MONASH University

MONASH INFORMATION TECHNOLOGY

HUMANISE

ACCESSIBLE AND ADAPTIVE FLOOR PLANS

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At a glance

Background

Floorplans are important for navigating complex indoor spaces like malls and museums. But they're currently not designed for people with disabilities.

Goal

Develop inclusive and adaptive floor plans that address the characteristics and capacities of multiple groups.

Strategies

- Gather requirements on how people with disabilities use floor plans in navigation.
- Develop an accessible floorplan generation framework using Scalable Vector Graphics (SVG).
- Interview communities of people with disabilities.

Key outcomes

List of requirements

Requirements gathered from surveying 80 people including those with:

- low vision
- colour impairment
- dyslexia
- wheelchairs.

Accessible floor plans and framework

Accessible versions of complex floor plans and a framework using SVG for generating these

Guidelines for accessible graphics

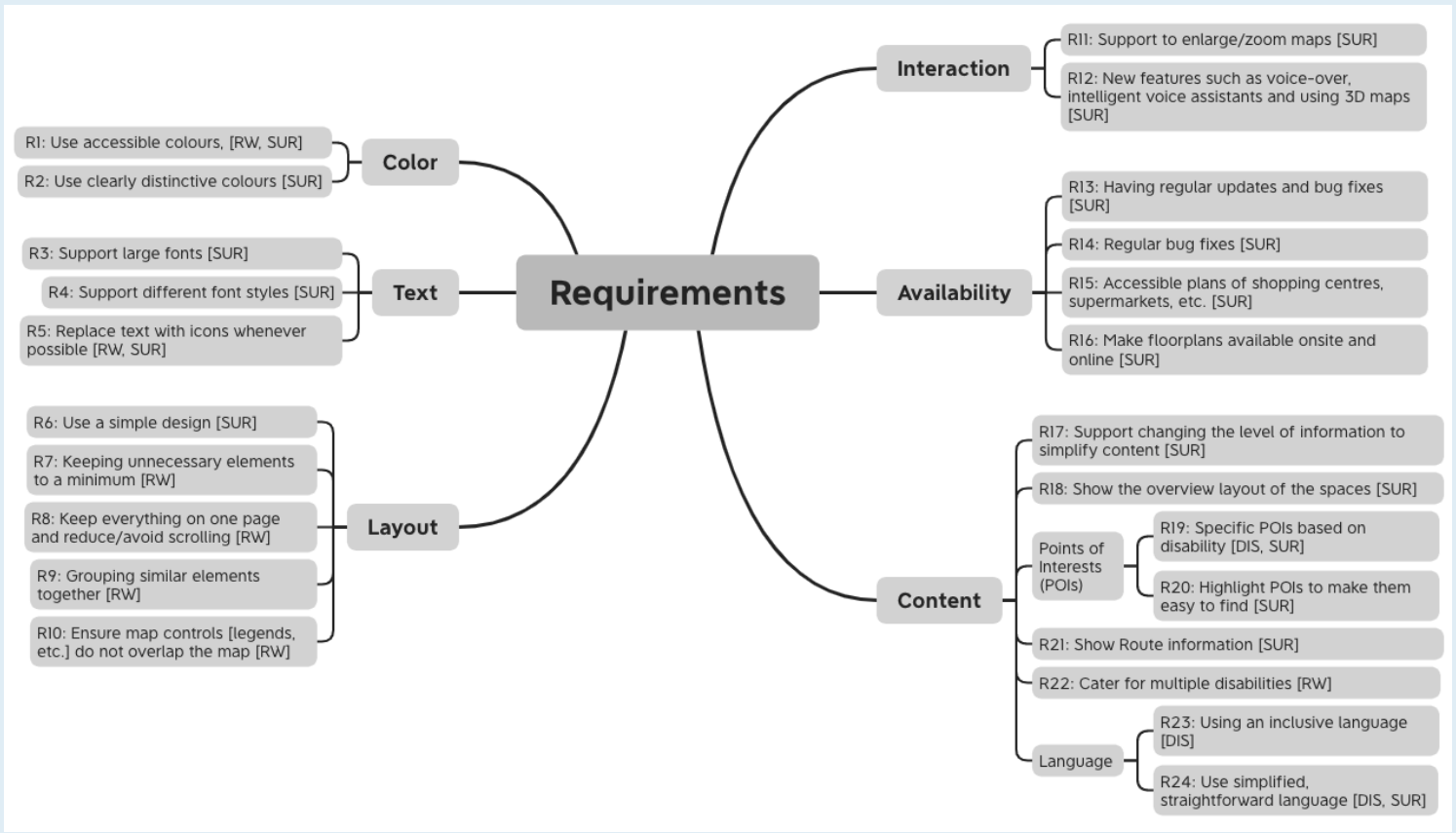
A set of guidelines for graphic designers that can be adopted to make any graphic accessible for people with disabilities.

More information

Developed a framework using SVGs to generate accessible graphics including floor plans. They contained a:

- parser to pre-process SVGs
- graphic generator to combine SVGs with meta data
- web tool based on react to present the accessible graphics.

Evaluated the framework by interviewing seven participants with disabilities and made improvements based on their feedback.



Identified requirements

Low Vision	Provide sufficient contrast using colours and patterns. In using patterns, ensure they are simple and do not overlap with text
	Always provide the ability to manually zoom in/out without causing any distortion to graphics
	Provide support for screen readers and keyboard accessibility
Color Impaired	Use colour impaired-friendly colours
	Ensure there is high contrast, or use monochrome colours (using multiple shades of a single colour)
	Do not place reliance only on colour to convey information; instead, combine it with text and symbols
Dyslexia	Use icons instead of labels as much as possible
	Keep the graphic simple and, if required, present it in multiple layers
	Use dyslexia-friendly fonts when possible
	Use a simple language
Mobility Impaired	For this group, special types of graphics, such as floorplans and maps, require
	Locations of ramps, lifts, accessible toilets; paths with wider corridors
	Paths with wider corridors, sufficient turning cycles, and less crowded areas

Guidelines

Get in touch

To use our tool or to make your public spaces accessible, contact the HumaniSE Lab or scan the QR code.

Acknowledgements

This project is funded by the Australian Research Council Laureate Fellowship FL190100035. We would like to acknowledge the participants who assisted with our research.

Australian Government
Australian Research Council

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