

Section 508 Mobile Standards Testing Summary

THE SECTION 508 TEAM

HEALTH SYSTEMS, OFFICE OF HEALTH INFORMATICS

OFFICE OF INFORMATICS AND ANALYTICS

VETERANS HEALTH ADMINISTRATION

Introduction

The purpose of this document is to consolidate and summarize the current Best Practice testing procedures for Mobile apps on both the Android and iOS platforms. This content has been researched, developed, and implemented by the Veterans Health Administration's Section 508 Team with the intent to serve as a resource and blueprint for project managers and developers as they begin to create Apps whereby accessibility and adherence to section 508 policy and compliance are included proactively in order to enable the highest level of access for users with disabilities.

This document outlines the Best Practices used by the VHA Section 508 team when evaluating Mobile Apps on either the Android or iOS platform. These methodologies are most helpful when implemented for developers early in the development process to achieve 508 compliance. Each practice is supported by resources present within our Team's Application Management Platform, (AMP). Access and log-in details can be obtained by any project manager, developer, or technical liaison providing service to the VA via our site license. To obtain access send a message to:

VHA10P7A508MobileTesting@va.gov with a subject line of AMP Access Request and include your name, e-mail and phone number.

Best Practices for Mobile Testing

The following Best Practices are used as criteria for Section 508 compliance for Mobile Apps. These items are organized into eleven sections categorized accordingly. Links to all pertinent information within AMP for both Android and iOS are provided for each Best Practice. The letters "N/A" is indicated when a particular best practice does not currently exist or apply to a particular mobile platform.

Audio, Video and Multimedia

Best Practice	Android	iOS
General Information	Android Media Info	iOS Media Info
Ensure audio does not disrupt text to speech functionality of assistive technologies	Android Media 1	iOS Media 1
Ensure audio information is not the only method used to indicate completion or error	Android Media 2	iOS Media 2
Ensure visual multimedia content is sufficiently described in the audio portion	Android Media 3	iOS Media 3
Provide a text transcript for audio only presentations	Android Media 4	iOS Media 4
Provide synchronized captions for multimedia content	Android Media 5	iOS Media 5
Provide text transcript or audio track of video only presentations	Android Media 6	iOS Media 6

Color

Best Practice	Android	iOS
General Information	Android Color Info	iOS Color Info
Ensure color and text formatting are not the sole means of communicating information	Android Color 1	iOS Color 1
Ensure color and text formatting are not the sole means of communicating selection	Android Color 2	iOS Color 2
Ensure content that provides meaning through color, also conveys this meaning without color, directly in the content, on-screen, and without additional user interaction	Android Color 3	iOS Color 3

Ensure text and images of text provide sufficient color contrast	Android Color 4	iOS Color 4
Ensure a variety of color contrast selections when colors from the OS are not used	N/A	iOS Color 5
Ensure application color settings provide acceptable contrast when White on Black is enabled	N/A	iOS Color 6

Dynamic Content and Animation

Best Practice	Android	iOS
General Information	Android Dynamic Info	iOS Dynamic Info
Ensure addition and removal of on-screen components are properly exposed to assistive technology	Android Dynamic 1	iOS Dynamic 1
Ensure animation content is sufficiently described in audio or text	Android Dynamic 2	iOS Dynamic 2
Ensure assistive technologies are aware of content changes in real time.	Android Dynamic 3	iOS Dynamic 3
Ensure auto-updating dynamic content can be paused, stopped, or hidden	Android Dynamic 4	iOS Dynamic 4
Ensure elements blink or flash in a safe threshold	Android Dynamic 5	iOS Dynamic 5
Ensure screen transition and decorative animation settle within 5 seconds	Android Dynamic 6	iOS Dynamic 6
Provide a non-animated method to step through/control animation	Android Dynamic 7	iOS Dynamic 7

Error Handling

Best Practice	Android	iOS
General Information	Android Error Info	iOS Error Info
Ensure error messages are in a platform specific alert or focus is moved to the error message after submit	Android Error 1	iOS Error 1
Provide a clear indication of errors	Android Error 2	iOS Error 2
Provide a consistent implementation of error and alert mechanisms	Android Error 3	iOS Error 3
Provide error prevention for information that is submitted	Android Error 4	iOS Error 4
Provide error prevention for legal commitments and financial data	Android Error 5	iOS Error 5
Provide suggestions for error messages when known	Android Error 6	iOS Error 6

Focus

Best Practice	Android	iOS
General Information	Android Focus Info	iOS Focus Info
Ensure context is not changed when focus changes occur	Android Focus 1	iOS Focus 1
Ensure focus is logically set when a module opens and when pop alerts close	Android Focus 2	iOS Focus 2
Ensure focus is not forcibly shifted on input	Android Focus 3	iOS Focus 3
Ensure navigation and input focus is indicated visually	Android Focus 4	iOS Focus 4
Ensure the focus order of interactive elements	Android Focus 5	iOS Focus 5

on the page is logical		
Ensure all elements and controls can receive focus	Android Focus 6	N/A

Forms & Controls

Best Practice	Android	iOS
General Information	Android Form Info	iOS Form Info
Ensure elements are sufficiently described	Android Form 1	iOS Form 1
Ensure form field constraints are clearly indicated	Android Form 2	iOS Form 2
Ensure multi-part controls are accessible and provide context	Android Form 3	iOS Form 3
Provide explicit labels for all form elements	Android Form 4	iOS Form 4
Ensure that instructive text is placed at the beginning of a form	Android Form 5	N/A

General Use

Best Practice	Android	iOS
General Information	Android General Info	iOS General Info
Enhancements that are provided for users with disabilities shall not be provided in a mutually exclusive fashion	Android General 1	iOS General 1
Ensure accessible usage of time based sessions	Android General 2	iOS General 2
Ensure all controls and non-decorative content supports Accessibility	Android General 3	iOS General 3
Ensure element role and state are correct	Android General 4	iOS General 4

Ensure that applications do not interfere with assistive technology	Android General 5	iOS General 5
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Language and Content

Best Practice	Android	iOS
General Information	Android Language Info	iOS Language Info
Ensure hidden, decorative and duplicate content and artifact elements are not exposed to assistive technologies	Android Language 1	iOS Language 1
Ensure instructions do not rely solely on sensory characteristics	Android Language 2	iOS Language 2
Ensure shape and location are not the sole methods used to communicate information or hierarchy	Android Language 3	iOS Language 3
Provide consistent labels for controls, images and other common elements	Android Language 4	iOS Language 4
Provide for user control of font size	Android Language 5	iOS Language 5
Ensure content that provides alternatives for non-accessible content provides equivalent functionality	N/A	iOS Language 6

Navigation and Input

Best Practice	Android	iOS
General Information	Android Navigation Info	iOS Navigation Info
Ensure access to alternative input methods	Android Navigation 1	iOS Navigation 1
Ensure element text is meaningful out of	Android Navigation 2	iOS Navigation 2

context		
Ensure element text is meaningful within context	Android Navigation 3	iOS Navigation 3
Ensure focus can be moved away from focusable components	Android Navigation 4	iOS Navigation 4
Ensure touch focus areas for active elements do not overlap	Android Navigation 5	iOS Navigation 5
Ensure touch screen actions are triggered on removal and not on initial touch	Android Navigation 6	iOS Navigation 6
Provide inactive space around touch screen elements	Android Navigation 7	iOS Navigation 7
Provide sufficient size for touch screen elements	Android Navigation 8	iOS Navigation 8
Ensure scrolling occurs as needed when logical navigation is used	N/A	iOS Navigation 9
Ensure controls provide support for the accessibility input methods used by the assigned trait/role	N/A	iOS Navigation 10

Non-text Elements

Best Practice	Android	iOS
General Information	Android Non-Text Info	iOS Non-Text Info
Avoid duplication of information such as control name, state or role in alternatives	Android Non-Text 1	iOS Non-Text 1
Ensure non-decorative images provide informative alternative text	Android Non-Text 2	iOS Non-Text 2
Ensure text is used instead of images of text when technology allows	Android Non-Text 3	iOS Non-Text 3
Provide textual equivalents for all non-text	Android Non-Text 4	iOS Non-Text 4

elements including sounds and images.		
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Structure and Reading Order

Best Practice	Android	iOS
General Information	N/A	iOS Structure Info
Ensure that the reading order of content is logical	Android Structure 1	iOS Structure 1
Provide a clear title for all screens	Android Structure 2	iOS Structure 2

Not Currently Tested But For Consideration

Best Practice	Android	iOS
Ensure changes in natural language are identified inline	Android Consider 1	iOS Consider 1
Indicate the current site hierarchy location to users	Android Consider 2	iOS Consider 2

Some Comments About Best Practices which Are Only Tested On One Mobile Platform

The following are comments about best practices listed above that are currently tested on only one Mobile Platform:

- **Ensure a variety of color contrast selections when colors from the OS are not used**
Mobile Apps cannot follow the OS settings for colors – so this best practice has been removed from the master AMP instance, but can it can be added back in applying it to both platforms if necessary.
- **Ensure application color settings provide acceptable contrast when White on Black is enabled**
This feature only exists on iOS and certain Samsung Android models. It is not a standard feature on Android. The feature also has been renamed to invert colors.
- **Indicate the current site hierarchy location to users**
This is a WCAG Level AAA item and as such is not generally recommended it as a requirement.
- **Ensure changes in natural language are identified inline**
This best practice is not possible with Android, but with iOS it does work with many exceptions.
- **Ensure controls provide support for the accessibility input methods used by the assigned trait/role**
This is iOS specific because it is the only platform that specifies accessibility traits.
- **Ensure scrolling occurs as needed when logical navigation is used**
This best practice is referenced in both platforms within Amp.
- **Ensure content that provides alternatives for non-accessible content provides equivalent functionality**
This best practice is referenced in both platforms within Amp.
- **Ensure that instructive text is placed at the beginning of a form**
This best practice is referenced in both platforms within Amp.
- **Ensure all elements and controls can receive focus**
This is an Android specific best practice. The more general best practice that exists for both platforms “Ensure access to alternative input methods” should cover this requirement.