will be of use to you in letting you know if any of your passengers are not wearing their seat belts? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No use</td>
<td>Always of use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. If you gave a score of 0 to Question 3, why do you think the Seat Belt Reminder System will be of no use to you in letting you know if any of your passengers are not wearing their seat belts (select only one response):?

- I never carry passengers
- I always check anyway that my passengers are wearing their seat belts
- It doesn’t matter if my passengers don’t wear their seat belts, because wearing a seat belt won’t make them any safer

   (more options over page)
My passengers always wear their seat belts, so there is no need to have warnings for them

I always drive safely so there is no need for passengers to have to wear a seat belt

There is little chance of getting a fine for not wearing a seat belt

It is up to my passengers whether they wear a seat belt – it is not my responsibility

Other, Please specify: 

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Warnings from the Seat Belt Reminder System are unnecessary when reversing out of a driveway or a parking spot

(b) The Seat Belt Reminder System will be of most benefit to drivers who forget to put their seat belts on

(c) The Seat Belt Reminder System is not necessary when there are hardly any other cars on the road

(d) There is no need for the Seat Belt Reminder System when travelling at speeds of less than 10 km/h
(e) There is no need for the Seat Belt Reminder System when travelling at speeds of **greater than** 10 km/h

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) The Seat Belt Reminder System is a real necessity for people who do not put their seat belts on when travelling short distances

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) The Seat Belt Reminder System will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) I will end up relying too strongly on the Seat Belt Reminder System to remind me to fasten my seat belt

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) I will end up relying too strongly on the Seat Belt Reminder System to let me know if any of my passengers are not wearing their seat belts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(j) After having driven the car with the Seat Belt Reminder System, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a Seat Belt Reminder System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(k) I will lose trust in the Seat Belt Reminder System if it does not issue warnings when it should issue warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(l) I will lose trust in the Seat Belt Reminder System if it issues false warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(m) The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(n) The Seat Belt Reminder System should be compulsory for all drivers

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(o) The Seat Belt Reminder System should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(p) The Seat Belt Reminder System takes too much control away from the driver

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(q) I would prefer it if, rather than just warning the driver, the Seat Belt Reminder System prevented the driver from starting the car if someone in the car is not wearing a seat belt

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(r) The Seat Belt Reminder System will make it easier for me to encourage my passengers to fasten their seat belts

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(s) I will drive more safely with the Seat Belt Reminder System in my car

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(t) I will enjoy driving less as a result of having the Seat Belt Reminder System in my car

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(u) I would prefer a Seat Belt Reminder System that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers)

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

6. For most drivers, what effect on seat belt wearing will the Seat Belt Reminder System have in each of the following conditions/situations?

- Reversing
  - Increase wearing
  - No change
  - Decrease wearing

- Driving short distances
  - Increase wearing
  - No change
  - Decrease wearing

(more options over page)
<table>
<thead>
<tr>
<th>Condition</th>
<th>Increase</th>
<th>No change</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low traffic levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speeds less than 10km/h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speeds more than 10km/h</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. What effect on seat belt wearing will the Seat Belt Reminder System have on drivers who do not wear seat belts for the following reasons?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase</th>
<th>No change</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forget to put seat belt on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that seat belts are uncomfortable to wear</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that seat belts are too fiddly to put on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that wearing seat belts is a violation of freedom</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can’t be bothered putting their seat belt on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that there is little chance of getting a fine for not wearing a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>seat belt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that wearing seat belts does not enhance safety</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. What effect will the Seat Belt Reminder System have on each of the following?

<table>
<thead>
<tr>
<th>Impact</th>
<th>Increase</th>
<th>No change</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence of crashes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injury severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability of being fined</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. How much would you be willing to pay for the Seat Belt Reminder System if it were an optional feature in a new car?

Purchase $ 
Maintenance/service $ (assume yearly)

10. How much would you be willing to pay for the Seat Belt Reminder System if it were able to be retrofitted to an existing car?

Purchase $ 
Installation $ 
Maintenance/service $ (assume yearly)

11. Hypothetically, if you had the option of keeping the Seat Belt Reminder System in your vehicle at the end of the study (at no extra cost), would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

[ ] Very Disinterested  [ ] Disinterested  [ ] Neither interested nor disinterested  [ ] Interested  [ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part D - Daytime Running Lights

1. To what extent do you feel that Daytime Running Lights will be of use to you? A score of 0 means that the Daytime Running Lights will be of no use to you while a score of 5 means that they will always be of use to you.

[ ] 0  [ ] 1  [ ] 2  [ ] 3  [ ] 4  [ ] 5

No use  Always of use
2. If you gave a score of 0 to Question 1, why do you think the Daytime Running Lights will be of no use to you (select only one response)?

- I always turn on the headlights during the day anyway – even when the weather is good
- They would take away the enjoyment of driving
- Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users
- You can’t get fined for not turning on your headlights during the day
- I have a light coloured car
- Other, Please specify:

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Daytime Running Lights are not needed when there are hardly any other cars or pedestrians on the road

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(b) Daytime Running Lights are a real necessity for drivers who forget to turn their headlights on during the day

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(c) Daytime Running Lights should be compulsory for all drivers

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(d) Daytime Running Lights will reduce my fuel economy

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(e) Daytime Running Lights will put extra strain on my car battery

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(f) I will need to change the headlamps more often because of the Daytime Running Lights

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(g) I will be safer with the Daytime Running Lights equipped to my car

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(h) Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(i) Driving will be less enjoyable with Daytime Running Lights in my car

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

4. What effect will Daytime Running Lights have on each of the following?:

Incidence of crashes
[ ] Increase [ ] No change [ ] Decrease

Crash severity
[ ] Increase [ ] No change [ ] Decrease

Injury severity
[ ] Increase [ ] No change [ ] Decrease

Probability of being fined
[ ] Increase [ ] No change [ ] Decrease

5. How much would you be willing to pay for Daytime Running Lights if they were an optional feature in a new car?

Purchase: $________

Maintenance/service: $________ (assume yearly)
6. How much would you be willing to pay for Daytime Running Lights if they were able to be retrofitted to an existing car?

Purchase $[ ]

Installation $[ ]

Maintenance/service $[ ] (assume yearly)

7. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

[ ] Very Disinterested

[ ] Disinterested

[ ] Neither interested nor disinterested

[ ] Interested

[ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

[ ]

If you responded “INTERESTED” or “VERY INTERESTED”, why?

[ ]

Part E - Reverse Collision Warning

1. To what extent do you feel that Reverse Collision Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

[ ] 0

[ ] 1

[ ] 2

[ ] 3

[ ] 4

[ ] 5

No use

Always of use
2. If you gave a score of 0 to Question 1, why do you think the Reverse Collision Warning System will be of no use to you (select only one response):?

☐ I am always on the lookout anyway when I reverse
☐ It would take away the enjoyment of driving
☐ I prefer to use other methods to help me reverse without hitting objects behind me (e.g. reflection in shop window)
☐ Other, Please specify: ____________________________

3. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) I will lose trust in the Reverse Collision Warning System if it fails to issue warnings when it should issue warnings

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(b) I will lose trust in the Reverse Collision Warning System if it issues false warnings

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(c) I will end up relying more on the Reverse Collision Warning System than my own lookout while reversing

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(d) The Reverse Collision Warning System should be compulsory in all vehicles

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
(e) The Reverse Collision Warning System takes too much control away from the driver

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(f) I would prefer it if the Reverse Collision Warning System made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(g) The enjoyment of driving will increase as a result of having the Reverse Collision Warning System in my car

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(h) I will drive more safely with the Reverse Collision Warning System in my car

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(i) I would prefer a Reverse Collision Warning System that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

4. What effect will the Reverse Collision Warning System have on each of the following?

Incidence of crashes  □ Increase  □ No change  □ Decrease
Crash severity  □ Increase  □ No change  □ Decrease
5. How much would you be willing to pay for the Reverse Collision Warning System if it were an optional feature in a new car?

Purchase $ 
Maintenance/service $ (assume yearly)

6. How much would you be willing to pay for the Reverse Collision Warning System if it were able to be retrofitted to an existing car?

Purchase $ 
Installation $ 
Maintenance/service $ (assume yearly)

7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

[ ] Very Disinterested
[ ] Disinterested
[ ] Neither interested nor disinterested
[ ] Interested
[ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?


If you responded “INTERESTED” or “VERY INTERESTED”, why?


Part F - Speed Request Button

1. To what extent do you feel that Speed Request Button will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

[ ] 0 No use
[ ] 1
[ ] 2
[ ] 3
[ ] 4
[ ] 5 Always of use
2. If you gave a score of 0 to Question 1, why do you think the Speed Request Button will be of no use to you (select only one response):?

☐ I always know what the speed limits are anyway
☐ Knowing the speed limits won’t change the way I drive
☐ It would take away the enjoyment of driving
☐ I prefer to rely on my own judgement exclusively and look out for speed limit signs myself
☐ Other, Please specify:

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Speed Request Button will be really helpful in areas where speed limit signs are displayed infrequently

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(b) The Speed Request Button will be really helpful in areas where I think there are speed cameras

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(c) I will not use the Speed Request Button if it issues inaccurate speed limit advice

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(d) The Speed Request Button is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Bendigo and Ballarat

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
(e) I will drive more safely with the Speed Request Button in my car

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(f) The enjoyment of driving will decrease if I use the Speed Request Button

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(g) The Speed Request Button should be compulsory in all vehicles

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

4. What effect will the Speed Request Facility have on each of the following:?

- Incidence of crashes
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease

- Crash severity
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease

- Probability of being fined
  - [ ] Increase
  - [ ] No change
  - [ ] Decrease

5. How much would you be willing to pay for the Speed Request Button if it were an optional feature in a new car?

- Purchase: $ [ ]
- Maintenance/service: $ [ ] (assume yearly)

6. How much would you be willing to pay for the Speed Request Button if it were able to be retrofitted to an existing car?

- Purchase: $ [ ]
- Installation: $ [ ]
- Maintenance/service: $ [ ] (assume yearly)
7. Hypothetically, if you had the option of keeping the Speed Request Button in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- [ ] Very Disinterested
- [ ] Disinterested
- [ ] Neither interested nor disinterested
- [ ] Interested
- [ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part G - Following Distance Warning

1. To what extent do you feel that Following Distance Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

- [ ] 0
- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5

No use

Always of use

2. If you gave a score of 0 to Question 1 above, why do you think the Following Distance Warning System will be of no use to you (select only one response):?

- [ ] I never drive less than 2 seconds from the car in front
- [ ] It is my choice as to how close I drive to the car in front
- [ ] There is little chance of getting caught/fined for tailgating
- [ ] It would take away the enjoyment of driving
- [ ] I am a good driver anyway and I know when it is safe to drive less than 2 seconds from the car in front

(more options over page)
I don’t believe that keeping a gap of at least 2 seconds from the car in front will make me any safer

Other, Please specify: ________________________

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Following Distance Warning System will be helpful when travelling on the freeway

(b) Warnings from the Following Distance Warning System will be more of a nuisance than a help in heavy traffic

(c) The Following Distance Warning System will be helpful to drivers who do not have a clear view of the car ahead because of poor weather conditions (e.g. fog)

(d) There is no need for the Following Distance Warning System when travelling on rural roads

(e) I will drive more safely with the Following Distance Warning System in my car
(f) Warnings from the Following Distance Warning System are unnecessary in 50 km/h zones

Strongly disagree  |  Disagree  |  Neither agree nor disagree  |  Agree  |  Strongly agree

(g) Receiving warnings from the Following Distance Warning System will be really helpful in 100 km/h zones

Strongly disagree  |  Disagree  |  Neither agree nor disagree  |  Agree  |  Strongly agree

(h) Warnings from the Following Distance Warning System are necessary in 60 km/h zones

Strongly disagree  |  Disagree  |  Neither agree nor disagree  |  Agree  |  Strongly agree

(i) The Following Distance Warning System is of little use when there are few other cars on the road

Strongly disagree  |  Disagree  |  Neither agree nor disagree  |  Agree  |  Strongly agree

(j) Warnings from the Following Distance Warning System are unnecessary in 80 km/h zones

Strongly disagree  |  Disagree  |  Neither agree nor disagree  |  Agree  |  Strongly agree

(k) Following Distance Warnings will be useful for alerting distracted or fatigued drivers

Strongly disagree  |  Disagree  |  Neither agree nor disagree  |  Agree  |  Strongly agree

(l) The Following Distance Warning System will be really helpful when approaching intersections or roundabouts

Strongly disagree  |  Disagree  |  Neither agree nor disagree  |  Agree  |  Strongly agree
(m) The enjoyment of driving will decrease as a result of driving with the Following Distance Warning System

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(n) As a result of driving a car with the Following Distance Warning System, I will be less likely to tailgate when driving a car that is not fitted with a Following Distance Warning System

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(o) The warnings from the Following Distance Warning System could distract me from my driving, affecting my safety and my passengers’ safety

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(p) I will lose faith in the Following Distance Warning System if it issues false warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(q) I will lose trust in the Following Distance Warning System if it fails to issue warnings when it should issue warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(r) The Following Distance Warning System should be compulsory for all drivers

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(s) Instead of using on my own judgement, I am likely to end up waiting until I hear warnings from the Following Distance Warning System before I back off from the car in front

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(t) The Following Distance Warning System should only be compulsory for drivers who have been booked on several occasions for tailgating and/or have had several rear-end collisions

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(u) The Following Distance Warning System takes too much control away from the driver

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(v) I would prefer a Following Distance Warning System that made it impossible for the driver to get to within 2 seconds or less from the car in front

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(w) I would prefer a Following Distance Warning System that I could turn on or off as required depending on the traffic situation

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
4. For most drivers, what effect on following distance will the Following Distance Warning System have in each of the following areas/conditions?

<table>
<thead>
<tr>
<th>Area/Condition</th>
<th>Increase Following Distance</th>
<th>No Change</th>
<th>Decrease Following Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freeways</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficult to see road ahead</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intersections/Round-a-bouts</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. What effect on following distance will the Following Distance Warning System have on drivers who follow cars too closely for the following reasons?:

Don’t notice that they are following cars too closely

Believe that following cars too closely is fun

Believe that following cars too closely has no effect on safety

In a hurry

Believe that they won’t get caught/fined

Believe that they can drive as close to cars as they like because it is their choice

Believe that they can control their car regardless of how close they are to the car in front

Car in front driving too slowly

Do not want other drivers cutting in front of them

6. What effect will the Following Distance Warning System have on each of the following?:

Incidence of crashes

Crash severity

Probability of being fined
7. How much would you be willing to pay for the Following Distance Warning System if it were an optional feature in a new car?

Purchase $ 
Maintenance/service $ (assume yearly)

8. How much would you be willing to pay for the Following Distance Warning System if it were able to be retrofitted to an existing car?

Purchase $ 
Installation $ 
Maintenance/service $ (assume yearly)

9. Hypothetically, if you had the option of keeping the Following Distance Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested Disinterested Neither interested nor disinterested Interested Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
Appendix AG  Interim Questionnaire Time 6
Interim Questionnaire Time 6

Aim of the questionnaire

Control Participants:

1. To assess participants’ acceptability towards the following systems:
   - Seat Belt Reminder;
   - Daytime Running Lights;
   - Reverse Collision Warning;
   - Intelligent Speed Adaptation;
   - Speed Request; and
   - Following Distance Warning.

Treatment Participants, who were exposed to ISA in During 3:

1. To measure the workload experienced by participants under the following condition:
   - While driving and warnings of the Intelligent Speed Adaptation system were being issued.

2. To measure participants’ acceptability towards the following systems:
   - Seat Belt Reminder;
   - Daytime Running Lights;
   - Reverse Collision Warning;
   - Intelligent Speed Adaptation;
   - Speed Request; and
   - Following Distance Warning.

Treatment Participants, who were exposed to FDW in During 3:

1. To measure the workload experienced by participants under the following condition:
   - While driving and warnings of the Following Distance Warning system were being issued.

2. To measure participants’ acceptability towards the following systems:
   - Seat Belt Reminder;
   - Daytime Running Lights;
   - Reverse Collision Warning;
   - Intelligent Speed Adaptation;
   - Speed Request; and
   - Following Distance Warning.
Treatment Participants, who were exposed to ISA and FDW in During 3:

1. To determine whether participants experienced any confusion, overload, etc. as a result of receiving warnings from multiple systems at the same time.

2. To measure participants’ acceptability towards the following systems:
   - Seat Belt Reminder;
   - Daytime Running Lights;
   - Reverse Collision Warning;
   - Intelligent Speed Adaptation;
   - Speed Request; and
   - Following Distance Warning.

**To whom should this questionnaire be administered?**

Interim Questionnaire Time 6 should be administered to ALL participants. There are four forms of the questionnaire available:

1. Comprises 6 parts:
   - Part A – Speed Warning System;
   - Part B – Seat Belt Reminder System;
   - Part C – Daytime Running Lights;
   - Part D – Reverse Collision Warning System;
   - Part E – Speed Request; and
   - Part F – Following Distance Warning System.

2. Comprises 6 parts:
   - Part A – Speed Warning System;
   - Part B – Seat Belt Reminder System;
   - Part C – Daytime Running Lights;
   - Part D – Reverse Collision Warning System;
   - Part E – Speed Request; and
   - Part F – Following Distance Warning System.

3. Comprises 6 parts:
   - Part A – Following Distance Warning System;
   - Part B – Seat Belt Reminder System;
   - Part C – Daytime Running Lights;
   - Part D – Reverse Collision Warning System;
   - Part E – Speed Warning System; and
   - Part F – Speed Request.

4. Comprises 7 parts:
   - Part A – Multiple Systems;
   - Part B – Speed Warning System;
   - Part C – Seat Belt Reminder System;
   - Part D – Daytime Running Lights;
The form of the questionnaire to be administered to a given participant will depend on whether that participant is in the control or the treatment group and, if the participant is in the treatment group, whether he/she was exposed in During 3 to Intelligent Speed Adaptation, Following Distance Warning, or both Intelligent Speed Adaptation and Following Distance Warning. Therefore:

**Control** participants should undertake **Form 1**. (10 participants in total.)

**Treatment** participants who are being exposed to **Intelligent Speed Adaptation** in **During 3** should undertake **Form 2**. (Six participants in total.)

**Treatment** participants who are being exposed to **Following Distance Warning** in **During 3** should undertake **Form 3**. (Seven participants in total.)

**Treatment** participants who are being exposed to both **Following Distance Warning** and **Intelligent Speed Adaptation** in **During 3** should undertake **Form 4**. (Seven participants in total.)

**When during the study should this questionnaire be administered?**

Interim Questionnaire Time 6 should be administered at the point in the study sequence when 15,750 kilometres of driving have been accumulated (excluding the Familiarisation period). For the treatment participants, this corresponds to the point 750 kilometres into the After 3 period.
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 6

This questionnaire should take you about 25 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. You will probably recognise many of the questions that are in this questionnaire. This is because we are interested in finding out whether there have been any changes in how people feel about the systems under study.

In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A – Speed Warning System

1. To what extent do you feel that the Speed Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

   0 1 2 3 4 5

   No use Always of use

2. If you gave a score of 0 to Question 1 above, why do you think the Speed Warning System will be of no use to you (select only one response):?

   □ I never exceed the speed limit
   □ It is my choice whether I speed or not
   □ I never get caught for exceeding the speed limit

   (more options over page)
The speed limits are too low
It is out of my control if cars around me carry me over the speed limit
It would take away the enjoyment of driving
I am a good driver anyway and I know when it is safe to exceed the speed limit
Exceeding the speed limit does not make any difference to my safety
Other, Please specify: ____________________________

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Receiving warnings from the Speed Warning System for exceeding the speed limit will be really helpful in areas where there are lots of pedestrians, such as in strip shopping centres or outside schools

(b) Warnings from the Speed Warning System are unnecessary in 60 km/h zones

(c) I will drive more safely with the Speed Warning System in my car

(d) There is no need for the Speed Warning System when travelling on the freeway
(e) There is no need for the Speed Warning System when travelling on rural roads

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(f) Receiving warnings from the Speed Warning System for exceeding the speed limit in 100 km/h zones is unnecessary

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(g) Warnings from the Speed Warning System are necessary in 50 km/h zones

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(h) There is a need for the Speed Warning System when road conditions are poor (e.g. slippery road, poor visibility)

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(i) The Speed Warning System is not necessary when there are hardly any other cars on the road

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(j) The Speed Warning System will be of most benefit to drivers who repeatedly exceed the speed limit without realising it

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(k) Warnings from the Speed Warning System are unnecessary in 80 km/h zones

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(l) The Speed Warning System is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Ballarat and Bendigo

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(m) The Speed Warning System will be wasted on drivers who speed intentionally – these drivers will ignore or override the warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(n) After having driven the car with the Speed Warning System, I will probably be less likely to exceed the speed limit when driving a car that is not fitted with a Speed Warning System

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(o) The enjoyment of driving will decrease as a result of driving with the Speed Warning System

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(p) I will be able to concentrate more on the traffic when the Speed Warning System is enabled than when it is not because I will not have to look out for speed signs

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(q) The warnings of the Speed Warning System could distract me from my driving, compromising my safety and that of any passengers that I might be carrying

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(r) The Speed Warning System will allow me to spend more time attending to the traffic because I will not have to look as much at the speedometer to monitor my speed

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(s) I will lose trust in the Speed Warning System if it issues false warnings

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(t) I will end up relying too strongly on the Speed Warning System to let me know if I am exceeding the speed limit at the expense of my own judgement

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(u) I will lose faith in the Speed Warning System if it does not issue warnings when it should issue warnings

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(v) The Speed Warning System should be compulsory for all drivers

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(w) The Speed Warning System should only be compulsory for drivers who have been booked on multiple occasions for exceeding the speed limit

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(x) The Speed Warning System takes too much control away from the driver

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

Form 1
(y) Rather than a system that simply warns the driver, I would prefer a Speed Warning System that made it impossible for the driver to exceed the speed limit

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(z) It would not bother me if the Speed Warning System were used as a device by authorities to monitor and track car speeds and locations on the road network

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(aa) I would prefer a Speed Warning System that I could turn on or off as required depending on the situation (e.g. turn off if in a hurry, turn on if I am travelling on a road where I know that there are speed cameras)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. For most drivers, what effect on travel speed will the Speed Warning System have in each of the following areas/conditions:

- 50 km/h zone
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- 60 km/h zone
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- 80 km/h zone
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- 100 km/h zone
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- Freeways
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- Rural
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- Residential
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

(more over page)
<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low traffic levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor road conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. What effect on travel speed will the Speed Warning System have on drivers who exceed the speed limit for the following reasons:?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed inadvertently</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed for fun</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe it is safe to speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a hurry</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Believe they won’t get caught/ fined for speeding</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Believe they shouldn’t have to follow speed limits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they can control their car safely at any speed</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Believe that the speed limit is too low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carried over the speed limit by other cars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aim to travel at the speed limit, but occasionally edge over before reducing speed again</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
6. What effect will the Speed Warning System have on each of the following:

- Incidence of crashes:
  - Increase
  - Decrease
  - No change

- Crash severity:
  - Increase
  - Decrease
  - No change

- Fuel consumption:
  - Increase
  - Decrease
  - No change

- Travel time:
  - Increase
  - Decrease
  - No change

- Probability of being fined:
  - Increase
  - Decrease
  - No change

7. How much would you be willing to pay for the Speed Warning System if it were an optional feature in a new car?

- Purchase: $________
- Maintenance/service: $________ (assume yearly)

8. How much would you be willing to pay for the Speed Warning System if it were able to be retrofitted to an existing car?

- Purchase: $________
- Installation: $________
- Maintenance/service: $________ (assume yearly)

9. Hypothetically, if you had the option of keeping the Speed Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

   - Very Disinterested
   - Disinterested
   - Neither interested nor disinterested
   - Interested
   - Very interested

   If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

   ________________________________

   If you responded “INTERESTED” or “VERY INTERESTED”, why?

   ________________________________
Part B - Seat Belt Reminder System

1. To what extent do you feel that the Seat Belt Reminder System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

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<table>
<thead>
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<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>No use</td>
<td>Always of use</td>
<td></td>
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</tbody>
</table>

2. If you gave a score of 0 to Question 1, why do you think the Seat Belt Reminder System will be of no use to you (select only one response):?

- [ ] I always wear my seat belt anyway
- [ ] I know when it is safe to drive without a seat belt
- [ ] There is little chance of getting a fine for not wearing a seat belt
- [ ] I don’t believe that wearing a seat belt in any situation will make me any safer
- [ ] Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt
- [ ] Seat belts are uncomfortable
- [ ] It would take away the enjoyment of driving
- [ ] Seat belts are too fiddly to put on
- [ ] I can’t be bothered putting my seat belt on
- [ ] Other, Please specify: ____________________________

3. To what extent do you think that the Seat Belt Reminder System will be of use to you in letting you know if any of your passengers are not wearing their seat belts? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<p>| | | | | | |</p>
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<thead>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>No use</td>
<td>Always of use</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
4. If you gave a score of 0 to Question 3, why do you think the Seat Belt Reminder System will be of no use to you in letting you know if any of your passengers are not wearing their seat belts (select only one response):?

- [ ] I never carry passengers
- [ ] I always check anyway that my passengers are wearing their seat belts
- [ ] It doesn’t matter if my passengers don’t wear their seat belts, because wearing a seat belt won’t make them any safer
- [ ] My passengers always wear their seat belts, so there is no need to have warnings for them
- [ ] I always drive safely so there is no need for passengers to have to wear a seat belt
- [ ] There is little chance of getting a fine for not wearing a seat belt
- [ ] It is up to my passengers whether they wear a seat belt – it is not my responsibility
- [ ] Other, Please specify: ____________________________

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Warnings from the Seat Belt Reminder System are unnecessary when reversing out of a driveway or a parking spot

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(b) The Seat Belt Reminder System will be of most benefit to drivers who forget to put their seat belts on

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(c) The Seat Belt Reminder System is not necessary when there are hardly any other cars on the road

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(d) There is no need for the Seat Belt Reminder System when travelling at speeds of **less than** 10 km/h

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(e) There is no need for the Seat Belt Reminder System when travelling at speeds of **greater than** 10 km/h

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(f) The Seat Belt Reminder System is a real necessity for people who do not put their seat belts on when travelling short distances

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(g) The Seat Belt Reminder System will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(h) I will end up relying too strongly on the Seat Belt Reminder System to remind me to fasten my seat belt

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(i) I will end up relying too strongly on the Seat Belt Reminder System to let me know if any of my passengers are not wearing their seat belts

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(j) After having driven the car with the Seat Belt Reminder System, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a Seat Belt Reminder System

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(k) I will lose trust in the Seat Belt Reminder System if it does not issue warnings when it should issue warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(l) I will lose trust in the Seat Belt Reminder System if it issues false warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(m) The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(n) The Seat Belt Reminder System should be compulsory for all drivers

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(o) The Seat Belt Reminder System should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(p) The Seat Belt Reminder System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(q) I would prefer it if, rather than just warning the driver, the Seat Belt Reminder System prevented the driver from starting the car if someone in the car is not wearing a seat belt

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(r) The Seat Belt Reminder System will make it easier for me to encourage my passengers to fasten their seat belts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) I will drive more safely with the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(t) I will enjoy driving less as a result of having the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(u) I would prefer a Seat Belt Reminder System that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers)

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

6. For most drivers, what effect on seat belt wearing will the Seat Belt Reminder System have in each of the following conditions/situations?:

<table>
<thead>
<tr>
<th>Condition/situation</th>
<th>Increase wearing</th>
<th>No change</th>
<th>Decrease wearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driving short distances</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low traffic levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speeds less than 10km/h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speeds more than 10km/h</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. What effect on seat belt wearing will the Seat Belt Reminder System have on drivers who do not wear seat belts for the following reasons?:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase wearing</th>
<th>No change</th>
<th>Decrease wearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forget to put seat belt on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that seat belts are uncomfortable to wear</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that seat belts are too fiddly to put on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that wearing seat belts is a violation of freedom</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can’t be bothered putting their seat belt on</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(more over page)
Believe that there is little chance of getting a fine for not wearing a seat belt

Believe that wearing seat belts does not enhance safety

8. What effect will the Seat Belt Reminder System have on each of the following:

- Incidence of crashes
  - Increase
  - No change
  - Decrease

- Crash severity
  - Increase
  - No change
  - Decrease

- Injury severity
  - Increase
  - No change
  - Decrease

- Probability of being fined
  - Increase
  - No change
  - Decrease

9. How much would you be willing to pay for the Seat Belt Reminder System if it were an optional feature in a new car?

- Purchase
  - $

- Maintenance/service
  - $(assume yearly)

10. How much would you be willing to pay for the Seat Belt Reminder System if it were able to be retrofitted to an existing car?

- Purchase
  - $

- Installation
  - $

- Maintenance/service
  - $(assume yearly)

11. Hypothetically, if you had the option of keeping the Seat Belt Reminder System in your vehicle at the end of the study (at no extra cost), would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- Very Disinterested
- Disinterested
- Neither interested nor disinterested
- Interested
- Very interested
If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

**Part C - Daytime Running Lights**

1. To what extent do you feel that Daytime Running Lights will be of use to you? A score of 0 means that the Daytime Running Lights will be of no use to you while a score of 5 means that they will always be of use to you.

   ![Score Options]

   0 No use                 1 2 3 4 5 Always of use

2. If you gave a score of 0 to Question 1, why do you think the Daytime Running Lights will be of no use to you (select only one response)?

   - [ ] I always turn on the headlights during the day anyway – even when the weather is good
   - [ ] They would take away the enjoyment of driving
   - [ ] Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users
   - [ ] You can’t get fined for not turning on your headlights during the day
   - [ ] I have a light coloured car
   - [ ] Other, Please specify:   

Form 1
3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Daytime Running Lights are not needed when there are hardly any other cars or pedestrians on the road

(b) Daytime Running Lights are a real necessity for drivers who forget to turn their headlights on during the day

(c) Daytime Running Lights should be compulsory for all drivers

(d) Daytime Running Lights will reduce my fuel economy

(e) Daytime Running Lights will put extra strain on my car battery

(f) I will need to change the headlamps more often because of the Daytime Running Lights

(g) I will be safer with the Daytime Running Lights equipped to my car
(h) Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights


(i) Driving will be less enjoyable with Daytime Running Lights in my car


4. What effect will Daytime Running Lights have on each of the following?:

- Incidence of crashes: □ Increase □ No change □ Decrease
- Crash severity: □ Increase □ No change □ Decrease
- Injury severity: □ Increase □ No change □ Decrease
- Probability of being fined: □ Increase □ No change □ Decrease

5. How much would you be willing to pay for Daytime Running Lights if they were an optional feature in a new car?

- Purchase: $
- Maintenance/service: $ (assume yearly)

6. How much would you be willing to pay for Daytime Running Lights if they were able to be retrofitted to an existing car?

- Purchase: $
- Installation: $
- Maintenance/service: $ (assume yearly)

7. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.


Form 1
If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part D - Reverse Collision Warning

1. To what extent do you feel that Reverse Collision Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No use</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Always of use</td>
</tr>
</tbody>
</table>

2. If you gave a score of 0 to Question 1, why do you think the Reverse Collision Warning System will be of no use to you (select only one response):

   - I am always on the lookout anyway when I reverse
   - It would take away the enjoyment of driving
   - I prefer to use other methods to help me reverse without hitting objects behind me (e.g. reflection in shop window)
   - Other, Please specify: ____________________________________________

3. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

   (a) I will lose trust in the Reverse Collision Warning System if it fails to issue warnings when it should issue warnings

   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly agree
(b) I will lose trust in the Reverse Collision Warning System if it issues false warnings


(c) I will end up relying more on the Reverse Collision Warning System than my own lookout while reversing


(d) The Reverse Collision Warning System should be compulsory in all vehicles


(e) The Reverse Collision Warning System takes too much control away from the driver


(f) I would prefer it if the Reverse Collision Warning System made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.


(g) The enjoyment of driving will increase as a result of having the Reverse Collision Warning System in my car


Form 1
(h) I will drive more safely with the Reverse Collision Warning System in my car

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(i) I would prefer a Reverse Collision Warning System that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

4. What effect will the Reverse Collision Warning System have on each of the following?:

   - Incidence of crashes: □ Increase □ No change □ Decrease
   - Crash severity: □ Increase □ No change □ Decrease

5. How much would you be willing to pay for the Reverse Collision Warning System if it were an optional feature in a new car?

   - Purchase: $
   - Maintenance/service: $(assume yearly)

6. How much would you be willing to pay for the Reverse Collision Warning System if it were able to be retrofitted to an existing car?

   - Purchase: $
   - Installation: $
   - Maintenance/service: $(assume yearly)

7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

   - Very Disinterested
   - Disinterested
   - Neither interested nor disinterested
   - Interested
   - Very interested
If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part E - Speed Request Button

1. To what extent do you feel that Speed Request Button will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

   0         1                  2                  3                  4                  5
   No use        Always of use

2. If you gave a score of 0 to Question 1, why do you think the Speed Request Button will be of no use to you (select only one response):?

   □ I always know what the speed limits are anyway
   □ Knowing the speed limits won’t change the way I drive
   □ It would take away the enjoyment of driving
   □ I prefer to rely on my own judgement exclusively and look out for speed limit signs myself
   □ Other, Please specify:

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

   (a) The Speed Request Button will be really helpful in areas where speed limit signs are displayed infrequently

   □ Strongly disagree  □ Disagree  □ Neither agree nor disagree  □ Agree  □ Strongly agree
(b) The Speed Request Button will be really helpful in areas where I think there are speed cameras

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(c) I will not use the Speed Request Button if it issues inaccurate speed limit advice

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(d) The Speed Request Button is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Bendigo and Ballarat

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(e) I will drive more safely with the Speed Request Button in my car

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(f) The enjoyment of driving will decrease if I use the Speed Request Button

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(g) The Speed Request Button should be compulsory in all vehicles

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

4. What effect will the Speed Request Facility have on each of the following?:

- Incidence of crashes
  - Increase
  - No change
  - Decrease

- Crash severity
  - Increase
  - No change
  - Decrease

- Probability of being fined
  - Increase
  - No change
  - Decrease
5. How much would you be willing to pay for the Speed Request Button if it were an optional feature in a new car?

Purchase $ \\
Maintenance/service $ (assume yearly)

6. How much would you be willing to pay for the Speed Request Button if it were able to be retrofitted to an existing car?

Purchase $ \\
Installation $ \\
Maintenance/service $ (assume yearly)

7. Hypothetically, if you had the option of keeping the Speed Request Button in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested  Disinterested  Neither interested nor disinterested  Interested  Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part F - Following Distance Warning

1. To what extent do you feel that Following Distance Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

0 1 2 3 4 5  
No use  Always of use
2. If you gave a score of 0 to Question 1 above, why do you think the Following Distance Warning System will be of no use to you (select only one response):?

- I never drive less than 2 seconds from the car in front
- It is my choice as to how close I drive to the car in front
- There is little chance of getting caught/fined for tailgating
- It would take away the enjoyment of driving
- I am a good driver anyway and I know when it is safe to drive less than 2 seconds from the car in front
- I don’t believe that keeping a gap of at least 2 seconds from the car in front will make me any safer
- Other, Please specify: ____________________________

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Following Distance Warning System will be helpful when travelling on the freeway

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(b) Warnings from the Following Distance Warning System will be more of a nuisance than a help in heavy traffic

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(c) The Following Distance Warning System will be helpful to drivers who do not have a clear view of the car ahead because of poor weather conditions (e.g. fog)

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(d) There is no need for the Following Distance Warning System when travelling on rural roads

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(e) I will drive more safely with the Following Distance Warning System in my car

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(f) Warnings from the Following Distance Warning System are unnecessary in 50 km/h zones

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(g) Receiving warnings from the Following Distance Warning System will be really helpful in 100 km/h zones

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(h) Warnings from the Following Distance Warning System are necessary in 60 km/h zones

Strongly disagree  Disagree Neither agree nor disagree  Agree  Strongly agree

(i) The Following Distance Warning System is of little use when there are few other cars on the road

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(j) Warnings from the Following Distance Warning System are unnecessary in 80 km/h zones

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(k) Following Distance Warnings will be useful for alerting distracted or fatigued drivers

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(l) The Following Distance Warning System will be really helpful when approaching intersections or roundabouts

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(m) The enjoyment of driving will decrease as a result of driving with the Following Distance Warning System

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(n) As a result of driving a car with the Following Distance Warning System, I will be less likely to tailgate when driving a car that is not fitted with a Following Distance Warning System

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(o) The warnings from the Following Distance Warning System could distract me from my driving, affecting my safety and my passengers’ safety

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)

(p) I will lose faith in the Following Distance Warning System if it issues false warnings

(Strongly disagree) (Disagree) (Neither agree nor disagree) (Agree) (Strongly agree)
(q) I will lose trust in the Following Distance Warning System if it fails to issue warnings when it should issue warnings

- [ ] Strongly disagree  - [ ] Disagree  - [ ] Neither agree nor disagree  - [ ] Agree  - [ ] Strongly agree

(r) The Following Distance Warning System should be compulsory for all drivers

- [ ] Strongly disagree  - [ ] Disagree  - [ ] Neither agree nor disagree  - [ ] Agree  - [ ] Strongly agree

(s) Instead of using on my own judgement, I am likely to end up waiting until I hear warnings from the Following Distance Warning System before I back off from the car in front

- [ ] Strongly disagree  - [ ] Disagree  - [ ] Neither agree nor disagree  - [ ] Agree  - [ ] Strongly agree

(t) The Following Distance Warning System should only be compulsory for drivers who have been booked on several occasions for tailgating and/or have had several rear-end collisions

- [ ] Strongly disagree  - [ ] Disagree  - [ ] Neither agree nor disagree  - [ ] Agree  - [ ] Strongly agree

(u) The Following Distance Warning System takes too much control away from the driver

- [ ] Strongly disagree  - [ ] Disagree  - [ ] Neither agree nor disagree  - [ ] Agree  - [ ] Strongly agree

(v) I would prefer a Following Distance Warning System that made it impossible for the driver to get to within 2 seconds or less from the car in front

- [ ] Strongly disagree  - [ ] Disagree  - [ ] Neither agree nor disagree  - [ ] Agree  - [ ] Strongly agree
(w) I would prefer a Following Distance Warning System that I could turn on or off as required depending on the traffic situation

Neither agree nor disagree

Strongly disagree

Disagree

Agree

Strongly agree

4. For most drivers, what effect on following distance will the Following Distance Warning System have in each of the following areas/conditions?:

50 km/h zone

60 km/h zone

80 km/h zone

100 km/h zone

Freeways

Rural

Residential

Little traffic

Difficult to see road ahead

Heavy traffic

Increase following distance

No change

Decrease following distance

(more over page)
5. What effect on following distance will the Following Distance Warning System have on drivers who follow cars too closely for the following reasons:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t notice that they are following cars too closely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that following cars too closely is fun</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that following cars too closely has no effect on safety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a hurry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that they won’t get caught/fined</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that they can drive as close to cars as they like because it is their choice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that they can control their car regardless of how close they are to the car in front</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Car in front driving too slowly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not want other drivers cutting in front of them</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. What effect will the Following Distance Warning System have on each of the following:

Incidence of crashes
- Increase
- No change
- Decrease

Crash severity
- Increase
- No change
- Decrease

Probability of being fined
- Increase
- No change
- Decrease

7. How much would you be willing to pay for the Following Distance Warning System if it were an optional feature in a new car?

Purchase $________

Maintenance/service $________ (assume yearly)

8. How much would you be willing to pay for the Following Distance Warning System if it were able to be retrofitted to an existing car?

Purchase $________

Installation $________

Maintenance/service $________ (assume yearly)

9. Hypothetically, if you had the option of keeping the Following Distance Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested
Disinterested
Neither interested nor disinterested
Interested
Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?
End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 6

This questionnaire should take you about 25 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. You will probably recognise many of the questions that are in this questionnaire. This is because we are interested in finding out whether there have been any changes in how people feel about the systems under study.

In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A - Speed Warning System

1. Have you experienced warnings from the Speed Warning system?

   [ ] Yes  [ ] No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Question 3 (page 3).

2. This question is designed to gauge your impression of how much mental workload you experienced when you were driving and warnings from the Speed Warning system were being issued.

   Six factors are known to contribute to the overall level of mental workload that people feel when they perform a task. Below are some questions that are designed to measure, for each of the six factors, the level of workload that you experienced while the speed warnings were being issued.
For each of the six factors, please indicate, **by placing a line at the appropriate point on the scale**, the level of workload that you experienced **while you were driving and the Speed Warning system was issuing warnings**.

For example,

| Low               | Neither high nor low | High               |

**Mental demand:**
On average, how much mental and perceptual activity was required? That is, how much thinking, deciding, calculating, remembering, looking, searching, etc was required **when you were driving and you were receiving warnings from the Speed Warning system**? Was the car driving task easy and simple (low) or demanding and complex (high) when the warnings were being issued?

| Low               | Neither high nor low | High               |

**Physical demand:**
On average, how much physical activity was required? That is, how much controlling of the vehicle, operating the brake, etc was required **when you were driving and you were receiving warnings from the Speed Warning system**? Was the car driving task easy and restful (low) or demanding and laborious (high) when the warnings were being issued?

| Low               | Neither high nor low | High               |

**Time demand:**
On average, how much time pressure did you feel **when driving while the Speed Warning system warnings were being issued**? Was the pace of driving slow and leisurely (low) or rapid and rushed (high) when the warnings were being issued?

| Low               | Neither high nor low | High               |

**Performance:**
On average, how satisfied were you with your **driving** performance **while the Speed Warning system warnings were being issued**?

| Good               | Neither good nor poor | Poor               |
Effort:
On average, how hard did you have to work (mentally and physically) to drive while the Speed Warning system warnings were being issued? Was little effort (low) or a large amount of effort (high) required?

Low  Neither high  High
nor low

Frustration level:
On average, did you feel secure, gratified, content, relaxed and complacent (low) when driving while the Speed Warning system warnings were being issued or did you feel insecure, discouraged, irritated, stressed and annoyed (high)?

Low  Neither high  High
nor low

3. To what extent do you feel that the Speed Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

[ ] 0  [ ] 1  [ ] 2  [ ] 3  [ ] 4  [ ] 5
No use  Always of use

4. If you gave a score of 0 to Question 3 above, why do you think the Speed Warning System will be of no use to you (select only one response)?

[ ] I never exceed the speed limit
[ ] It is my choice whether I speed or not
[ ] I never get caught for exceeding the speed limit
[ ] The speed limits are too low
[ ] It is out of my control if cars around me carry me over the speed limit
[ ] It would take away the enjoyment of driving
[ ] I am a good driver anyway and I know when it is safe to exceed the speed limit
[ ] Exceeding the speed limit does not make any difference to my safety
[ ] Other, Please specify: ___________________________________________
5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Receiving warnings from the Speed Warning System for exceeding the speed limit will be really helpful in areas where there are lots of pedestrians, such as in strip shopping centres or outside schools

(b) Warnings from the Speed Warning System are unnecessary in 60 km/h zones

(c) I will drive more safely with the Speed Warning System in my car

(d) There is no need for the Speed Warning System when travelling on the freeway

(e) There is no need for the Speed Warning System when travelling on rural roads

(f) Receiving warnings from the Speed Warning System for exceeding the speed limit in 100 km/h zones is unnecessary
(g) Warnings from the Speed Warning System are necessary in 50 km/h zones

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(h) There is a need for the Speed Warning System when road conditions are poor (e.g. slippery road, poor visibility)

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(i) The Speed Warning System is not necessary when there are hardly any other cars on the road

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(j) The Speed Warning System will be of most benefit to drivers who repeatedly exceed the speed limit without realising it

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(k) Warnings from the Speed Warning System are unnecessary in 80 km/h zones

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(l) The Speed Warning System is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Ballarat and Bendigo

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(m) The Speed Warning System will be wasted on drivers who speed intentionally – these drivers will ignore or override the warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(n) After having driven the car with the Speed Warning System, I will probably be less likely to exceed the speed limit when driving a car that is not fitted with a Speed Warning System

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(o) The enjoyment of driving will decrease as a result of driving with the Speed Warning System

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(p) I will be able to concentrate more on the traffic when the Speed Warning System is enabled than when it is not because I will not have to look out for speed signs

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(q) The warnings of the Speed Warning System could distract me from my driving, compromising my safety and that of any passengers that I might be carrying

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(r) The Speed Warning System will allow me to spend more time attending to the traffic because I will not have to look as much at the speedometer to monitor my speed

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(s) I will lose trust in the Speed Warning System if it issues false warnings

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(t) I will end up relying too strongly on the Speed Warning System to let me know if I am exceeding the speed limit at the expense of my own judgement

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) I will lose faith in the Speed Warning System if it does not issue warnings when it should issue warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(v) The Speed Warning System should be compulsory for all drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(w) The Speed Warning System should only be compulsory for drivers who have been booked on multiple occasions for exceeding the speed limit

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(x) The Speed Warning System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(y) Rather than a system that simply warns the driver, I would prefer a Speed Warning System that made it impossible for the driver to exceed the speed limit

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(z) It would not bother me if the Speed Warning System were used as a device by authorities to monitor and track car speeds and locations on the road network

Neither agree nor disagree

Strongly disagree

Disagree

Agree

Strongly agree

(aa) I would prefer a Speed Warning System that I could turn on or off as required depending on the situation (e.g. turn off if in a hurry, turn on if I am travelling on a road where I know that there are speed cameras)

Neither agree nor disagree

Strongly disagree

Disagree

Agree

Strongly agree

6. For most drivers, what effect on travel speed will the Speed Warning System have in each of the following areas/conditions:

50 km/h zone

Increase speed

No change

Decrease speed

60 km/h zone

Increase speed

No change

Decrease speed

80 km/h zone

Increase speed

No change

Decrease speed

100 km/h zone

Increase speed

No change

Decrease speed

Freeways

Increase speed

No change

Decrease speed

Rural

Increase speed

No change

Decrease speed

Residential

Increase speed

No change

Decrease speed

Low traffic levels

Increase speed

No change

Decrease speed

Poor road conditions

Increase speed

No change

Decrease speed
7. What effect on travel speed will the Speed Warning System have on drivers who exceed the speed limit for the following reasons:?

- Speed inadvertently increased speed
- Speed for fun increased speed
- Believe it is safe to speed increased speed
- In a hurry increased speed
- Believe they won’t get caught/ fined for speeding increased speed
- Believe they shouldn’t have to follow speed limits increased speed
- Believe they can control their car safely at any speed increased speed
- Believe that the speed limit is too low increased speed
- Carried over the speed limit by other cars increased speed
- Aim to travel at the speed limit, but occasionally edge over before reducing speed again increased speed

8. What effect will the Speed Warning System have on each of the following:?

- Incidence of crashes increased speed
- Crash severity increased speed
- Fuel consumption increased speed
- Travel time increased speed
- Probability of being fined increased speed
9. How much would you be willing to pay for the Speed Warning System if it were an optional feature in a new car?

Purchase $  
Maintenance/service $ (assume yearly)

10. How much would you be willing to pay for the Speed Warning System if it were able to be retrofitted to an existing car?

Purchase $  
Installation $  
Maintenance/service $ (assume yearly)

11. Hypothetically, if you had the option of keeping the Speed Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested  Disinterested  Neither interested nor disinterested  Interested  Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part B - Seat Belt Reminder System

1. To what extent do you feel that the Seat Belt Reminder System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

0 1 2 3 4 5
No use  Always of use
2. If you gave a score of 0 to Question 1, why do you think the Seat Belt Reminder System will be of no use to you (select only one response):?

- [ ] I always wear my seat belt anyway
- [ ] I know when it is safe to drive without a seat belt
- [ ] There is little chance of getting a fine for not wearing a seat belt
- [ ] I don’t believe that wearing a seat belt in any situation will make me any safer
- [ ] Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt
- [ ] Seat belts are uncomfortable
- [ ] It would take away the enjoyment of driving
- [ ] Seat belts are too fiddly to put on
- [ ] I can’t be bothered putting my seat belt on
- [ ] Other, Please specify: [ ]

3. To what extent do you think that the Seat Belt Reminder System will be of use to you in letting you know if any of your passengers are not wearing their seat belts? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

- [ ] 0 No use
- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5 Always of use

4. If you gave a score of 0 to Question 3, why do you think the Seat Belt Reminder System will be of no use to you in letting you know if any of your passengers are not wearing their seat belts (select only one response):?

- [ ] I never carry passengers
- [ ] I always check anyway that my passengers are wearing their seat belts
- [ ] It doesn’t matter if my passengers don’t wear their seat belts, because wearing a seat belt won’t make them any safer

(more options over page)
My passengers always wear their seat belts, so there is no need to have warnings for them

I always drive safely so there is no need for passengers to have to wear a seat belt

There is little chance of getting a fine for not wearing a seat belt

It is up to my passengers whether they wear a seat belt – it is not my responsibility

Other, Please specify:

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Warnings from the Seat Belt Reminder System are unnecessary when reversing out of a driveway or a parking spot

(b) The Seat Belt Reminder System will be of most benefit to drivers who forget to put their seat belts on

(c) The Seat Belt Reminder System is not necessary when there are hardly any other cars on the road

(d) There is no need for the Seat Belt Reminder System when travelling at speeds of less than 10 km/h
(e) There is no need for the Seat Belt Reminder System when travelling at speeds of **greater than** 10 km/h

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) The Seat Belt Reminder System is a real necessity for people who do not put their seat belts on when travelling short distances

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) The Seat Belt Reminder System will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) I will end up relying too strongly on the Seat Belt Reminder System to remind me to fasten my seat belt

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) I will end up relying too strongly on the Seat Belt Reminder System to let me know if any of my passengers are not wearing their seat belts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(j) After having driven the car with the Seat Belt Reminder System, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a Seat Belt Reminder System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(k) I will lose trust in the Seat Belt Reminder System if it does not issue warnings when it should issue warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(l) I will lose trust in the Seat Belt Reminder System if it issues false warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(m) The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(n) The Seat Belt Reminder System should be compulsory for all drivers

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(o) The Seat Belt Reminder System should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(p) The Seat Belt Reminder System takes too much control away from the driver

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(q) I would prefer it if, rather than just warning the driver, the Seat Belt Reminder System prevented the driver from starting the car if someone in the car is not wearing a seat belt

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(r) The Seat Belt Reminder System will make it easier for me to encourage my passengers to fasten their seat belts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) I will drive more safely with the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(t) I will enjoy driving less as a result of having the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) I would prefer a Seat Belt Reminder System that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

6. For most drivers, what effect on seat belt wearing will the Seat Belt Reminder System have in each of the following conditions/situations?:

Reversing
- [ ] Increase wearing
- [ ] No change
- [ ] Decrease wearing

Driving short distances
- [ ] Increase wearing
- [ ] No change
- [ ] Decrease wearing

(more over page)
<table>
<thead>
<tr>
<th>Traffic Conditions</th>
<th>Increase wearing</th>
<th>No change</th>
<th>Decrease wearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low traffic levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speeds less than 10km/h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speeds more than 10km/h</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. What effect on seat belt wearing will the Seat Belt Reminder System have on drivers who do not wear seat belts for the following reasons:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase wearing</th>
<th>No change</th>
<th>Decrease wearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forget to put seat belt on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that seat belts are uncomfortable to wear</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that seat belts are too fiddly to put on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that wearing seat belts is a violation of freedom</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can’t be bothered putting their seat belt on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that there is little chance of getting a fine for not wearing a seat belt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that wearing seat belts does not enhance safety</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. What effect will the Seat Belt Reminder System have on each of the following:

<table>
<thead>
<tr>
<th>Effect</th>
<th>Increase</th>
<th>No change</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence of crashes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injury severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability of being fined</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. How much would you be willing to pay for the Seat Belt Reminder System if it were an optional feature in a new car?

Purchase $  
Maintenance/service $ (assume yearly)

10. How much would you be willing to pay for the Seat Belt Reminder System if it were able to be retrofitted to an existing car?

Purchase $  
Installation $  
Maintenance/service $ (assume yearly)

11. Hypothetically, if you had the option of keeping the Seat Belt Reminder System in your vehicle at the end of the study (at no extra cost), would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested  Disinterested  Neither interested nor disinterested  Interested  Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part C- Daytime Running Lights

1. To what extent do you feel that Daytime Running Lights will be of use to you? A score of 0 means that the Daytime Running Lights will be of no use to you while a score of 5 means that they will always be of use to you.

0 1 2 3 4 5
No use  Always of use
2. If you gave a score of 0 to Question 1, why do you think the Daytime Running Lights will be of no use to you (select only one response)?

☐ I always turn on the headlights during the day anyway – even when the weather is good

☐ They would take away the enjoyment of driving

☐ Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users

☐ You can’t get fined for not turning on your headlights during the day

☐ I have a light coloured car

☐ Other, Please specify:

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Daytime Running Lights are not needed when there are hardly any other cars or pedestrians on the road

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(b) Daytime Running Lights are a real necessity for drivers who forget to turn their headlights on during the day

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(c) Daytime Running Lights should be compulsory for all drivers

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(d) Daytime Running Lights will reduce my fuel economy

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
(e) Daytime Running Lights will put extra strain on my car battery

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) I will need to change the headlamps more often because of the Daytime Running Lights

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) I will be safer with the Daytime Running Lights equipped to my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) Driving will be less enjoyable with Daytime Running Lights in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. What effect will Daytime Running Lights have on each of the following?:

- Incidence of crashes: [ ] Increase [ ] No change [ ] Decrease
- Crash severity: [ ] Increase [ ] No change [ ] Decrease
- Injury severity: [ ] Increase [ ] No change [ ] Decrease
- Probability of being fined: [ ] Increase [ ] No change [ ] Decrease

5. How much would you be willing to pay for Daytime Running Lights if they were an optional feature in a new car?

- Purchase: $ [ ]
- Maintenance/service: $ [ ] (assume yearly)
6. How much would you be willing to pay for Daytime Running Lights if they were able to be retrofitted to an existing car?

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase</td>
<td>$</td>
</tr>
<tr>
<td>Installation</td>
<td>$</td>
</tr>
<tr>
<td>Maintenance/service</td>
<td>$ (assume yearly)</td>
</tr>
</tbody>
</table>

7. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- [ ] Very Disinterested
- [ ] Disinterested
- [ ] Neither interested nor disinterested
- [ ] Interested
- [ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part D - Reverse Collision Warning

1. To what extent do you feel that Reverse Collision Warning System **will be of use to you**? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No use</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Always of use</td>
</tr>
</tbody>
</table>
2. If you gave a score of 0 to Question 1, why do you think the Reverse Collision Warning System will be of no use to you (select only one response):?

- [ ] I am always on the lookout anyway when I reverse
- [ ] It would take away the enjoyment of driving
- [ ] I prefer to use other methods to help me reverse without hitting objects behind me (e.g. reflection in shop window)
- [ ] Other, Please specify: ____________________________

3. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) I will lose trust in the Reverse Collision Warning System if it fails to issue warnings when it should issue warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(b) I will lose trust in the Reverse Collision Warning System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) I will end up relying more on the Reverse Collision Warning System than my own lookout while reversing

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) The Reverse Collision Warning System should be compulsory in all vehicles

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(e) The Reverse Collision Warning System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) I would prefer it if the Reverse Collision Warning System made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) The enjoyment of driving will increase as a result of having the Reverse Collision Warning System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) I will drive more safely with the Reverse Collision Warning System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) I would prefer a Reverse Collision Warning System that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. What effect will the Reverse Collision Warning System have on each of the following?

- Incidence of crashes: [ ] Increase [ ] No change [ ] Decrease
- Crash severity: [ ] Increase [ ] No change [ ] Decrease
5. How much would you be willing to pay for the Reverse Collision Warning System if it were an optional feature in a new car?

Purchase $________________
Maintenance/service $________________ (assume yearly)

6. How much would you be willing to pay for the Reverse Collision Warning System if it were able to be retrofitted to an existing car?

Purchase $________________
Installation $________________
Maintenance/service $________________ (assume yearly)

7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested    Disinterested    Neither interested nor disinterested    Interested    Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

__________________________________________________________________________

If you responded “INTERESTED” or “VERY INTERESTED”, why?

__________________________________________________________________________

Part E - Speed Request Button

1. To what extent do you feel that Speed Request Button will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

0       1       2       3       4       5
No use  ___________  ___________  ___________  ___________  ___________  Always of use
2. If you gave a score of 0 to Question 1, why do you think the Speed Request Button will be of no use to you (select only one response):?

☐ I always know what the speed limits are anyway
☐ Knowing the speed limits won’t change the way I drive
☐ It would take away the enjoyment of driving
☐ I prefer to rely on my own judgement exclusively and look out for speed limit signs myself
☐ Other, Please specify: __________________________

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Speed Request Button will be really helpful in areas where speed limit signs are displayed infrequently

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(b) The Speed Request Button will be really helpful in areas where I think there are speed cameras

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(c) I will not use the Speed Request Button if it issues inaccurate speed limit advice

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(d) The Speed Request Button is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Bendigo and Ballarat

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
(e) I will drive more safely with the Speed Request Button in my car

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(f) The enjoyment of driving will decrease if I use the Speed Request Button

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(g) The Speed Request Button should be compulsory in all vehicles

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

4. What effect will the Speed Request Facility have on each of the following?

- Incidence of crashes: □ Increase □ No change □ Decrease
- Crash severity: □ Increase □ No change □ Decrease
- Probability of being fined: □ Increase □ No change □ Decrease

5. How much would you be willing to pay for the Speed Request Button if it were an optional feature in a new car?

- Purchase: $__________
- Maintenance/service: $__________ (assume yearly)

6. How much would you be willing to pay for the Speed Request Button if it were able to be retrofitted to an existing car?

- Purchase: $__________
- Installation: $__________
- Maintenance/service: $__________ (assume yearly)
7. Hypothetically, if you had the option of keeping the Speed Request Button in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

| Very Disinterested | Disinterested | Neither interested nor disinterested | Interested | Very interested |

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part F - Following Distance Warning

1. To what extent do you feel that Following Distance Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No use</td>
<td>Always of use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. If you gave a score of 0 to Question 1 above, why do you think the Following Distance Warning System will be of no use to you (select only one response):?

- [ ] I never drive less than 2 seconds from the car in front
- [ ] It is my choice as to how close I drive to the car in front
- [ ] There is little chance of getting caught/fined for tailgating
- [ ] It would take away the enjoyment of driving
- [ ] I am a good driver anyway and I know when it is safe to drive less than 2 seconds from the car in front
- [ ] I don’t believe that keeping a gap of at least 2 seconds from the car in front will make me any safer

(more options over page)
3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Following Distance Warning System will be helpful when travelling on the freeway

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(b) Warnings from the Following Distance Warning System will be more of a nuisance than a help in heavy traffic

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(c) The Following Distance Warning System will be helpful to drivers who do not have a clear view of the car ahead because of poor weather conditions (e.g. fog)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(d) There is no need for the Following Distance Warning System when travelling on rural roads

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(e) I will drive more safely with the Following Distance Warning System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) Warnings from the Following Distance Warning System are unnecessary in 50 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(g) Receiving warnings from the Following Distance Warning System will be really helpful in 100 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) Warnings from the Following Distance Warning System are necessary in 60 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) The Following Distance Warning System is of little use when there are few other cars on the road

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(j) Warnings from the Following Distance Warning System are unnecessary in 80 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(k) Following Distance Warnings will be useful for alerting distracted or fatigued drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(l) The Following Distance Warning System will be really helpful when approaching intersections or roundabouts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(m) The enjoyment of driving will decrease as a result of driving with the Following Distance Warning System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(n) As a result of driving a car with the Following Distance Warning System, I will be less likely to tailgate when driving a car that is not fitted with a Following Distance Warning System

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(o) The warnings from the Following Distance Warning System could distract me from my driving, affecting my safety and my passengers’ safety

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(p) I will lose faith in the Following Distance Warning System if it issues false warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(q) I will lose trust in the Following Distance Warning System if it fails to issue warnings when it should issue warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(r) The Following Distance Warning System should be compulsory for all drivers

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(s) Instead of using on my own judgement, I am likely to end up waiting until I hear warnings from the Following Distance Warning System before I back off from the car in front

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(t) The Following Distance Warning System should only be compulsory for drivers who have been booked on several occasions for tailgating and/or have had several rear-end collisions

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) The Following Distance Warning System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(v) I would prefer a Following Distance Warning System that made it impossible for the driver to get to within 2 seconds or less from the car in front

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(w) I would prefer a Following Distance Warning System that I could turn on or off as required depending on the traffic situation

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. For most drivers, what effect on following distance will the Following Distance Warning System have in each of the following areas/conditions?:

- 50 km/h zone
  - [ ] Increase following distance
  - [ ] No change
  - [ ] Decrease following distance

- 60 km/h zone
  - [ ] Increase following distance
  - [ ] No change
  - [ ] Decrease following distance

- 80 km/h zone
  - [ ] Increase following distance
  - [ ] No change
  - [ ] Decrease following distance

- 100 km/h zone
  - [ ] Increase following distance
  - [ ] No change
  - [ ] Decrease following distance

(more over page)
<table>
<thead>
<tr>
<th>Scenario</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeways</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficult to see road ahead</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intersections/Round-a-bouts</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. What effect on following distance will the Following Distance Warning System have on drivers who follow cars too closely for the following reasons?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t notice that they are following cars too closely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that following cars too closely is fun</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that following cars too closely has no effect on safety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a hurry</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(more over page)
Believe that they won’t get caught/fined

Believe that they can drive as close to cars as they like because it is their choice

Believe that they can control their car regardless of how close they are to the car in front

Car in front driving too slowly

Do not want other drivers cutting in front of them

6. What effect will the Following Distance Warning System have on each of the following?

Incidence of crashes

Crash severity

Probability of being fined

7. How much would you be willing to pay for the Following Distance Warning System if it were an optional feature in a new car?

Purchase

Maintenance/service

8. How much would you be willing to pay for the Following Distance Warning System if it were able to be retrofitted to an existing car?

Purchase

Installation

Maintenance/service
9. Hypothetically, if you had the option of keeping the Following Distance Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 6

This questionnaire should take you about 25 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. You will probably recognise many of the questions that are in this questionnaire. This is because we are interested in finding out whether there have been any changes in how people feel about the systems under study.

In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A - Following Distance Warning System

1. Have you experienced warnings from the Following Distance Warning system?

   [ ] Yes       [ ] No

   If you responded “Yes”, go to Question 2.

   If you responded “No”, go to Question 3 (page 3).

2. This question is designed to gauge your impression of how much mental workload you experienced when you were driving and warnings from the Following Distance Warning system were being issued.

   Six factors are known to contribute to the overall level of mental workload that people feel when they perform a task. Below are some questions that are designed to measure, for each of the six factors, the level of workload that you experienced while the Following Distance warnings were being issued.
For each of the six factors, please indicate, by placing a line at the appropriate point on the scale, the level of workload that you experienced while you were driving and the Following Distance Warning system was issuing warnings.

For example,

Low    Neither high nor low    High

**Mental demand:**
On average, how much mental and perceptual activity was required? That is, how much thinking, deciding, calculating, remembering, looking, searching, etc was required **when you were driving and you were receiving warnings from the Following Distance Warning system**? Was the car driving task easy and simple (low) or demanding and complex (high) when the warnings were being issued?

Low    Neither high nor low    High

**Physical demand:**
On average, how much physical activity was required? That is, how much controlling of the vehicle, operating the brake, etc was required **when you were driving and you were receiving warnings from the Following Distance Warning system**? Was the car driving task easy and restful (low) or demanding and laborious (high) when the warnings were being issued?

Low    Neither high nor low    High

**Time demand:**
On average, how much time pressure did you feel **when driving while the Following Distance Warning system warnings were being issued**? Was the pace of driving slow and leisurely (low) or rapid and rushed (high) when the warnings were being issued?

Low    Neither high nor low    High
Performance:
On average, how satisfied were you with your driving performance while the Following Distance Warning system warnings were being issued?

| Good | Neither good nor poor | Poor |

Effort:
On average, how hard did you have to work (mentally and physically) to drive while the Following Distance Warning system warnings were being issued? Was little effort (low) or a large amount of effort (high) required?

| Low | Neither high nor low | High |

Frustration level:
On average, did you feel secure, gratified, content, relaxed and complacent (low) when driving while the Following Distance Warning system warnings were being issued or did you feel insecure, discouraged, irritated, stressed and annoyed (high)?

| Low | Neither high nor low | High |

3. To what extent do you feel that Following Distance Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

- 0: No use
- 1
- 2
- 3
- 4
- 5: Always of use

4. If you gave a score of 0 to Question 3 above, why do you think the Following Distance Warning System will be of no use to you (select only one response):?

- I never drive less than 2 seconds from the car in front
- It is my choice as to how close I drive to the car in front
- There is little chance of getting caught/fined for tailgating
- It would take away the enjoyment of driving
- I am a good driver anyway and I know when it is safe to drive less than 2 seconds from the car in front

(more options over page)
I don’t believe that keeping a gap of at least 2 seconds from the car in front will make me any safer

Other, Please specify: __________________________________________________________________________

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Following Distance Warning System will be helpful when travelling on the freeway

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(b) Warnings from the Following Distance Warning System will be more of a nuisance than a help in heavy traffic

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(c) The Following Distance Warning System will be helpful to drivers who do not have a clear view of the car ahead because of poor weather conditions (e.g. fog)

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(d) There is no need for the Following Distance Warning System when travelling on rural roads

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(e) I will drive more safely with the Following Distance Warning System in my car

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(f) Warnings from the Following Distance Warning System are unnecessary in 50 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) Receiving warnings from the Following Distance Warning System will be really helpful in 100 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) Warnings from the Following Distance Warning System are necessary in 60 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) The Following Distance Warning System is of little use when there are few other cars on the road

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(j) Warnings from the Following Distance Warning System are unnecessary in 80 km/h zones

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(k) Following Distance Warnings will be useful for alerting distracted or fatigued drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(l) The Following Distance Warning System will be really helpful when approaching intersections or roundabouts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(m) The enjoyment of driving will decrease as a result of driving with the Following Distance Warning System

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(n) As a result of driving a car with the Following Distance Warning System, I will be less likely to tailgate when driving a car that is not fitted with a Following Distance Warning System

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(o) The warnings from the Following Distance Warning System could distract me from my driving, affecting my safety and my passengers’ safety

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(p) I will lose faith in the Following Distance Warning System if it issues false warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(q) I will lose trust in the Following Distance Warning System if it fails to issue warnings when it should issue warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(r) The Following Distance Warning System should be compulsory for all drivers

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(s) Instead of using on my own judgement, I am likely to end up waiting until I hear warnings from the Following Distance Warning System before I back off from the car in front

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(t) The Following Distance Warning System should only be compulsory for drivers who have been booked on several occasions for tailgating and/or have had several rear-end collisions

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(u) The Following Distance Warning System takes too much control away from the driver

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(v) I would prefer a Following Distance Warning System that made it impossible for the driver to get to within 2 seconds or less from the car in front

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<thead>
<tr>
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<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</table>

(w) I would prefer a Following Distance Warning System that I could turn on or off as required depending on the traffic situation

<table>
<thead>
<tr>
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<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

6. For most drivers, what effect on following distance will the Following Distance Warning System have in each of the following areas/conditions?:

<table>
<thead>
<tr>
<th>50 km/h zone</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
</table>

(more over page)
<table>
<thead>
<tr>
<th>Category</th>
<th>Effect 1</th>
<th>Effect 2</th>
<th>Effect 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 km/h zone</td>
<td>Increase distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>80 km/h zone</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>100 km/h zone</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>Freeways</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>Rural</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>Residential</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>Little traffic</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>Difficult to see road ahead</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>Heavy traffic</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
<tr>
<td>Intersections/Round-a-bouts</td>
<td>Increase following distance</td>
<td>No change</td>
<td>Decrease following distance</td>
</tr>
</tbody>
</table>

7. What effect on following distance will the Following Distance Warning System have on drivers who follow cars too closely for the following reasons:?

Don’t notice that they are following cars too closely

Increase following distance  | No change  | Decrease following distance (more over page)
Believe that following cars too closely is fun

☐ Increase following distance
☐ No change
☐ Decrease following distance

Believe that following cars too closely has no effect on safety

☐ Increase following distance
☐ No change
☐ Decrease following distance

In a hurry

☐ Increase following distance
☐ No change
☐ Decrease following distance

Believe that they won’t get caught/fined

☐ Increase following distance
☐ No change
☐ Decrease following distance

Believe that they can drive as close to cars as they like because it is their choice

☐ Increase following distance
☐ No change
☐ Decrease following distance

Believe that they can control their car regardless of how close they are to the car in front

☐ Increase following distance
☐ No change
☐ Decrease following distance

Car in front driving too slowly

☐ Increase following distance
☐ No change
☐ Decrease following distance

Do not want other drivers cutting in front of them

☐ Increase following distance
☐ No change
☐ Decrease following distance

8. What effect will the Following Distance Warning System have on each of the following?

Incidence of crashes

☐ Increase
☐ No change
☐ Decrease

Crash severity

☐ Increase
☐ No change
☐ Decrease

Probability of being fined

☐ Increase
☐ No change
☐ Decrease

9. How much would you be willing to pay for the Following Distance Warning System if it were an optional feature in a new car?

Purchase

$ __________

Maintenance/service $ __________ (assume yearly)
10. How much would you be willing to pay for the Following Distance Warning System if it were able to be retrofitted to an existing car?

<table>
<thead>
<tr>
<th></th>
<th>Purchase $</th>
<th>Installation $</th>
<th>Maintenance/service $ (assume yearly)</th>
</tr>
</thead>
</table>

11. Hypothetically, if you had the option of keeping the Following Distance Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

<table>
<thead>
<tr>
<th></th>
<th>Very Disinterested</th>
<th>Disinterested</th>
<th>Neither interested nor disinterested</th>
<th>Interested</th>
<th>Very interested</th>
</tr>
</thead>
</table>

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part B - Seat Belt Reminder System

1. To what extent do you feel that the Seat Belt Reminder System **will be of use to you**? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No use</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Always of use</td>
</tr>
</tbody>
</table>

2. If you gave a score of 0 to Question 1, why do you think the Seat Belt Reminder System **will be of no use to you** (select only one response):?

- [ ] I always wear my seat belt anyway
- [ ] I know when it is safe to drive without a seat belt

(more options over page)
There is little chance of getting a fine for not wearing a seat belt

I don’t believe that wearing a seat belt in any situation will make me any safer

Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt

Seat belts are uncomfortable

It would take away the enjoyment of driving

Seat belts are too fiddly to put on

I can’t be bothered putting my seat belt on

Other, Please specify: ____________________________

3. To what extent do you think that the Seat Belt Reminder System will be of use to you in letting you know if any of your passengers are not wearing their seat belts? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No use</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Always of use</td>
</tr>
</tbody>
</table>

4. If you gave a score of 0 to Question 3, why do you think the Seat Belt Reminder System will be of no use to you in letting you know if any of your passengers are not wearing their seat belts (select only one response):?

I never carry passengers

I always check anyway that my passengers are wearing their seat belts

It doesn’t matter if my passengers don’t wear their seat belts, because wearing a seat belt won’t make them any safer

My passengers always wear their seat belts, so there is no need to have warnings for them

I always drive safely so there is no need for passengers to have to wear a seat belt

There is little chance of getting a fine for not wearing a seat belt

(more options over page)
It is up to my passengers whether they wear a seat belt – it is not my responsibility

Other, Please specify: 

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Warnings from the Seat Belt Reminder System are unnecessary when reversing out of a driveway or a parking spot

(b) The Seat Belt Reminder System will be of most benefit to drivers who forget to put their seat belts on

(c) The Seat Belt Reminder System is not necessary when there are hardly any other cars on the road

(d) There is no need for the Seat Belt Reminder System when travelling at speeds of less than 10 km/h

(e) There is no need for the Seat Belt Reminder System when travelling at speeds of greater than 10 km/h
(f) The Seat Belt Reminder System is a real necessity for people who do not put their seat belts on when travelling short distances

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(g) The Seat Belt Reminder System will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(h) I will end up relying too strongly on the Seat Belt Reminder System to remind me to fasten my seat belt

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(i) I will end up relying too strongly on the Seat Belt Reminder System to let me know if any of my passengers are not wearing their seat belts

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(j) After having driven the car with the Seat Belt Reminder System, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a Seat Belt Reminder System

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(k) I will lose trust in the Seat Belt Reminder System if it does not issue warnings when it should issue warnings

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(l) I will lose trust in the Seat Belt Reminder System if it issues false warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(m) The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(n) The Seat Belt Reminder System should be compulsory for all drivers

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(o) The Seat Belt Reminder System should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(p) The Seat Belt Reminder System takes too much control away from the driver

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(q) I would prefer it if, rather than just warning the driver, the Seat Belt Reminder System prevented the driver from starting the car if someone in the car is not wearing a seat belt

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(r) The Seat Belt Reminder System will make it easier for me to encourage my passengers to fasten their seat belts

Strongly disagree   Disagree   Neither agree nor disagree   Agree   Strongly agree

(s) I will drive more safely with the Seat Belt Reminder System in my car

Strongly disagree   Disagree   Neither agree nor disagree   Agree   Strongly agree

(t) I will enjoy driving less as a result of having the Seat Belt Reminder System in my car

Strongly disagree   Disagree   Neither agree nor disagree   Agree   Strongly agree

(u) I would prefer a Seat Belt Reminder System that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers)

Strongly disagree   Disagree   Neither agree nor disagree   Agree   Strongly agree

6. For most drivers, what effect on seat belt wearing will the Seat Belt Reminder System have in each of the following conditions/situations?:

- Reversing
  - Increase wearing
  - No change
  - Decrease wearing

- Driving short distances
  - Increase wearing
  - No change
  - Decrease wearing

- Low traffic levels
  - Increase wearing
  - No change
  - Decrease wearing

- Speeds less than 10km/h
  - Increase wearing
  - No change
  - Decrease wearing

- Speeds more than 10km/h
  - Increase wearing
  - No change
  - Decrease wearing
7. What effect on seat belt wearing will the Seat Belt Reminder System have on drivers who do not wear seat belts for the following reasons:?

- Forget to put seat belt on
  - Increase
  - No change
  - Decrease
- Believe that seat belts are uncomfortable to wear
  - Increase
  - No change
  - Decrease
- Believe that seat belts are too fiddly to put on
  - Increase
  - No change
  - Decrease
- Believe that wearing seat belts is a violation of freedom
  - Increase
  - No change
  - Decrease
- Can’t be bothered putting their seat belt on
  - Increase
  - No change
  - Decrease
- Believe that there is little chance of getting a fine for not wearing a seat belt
  - Increase
  - No change
  - Decrease
- Believe that wearing seat belts does not enhance safety
  - Increase
  - No change
  - Decrease

8. What effect will the Seat Belt Reminder System have on each of the following:?

- Incidence of crashes
  - Increase
  - No change
  - Decrease
- Crash severity
  - Increase
  - No change
  - Decrease
- Injury severity
  - Increase
  - No change
  - Decrease
- Probability of being fined
  - Increase
  - No change
  - Decrease

9. How much would you be willing to pay for the Seat Belt Reminder System if it were an optional feature in a new car?

- Purchase
  - $_________
- Maintenance/service
  - $_________ (assume yearly)
10. How much would you be willing to pay for the Seat Belt Reminder System if it were able to be retrofitted to an existing car?

<table>
<thead>
<tr>
<th>Purchase</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation</td>
<td>$</td>
</tr>
<tr>
<td>Maintenance/service</td>
<td>$ (assume yearly)</td>
</tr>
</tbody>
</table>

11. Hypothetically, if you had the option of keeping the Seat Belt Reminder System in your vehicle at the end of the study (at no extra cost), would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- [ ] Very Disinterested
- [ ] Disinterested
- [ ] Neither interested nor disinterested
- [ ] Interested
- [ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

[ ]

If you responded “INTERESTED” or “VERY INTERESTED”, why?

[ ]

Part C - Daytime Running Lights

1. To what extent do you feel that Daytime Running Lights will be of use to you? A score of 0 means that the Daytime Running Lights will be of no use to you while a score of 5 means that they will always be of use to you.

- [ ] 0 No use
- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5 Always of use

2. If you gave a score of 0 to Question 1, why do you think the Daytime Running Lights will be of no use to you (select only one response)?

- [ ] I always turn on the headlights during the day anyway – even when the weather is good

(more options over page)
They would take away the enjoyment of driving

Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users

You can’t get fined for not turning on your headlights during the day

I have a light coloured car

Other, Please specify:

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Daytime Running Lights are not needed when there are hardly any other cars or pedestrians on the road

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(b) Daytime Running Lights are a real necessity for drivers who forget to turn their headlights on during the day

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(c) Daytime Running Lights should be compulsory for all drivers

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(d) Daytime Running Lights will reduce my fuel economy

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(e) Daytime Running Lights will put extra strain on my car battery

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(f) I will need to change the headlamps more often because of the Daytime Running Lights

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) I will be safer with the Daytime Running Lights equipped to my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) Driving will be less enjoyable with Daytime Running Lights in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. What effect will Daytime Running Lights have on each of the following:

- Incidence of crashes: [ ] Increase [ ] No change [ ] Decrease
- Crash severity: [ ] Increase [ ] No change [ ] Decrease
- Injury severity: [ ] Increase [ ] No change [ ] Decrease
- Probability of being fined: [ ] Increase [ ] No change [ ] Decrease

5. How much would you be willing to pay for Daytime Running Lights if they were an optional feature in a new car?

- Purchase: $ 
- Maintenance/service: $ (assume yearly)
6. How much would you be willing to pay for Daytime Running Lights if they were able to be retrofitted to an existing car?

   Purchase $________________

   Installation $________________

   Maintenance/service $________________ (assume yearly)

7. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

   Very Disinterested   Disinterested   Neither interested nor disinterested   Interested   Very interested

   If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

   If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part D - Reverse Collision Warning

1. To what extent do you feel that Reverse Collision Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

   0         1                  2                  3                  4                  5

   No use        Always of use

2. If you gave a score of 0 to Question 1, why do you think the Reverse Collision Warning System will be of no use to you (select only one response):?

   □ I am always on the lookout anyway when I reverse

   (more options over page)
It would take away the enjoyment of driving

I prefer to use other methods to help me reverse without hitting objects behind me (e.g. reflection in shop window)

Other, Please specify: 

3. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) I will lose trust in the Reverse Collision Warning System if it fails to issue warnings when it should issue warnings

(b) I will lose trust in the Reverse Collision Warning System if it issues false warnings

(c) I will end up relying more on the Reverse Collision Warning System than my own lookout while reversing

(d) The Reverse Collision Warning System should be compulsory in all vehicles

(e) The Reverse Collision Warning System takes too much control away from the driver
(f) I would prefer it if the Reverse Collision Warning System made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(g) The enjoyment of driving will increase as a result of having the Reverse Collision Warning System in my car

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(h) I will drive more safely with the Reverse Collision Warning System in my car

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(i) I would prefer a Reverse Collision Warning System that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

4. What effect will the Reverse Collision Warning System have on each of the following?:

Incidence of crashes [ ] Increase [ ] No change [ ] Decrease
Crash severity [ ] Increase [ ] No change [ ] Decrease

5. How much would you be willing to pay for the Reverse Collision Warning System if it were an optional feature in a new car?

Purchase $ [ ]
Maintenance/service $ [ ] (assume yearly)
6. How much would you be willing to pay for the Reverse Collision Warning System if it were able to be retrofitted to an existing car?

Purchase $  
Installation $  
Maintenance/service $  (assume yearly)

7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

[ ] Very Disinterested  [ ] Disinterested  [ ] Neither interested nor disinterested  [ ] Interested  [ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part E – Speed Warning System

1. To what extent do you feel that the Speed Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

[ ] 0  [ ] 1  [ ] 2  [ ] 3  [ ] 4  [ ] 5

No use  Always of use

2. If you gave a score of 0 to Question 1 above, why do you think the Speed Warning System will be of no use to you (select only one response):?

[ ] I never exceed the speed limit  
[ ] It is my choice whether I speed or not  

(more options over page)
1. I never get caught for exceeding the speed limit
   - [ ]

2. The speed limits are too low
   - [ ]

3. It is out of my control if cars around me carry me over the speed limit
   - [ ]

4. It would take away the enjoyment of driving
   - [ ]

5. I am a good driver anyway and I know when it is safe to exceed the speed limit
   - [ ]

6. Exceeding the speed limit does not make any difference to my safety
   - [ ]

7. Other, Please specify: _____________________________
   - [ ]

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

   (a) Receiving warnings from the Speed Warning System for exceeding the speed limit will be really helpful in areas where there are lots of pedestrians, such as in strip shopping centres or outside schools

   - [ ] Strongly disagree
   - [ ] Disagree
   - [ ] Neither agree nor disagree
   - [ ] Agree
   - [ ] Strongly agree

   (b) Warnings from the Speed Warning System are unnecessary in 60 km/h zones

   - [ ] Strongly disagree
   - [ ] Disagree
   - [ ] Neither agree nor disagree
   - [ ] Agree
   - [ ] Strongly agree

   (c) I will drive more safely with the Speed Warning System in my car

   - [ ] Strongly disagree
   - [ ] Disagree
   - [ ] Neither agree nor disagree
   - [ ] Agree
   - [ ] Strongly agree

   (d) There is no need for the Speed Warning System when travelling on the freeway

   - [ ] Strongly disagree
   - [ ] Disagree
   - [ ] Neither agree nor disagree
   - [ ] Agree
   - [ ] Strongly agree
(e) There is no need for the Speed Warning System when travelling on rural roads

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(f) Receiving warnings from the Speed Warning System for exceeding the speed limit in 100 km/h zones is unnecessary

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(g) Warnings from the Speed Warning System are necessary in 50 km/h zones

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(h) There is a need for the Speed Warning System when road conditions are poor (e.g. slippery road, poor visibility)

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(i) The Speed Warning System is not necessary when there are hardly any other cars on the road

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(j) The Speed Warning System will be of most benefit to drivers who repeatedly exceed the speed limit without realising it

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(k) Warnings from the Speed Warning System are unnecessary in 80 km/h zones

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(l) The Speed Warning System is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Ballarat and Bendigo

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(m) The Speed Warning System will be wasted on drivers who speed intentionally – these drivers will ignore or override the warnings

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(n) After having driven the car with the Speed Warning System, I will probably be less likely to exceed the speed limit when driving a car that is not fitted with a Speed Warning System

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(o) The enjoyment of driving will decrease as a result of driving with the Speed Warning System

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(p) I will be able to concentrate more on the traffic when the Speed Warning System is enabled than when it is not because I will not have to look out for speed signs

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(q) The warnings of the Speed Warning System could distract me from my driving, compromising my safety and that of any passengers that I might be carrying

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(r) The Speed Warning System will allow me to spend more time attending to the traffic because I will not have to look as much at the speedometer to monitor my speed

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) I will lose trust in the Speed Warning System if it issues false warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(t) I will end up relying too strongly on the Speed Warning System to let me know if I am exceeding the speed limit at the expense of my own judgement

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) I will lose faith in the Speed Warning System if it does not issue warnings when it should issue warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(v) The Speed Warning System should be compulsory for all drivers

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(w) The Speed Warning System should only be compulsory for drivers who have been booked on multiple occasions for exceeding the speed limit

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(x) The Speed Warning System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(y) Rather than a system that simply warns the driver, I would prefer a Speed Warning System that made it impossible for the driver to exceed the speed limit

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(z) It would not bother me if the Speed Warning System were used as a device by authorities to monitor and track car speeds and locations on the road network

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(aa) I would prefer a Speed Warning System that I could turn on or off as required depending on the situation (e.g. turn off if in a hurry, turn on if I am travelling on a road where I know that there are speed cameras)

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</thead>
</table>

4. For most drivers, what effect on travel speed will the Speed Warning System have in each of the following areas/conditions?:

- **50 km/h zone**
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- **60 km/h zone**
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- **80 km/h zone**
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- **100 km/h zone**
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- **Freeways**
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- **Rural**
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

- **Residential**
  - [ ] Increase speed
  - [ ] No change
  - [ ] Decrease speed

(more options over page)
5. What effect on travel speed will the Speed Warning System have on drivers who exceed the speed limit for the following reasons:

- Speed inadvertently:
  - Increase speed
  - No change
  - Decrease speed

- Speed for fun:
  - Increase speed
  - No change
  - Decrease speed

- Believe it is safe to speed:
  - Increase speed
  - No change
  - Decrease speed

- In a hurry:
  - Increase speed
  - No change
  - Decrease speed

- Believe they won’t get caught/fined for speeding:
  - Increase speed
  - No change
  - Decrease speed

- Believe they shouldn’t have to follow speed limits:
  - Increase speed
  - No change
  - Decrease speed

- Believe they can control their car safely at any speed:
  - Increase speed
  - No change
  - Decrease speed

- Believe that the speed limit is too low:
  - Increase speed
  - No change
  - Decrease speed

- Carried over the speed limit by other cars:
  - Increase speed
  - No change
  - Decrease speed

- Aim to travel at the speed limit, but occasionally edge over before reducing speed again:
  - Increase speed
  - No change
  - Decrease speed
6. What effect will the Speed Warning System have on each of the following:?

- Incidence of crashes
  - Increase
  - No change
  - Decrease

- Crash severity
  - Increase
  - No change
  - Decrease

- Fuel consumption
  - Increase
  - No change
  - Decrease

- Travel time
  - Increase
  - No change
  - Decrease

- Probability of being fined
  - Increase
  - No change
  - Decrease

7. How much would you be willing to pay for the Speed Warning System if it were an optional feature in a new car?

   Purchase $________

   Maintenance/service $________ (assume yearly)

8. How much would you be willing to pay for the Speed Warning System if it were able to be retrofitted to an existing car?

   Purchase $________

   Installation $________

   Maintenance/service $________ (assume yearly)

9. Hypothetically, if you had the option of keeping the Speed Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

   Very Disinterested  Disinterested  Neither interested nor disinterested  Interested  Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

____________________________________________________________________________________

If you responded “INTERESTED” or “VERY INTERESTED”, why?

____________________________________________________________________________________
Part F - Speed Request Button

1. To what extent do you feel that Speed Request Button \textbf{will be of use to you}? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

\begin{tabular}{cccccc}
0 & 1 & 2 & 3 & 4 & 5 \\
No use & & & & & Always of use \\
\end{tabular}

2. If you gave a score of \textbf{0 to Question 1}, why do you think the Speed Request Button \textbf{will be of no use to you} (select only one response):?

- I always know what the speed limits are anyway
- Knowing the speed limits won’t change the way I drive
- It would take away the enjoyment of driving
- I prefer to rely on my own judgement exclusively and look out for speed limit signs myself
- Other, Please specify: 

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Speed Request Button will be really helpful in areas where speed limit signs are displayed infrequently

\begin{tabular}{cccccc}
 & & & & & \\
Strongly disagree & Disagree & Neither agree nor disagree & Agree & Strongly agree \\
\end{tabular}

(b) The Speed Request Button will be really helpful in areas where I think there are speed cameras

\begin{tabular}{cccccc}
 & & & & & \\
Strongly disagree & Disagree & Neither agree nor disagree & Agree & Strongly agree \\
\end{tabular}

(c) I will not use the Speed Request Button if it issues inaccurate speed limit advice

\begin{tabular}{cccccc}
 & & & & & \\
Strongly disagree & Disagree & Neither agree nor disagree & Agree & Strongly agree \\
\end{tabular}
(d) The Speed Request Button is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Bendigo and Ballarat

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(e) I will drive more safely with the Speed Request Button in my car

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(f) The enjoyment of driving will decrease if I use the Speed Request Button

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(g) The Speed Request Button should be compulsory in all vehicles

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

4. What effect will the Speed Request Facility have on each of the following:?

- Incidence of crashes
  - Increase
  - No change
  - Decrease

- Crash severity
  - Increase
  - No change
  - Decrease

- Probability of being fined
  - Increase
  - No change
  - Decrease

5. How much would you be willing to pay for the Speed Request Button if it were an optional feature in a new car?

- Purchase
  - $

- Maintenance/service
  - $ (assume yearly)

6. How much would you be willing to pay for the Speed Request Button if it were able to be retrofitted to an existing car?

- Purchase
  - $

- Installation
  - $

- Maintenance/service
  - $ (assume yearly)
7. Hypothetically, if you had the option of keeping the Speed Request Button in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
On-Road Study into the Effects on Driving of In-Vehicle Intelligent Transport Systems

Interim Questionnaire Time 6

This questionnaire should take you about 25 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. You will probably recognise many of the questions that are in this questionnaire. This is because we are interested in finding out whether there have been any changes in how people feel about the systems under study.

In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you will provide will be kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A - Multiple Systems

1. The SafeCars were designed so that, if warnings are triggered by more than one SafeCar system at the same time, only the most urgent warning is issued to the driver. There are some situations, however, where warnings can be issued at the same time by two or more SafeCar systems.

Listed below are four scenarios. Each scenario describes a situation where warnings from two or more SafeCar systems are issued at the same time. For each scenario, please indicate whether you have experienced that situation and, if you felt, confused, overloaded, etc. when the multiple warnings were being issued.

(a) Have you experienced Following Distance Warning system visual warnings only (i.e. no audio warning) and Seat Belt Reminder system audio and visual warnings at the same time?

☐ Yes  ☐ No
If you responded “Yes”, did you feel:?

Confused  □ Yes  □ No
Overloaded □ Yes  □ No
Other     □ Yes  □ No

If you responded “Yes” for “Other”, please explain

(b) Have you experienced Speed Warning system upward accelerator pressure and Seat Belt Reminder system audio and visual warnings at the same time?

□ Yes  □ No

If you responded “Yes”, did you feel:?

Confused  □ Yes  □ No
Overloaded □ Yes  □ No
Other     □ Yes  □ No

If you responded “Yes” for “Other”, please explain

(c) Have you experienced Following Distance Warning system visual warnings only (i.e. no audio warning) and Speed Warning system visual warnings and upward accelerator pressure at the same time?

□ Yes  □ No

If you responded “Yes”, did you feel:?

Confused  □ Yes  □ No
Overloaded □ Yes  □ No
Other     □ Yes  □ No

If you responded “Yes” for “Other”, please explain
(d) Have you experienced Following Distance Warning system visual warnings only (i.e. **no** audio warning), Speed Warning system upward accelerator pressure, and Seat Belt Reminder system audio and visual warnings at the same time?

☐ Yes  ☐ No

If you responded “Yes”, did you feel:?

- Confused  ☐ Yes  ☐ No
- Overloaded  ☐ Yes  ☐ No
- Other  ☐ Yes  ☐ No

If you responded “Yes” for “Other”, please explain

Part B – Speed Warning System

1. To what extent do you feel that the Speed Warning System **will be of use to you**? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No use</td>
<td>Always of use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. If you gave a score of **0 to Question 1** above, why do you think the Speed Warning System **will be of no use to you** (select only one response):?

☐ I never exceed the speed limit
☐ It is my choice whether I speed or not
☐ I never get caught for exceeding the speed limit
☐ The speed limits are too low
☐ It is out of my control if cars around me carry me over the speed limit
☐ It would take away the enjoyment of driving
☐ I am a good driver anyway and I know when it is safe to exceed the speed limit

(more options over page)
Exceeding the speed limit does not make any difference to my safety

Other, Please specify: ________________

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Receiving warnings from the Speed Warning System for exceeding the speed limit will be really helpful in areas where there are lots of pedestrians, such as in strip shopping centres or outside schools

Strongly disagreement Disagree Neither agree nor disagree Agree Strongly agree

(b) Warnings from the Speed Warning System are unnecessary in 60 km/h zones

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(c) I will drive more safely with the Speed Warning System in my car

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(d) There is no need for the Speed Warning System when travelling on the freeway

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(e) There is no need for the Speed Warning System when travelling on rural roads

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree
(f) Receiving warnings from the Speed Warning System for exceeding the speed limit in 100 km/h zones is unnecessary

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(g) Warnings from the Speed Warning System are necessary in 50 km/h zones

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(h) There is a need for the Speed Warning System when road conditions are poor (e.g. slippery road, poor visibility)

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(i) The Speed Warning System is not necessary when there are hardly any other cars on the road

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(j) The Speed Warning System will be of most benefit to drivers who repeatedly exceed the speed limit without realising it

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(k) Warnings from the Speed Warning System are unnecessary in 80 km/h zones

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(l) The Speed Warning System is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Ballarat and Bendigo

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(m) The Speed Warning System will be wasted on drivers who speed intentionally – these drivers will ignore or override the warnings

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(n) After having driven the car with the Speed Warning System, I will probably be less likely to exceed the speed limit when driving a car that is not fitted with a Speed Warning System

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(o) The enjoyment of driving will decrease as a result of driving with the Speed Warning System

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(p) I will be able to concentrate more on the traffic when the Speed Warning System is enabled than when it is not because I will not have to look out for speed signs

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(q) The warnings of the Speed Warning System could distract me from my driving, compromising my safety and that of any passengers that I might be carrying

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(r) The Speed Warning System will allow me to spend more time attending to the traffic because I will not have to look as much at the speedometer to monitor my speed

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
(s) I will lose trust in the Speed Warning System if it issues false warnings

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(t) I will end up relying too strongly on the Speed Warning System to let me know if I am exceeding the speed limit at the expense of my own judgement

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(u) I will lose faith in the Speed Warning System if it does not issue warnings when it should issue warnings

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(v) The Speed Warning System should be compulsory for all drivers

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(w) The Speed Warning System should only be compulsory for drivers who have been booked on multiple occasions for exceeding the speed limit

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(x) The Speed Warning System takes too much control away from the driver

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(y) Rather than a system that simply warns the driver, I would prefer a Speed Warning System that made it impossible for the driver to exceed the speed limit

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(z) It would not bother me if the Speed Warning System were used as a device by authorities to monitor and track car speeds and locations on the road network

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

(aa) I would prefer a Speed Warning System that I could turn on or off as required depending on the situation (e.g. turn off if in a hurry, turn on if I am travelling on a road where I know that there are speed cameras)

[ ] Strongly disagree  [ ] Disagree  [ ] Neither agree nor disagree  [ ] Agree  [ ] Strongly agree

4. For most drivers, what effect on travel speed will the Speed Warning System have in each of the following areas/conditions?

50 km/h zone
[ ] Increase speed  [ ] No change  [ ] Decrease speed

60 km/h zone
[ ] Increase speed  [ ] No change  [ ] Decrease speed

80 km/h zone
[ ] Increase speed  [ ] No change  [ ] Decrease speed

100 km/h zone
[ ] Increase speed  [ ] No change  [ ] Decrease speed

Freeways
[ ] Increase speed  [ ] No change  [ ] Decrease speed

Rural
[ ] Increase speed  [ ] No change  [ ] Decrease speed

Residential
[ ] Increase speed  [ ] No change  [ ] Decrease speed

Low traffic levels
[ ] Increase speed  [ ] No change  [ ] Decrease speed

Poor road conditions
[ ] Increase speed  [ ] No change  [ ] Decrease speed
5. What effect on travel speed will the Speed Warning System have on drivers who exceed the speed limit for the following reasons?:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed inadvertently</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed for fun</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe it is safe to speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a hurry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they won’t get caught/ fined for speeding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they shouldn’t have to follow speed limits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe they can control their car safely at any speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that the speed limit is too low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carried over the speed limit by other cars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aim to travel at the speed limit, but occasionally edge over before reducing speed again</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. What effect will the Speed Warning System have on each of the following?:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Increase speed</th>
<th>No change</th>
<th>Decrease speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence of crashes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability of being fined</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. How much would you be willing to pay for the Speed Warning System if it were an optional feature in a new car?

Purchase $ 
Maintenance/service $ (assume yearly)

8. How much would you be willing to pay for the Speed Warning System if it were able to be retrofitted to an existing car?

Purchase $ 
Installation $ 
Maintenance/service $ (assume yearly)

9. Hypothetically, if you had the option of keeping the Speed Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested Disinterested Neither interested nor disinterested Interested Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part C - Seat Belt Reminder System

1. To what extent do you feel that the Seat Belt Reminder System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

0 1 2 3 4 5
No use Always of use
2. If you gave a score of 0 to Question 1, why do you think the Seat Belt Reminder System will be of no use to you (select only one response):?

☐ I always wear my seat belt anyway
☐ I know when it is safe to drive without a seat belt
☐ There is little chance of getting a fine for not wearing a seat belt
☐ I don’t believe that wearing a seat belt in any situation will make me any safer
☐ Wearing a seat belt violates my freedom – it is my choice whether or not I wear a seat belt
☐ Seat belts are uncomfortable
☐ It would take away the enjoyment of driving
☐ Seat belts are too fiddly to put on
☐ I can’t be bothered putting my seat belt on
☐ Other, Please specify: ____________________________

3. To what extent do you think that the Seat Belt Reminder System will be of use to you in letting you know if any of your passengers are not wearing their seat belts? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

☐ 0  ☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

No use  Always of use

4. If you gave a score of 0 to Question 3, why do you think the Seat Belt Reminder System will be of no use to you in letting you know if any of your passengers are not wearing their seat belts (select only one response):?

☐ I never carry passengers
☐ I always check anyway that my passengers are wearing their seat belts
☐ It doesn’t matter if my passengers don’t wear their seat belts, because wearing a seat belt won’t make them any safer

(more options over page)
My passengers always wear their seat belts, so there is no need to have warnings for them

I always drive safely so there is no need for passengers to have to wear a seat belt

There is little chance of getting a fine for not wearing a seat belt

It is up to my passengers whether they wear a seat belt – it is not my responsibility

Other, Please specify:  

5. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Warnings from the Seat Belt Reminder System are unnecessary when reversing out of a driveway or a parking spot

(b) The Seat Belt Reminder System will be of most benefit to drivers who forget to put their seat belts on

(c) The Seat Belt Reminder System is not necessary when there are hardly any other cars on the road

(d) There is no need for the Seat Belt Reminder System when travelling at speeds of **less than** 10 km/h
(e) There is no need for the Seat Belt Reminder System when travelling at speeds of **greater than** 10 km/h

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) The Seat Belt Reminder System is a real necessity for people who do not put their seat belts on when travelling short distances

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) The Seat Belt Reminder System will be wasted on drivers who deliberately do not wear seat belts – these drivers will ignore or override the warnings

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) I will end up relying too strongly on the Seat Belt Reminder System to remind me to fasten my seat belt

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) I will end up relying too strongly on the Seat Belt Reminder System to let me know if any of my passengers are not wearing their seat belts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(j) After having driven the car with the Seat Belt Reminder System, I will probably be likely to forget to put my seat belt on when driving a car that is not fitted with a Seat Belt Reminder System

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
(k) I will lose trust in the Seat Belt Reminder System if it does not issue warnings when it should issue warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(l) I will lose trust in the Seat Belt Reminder System if it issues false warnings

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(m) The warnings could distract me from my driving, affecting my safety and that of any passengers that I might be carrying

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(n) The Seat Belt Reminder System should be compulsory for all drivers

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(o) The Seat Belt Reminder System should only be compulsory for drivers who have been caught on several occasions by the police for not wearing a seat belt while driving

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(p) The Seat Belt Reminder System takes too much control away from the driver

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(q) I would prefer it if, rather than just warning the driver, the Seat Belt Reminder System prevented the driver from starting the car if someone in the car is not wearing a seat belt

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(r) The Seat Belt Reminder System will make it easier for me to encourage my passengers to fasten their seat belts

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(s) I will drive more safely with the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(t) I will enjoy driving less as a result of having the Seat Belt Reminder System in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) I would prefer a Seat Belt Reminder System that I could turn on or off as required depending on the situation (e.g. only turn on the system if I am carrying passengers)

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

6. For most drivers, what effect on seat belt wearing will the Seat Belt Reminder System have in each of the following conditions/situations?

- Reversing
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

- Driving short distances
  - [ ] Increase wearing
  - [ ] No change
  - [ ] Decrease wearing

(more options over page)
Low traffic levels
- Increase
- No change
- Decrease

Speeds less than 10km/h
- Increase
- No change
- Decrease

Speeds more than 10km/h
- Increase
- No change
- Decrease

7. What effect on seat belt wearing will the Seat Belt Reminder System have on drivers who do not wear seat belts for the following reasons?

- Forget to put seat belt on
- Increase
- No change
- Decrease

- Believe that seat belts are uncomfortable to wear
- Increase
- No change
- Decrease

- Believe that seat belts are too fiddly to put on
- Increase
- No change
- Decrease

- Believe that wearing seat belts is a violation of freedom
- Increase
- No change
- Decrease

- Can’t be bothered putting their seat belt on
- Increase
- No change
- Decrease

- Believe that there is little chance of getting a fine for not wearing a seat belt
- Increase
- No change
- Decrease

- Believe that wearing seat belts does not enhance safety
- Increase
- No change
- Decrease

8. What effect will the Seat Belt Reminder System have on each of the following?

- Incidence of crashes
- Increase
- No change
- Decrease

- Crash severity
- Increase
- No change
- Decrease

- Injury severity
- Increase
- No change
- Decrease

- Probability of being fined
- Increase
- No change
- Decrease
9. How much would you be willing to pay for the Seat Belt Reminder System if it were an optional feature in a new car?

Purchase $__________

Maintenance/service $__________ (assume yearly)

10. How much would you be willing to pay for the Seat Belt Reminder System if it were able to be retrofitted to an existing car?

Purchase $__________

Installation $__________

Maintenance/service $__________ (assume yearly)

11. Hypothetically, if you had the option of keeping the Seat Belt Reminder System in your vehicle at the end of the study (at no extra cost), would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested  Disinterested  Neither interested nor disinterested  Interested  Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part D - Daytime Running Lights

1. To what extent do you feel that Daytime Running Lights will be of use to you? A score of 0 means that the Daytime Running Lights will be of no use to you while a score of 5 means that they will always be of use to you.

0 1 2 3 4 5

No use  Always of use
2. If you gave a score of 0 to Question 1, why do you think the Daytime Running Lights will be of no use to you (select only one response)?

[ ] I always turn on the headlights during the day anyway – even when the weather is good

[ ] They would take away the enjoyment of driving

[ ] Turning on the headlights during the day when the weather is good will not make any difference to whether other road users can see me or whether I can see other road users

[ ] You can’t get fined for not turning on your headlights during the day

[ ] I have a light coloured car

[ ] Other, Please specify: ______________________

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) Daytime Running Lights are not needed when there are hardly any other cars or pedestrians on the road

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(b) Daytime Running Lights are a real necessity for drivers who forget to turn their headlights on during the day

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(c) Daytime Running Lights should be compulsory for all drivers

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(d) Daytime Running Lights will reduce my fuel economy

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree
(e) Daytime Running Lights will put extra strain on my car battery

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(f) I will need to change the headlamps more often because of the Daytime Running Lights

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(g) I will be safer with the Daytime Running Lights equipped to my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(h) Other drivers and pedestrians will be able to see my car more easily during the day because of the Daytime Running Lights

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(i) Driving will be less enjoyable with Daytime Running Lights in my car

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

4. What effect will Daytime Running Lights have on each of the following?:

- Incidence of crashes: [ ] Increase [ ] No change [ ] Decrease
- Crash severity: [ ] Increase [ ] No change [ ] Decrease
- Injury severity: [ ] Increase [ ] No change [ ] Decrease
- Probability of being fined: [ ] Increase [ ] No change [ ] Decrease

5. How much would you be willing to pay for Daytime Running Lights if they were an optional feature in a new car?

- Purchase: $[
- Maintenance/service: $[ (assume yearly)
6. How much would you be willing to pay for Daytime Running Lights if they were able to be retrofitted to an existing car?

<table>
<thead>
<tr>
<th>Purchase</th>
<th>$ [ ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation</td>
<td>$ [ ]</td>
</tr>
<tr>
<td>Maintenance/service</td>
<td>$ [ ] (assume yearly)</td>
</tr>
</tbody>
</table>

7. Hypothetically, if you had the option of keeping the Daytime Running Lights in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

- [ ] Very Disinterested
- [ ] Disinterested
- [ ] Neither interested nor disinterested
- [ ] Interested
- [ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

[ ]

If you responded “INTERESTED” or “VERY INTERESTED”, why?

[ ]

Part E - Reverse Collision Warning

1. To what extent do you feel that Reverse Collision Warning System **will be of use to you**? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No use</td>
<td>Always of use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. If you gave a score of 0 to Question 1, why do you think the Reverse Collision Warning System will be of no use to you (select only one response)?

☐ I am always on the lookout anyway when I reverse
☐ It would take away the enjoyment of driving
☐ I prefer to use other methods to help me reverse without hitting objects behind me (e.g. reflection in shop window)
☐ Other, Please specify:

3. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) I will lose trust in the Reverse Collision Warning System if it fails to issue warnings when it should issue warnings

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(b) I will lose trust in the Reverse Collision Warning System if it issues false warnings

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(c) I will end up relying more on the Reverse Collision Warning System than my own lookout while reversing

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

(d) The Reverse Collision Warning System should be compulsory in all vehicles

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
(e) The Reverse Collision Warning System takes too much control away from the driver

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(f) I would prefer it if the Reverse Collision Warning System made the decision for the driver and actually prevented the driver from reversing any further if the system detected that the driver is at risk of reversing into another vehicle/object.

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(g) The enjoyment of driving will increase as a result of having the Reverse Collision Warning System in my car

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(h) I will drive more safely with the Reverse Collision Warning System in my car

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(i) I would prefer a Reverse Collision Warning System that I could turn on and off depending on when I think I need it to help me reverse without hitting objects behind me

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

4. What effect will the Reverse Collision Warning System have on each of the following:?

- Incidence of crashes:  
  - Increase
  - No change
  - Decrease

- Crash severity:  
  - Increase
  - No change
  - Decrease
5. How much would you be willing to pay for the Reverse Collision Warning System if it were an optional feature in a new car?

Purchase $ 
Maintenance/service $ (assume yearly)

6. How much would you be willing to pay for the Reverse Collision Warning System if it were able to be retrofitted to an existing car?

Purchase $ 
Installation $ 
Maintenance/service $ (assume yearly)

7. Hypothetically, if you had the option of keeping the Reverse Collision Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

[ ] Very Disinterested [ ] Disinterested [ ] Neither interested nor disinterested [ ] Interested [ ] Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

---

Part F - Speed Request Button

1. To what extent do you feel that Speed Request Button will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

[ ] 0 No use [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 Always of use

Form 4
2. If you gave a score of 0 to Question 1, why do you think the Speed Request Button **will be of no use to you** (select only one response):?

- I always know what the speed limits are anyway
- Knowing the speed limits won’t change the way I drive
- It would take away the enjoyment of driving
- I prefer to rely on my own judgement exclusively and look out for speed limit signs myself
- Other, Please specify: 

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Speed Request Button will be really helpful in areas where speed limit signs are displayed infrequently

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(b) The Speed Request Button will be really helpful in areas where I think there are speed cameras

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(c) I will not use the Speed Request Button if it issues inaccurate speed limit advice

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(d) The Speed Request Button is of little use to me because the system database of speed limits does not cover roads other than those in metropolitan and greater Melbourne, Geelong, Bendigo and Ballarat

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(e) I will drive more safely with the Speed Request Button in my car

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(f) The enjoyment of driving will decrease if I use the Speed Request Button

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(g) The Speed Request Button should be compulsory in all vehicles

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

4. What effect will the Speed Request Facility have on each of the following:

- Incidence of crashes  Increase  No change  Decrease
- Crash severity  Increase  No change  Decrease
- Probability of being fined  Increase  No change  Decrease

5. How much would you be willing to pay for the Speed Request Button if it were an optional feature in a new car?

- Purchase $  
- Maintenance/service $ (assume yearly)

6. How much would you be willing to pay for the Speed Request Button if it were able to be retrofitted to an existing car?

- Purchase $  
- Installation $  
- Maintenance/service $ (assume yearly)
7. Hypothetically, if you had the option of keeping the Speed Request Button in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested □ Disinterested □ Neither interested nor disinterested □ Interested □ Very interested □

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

Part G - Following Distance Warning

1. To what extent do you feel that Following Distance Warning System will be of use to you? A score of 0 means that the system will be of no use to you while a score of 5 means that the system will always be of use to you.

0 □ 1 □ 2 □ 3 □ 4 □ 5 □

No use □ Always of use □

2. If you gave a score of 0 to Question 1 above, why do you think the Following Distance Warning System will be of no use to you (select only one response):?

□ I never drive less than 2 seconds from the car in front
□ It is my choice as to how close I drive to the car in front
□ There is little chance of getting caught/fined for tailgating
□ It would take away the enjoyment of driving
□ I am a good driver anyway and I know when it is safe to drive less than 2 seconds from the car in front

(more options over page)
I don’t believe that keeping a gap of at least 2 seconds from the car in front will make me any safer

Other, Please specify: __________________________

3. To what extent do you agree or disagree with each of the following statements? The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) The Following Distance Warning System will be helpful when travelling on the freeway

(b) Warnings from the Following Distance Warning System will be more of a nuisance than a help in heavy traffic

(c) The Following Distance Warning System will be helpful to drivers who do not have a clear view of the car ahead because of poor weather conditions (e.g. fog)

(d) There is no need for the Following Distance Warning System when travelling on rural roads

(e) I will drive more safely with the Following Distance Warning System in my car
(f) Warnings from the Following Distance Warning System are unnecessary in 50 km/h zones

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(g) Receiving warnings from the Following Distance Warning System will be really helpful in 100 km/h zones

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(h) Warnings from the Following Distance Warning System are necessary in 60 km/h zones

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(i) The Following Distance Warning System is of little use when there are few other cars on the road

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(j) Warnings from the Following Distance Warning System are unnecessary in 80 km/h zones

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(k) Following Distance Warnings will be useful for alerting distracted or fatigued drivers

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

(l) The Following Distance Warning System will be really helpful when approaching intersections or roundabouts

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree
(m) The enjoyment of driving will decrease as a result of driving with the Following Distance Warning System

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(n) As a result of driving a car with the Following Distance Warning System, I will be less likely to tailgate when driving a car that is not fitted with a Following Distance Warning System

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(o) The warnings from the Following Distance Warning System could distract me from my driving, affecting my safety and my passengers’ safety

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(p) I will lose faith in the Following Distance Warning System if it issues false warnings

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(q) I will lose trust in the Following Distance Warning System if it fails to issue warnings when it should issue warnings

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(r) The Following Distance Warning System should be compulsory for all drivers

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
(s) Instead of using on my own judgement, I am likely to end up waiting until I hear warnings from the Following Distance Warning System before I back off from the car in front

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(t) The Following Distance Warning System should only be compulsory for drivers who have been booked on several occasions for tailgating and/or have had several rear-end collisions

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(u) The Following Distance Warning System takes too much control away from the driver

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(v) I would prefer a Following Distance Warning System that made it impossible for the driver to get to within 2 seconds or less from the car in front

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree

(w) I would prefer a Following Distance Warning System that I could turn on or off as required depending on the traffic situation

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Neither agree nor disagree
- [ ] Agree
- [ ] Strongly agree
4. For most drivers, what effect on following distance will the Following Distance Warning System have in each of the following areas/conditions?:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Increase</th>
<th>No change</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 km/h zone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freeways</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficult to see road ahead</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intersections/Round-a-bouts</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. What effect on following distance will the Following Distance Warning System have on drivers who follow cars too closely for the following reasons:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Increase following distance</th>
<th>No change</th>
<th>Decrease following distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t notice that they are following cars too closely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that following cars too closely is fun</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that following cars too closely has no effect on safety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a hurry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that they won’t get caught/fined</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that they can drive as close to cars as they like because it is their choice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that they can control their car regardless of how close they are to the car in front</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Car in front driving too slowly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not want other drivers cutting in front of them</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. What effect will the Following Distance Warning System have on each of the following:

<table>
<thead>
<tr>
<th>Effect</th>
<th>Increase</th>
<th>No change</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence of crashes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability of being fined</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. How much would you be willing to pay for the Following Distance Warning System if it were an optional feature in a new car?

Purchase $________

Maintenance/service $________ (assume yearly)

8. How much would you be willing to pay for the Following Distance Warning System if it were able to be retrofitted to an existing car?

Purchase $________

Installation $________

Maintenance/service $________ (assume yearly)

9. Hypothetically, if you had the option of keeping the Following Distance Warning System in your vehicle at the end of the study (at no extra cost) would you be interested? The boxes give a scale from very disinterested on the left to very interested on the right.

Very Disinterested  Disinterested  Neither interested nor disinterested  Interested  Very interested

If you responded “VERY DISINTERESTED” or “DISINTERESTED”, why?

If you responded “INTERESTED” or “VERY INTERESTED”, why?

End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.
Appendix AH  Post Questionnaire
Post Questionnaire

Aims of the questionnaire

To obtain post study measures of participants’:
- Driver behaviour;
- Awareness of road safety issues;
- Attitudes towards driving behaviours that the ITS technologies in the SafeCars are designed to address;
- Attitudes towards ITS technologies; and
- Attitudes towards road safety countermeasures that target the driving behaviours addressed by the SafeCar technologies.

These measures were all administered as part of Preliminary Questionnaire Time 1.

To whom should this questionnaire be administered?

The Post Questionnaire should be administered to all participants, regardless of whether they are in the treatment or control group. The form is the same for all participants.

When during the study should this questionnaire be administered?

The Post Questionnaire should be administered within one week of the participant accruing the required number of kilometres.

How should this questionnaire be administered?

Refer notes for previous questionnaires.

Arranging for administration of the questionnaire

Once notification has been received that a participant has accrued the required number of kilometres and hence, completed the study, contact should be made with the participant and it should be explained that there is one more questionnaire that we would like him/her to complete. Explain to the participant that, within the next few days, he/she will receive in the mail the final questionnaire, which needs to be completed within two days of its receipt.
Development of the Post Questionnaire

The questions comprising each of the five sections in the Post Questionnaire were drawn from Preliminary Questionnaire Time 1. The purpose of the Post Questionnaire is to obtain post study measures of participant driving behaviour, attitudes and knowledge of road safety issues that the “questionnaire development team” (i.e. Mike, Tom and Eve) thought might change as a result of interaction with the SafeCar technologies. Within both treatment and control groups, “preliminary” and “post” responses can be compared. Between groups, “preliminary” responses can be compared as can “post” responses.

The structure of the Post Questionnaire is as follows:

**Part A - Driver Behaviour**
Questions are drawn from the “Driver Behaviour Questionnaire”. For each item, participants are asked to think about how often the described situation happened to them in the period while they were driving their SafeCar. This contrasts from Preliminary Questionnaire Time 1 where participants were not asked to respond to items with a particular time frame in mind.

**Part B – Awareness of Road Safety Issues**
Questions in this section are a direct replication of the questions forming Part F of Preliminary Questionnaire Time 1. Specifically, question 1 is concerned with Legislation, question 2 addresses Crash Problems, questions 3 to 9 deal with Risk Perception, question 10 addresses Advertising, and questions 11 to 13 deal with Enforcement.

**Part C – Attitudes towards Driving Behaviours**

**Part D – Attitudes towards ITS Technologies**

**Part E – Attitudes towards Road Safety Measures**

Questions forming Parts C, D and E were drawn directly from the corresponding sections in Preliminary Questionnaire Time 1.

Eve Mitsopoulos
10th June 2003
We hope that you have enjoyed participating in the study. Your involvement is greatly appreciated. We have just one more questionnaire that we would like you to complete. This is it!

The questionnaire should take you about 20 minutes to complete. But don’t be too concerned if you take less time or if you need to take longer. You may recognise many of the questions from the very first questionnaire that we asked you to complete. We are interested in finding out how people feel about issues to do with driving and road safety after having driven a SafeCar.

In answering the questions that follow, please be as truthful as possible. There are no right or wrong answers to any of the questions, and remember, all of the information that you provide is kept confidential.

Once you have answered a question move onto the next one and don’t go back. Please do not change your response to any question once you have completed it.

Part A – Driver Behaviour

1. Each of the statements below is a situation in everyday driving. Please indicate, by ticking one of the boxes, how frequently you did the following things in the period while you were driving your SafeCar. The boxes give a scale from never on the left to very often on the right.

(a) Deliberately disregard the speed limit to stay with the traffic flow

☐ Never ☐ Very seldom ☐ Rather seldom ☐ Sometimes ☐ Often ☐ Very often

(b) Overtake when the car in front is slowing down approaching an area with a lower speed limit

☐ Never ☐ Very seldom ☐ Rather seldom ☐ Sometimes ☐ Often ☐ Very often
(c) Fail to notice a green arrow at a traffic light allowing you to turn

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(d) Forget to loosen the park brake when driving off

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(e) Drive especially close to the car in front as a signal to its driver to go faster or to get out of the way

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(f) Forget to dip the lights when driving at night and are reminded to do so by other drivers flashing their lights

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(g) Speed up to get through traffic lights when the lights are yellow or green

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(h) Deliberately park your car illegally in order to run an errand

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(i) Break a traffic rule because you hadn’t noticed the newly put up sign

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(j) Misread signs and find yourself lost

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>
(k) Fail to notice when a traffic light turns green

[ ] Never  [ ] Very seldom  [ ] Rather seldom  [ ] Sometimes  [ ] Often  [ ] Very often

(l) Deliberately exceed the speed limit on roads when there is little traffic

[ ] Never  [ ] Very seldom  [ ] Rather seldom  [ ] Sometimes  [ ] Often  [ ] Very often

(m) Find yourself driving in the second last gear even though you are driving fast enough to be in the highest gear (answer only if applicable)

[ ] Never  [ ] Very seldom  [ ] Rather seldom  [ ] Sometimes  [ ] Often  [ ] Very often

(n) Uncertain where you parked your car in a large car park

[ ] Never  [ ] Very seldom  [ ] Rather seldom  [ ] Sometimes  [ ] Often  [ ] Very often

(o) Intend to reverse but find that the car is moving forward because it is in the wrong gear

[ ] Never  [ ] Very seldom  [ ] Rather seldom  [ ] Sometimes  [ ] Often  [ ] Very often

(p) Deliberately exceed the speed limit when overtaking

[ ] Never  [ ] Very seldom  [ ] Rather seldom  [ ] Sometimes  [ ] Often  [ ] Very often

(q) Fail to notice a traffic sign telling you that the road is temporarily closed

[ ] Never  [ ] Very seldom  [ ] Rather seldom  [ ] Sometimes  [ ] Often  [ ] Very often

(r) Intend to drive to destination A, only to suddenly find yourself on the road to destination B, perhaps because destination B is your more usual destination

[ ] Never  [ ] Very seldom  [ ] Rather seldom  [ ] Sometimes  [ ] Often  [ ] Very often
(s) Miss your exit on a freeway and have to make a lengthy detour

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(t) Misjudge the road surface and when braking find that the distance needed to stop is longer than you expected

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(u) Shift into the wrong gear while driving (answer only if applicable)

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(v) Switch on the wipers for example, when you meant to switch on something else, such as the head lights

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(w) Forget which gear you are currently in and have to check with your hand (answer only if applicable)

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(x) Deliberately turn onto a road just in front of an oncoming vehicle even though there is no other traffic behind the oncoming vehicle

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(y) Misjudge the gap to an oncoming vehicle (in the opposite lane) when overtaking and you are forced to just sweep in front of the vehicle you overtake

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>
(z) Turn right onto a road into the path of an oncoming vehicle that you hadn’t seen, or whose speed you misjudged

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(aa) Try to shift into a higher gear even though you’re already in the highest gear (answer only if applicable)

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(ab) Park against parking rules because you can’t find a parking space

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(ac) Misjudge your speed when turning from a road and have to slam on the brakes

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(ad) Cut corners and occasionally cut into the opposing lane when driving around sharp bends in rural areas

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(ae) Misjudge the gap to an oncoming vehicle when you are turning right and force the oncoming vehicle to slam on the brakes

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(af) Underestimate the speed of an oncoming vehicle (in the opposite lane) when overtaking

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very seldom</th>
<th>Rather seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>
Part B – Awareness of Road Safety Issues

1. (a) According to the law, under which of the following circumstances is it okay NOT to wear a seatbelt (you can tick more than one response)?

- [ ] Never
- [ ] On short trips
- [ ] When reversing
- [ ] When travelling below 10 km/h
- [ ] If start and stop driving below 25 km/h (e.g. garbage truck)

(b) When the road is dry, what is the minimum recommended following distance from a car in front (tick only one response)?

- [ ] 1 second
- [ ] 2 seconds
- [ ] 3 seconds
- [ ] 4 seconds

(c) When are you required to turn on your headlights (tick only one response)?

- [ ] Only at night
- [ ] When the street lights are on
- [ ] When you see other cars with headlights on
- [ ] Between sunset and sunrise
- [ ] In poor weather conditions
- [ ] At night and in hazardous weather conditions
2. How often do you think each of the following factors contributes to road crashes? The boxes give a scale from never on the left to very often on the right.

(a) Speeding

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(b) Drink driving

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(c) Drugs (other than alcohol)

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(d) Factors associated, in general, with old age (e.g. reduced visual acuity, slower reaction time)

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(e) Inattention/Lack of concentration

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(f) Carelessness/Negligent driving

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(g) Lack of driver training/Insufficient training

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>
(h) Driver fatigue

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(i) Disregard of road rules

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(j) Ignorance of road rules

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(k) Distraction

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(l) Poor road design/Poor road signage

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(m) Road conditions/Traffic congestion

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(n) Weather conditions

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(o) Vehicle Design

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>
(p) Failing to maintain vehicle/Lack of vehicle maintenance

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(q) Too few police on road/Lack of police enforcement

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(r) Louts/Showing off/Risk taking

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(s) Driving too close to other cars

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(t) Failure to turn on headlights

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

(u) Factors associated, in general, with being young (e.g. inexperience, risk taking)

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

3. Each of the statements below is a situation in everyday driving. In your opinion and regardless of what the law states, how safe or dangerous are each of these situations? The boxes give a scale from very dangerous on the left to very safe on the right.

(a) Travelling less than 10 km/h without a seatbelt in the front seat of the car

<table>
<thead>
<tr>
<th></th>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(b) Driving short distances without wearing a seat belt

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(c) Travelling at 55 km/h in a 50 km/h zone

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(d) Travelling **more** than 10 km/h without a seatbelt in the **front** seat of the car

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(e) Travelling at 65 km/h in a 60 km/h zone

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(f) Travelling **more** than 10 km/h without a seatbelt in the **back** seat of the car

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(g) Travelling less than 2 seconds from the car in front in a 50 km/h zone

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(h) Travelling at 105 km/h in a 100 km/h zone

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>
(i) Driving long distances without wearing a seat belt

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(j) Travelling at 60 km/h in a 50 km/h zone

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(k) Not turning your headlights on during the day when driving conditions are good

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(l) Travelling at 70 km/h in a 60 km/h zone

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(m) Travelling at 70 km/h in a 50 km/h zone

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(n) Travelling less than 10 km/h without a seatbelt in the back seat of the car

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>

(o) Travelling at 120 km/h in a 100 km/h zone

<table>
<thead>
<tr>
<th>Very dangerous</th>
<th>Dangerous</th>
<th>Neither safe nor dangerous</th>
<th>Safe</th>
<th>Very safe</th>
</tr>
</thead>
</table>
(p) Travelling less than 2 seconds from the car in front in a 60 km/h zone

[ ] Very dangerous [ ] Dangerous [ ] Neither safe nor dangerous [ ] Safe [ ] Very safe

(q) Travelling at 110 km/h in a 100 km/h zone

[ ] Very dangerous [ ] Dangerous [ ] Neither safe nor dangerous [ ] Safe [ ] Very safe

(r) Travelling less than 2 seconds from the car in front in a 100 km/h zone

[ ] Very dangerous [ ] Dangerous [ ] Neither safe nor dangerous [ ] Safe [ ] Very safe

(s) Travelling at 80 km/h in a 60 km/h zone

[ ] Very dangerous [ ] Dangerous [ ] Neither safe nor dangerous [ ] Safe [ ] Very safe

4. Regardless of what the law states, in a 50 km/h zone how many km/h over the limit do you think you have to be before you are considered to be speeding (tick only one response)?

[ ] Anything over 50 km/h
[ ] 1-5 km/h over the limit
[ ] 6-10 km/h over the limit
[ ] 11-15 km/h over the limit
[ ] 16-20 km/h over the limit
[ ] 21-25 km/h over the limit
[ ] 26-30 km/h over the limit
[ ] More the 30 km/h over the limit
[ ] Don’t know
5. Regardless of what the law states, in a **60 km/h zone** how many km/h over the limit do you think you have to be before you are considered to be speeding (tick only one response)?

- [x] Anything over 60 km/h
- [ ] 1-5 km/h over the limit
- [ ] 6-10 km/h over the limit
- [ ] 11-15 km/h over the limit
- [ ] 16-20 km/h over the limit
- [ ] 21-25 km/h over the limit
- [ ] 26-30 km/h over the limit
- [ ] More than 30 km/h over the limit
- [ ] Don’t know

6. Regardless of what the law states, in a **100 km/h zone** how many km/h over the limit do you think you have to be before you are considered to be speeding (tick only one response)?

- [ ] Anything over 100 km/h
- [ ] 1-5 km/h over the limit
- [ ] 6-10 km/h over the limit
- [ ] 11-15 km/h over the limit
- [ ] 16-20 km/h over the limit
- [ ] 21-25 km/h over the limit
- [ ] 26-30 km/h over the limit
- [ ] More than 30 km/h over the limit
- [ ] Don’t know
7. What are the **top three** factors influencing the speed at which you drive (tick **three boxes** only)?

- [ ] The road and weather conditions
- [ ] My chances of having a crash
- [ ] My chances of being caught
- [ ] The speed of other traffic
- [ ] The volume of traffic on the particular road
- [ ] The speed limit
- [ ] How much of a hurry I am in
- [ ] Other, Please specify
- [ ] Don’t Know

8. What are the **top three** factors influencing how close you drive to the car in front (tick **three boxes** only)?

- [ ] Desire to keep a 2 second gap
- [ ] The road and weather conditions
- [ ] My chances of being caught tailgating
- [ ] The gaps other drivers are adopting
- [ ] How much of a hurry I am in
- [ ] My chances of having a crash
- [ ] How good a driver I am
- [ ] Other, Please specify
- [ ] Don’t Know
9. What are the **top three** factors influencing when you turn on your head lights (tick **three boxes** only)?

- [ ] It is night-time
- [ ] When the street lights turn on
- [ ] When I see other cars with head lights on
- [ ] Other cars flash me
- [ ] When I want other road users to see me
- [ ] When it becomes hard to see others
- [ ] Passenger tells me to
- [ ] When I can’t see the instrument panel
- [ ] Other, Please specify

10. Which of the following road safety advertising campaigns are you aware of (you can **tick more than one** response)?

- [ ] Wipe off 5
- [ ] If you drink and drive you’re a bloody idiot
- [ ] Road Aware
- [ ] Stop, revive, survive
- [ ] Don’t fool yourself, speed kills
- [ ] Drive Safe
- [ ] Take a break, fatigue kills
- [ ] Belt up or suffer the pain
- [ ] A 15 minute powernap could save your life
- [ ] Operation Clampdown
- [ ] Concentrate or kill
11. By how much can you exceed the speed limit before being booked by the police? (tick only one response)

☐ 1 km/h
☐ 5% of speed limit
☐ Don’t know
☐ 10% of speed limit
☐ Other, Please specify

12. What is the likelihood of being caught by the police for?: (The boxes give a scale from very unlikely on the left to very likely on the right.)

(a) Travelling 5 km/h over the speed limit

☐ Very unlikely
☐ Unlikely
☐ Neither likely nor unlikely
☐ Likely
☐ Very likely

(b) Driving without your seat belt on

☐ Very unlikely
☐ Unlikely
☐ Neither likely nor unlikely
☐ Likely
☐ Very likely

(c) Travelling 10 km/h over the speed limit

☐ Very unlikely
☐ Unlikely
☐ Neither likely nor unlikely
☐ Likely
☐ Very likely

(d) Travelling too close to the car in front

☐ Very unlikely
☐ Unlikely
☐ Neither likely nor unlikely
☐ Likely
☐ Very likely

(e) Reversing in an unsafe manner

☐ Very unlikely
☐ Unlikely
☐ Neither likely nor unlikely
☐ Likely
☐ Very likely
(f) Travelling 20 km/h over the speed limit

Very unlikely  Unlikely  Neither likely nor unlikely  Likely  Very likely

(g) Driving without your head lights on when required

Very unlikely  Unlikely  Neither likely nor unlikely  Likely  Very likely

13. (a) The current fine for a driver who is caught exceeding the speed limit by less than 10 km/h is $125. Do you think that the current fine is:?

Far too low  Too low  Just right  Too high  Far too high

(b) The current fine for a driver who is caught not wearing his/her seat belt is $135. Do you think that the current fine is:?

Far too low  Too low  Just right  Too high  Far too high

(c) The current fine for a driver who is caught without his/her headlights on when they should be on is $135. Do you think that the current fine is:?

Far too low  Too low  Just right  Too high  Far too high

(d) The current fine for a driver who is caught following too closely to the car in front is $135. Do you think that the current fine is:?

Far too low  Too low  Just right  Too high  Far too high

(e) The current fine for a driver who is caught reversing when unsafe is $105. Do you think that the current fine is:?

Far too low  Too low  Just right  Too high  Far too high
Part C – Attitudes towards driving behaviours

1. To what extent do you agree or disagree with each of the following statements. The boxes give a scale from strongly disagree on the left to strongly agree on the right.

(a) I am comfortable driving close behind another car

(b) Speeding is always wrong

(c) It makes sense to exceed speed limits to get ahead of Sunday drivers

(d) If you are a good driver it is acceptable to drive a little faster

(e) When road conditions are good and nobody is around driving in excess of 100 km/h in an 80 km/h zone is okay

(f) I will ride as a passenger with someone who speeds if others are also in the car
(g) I think it is okay to exceed the speed limit if you are driving safely

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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(h) If you increase your driving speed by 5 km/h you are significantly more likely to be involved in a crash

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<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
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(i) A crash at 70 km/h will be a lot more severe than a crash at 60 km/h

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<th>Strongly disagree</th>
<th>Disagree</th>
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<th>Strongly agree</th>
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(j) It is easy to avoid being caught speeding

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<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
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<th>Strongly agree</th>
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(k) Speeding enforcement is more for revenue raising than for safety

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<th>Strongly disagree</th>
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<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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(l) Speed limits are too low – it is usually safe to drive faster than the speed limit

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<th>Strongly disagree</th>
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<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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(m) It doesn’t bother me if other people speed

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<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</table>
(n) You don’t need to wear a seat belt to be safe if you are sitting in the back seat

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<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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(o) It is safe to speed on roads that are familiar

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<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</thead>
</table>

(p) People who exceed speed limits are a major contributor to crashes

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<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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(q) Wearing a seatbelt will significantly reduce my chances of serious injury in the event of crash

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<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</table>

(r) I only wear a seatbelt because I am required to by law

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<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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(s) If I am not wearing a seatbelt it is very likely that I will be pulled over by the police

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<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</table>

(t) It makes sense to tailgate when the driver in front is going too slowly

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<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</thead>
</table>
(u) A 2 second gap from the car in front is far too big

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(v) If you are a good driver it is acceptable to drive close behind another car

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(w) When road conditions are good it is okay to drive close to the car in front

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(x) I will drive close to the car in front if everyone else is

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(y) The closer you are to the car in front, the more likely you are to be involved in a crash

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(z) People who tailgate are a major contributor to crashes

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree

(aa) I drive close to the car in front because I know I can get away with it

Strongly disagree  Disagree  Neither agree nor disagree  Agree  Strongly agree
(ab) I think it is okay to drive close to the car in front if it is safe to do so

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

(ac) It doesn’t bother me if other people drive close behind me

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<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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(ad) On a sunny day there is no point turning your headlights on

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<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</table>

(ae) You are less likely to have a crash during the day if you have your headlights on

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<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</thead>
</table>

(af) Other motorists are more likely to see you during the day if you have your headlights on

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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Part D – Attitudes towards ITS technologies

1. I would like a car that: (The boxes give a scale from strongly disagree on the left to strongly agree on the right.)

(a) Automatically warns me if I am exceeding the speed limit

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<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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<tbody>
<tr>
<td>Option</td>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Neither agree nor disagree</td>
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<td>(b) Automatically warns me if I am following a car in front too closely</td>
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<td>(c) Stops me from exceeding the speed limit</td>
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<td>(d) Automatically warns me if anyone in the car is not wearing their seat belt</td>
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<tr>
<td>(e) Stops me from following a car in front too closely</td>
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<td>(f) Automatically warns me if I am about to collide with a vehicle in front</td>
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<tr>
<td>(g) Prevents me from starting the car if someone in the car does not have their seat belt on</td>
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<tr>
<td>(h) Automatically warns me if I am about to collide with an object while reversing</td>
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</table>
(i) Automatically turns the headlights on for me during the day

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(j) Prevents me from colliding with a vehicle in front

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(k) Automatically warns me if I am becoming fatigued

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(l) Automatically warns me if my Blood Alcohol Concentration is over 0.05

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(m) Prevents me from colliding with an object while reversing

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(n) Automatically warns me if I start drifting out of my lane

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

(o) Pulls over and parks itself if it detects I am becoming fatigued

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree
(p) Prevents me from starting the car if my Blood Alcohol Concentration is over 0.05

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(q) Gives me turn-by-turn instructions on how to get from one location to another

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(r) Let’s me see pedestrians and road users more clearly at night

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(s) Prevents me from drifting out of my lane

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(t) Automatically dials for, and sends, an ambulance to my location if I have a crash

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree

(u) Prevents me from starting the car if I am not licensed to drive it

[ ] Strongly disagree [ ] Disagree [ ] Neither agree nor disagree [ ] Agree [ ] Strongly agree
### Part E – Attitudes towards road safety measures

1. **In your opinion**, how effective are each of the following measures in helping you to keep to the speed limit? The boxes give a scale from very ineffective on the left to very effective on the right.

(a) Penalties (e.g. fines, demerit points)

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<th>Very ineffective</th>
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(b) Speed cameras

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(c) Speed humps

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(d) Roundabouts

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(e) Speed signs

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(f) Advertising

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(g) In-car technologies that warn you if you are exceeding the speed limit

- Very ineffective
- Ineffective
- Neither effective nor ineffective
- Effective
- Very effective

(h) Speed guns

- Very ineffective
- Ineffective
- Neither effective nor ineffective
- Effective
- Very effective

(i) Police car presence

- Very ineffective
- Ineffective
- Neither effective nor ineffective
- Effective
- Very effective

(j) Traffic islands

- Very ineffective
- Ineffective
- Neither effective nor ineffective
- Effective
- Very effective

2. **In your opinion**, how effective are each of the following measures in helping you travel at a safe distance from the car in front? The boxes give a scale from very ineffective on the left to very effective on the right.

(a) Penalties (e.g. fines)

- Very ineffective
- Ineffective
- Neither effective nor ineffective
- Effective
- Very effective

(b) In-car technologies that warn you if you are travelling less than 2 seconds from the car in front

- Very ineffective
- Ineffective
- Neither effective nor ineffective
- Effective
- Very effective
(c) Chevrons on the road

<table>
<thead>
<tr>
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<th>Ineffective</th>
<th>Neither effective nor ineffective</th>
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(d) 2 second rule

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(e) Police car presence

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(f) Electronic sign that tells you if you are too close to the car ahead

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3. **In your opinion**, how effective are each of the following measures in reminding you to wear your seatbelt? The boxes give a scale from very ineffective on the left to very effective on the right.

(a) In-car technologies that warn you if you or one of your passengers is not wearing his/her seat belt

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<thead>
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<th>Very ineffective</th>
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<th>Neither effective nor ineffective</th>
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(b) Advertising/Education

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<th>Neither effective nor ineffective</th>
<th>Effective</th>
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</table>
4. In your opinion, how effective are each of the following measures in helping you to reverse safely? The boxes give a scale from very ineffective on the left to very effective on the right.

(a) In-car technologies that issue more urgent warnings as you get closer to an object while reversing

Very ineffective Ineffective Neither effective nor ineffective Effective Very effective

(b) Penalties (e.g. fines)

Very ineffective Ineffective Neither effective nor ineffective Effective Very effective

End of Questionnaire

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire into the pre-paid envelope provided and mail it to Kristie Young at the Monash University Accident Research Centre as soon as possible.