














Title: Identified Requirements

Guideline (ID: Name)	Requirement (R#)	Req. Type
 Elderly Communities		
E1: Reduce short-term memory load [1]	R01: Ensure the system simplifies navigation, uses clear and consistent icons, and provides step-by-step instructions to reduce memory burden.	Non-functional (Usability)
E2: Maintain focus on current action [2]	R02: Ensure the interface removes distractions and secondary functions, highlighting the most important or typical action on each screen.	Non-functional (Usability)
E3: Reduce options and available elements [2]	R03: Ensure the interface limits unnecessary choices during interactions to avoid overwhelming users.	Non-functional (Usability)
E4: Introduce features incrementally [3]	R04: Ensure the system introduces new features gradually to prevent overwhelming users with too many unfamiliar elements at once.	Non-functional (Usability)
E5: Readable text content [4]	R05: Ensure the system provides definitions or tooltips for abbreviations and jargon to improve text comprehension.	Non-functional (Accessibility)
E6: Accuracy and precision [5]	R06: Ensure interactive elements (e.g., buttons) have a minimum size of 16.5 mm diagonally and font sizes ≥ 14 pt with high-contrast colours.	Non-functional (Accessibility)
E7: Adaptable content presentation [4]	R07: Ensure the system supports alternative content presentations (e.g., audio or simplified layouts) without loss of information.	Non-functional (Accessibility)
E8: Contextualised help [2]	R08: Ensure the system provides context-aware help automatically, reducing the need for users to search manually.	Functional
E9: Provide a safe exit on any screen [2]	R09: Ensure every process screen includes back, cancel, or exit buttons to let users exit at any point without losing control.	Functional
E10: Don't assume knowledge of symbols [2]	R10: Ensure icons are intuitive and semantically meaningful; avoid abstract or ambiguous symbols.	Non-functional (Usability)
E11: Prefer tapping over gestures [2]	R11: Ensure tapping alternatives exist for gesture-based interactions (e.g., sliders) to reduce dexterity demands.	Functional
 Low-Digital-Literacy Communities		
D1: Include short, simple Help instructions [6],	R12: Ensure help menus provide concise, jargon-free, and easy-to-act-on instructions.	Non-functional (Usability)
D2: Enable customisation [6],	R13: Ensure the system allows users to customise layout, content, and settings to fit their needs.	Functional
D3: Consistency [7]	R14: Ensure consistent colour schemes, typography, and navigation patterns across the entire application.	Non-functional (Usability)
D4: Predictable behaviour [4]	R15: Ensure app behaviour matches user expectations, with consistent navigation and no conflicting signals; provide reliable help if errors occur.	Functional
D5: Use multiple modes of interaction [6]	R16: Ensure content is available in multiple modalities (e.g., text, audio, video) for better comprehension.	Functional
D6: Use distinct audio output [8]	R17: Ensure audio outputs are customisable and distinct so users can control volume and recognise meanings.	Functional
D7: Avoid unfamiliar visuals [9]	R18: Ensure visuals use universal or culturally appropriate symbols to improve recognition.	Non-functional (Accessibility)
D8: Avoid abstract and detailed imagery [9]	R19: Ensure visuals are semi-abstract and focused on key actions; avoid unnecessary detail.	Non-functional (Usability)

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D9: Maintain conceptual models [7]	R20: Ensure design uses affordances and signifiers to preserve a consistent mental model across the interface.	Non-functional (Usability)
D10: Provide affordances [7]	R21: Ensure interactive elements such as buttons and links are clearly distinguishable from static content.	Non-functional (Accessibility)
D11: Apply constraints to reduce overload [7]	R22: Ensure the interface limits distractions by restricting interactions to only essential actions and respects cultural constraints.	Non-functional (Usability)
D12: Provide clear signifiers [7]	R23: Ensure app design communicates expected outcomes using visual/textual cues without relying solely on instructions.	Non-functional (Usability)
D13: Natural mapping [7]	R24: Ensure controls reflect real-world relationships (e.g., volume sliders aligned with perceived loudness).	Non-functional (Usability)
D14: Adopt culturally responsive design [6]	R25: Ensure visuals, colours, and symbols align with local cultural preferences.	Non-functional (Accessibility)
D15: Error-free operation [8]	R26: Ensure the app is stable and fails gracefully with clear recovery options instead of crashing.	Non-functional (Reliability)
 Rural Communities		
R1: Split content into pages [10]	R27: Ensure long content loads in smaller paginated chunks to improve usability under poor Internet conditions.	Functional
R2: Promote app/website visibility [11]	R28: Ensure content is properly indexed (e.g., by search engines) and organised into discrete, discoverable pages.	Functional
R3: Learnability [12]	R29: Ensure navigation is logical and minimal, requiring little prior knowledge or training.	Non-functional (Usability)
R4: Memorability [12]	R30: Ensure app structures are intuitive and memorable so users can easily recall information and actions.	Non-functional (Usability)
R5: Rely on telecommunication [13]	R31: Ensure the app supports SMS or offline-friendly messaging for areas with poor Internet connectivity.	Functional
 Colour-Blind Communities		
C1: Test against tools [14]	R32: Ensure the design is validated using WCAG and colour-blindness simulators.	Non-functional (Accessibility/-Compliance)
C2: Use more than colour to distinguish [15]	R33: Ensure redundant visual cues (e.g., icons, text, patterns) supplement colour-coded information.	Non-functional (Accessibility)
C3: Use thicker lines or larger elements [14]	R34: Ensure lines, fonts, and elements are sufficiently thick/large for visibility.	Non-functional (Accessibility)
C4: Avoid reliance on “colour-blind-friendly” palettes [15]	R35: Ensure designs rely on contrast and redundant cues rather than searching for a universally friendly palette.	Non-functional (Accessibility)
C5: Underline links [14]	R36: Ensure all hyperlinks are underlined or clearly marked beyond colour alone.	Non-functional (Accessibility)
C6: Supplement colour coding with text [16]	R37: Ensure colour-coded statuses or alerts include text labels as backups.	Non-functional (Accessibility)
C7: Use patterns [15]	R38: Ensure patterns (e.g., stripes/dots) provide redundancy for colour-coded areas such as charts or maps.	Non-functional (Accessibility)
C8: Alter designs to avoid conflicts [17]	R39: Ensure UI is proactively designed to avoid problematic colour pairings that reduce contrast.	Non-functional (Accessibility)
C9: Keep it simple [15]	R40: Ensure the interface limits excessive colours and shades to avoid ambiguity.	Non-functional (Usability)

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C10: Respect colour-blind preferences [14]	R41: Ensure designs respect typical user preferences (e.g., favouring blue for clarity) and avoid negative shifts in meaning.	Non-functional (Accessibility)
  Elderly + Colour-Blind Communities		
EC1: Colour contrast between popups and background [18]	R42: Ensure popup backgrounds and foreground text meet high contrast ratios for readability.	Non-functional (Accessibility)
EC2: Design without colour to maintain luminance contrast [19]	R43: Ensure designs work in greyscale by testing contrast without chromatic elements.	Non-functional (Accessibility)
EC3: Maintain WCAG contrast ratios [14]	R44: Ensure the design complies with WCAG AA/AAA standards (e.g., 4.5:1 for text) and validates dynamically with tools like Google Lighthouse.	Non-functional (Accessibility/-Compliance)
  Elderly + Rural Communities		
ER1: Give time to act and read [2]	R45: Ensure time-sensitive actions allow extended durations so slower readers are not disadvantaged.	Functional
ER2: Improve discoverability [7]	R46: Ensure clear focal points, strong visual hierarchy, and transparent navigation states.	Non-functional (Usability)
ER3: Keep minimalist, simple interface [6]	R47: Ensure key features remain prominent using concise layouts, larger fonts, and visual highlights.	Non-functional (Usability)
ER4: Use linear navigation [9]	R48: Ensure navigation avoids tree-structured hierarchies, using simple forward-and-back flows.	Non-functional (Usability)
ER5: Make onboarding easy [9]	R49: Ensure onboarding processes are simple, brief, and welcoming to first-time users.	Functional
ER6: Make app purpose clear [9]	R50: Ensure new users can easily understand the app's purpose without prior context.	Non-functional (Usability)
ER7: Break down information [9]	R51: Ensure long or dense content is split across pages/screens using short sentences and bullet points.	Functional
ER8: Provide text alternatives [4]	R52: Ensure all non-text content includes descriptive text alternatives (e.g., alt-text).	Non-functional (Accessibility)
  Rural + Low-Digital-Literacy Communities		
RD1: Minimise download times [11]	R53: Ensure multimedia elements are optimised or replaced with lightweight alternatives to improve load times on poor connections.	Non-functional (Performance)
RD2: Consider alternative information infrastructure [20]	R54: Ensure app design supports shared-device usage and alternative distribution channels where app stores are inaccessible.	Functional
RD3: Reduce phone resource usage [8]	R55: Ensure minimal CPU, memory, and battery consumption for low-end or older devices.	Non-functional (Performance)
RD4: Reduce data use [21]	R56: Ensure data-heavy components (e.g., videos, maps) are optimised for users with limited mobile data plans.	Non-functional (Performance)
RD5: Enable offline access [21]	R57: Ensure essential features remain accessible offline or with intermittent connectivity.	Functional
   Elderly + Rural + Low-Digital-Literacy Communities		
ERD1: Simplify navigation structure [6]	R58: Ensure navigation flows are flattened and linear to reduce cognitive complexity.	Non-functional (Usability)
ERD2: Reduce alternative paths [2]	R59: Ensure single, consistent routes for completing tasks to minimise confusion.	Non-functional (Usability)

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ERD3: Avoid Hamburger Menu [10]	R60: Ensure critical functions remain visible and avoid hiding navigation options behind expandable menus.	Non-functional (Usability/Ac- cessibility)
ERD4: Provide informative & clear feedback [7, 2, 22]	R61: Ensure progress, error, and confirmation feedback is clear, accessible, and non-intrusive.	Functional
ERD5: Understandable error messages [18]	R62: Ensure error messages are concise, instructive, and reduce user anxiety during recovery.	Functional

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