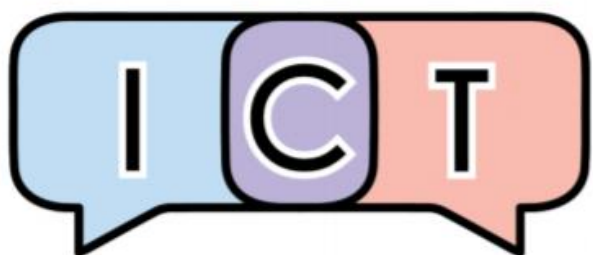




Mobile Site Accessibility Testing Methodology – Test Cases for Assistive technologies and mobile features



**Accessibility Testing
Symposium**

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Introduction

Why this is important

Mobile devices provide a multitude of accessibility features. As an accessibility tester for mobile devices, it is important that you understand what these features are, how they work, and how they improve an experience for someone with a given disability. As both mobile operating systems and mobile assistive technology are structured in a different manner from their desktop counterparts, it is important that mobile testing is conducted independently from desktop testing of a website. As a rule of thumb, if a website is not compatible with assistive technology designed for the device with which you are testing, it is inaccessible.

Essential content should never be hidden from assistive technology but displayed visually. An example of this would be to use `aria-hidden="true"`, which causes the element to be ignored by assistive technology. For more information see [WCAG2.1 SC 1.1.1: Non-text Content](#). In addition, `aria-hidden="true"`, `CSS display:none`, and `CSS visibility` can be used to "hide" other content on a page from assistive technology. If this content is meaningful, it should be available to assistive technology.

Any control that changes a state visually should indicate the change of state to the assistive technology user. For example, a hamburger menu that is closed would show an `aria-expanded="false"`, and when opened, it would show `aria-expanded="true"`. A ratings star that turns yellow when the user selects it should tell the assistive technology user of the change to yellow. For more information see [WCAG2.1 SC 4.1.2: Name, Role, Value](#).

Errors that need to be tested

Access and activation

All actionable items and content can be accessed and activated by the following assistive technologies (or when the following feature is enabled):

Please see the following sections on how to test this requirement with assistive technologies and mobile features.

iOS combinations

Please note that iOS 13 features, such as Dark Mode and Voice Control are not included in this list. Please note: As of July 2019, "dynamic type" on iOS does not change the appearance of web pages in Safari.

iPhone

- VoiceOver
- Keyboard

- Keyboard and switch
- Zoom
- Invert colors
- Grayscale
- Reader view

iPad

- VoiceOver
- Keyboard
- Keyboard and switch
- Zoom
- Invert colors
- Grayscale
- Reader view

Android combinations

- TalkBack
- Voice Assistant (Samsung)
- VoiceView (Kindle)
- Keyboard
- Keyboard and switch
- Magnification
- Invert colors
- Grayscale
- Increase text size with Android Chrome
- Color correction
- Simplified view

9. iOS Test Cases

Please note that the committee is aware that Assistive Touch, as well as other iOS 13 features bring a myriad of advances for people with disabilities. The committee will be reviewing these assistive technologies in the coming year.

9.1: VoiceOver (iOS)

All actionable items and content can be accessed and activated by VoiceOver on iOS.

About this requirement

VoiceOver users include blind and low-vision users, as well as users with some cognitive or learning difficulties. To enable VoiceOver, navigate to **Settings** → **General** → **Accessibility** → **VoiceOver**.

Then, tap and slide the white **Off** button (beside the word *VoiceOver*) to the right to enable VoiceOver. Once in the On position, the button changes color to indicate VoiceOver is enabled.

Figure 1: Turning on VoiceOver on iOS

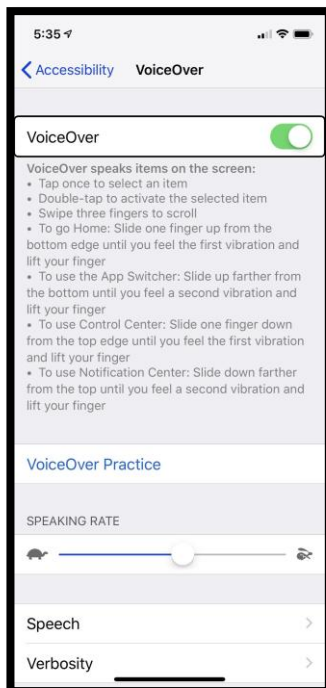
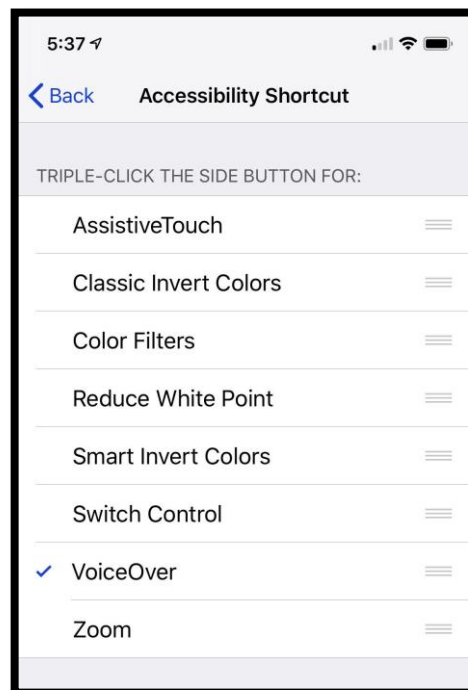


Figure 2: Setting Accessibility shortcuts on iOS



You may find it easier to toggle VoiceOver by setting the "Accessibility Shortcut" to VoiceOver and/or the other accessibility options. Once set up, triple-click the home or side button of the device to enable the menu. (If only one accessibility setting is enabled, the device won't show a menu and will immediately toggle the setting.)

How to test

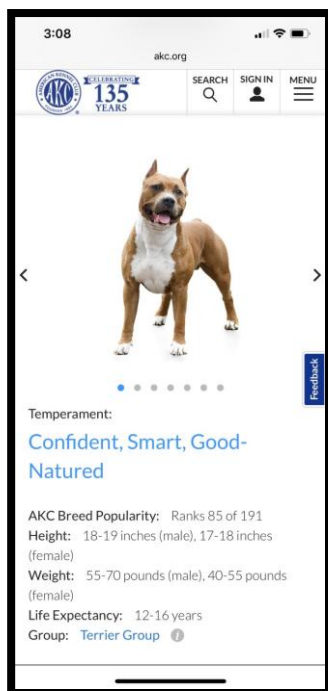
1. Open Safari and launch the website.
2. Scan the page for content and actionable items.
3. Turn on VoiceOver.
4. Utilize standard navigation techniques for VoiceOver to browse the page. Whilst VoiceOver is robust, common controls to get started include:
 - a. Move forward by swiping right with one finger to read the next piece of content on the page. Swiping left moves you backward. Note: This means that you will no longer have traditional swipe functionality.
 - b. To select a link, form field, or other actionable item, double tap the screen with one finger.
 - c. There are many [additional gestures used to control VoiceOver](#), including a useful [rotor tool](#) that allows users to browse by headings, regions, form fields, etc. at the users' pleasure.
5. Verify that all content can be read by VoiceOver and that the text being read by VoiceOver matches what is on screen.
6. Verify that all actionable items can be accessed and controlled by VoiceOver. It is imperative that all actionable items are accurately labelled and described.

Examples

Pass 1 – All content is read by VoiceOver

On this site, all content can be read, and all actionable items have appropriate descriptions and function as expected with VoiceOver controls

Figure 3: **All content is read by VoiceOver**



9.2: Keyboard (iOS)

All actionable items and content can be accessed and activated by the keyboard on iOS.

About this requirement

iOS 12.3 and lower only support keyboard use when VoiceOver is activated. Apple is projecting that iOS 13 will support keyboard use without VoiceOver.

Connect a Bluetooth keyboard to your iOS device, activate VoiceOver, and navigate to the page in Safari as you would on desktop. Press the arrow keys or TAB to navigate from one actionable item (buttons, links and form controls) to the next, use SPACEBAR or ENTER to activate the currently selected item.

How to test

1. Connect the keyboard. Turn on VoiceOver
2. Do all actionable items receive focus when using the TAB or arrow keys?
3. Can all actionable items be activated?
4. Can the keyboard access all fields, radio buttons, checkboxes, dropdowns and submit buttons?
5. Is the keyboard focus visible at all times?
6. Is the keyboard focus indicator highly visible?
7. Do items receive keyboard focus in the order that they visibly appear on the screen?

Examples

Pass 1 – Keyboard accessible

The Washington Post menu is keyboard accessible and has a highly visible keyboard focus indicator (please note that this does not have a keyboard focus indicator in Android).

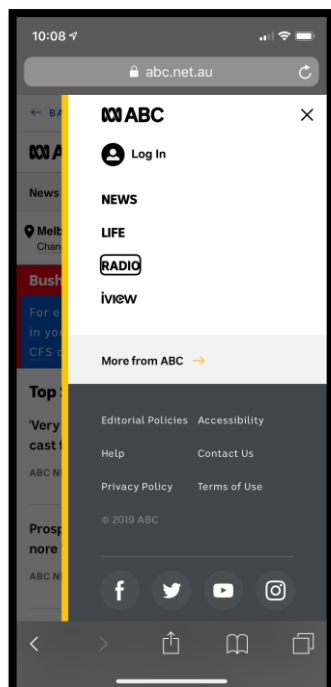
Figure 4: **Keyboard accessible**



Pass 2 – Keyboard accessible

The ABC menu is keyboard accessible and has a highly visible keyboard focus indicator.

Figure 5: **Keyboard accessible**



9.3: Switch (iOS)

All actionable items and content can be accessed and activated by the switch on iOS.

About this requirement

In most cases switch errors will be identified also as keyboard errors. This will be investigated more fully in the coming year.

People with limited manual dexterity or other mobility disabilities often use Switch Control. Switch Control allows users to navigate their phone with one or more switches. To enable Switch Control, navigate to **Settings** → **General** → **Accessibility** → **Switch Control**.

Switch Control has two modes: item mode and point mode. Item mode will scan through groups of elements on the screen. Each time a user activates the Select Item switch, it will drill down into that group of elements. Once an element is selected, the options to Tap the element or access the switch menu appears. When an element cannot be accessed using item mode, point mode can be used. Point mode allows the user to select a location on screen to simulate a tap through a coordinate grid system. Users select the vertical location and then the horizontal location of where they would like to tap. Point mode is much more tedious to use than item mode. Switch Control also has more advanced features available (for example: simulating gestures).

Users typically use one or two switches. A variety of hardware options are available to use as a switch: Bluetooth switch, Bluetooth keyboard, sip and puff technology, wheelchair joystick and other switches. The iOS device's screen can also be used as a switch. For testing, it is easiest to use a Bluetooth keyboard. Each key can be programmed as a different switch action. Note that the original actions of the switch (device's screen or hardware button) will be overrode by the switch's action.

Each switch is mapped to a specific action. The action that is easiest to use for testing is Select Item. The Select Item action will scan through items on screen with either item mode or point mode, access the Tap feature and the switch menu. A second switch action that is popular is Scanner Menu, which provides the user with easier access to the switch's menu.

To set up the device's screen as a switch: navigate to **Settings** → **General** → **Accessibility** → **Switch Control** → **Switches** → **Add New Switch...** → **Screen** → **Full Screen** → **Select Item**.

The switch's item mode navigates to both actionable and nonactionable elements. Most of the time, nonactionable elements do not need to be accessed if they are visible in the current screen view. Scrolling is also an important feature to test in order to access content. Scrolling can be accessed on the switch's menu.

How to test

1. Activate the switch (or the screen)
2. Scan to the section you want to navigate to and activate the switch

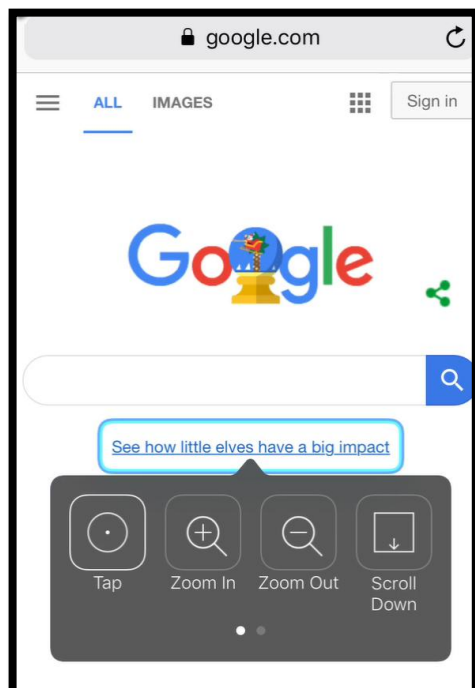
3. Repeat step 2 until you drill down to an element. When an element is activated, a menu will appear.
4. Activate the Tap menu item.
5. If the element is not accessible via item mode, point mode is a fallback/workaround. Item mode must work for an item to pass. To use point mode:
 - a. Repeat steps 1-4 of item mode above to drill down to an element. When an element is activated, a menu will appear.
 - b. Activate the ".." under Tap to access more menu features.
 - c. Activate the row with Point Mode, then activate Point Mode
 - d. A grid will appear to allow you pick where on the screen to simulate a "tap"
 - e. Select the horizontal area of the screen and then the vertical area of the screen
 - f. Select the horizontal and vertical point to simulate a "tap"
 - g. Activate the Tap menu item.

Examples

Pass 1 – Actionable element can be navigated to and activated with Switch

The actionable element can be navigated to or activated using item mode. The link below is selected with item mode.

Figure 6: **Actionable element can be navigated to and activated with Switch**



9.4: Zoom (iOS)

All actionable items and content can be accessed and activated with Zoom enabled on iOS.

About this requirement

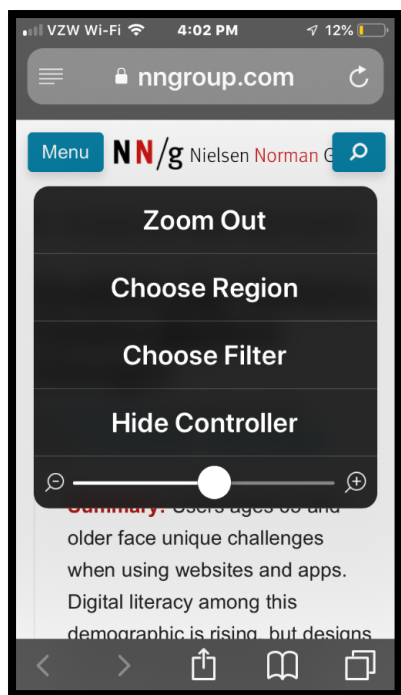
People with low vision often use Zoom. Users with cognitive impairments, such as autism or attention deficit disorder, may also use Zoom to focus in on key content and reduce the amount of visual clutter on the screen. To enable full screen Zoom, first navigate to the Zoom screen and select **Settings** → **General** → **Accessibility** → **Zoom**.

Then, touch and slide the white **Off** button (beside the word *Zoom*) to the right to enable Zoom. Once in the On position, the button changes color to indicate Zoom is enabled.

Triple-tapping the screen with three fingers will display the Zoom menu. You can adjust the following settings with the Zoom menu:

- Choose Region: select Full Screen Zoom or Window Zoom.
 - Full Screen Zoom: You can magnify the entire screen
 - Window Zoom: Magnify only part of the screen with a resizable lens. You can move the lens around to zoom in on different sections of the screen.
- Choose Filter: select Inverted, Grayscale, Grayscale, or Low Light.
- Show/Hide the Controller: show/hide the zoom controller. The Zoom controls provides a quick way to pan the screen or zoom in or out.
- Use the slider to control the zoom level.

Figure 7: **Activating zoom on iOS**



Standard iOS gestures—flick, pinch, tap and rotor—still work when the screen is magnified. Invert Colors and Grayscale also work with Zoom. There are some differences in commands when Zoom is run with VoiceOver.

You can view magnified screens either in either “Full Screen Zoom” or “Window Zoom.”

How to test

1. Triple tap with three fingers to open the zoom menu.
2. Select a region (Full Screen or Window).
3. Select a zoom magnification.
4. Select a Filter
5. Determine that you can move around the page and access all content and functionality.

Examples

Pass 1 – Zoom enlarges the screen

Figure 8: **Zoom enlarges the screen**



9.5: Reduce motion (iOS)

Reduce Motion does not work on iOS, or content is lost when it is enabled.

About this requirement

The Reduce Motion feature on iOS reduces swipe-in features and things like parallax scrolling. The Reduce Motion option is available under **Settings** → **General** → **Accessibility** → **Reduce User Motion**.

How to test

1. Identify all areas of movement in the site.
2. Turn on the Reduce Motion feature.
3. Is the movement removed or reduced?
4. Ensure no information or functionality is lost.

Examples

Pass 1 – Reduce Motion stops moving content

With Reduce Motion enabled the “Window Wonderland” does not have any movement on loading the page. Normally the background shows people walking around.

Reduce Motion disabled

Figure 9: **Reduce Motion stops moving content (normal view)**



Reduce Motion enabled

Figure 10: **Reduce Motion stops moving content (with reduced motion)**



9.6: Invert colors (iOS)

All actionable items and content can be accessed and activated with Invert Colors enabled on iOS.

About this requirement

To enable Invert Colors, first navigate to **Settings** → **General** → **Accessibility** → **Display Accommodations** and find **Invert Colors** in the Vision list.

Then, tap the white **Off** button (beside the words *Invert Colors or Classic Invert*) to enable the feature. In the new page choose “Smart Invert” or “Classic Invert” as required. The color inversion is applied to all screens until the feature is disabled by switching the button to the **Off** position.

Invert Colors can be used with VoiceOver, Zoom and Grayscale.

Classic Invert

Classic Invert inverts everything on the screen. As you can see from the invert screen, some items are difficult to see in Invert Colors – such as the native switch.

Figure 11: **Activating Classic Invert on iOS**

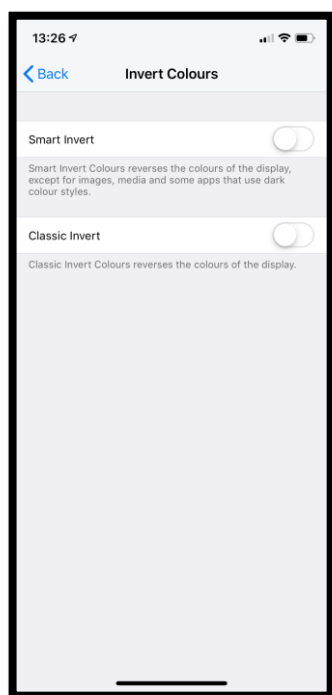
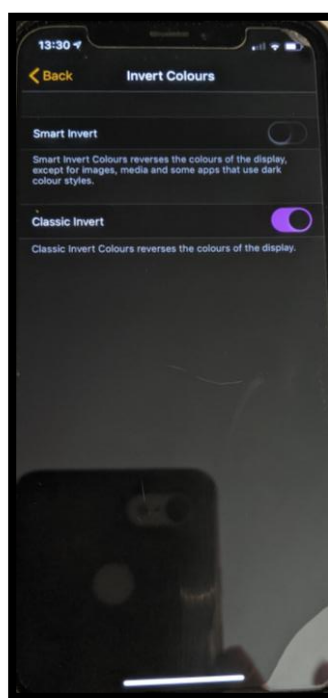


Figure 12: **Classic Invert on iOS activated**



Smart Invert

“Smart Invert,” a recent addition to iOS, will invert the colors of text and solid backgrounds while preserving the colors of graphics, media, and some mobile sites that

support dark mode. When enabled, images on your site should not be inverted so that they remain clear and consistent.

As you can see from the invert screen, native switches are much easier to see in Smart Invert than in Classic Invert.

Figure 13: **Activating Smart Invert on iOS**

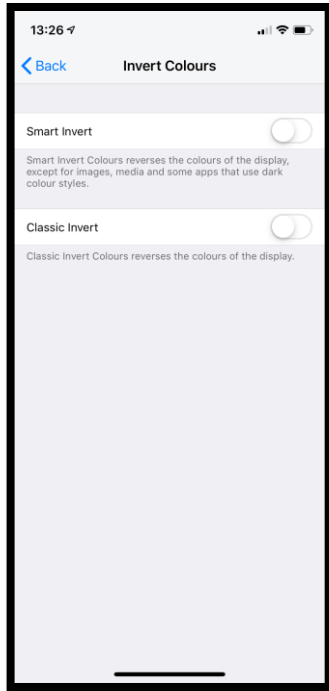
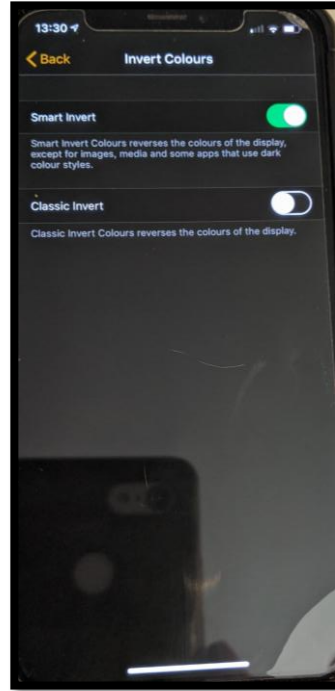


Figure 14: **Smart Invert on iOS activated**



How to test

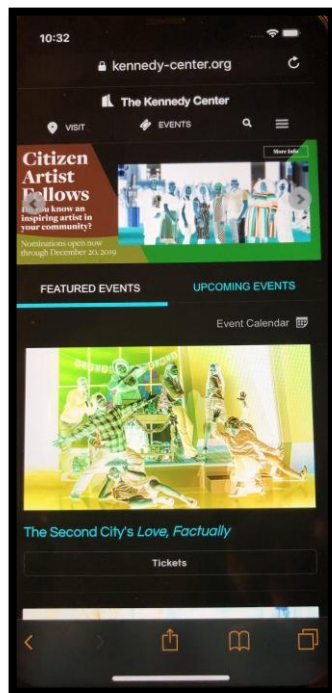
1. Open the site.
2. Activate Classic Invert.
3. Is the contrast between the foreground and background sufficient for important content and actionable items?
4. Ensure that no important content or actionable items use color as critical to its meaning.
5. Turn off Classic Invert.
6. Identify images, videos, camera access, dark backgrounds in the site.
7. Turn on Smart Invert.
8. Does the page show inverted colors, with the exception of images, videos, camera access and dark backgrounds?

Examples

Pass 1 – Classic Invert

All content in the website inverts colors.

Figure 15: **Classic Invert**



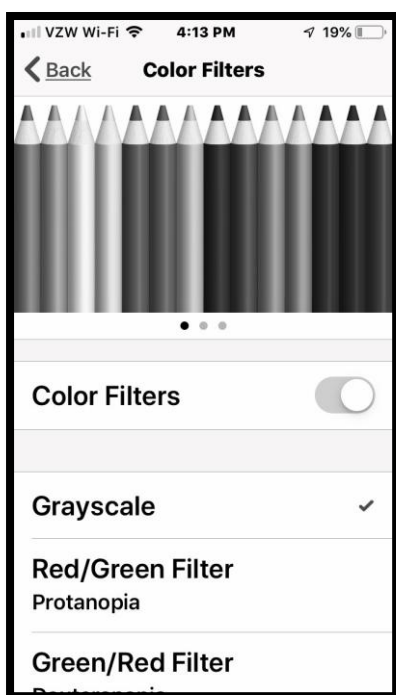
9.7: Grayscale (iOS)

All actionable items and content can be accessed and activated with Grayscale enabled on iOS.

About this requirement

To enable Grayscale, first navigate to **Settings** → **General** → **Accessibility** → **Display Accommodations**. Select **Color Filters** and toggle **Color Filters** to the **On** position. **Grayscale** is listed as the first color filter in the list and should be checked (on) by default. If not, select Grayscale so it is checked. Once Grayscale is enabled colors across iOS and all mobile sites are in grayscale.

Figure 16: Grayscale view on iOS



Grayscale is applied to all screens until the feature is disabled by toggling the button to the **Off** position. Grayscale can be used with VoiceOver, Zoom and Invert Colors.

How to test

1. Open the site.
2. Activate Grayscale.
3. Is the contrast between the foreground and background sufficient for important content and actionable items?
4. Ensure that no important content or actionable items use color as critical to its meaning.

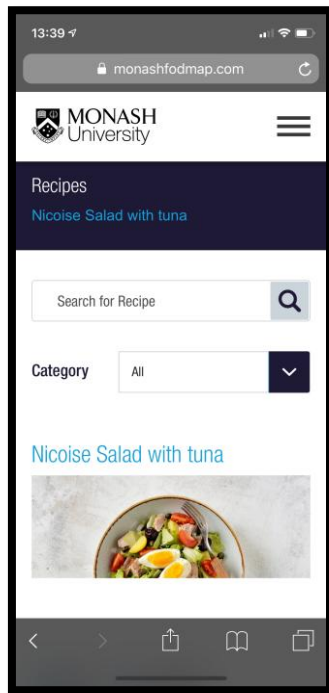
Examples

Pass 1 – Grayscale

The entire site changes to Grayscale.

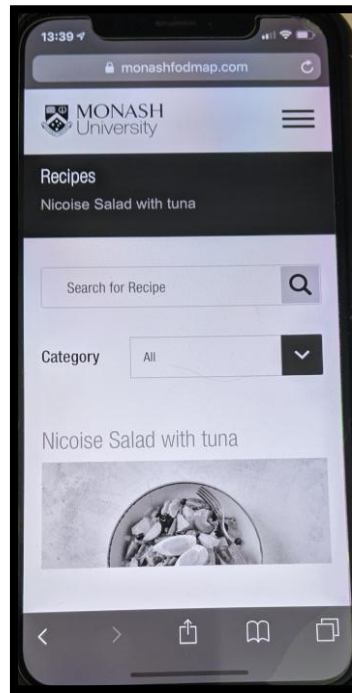
Normal display

Figure 17: **Grayscale**



Grayscale display

Figure 18: **Grayscale activated**



9.8: Reader view and increase text size (iOS Safari)

All actionable items and content can be accessed and activated with Reader View and increase text size enabled on iOS Safari.

About this requirement

The Larger Text Accessibility feature found in iPhones does not apply to Safari in iOS 12 and below. For iOS version 13.x, you may increase the text size for Safari in the Safari application settings.

Safari appears to rely on many structural elements to orient itself to the main content of the page. When clicked, the view should display the heading and content of the “main” part of the page, defined broadly, excluding any navigational elements other than “next” and “previous” at the end of the page or post.

If you find that the Reader view does not capture the main content of the page, check for the presence of structural tags such as <main>.

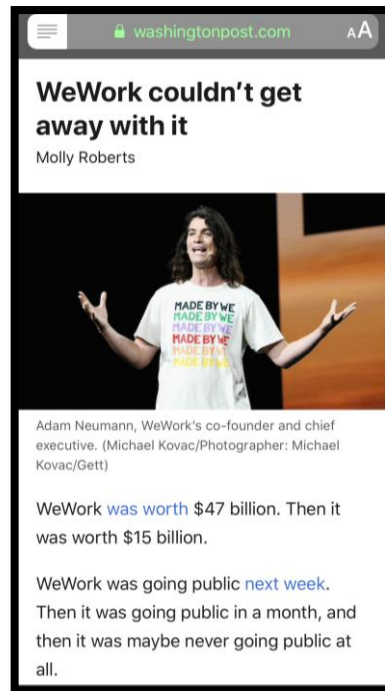
For iOS version 12.3 and lower, you must do the following on Safari:

1. Open the web page in the browser.
2. If text size on that page can be increased Safari will display “Reader View” in the URL area and then an icon appearing as several horizontal lines on the left. Not all pages have “Reader View” available.
3. Tap the lines icon. An “AA” icon appears in the top-right of the URL area.
4. Tap on the “AA” to open a menu.
5. Increase or decrease the text size by tapping on the large A or small A.

When Safari has enough information to create a reader view, you can see the Reader view icon to the left of the domain name (URL) at the top of the screen.

Figure 19: **Turning on the Reader view on iOS**

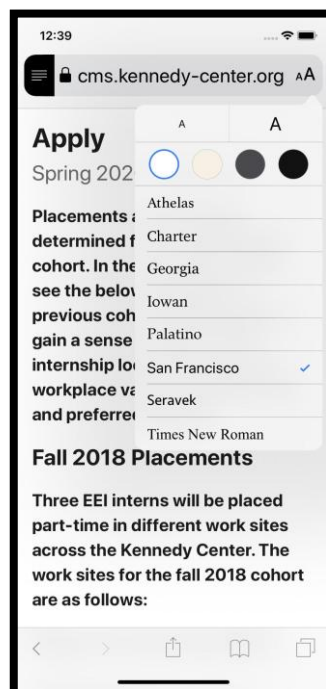
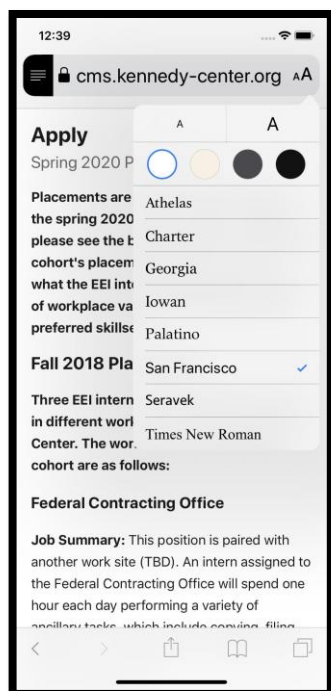
Figure 20: **The same article displayed in Reader view**



When Reader View is available you can select the "AA" option in the top right to modify text size and color.

Figure 21: Increase text size (smaller text)

Figure 22: Increase text size (larger text)



How to test

For iOS version 13.x, you may increase the text size for Safari in the Safari application settings.

For iOS version 12.3 and lower, you must do the following on Safari:

1. Identify all pages with one main block of text.
2. Is the Reader view available?
3. If the Reader view is available, tap the lines icon. Does the content change to Reader view?
4. Tap on the "AA" to open a menu.
5. Increase or decrease the text size by tapping on the large A or small A.
6. Does the text change size appropriately?
7. Ensure that extraneous content is not shown, and the only content visible is the main block of content (with headings)
8. Ensure the text does not overlap or obstruct other elements on the page.

Examples

Pass 1 – Reader View

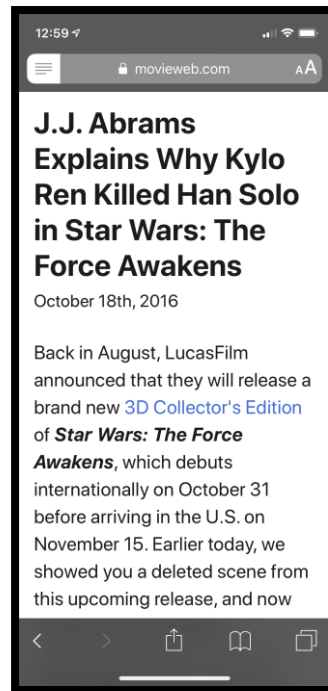
On this site, the Reader view displays just the article text.

Normal View

Figure 23: **Reader view (normal view)**

Reader View

Figure 24: **Reader view**

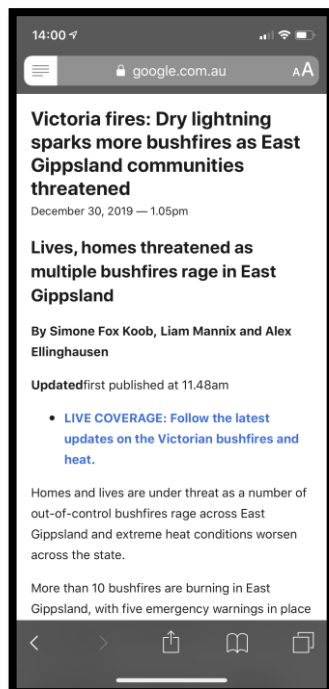


Pass 2 – Reader View increase text size

In this page, the text changes size appropriately.

Smallest text

Figure 25: Reader View increase text size (smallest text)



Largest text

Figure 26: Reader View increase text size (largest text)



10. Android test cases

In general, you access assistive technologies and mobile features through the **Settings** menu, and then select **Accessibility**. In most cases you can access detailed instructions by selecting the question mark icon in the top right-hand corner.

Figure 27: **Support link in the Font Size page**

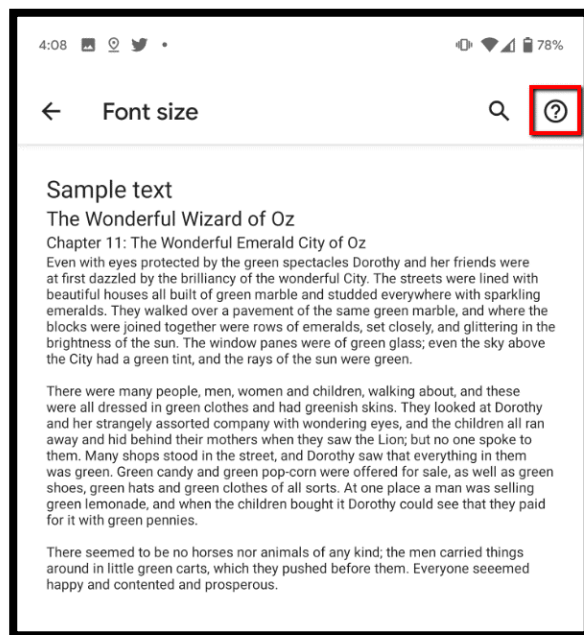
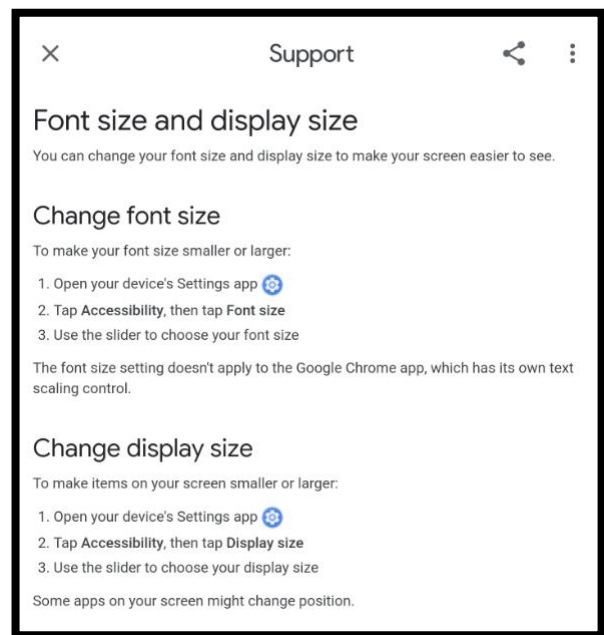


Figure 28: **Font size support**



10.1: TalkBack (Android)

All actionable items and content can be accessed and activated by TalkBack on Android.

About this requirement

To enable TalkBack, navigate to **Settings** → **Accessibility** → **TalkBack** then switch the button to **On**. A “Use TalkBack” confirmation screen will appear. When used for the first time a tutorial will be launched. Ensure the device volume is turned up as TalkBack doesn’t automatically adjust the volume if muted. See the [Android documentation on getting started on Android with TalkBack](#).

You can also access additional information and a detailed TalkBack tutorial by selecting **Settings**.

Figure 29: **Selecting Settings in the TalkBack page**

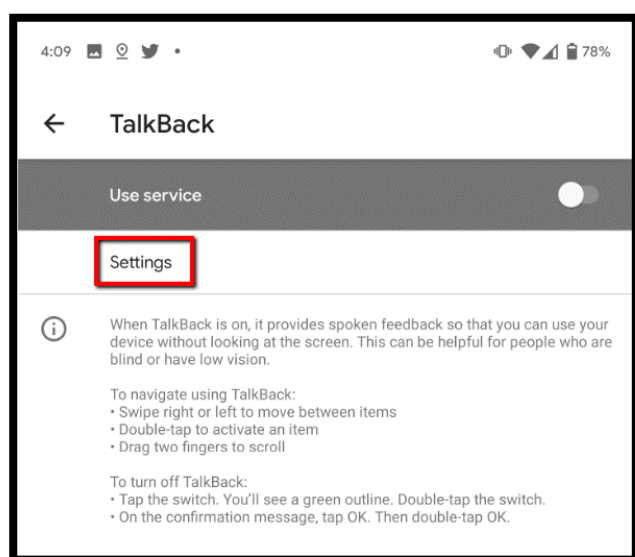
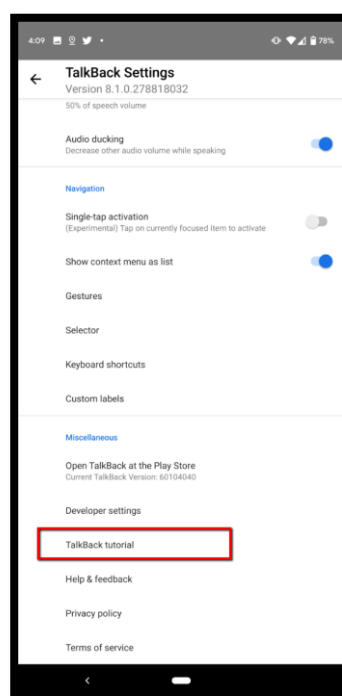


Figure 30: **The TalkBack tutorial**



How to test

1. With TalkBack on, open the site.
2. Swipe through the site.
3. As you swipe, the content will be read out loud.
4. Verify that all content can be read by TalkBack and that the text being read by TalkBack matches what is on screen.
5. Verify that all actionable items can be accessed and controlled by TalkBack. It is imperative that all actionable items are accurately labelled and described.

Examples

Pass

There are currently no example passes documented for this requirement. Similar Pass examples are available in the Mobile Site Assistive Technologies and Mobile Features Test Cases document.

10.2: Keyboard (Android)

All actionable items and content can be accessed and activated by the keyboard on Android.

About this requirement

Connect a Bluetooth keyboard to your Android device and navigate the page in Chrome as you would on desktop. Press TAB to navigate from one actionable item (buttons, links and form controls) to the next, use SPACEBAR to scroll the page, and press ENTER to activate the currently selected item.

How to test

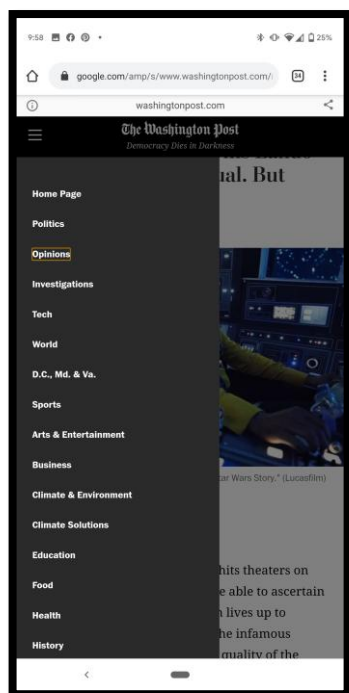
1. Connect the keyboard.
2. Do all actionable items receive focus when using the TAB or arrow keys?
3. Can all actionable items be activated using Enter?
4. Can the keyboard access all fields, radio buttons, checkboxes, dropdowns and submit buttons?
5. Is the keyboard focus visible at all times?
6. Is the keyboard focus indicator highly visible?
7. Do items receive keyboard focus in the order that they visibly appear on the screen?

Examples

Pass 1 – Keyboard accessible with highly visible keyboard focus indicator

In The Washington Post website, the menu items are keyboard accessible and have a highly visible keyboard focus indicator.

Figure 31: **Keyboard accessible with highly visible keyboard focus indicator**



10.3: Switch (Android)

All actionable items and content can be accessed and activated by the switch on Android.

About this requirement

To enable switch access, navigate to **Settings** → **Accessibility** → **Switch access** and then switch the button to **On**.

Switch Access has two modes: item mode and point scan mode. Item mode will scan through the elements on the screen. Once an element is selected, the options to Tap the element or access the switch menu appears. When an element cannot be accessed using item mode, point mode can be used. Point scan mode allows the user to select a location on screen to simulate a tap through a coordinate grid system. Users select the vertical location and then the horizontal location of where they would like to tap. Point mode is much more tedious to use than item mode. The menu for Switch Access is at the top of the screen and can be used to access scrolling, switch modes and access device functions.

Users typically use one or two switches. A variety of hardware options are available to use as a switch: Bluetooth switch, Bluetooth keyboard, sip and puff technology, wheelchair joystick and other switches. For testing, it is easiest to use a Bluetooth keyboard. Each key can be programmed as a different switch action.

To use switch access, you'll need a keyboard paired with the tablet or mobile. Then you'll need to assign keys to actions through **Settings** → **Accessibility** → **Switch access** → **Settings**. Select **Assign switches for scanning** under the heading "**Assign switches**" to map a keystroke to the action. Mapping "Auto-scan" and "Enter" actions is

recommended. Note that the keys that you map to actions will no longer have their original action. The on-screen keyboard may not appear by default. To enable the on-screen keyboard: **Settings** → **General Management** → **Language and input** → **Physical keyboard** → **toggle Show on-screen keyboard to On**.

The switch's item mode navigates to both actionable and nonactionable elements. Most of the time, nonactionable elements do not need to be accessed if they are visible in the current screen view. Scrolling is also an important feature to test in order to access content. Scrolling can be accessed on the switch's menu or activating an area of the screen via item mode.

If the on-screen keyboard is not working properly with Switch Access, check that your on-screen keyboard is enabled and use the GBoard keyboard if the default keyboard doesn't behave correctly.

Figure 32: The **Settings** link in the **Switch Access** page

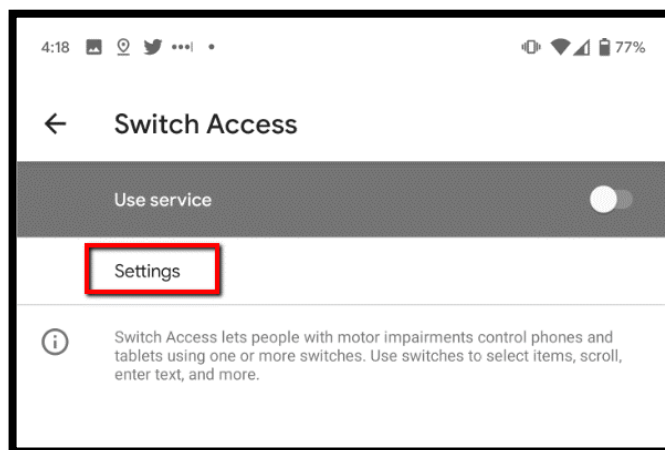
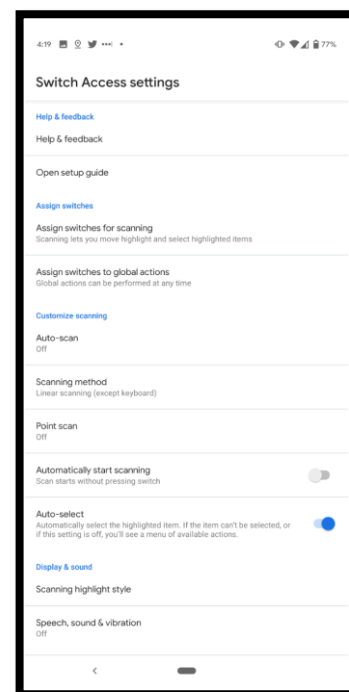


Figure 33: **Switch Access Settings**



How to test

1. Activate the switch (or the screen)
2. Scan to the section you want to navigate to and activate the switch
3. Activate the Tap menu item.
4. If the element is not accessible via item mode, point scan mode is a fallback/workaround. Item mode must work for an item to pass. To use point scan mode:
 - a. Activate the Menu button to access the menu
 - b. Activate the Point Scan Mode

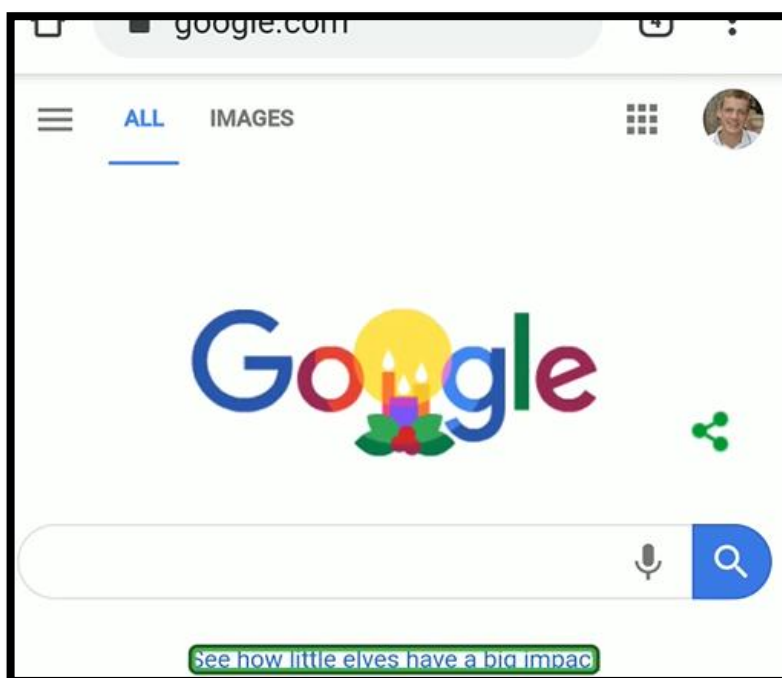
- c. A grid will appear to allow you pick where on the screen to simulate a "tap"
- d. Select the horizontal area of the screen and then the vertical area of the screen
- e. Select the horizontal and vertical point to simulate a "tap"

Examples

Pass 1 – Actionable element can be navigated to and activated with switch

The actionable element can be navigated to or activated using item mode. The link below is selected with item mode.

Figure 34: **Actionable element can be navigated to and activated with switch**



10.4: Magnification (Android)

All actionable items and content can be accessed and activated with Magnification enabled on Android.

About this requirement

To enable Zoom, navigate to **Settings** → **Accessibility** → **Magnification**. There are two settings, one for **Magnify with a Triple Tap** (Off by default) and **Magnify with a Shortcut** (Off by default).

Choose **Magnify with a Triple Tap** or **Magnify with a Shortcut** by selecting the item and then turning on the Use service button **On**.

When magnification gestures are enabled, you can zoom, pan across the screen and pan content:

- **Zoom:** quickly tap the screen 3 times.
- **Adjust Zoom:** pinch with two or more fingers to adjust zoom.
- **Scroll:** drag two or more fingers to scroll.
- **Zoom temporarily:** quickly tap the screen three times and hold your finger down on the third tap.
- **Move around the screen:** drag.

Note: you can't zoom in on the keyboard and navigation bar (native UI elements).

When magnify with button is on, you can use the Accessibility button at the bottom of the screen to quickly magnify. To zoom, tap the Accessibility button, then tap anywhere on the screen.

To zoom temporarily, tap the Accessibility button, then touch and hold on the screen. Drag to move around the screen. Lift finger to zoom out.

How to test

1. Open the mobile site and turn on **Magnification**.
2. While zoomed in, can you:
 - a. Drag two or more fingers to pan across the screen?
 - b. Pinch two or more fingers together or spread them apart to adjust the zoom level?Ensure the zoom is operable and there are no barriers and no element does not zoom accordingly (keyboard and navigation bar excepted).

Examples

Pass

There are currently no example passes documented for this requirement. Similar Pass examples are available in the Native App Assistive Technologies and Mobile Features Test Cases document.

10.5: Remove animations (Android)

All actionable items and content can be accessed and activated with Remove Animations enabled on Android.

About this requirement

The Remove Animations feature on Android reduces swipe-in features and things like parallax scrolling. To enable Remove Animations, navigate to **Settings** → **Accessibility** and turn on **Remove Animations** (off by default).

How to test

1. Identify all areas of movement in the site.
2. Turn on the Remove Animations feature.
3. Is the movement removed or reduced?

Examples

Pass

There are currently no example passes documented for this requirement.

10.6: Color inversion (Android)

All actionable items and content can be accessed and activated with Color Inversion enabled on Android.

About this requirement

To enable Color Inversion, navigate to **Settings** → **Accessibility** → **Color Inversion** then switch the button to **On**. Simply tapping on the title “Color Inversion” or tapping the toggle switch will activate color inversion immediately. The background will invert from white to black, and colors for icons and text, invert accordingly.

How to test

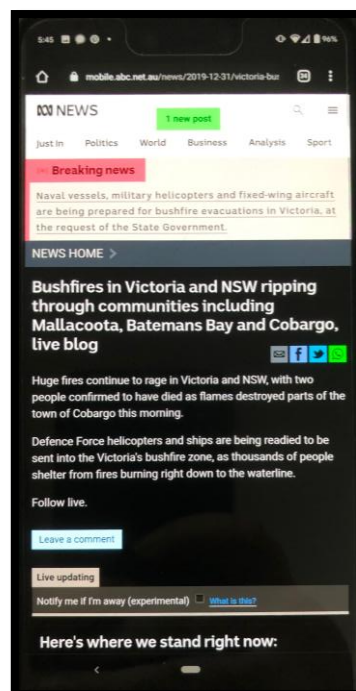
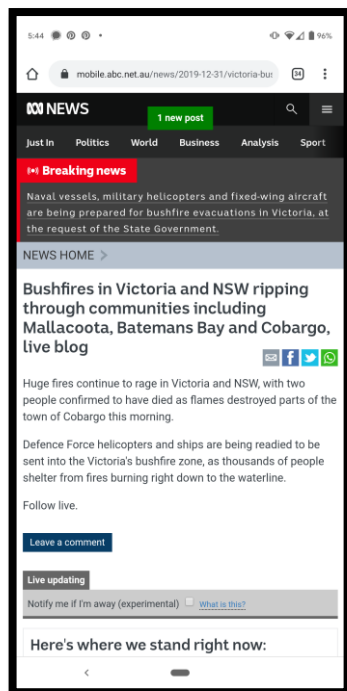
1. Open the site.
2. Activate Color Inversion.
3. Is the contrast between the foreground and background sufficient for important content and actionable items?
4. Ensure that no important content or actionable items use color as critical to its meaning.

Examples

Pass 1 - Color Inversion

The ABC website the Color Inversion works.

Figure 35: **Color inversion (normal view)** Figure 36: **Color inversion (activated)**



10.7: Grayscale (Android)

All actionable items and content can be accessed and activated with Grayscale enabled on Android.

About this requirement

To enable Android's grayscale view, first **enable Developer Mode** on your device. (This is a one-time process for each device.)

- Go to **Settings** → **About Tablet** (which might also be labelled "About Phone" or "About Device").
- Locate the Build number section and tap on the phrase "Build number" 7 times.
- Go back to the main Settings page and tap on "Developer Options."
- Enable the Developer Options switch.

From then on, you can enable Android's grayscale view (Lollipop 5.0 onwards) by going to **Settings** → **Developer Options** → **Simulate color space** and selecting "**Monochromacy**." Once you've made that selection, display colors will be replaced by shades of gray.

Grayscale is applied to all screens until you turn off the feature, which you can do by going back to **Settings** → **Developer Options** → **Simulate color space** and selecting "**Disabled**."

Android's grayscale view can be used alongside any of Android's other modes or applications, including TalkBack and Shade, among others.

How to test

1. Open the site.
2. Activate Grayscale.
3. Is the contrast between the foreground and background sufficient for important content and actionable items?
4. Ensure that no important content or actionable items use color as critical to its meaning.

Examples

Pass

There are currently no example passes documented for this requirement. Similar Pass examples are available in the Native App Assistive Technologies and Mobile Features Test Cases document.

10.8: Color correction (Android)

All actionable items and content can be accessed and activated with Color Correction enabled on Android.

About this requirement

In most cases color correction errors will be identified also as grayscale errors. This will be investigated more fully in the coming year.

To enable Color Correction, first navigate to **Settings** → **Accessibility** → **Color Correction** and use the slider to turn color correction on.

You can mimic the three types of color blindness:

- Deuteranopia / Deuteranomaly – malfunctioning or missing green cones (approximately 6% of males)
- Protanopia / Protanomaly– malfunctioning or missing red cone (approximately 2% of males)
- Tritanopia / tritanomaly - malfunctioning or missing blue cones (approximately 0.5% of males)

You can select different types of color blindness by selecting **Correction mode**.

Figure 37: **Selecting different color blindness options**

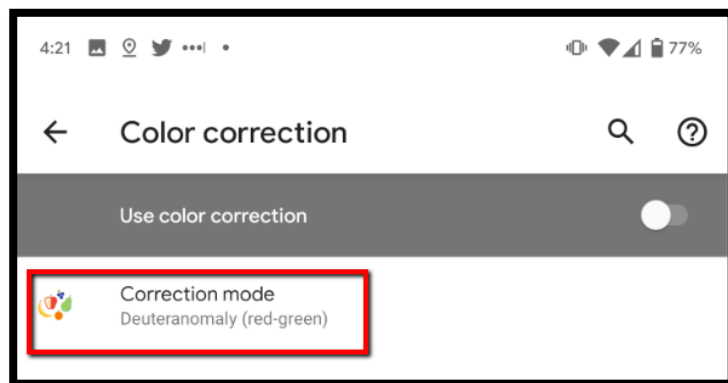
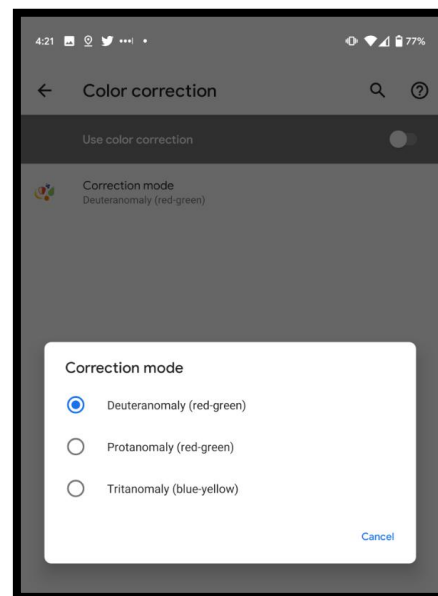


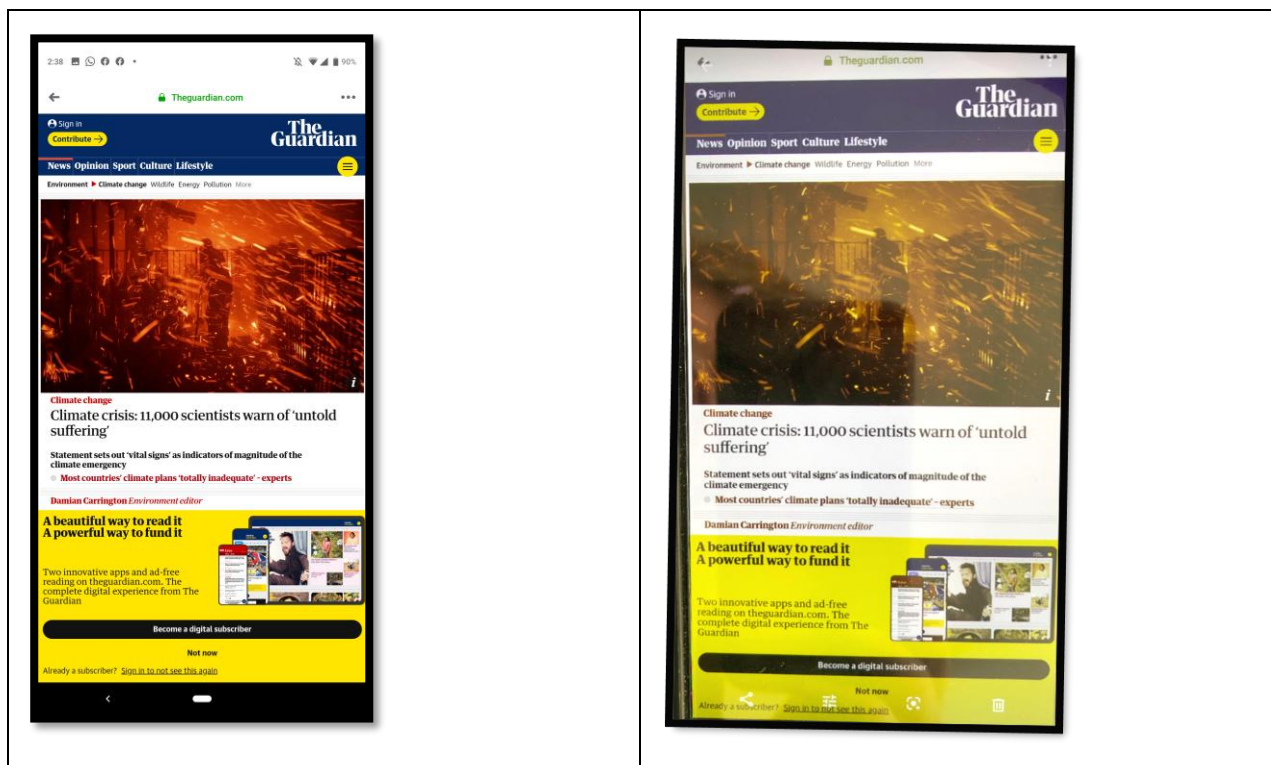
Figure 38: **Color blindness options**



Color Correction on versus off

Figure 39: **Color Correction off**

Figure 40: **Color Correction on**



How to test

1. Turn on Color Correction.
2. Are all actionable items still visible? Is it clear what action will be undertaken when activated?
3. Is all important content and actionable items still visible?
4. Ensure that no important content or actionable items use color as critical to its meaning.
5. Is color contrast still sufficient?

Examples

Pass

There are currently no example passes documented for this requirement. Similar Pass examples are available in the Mobile Site Assistive Technologies and Mobile Features Test Cases document.

10.9: Increase display size (Android)

All actionable items and content can be accessed and activated with Increase Display Size enabled on Android.

About this requirement

To enable Increase Display Size, first navigate to **Settings** → **Accessibility** → **Display Size** and use the slider to change the size of content, including text and containers. Please note that this overrides the Android Chrome Increase Text Size feature.

How to test

1. Increase the display size.
2. Open the site.
3. Has the text increased in size?
4. Is all content visible and operational?

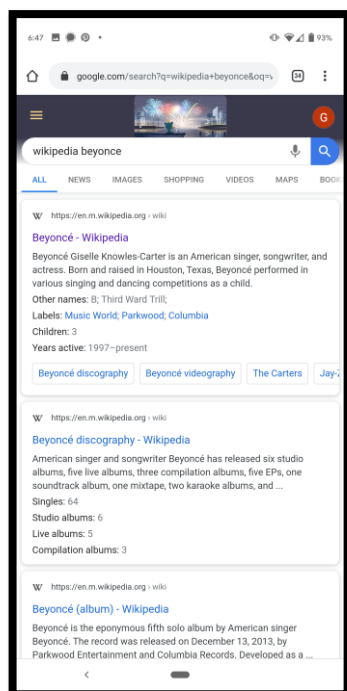
Examples

Pass 1 – Content increases in display size

In the Google.com search results, all text is increased in size.

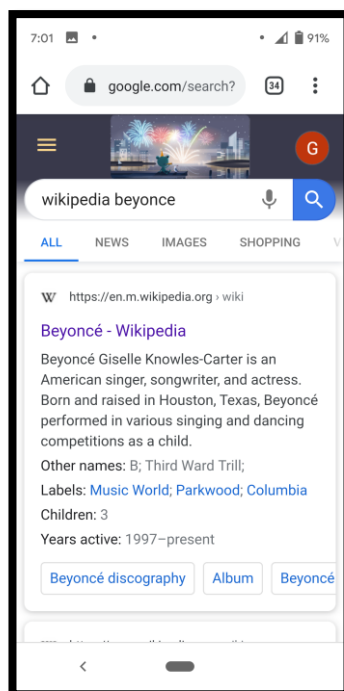
Normal Display Size

Figure 41: Content increases in display size (normal display size)



Largest display size

Figure 42: Content increases in display size (largest display size)

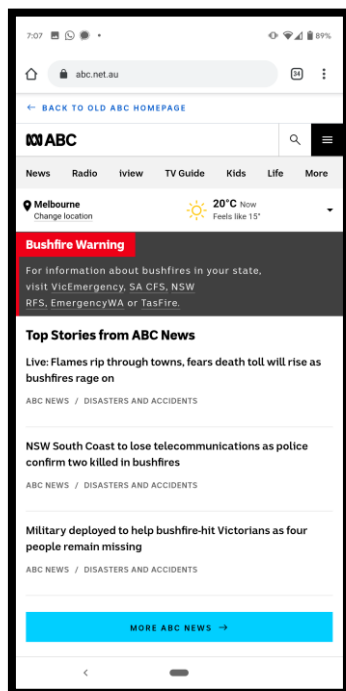


Pass 2 – Content increases in display size

In the ABC site all text is increased in size. As the navigation items (News, Radio, iview, etc.) no longer fit they can now be scrolled.

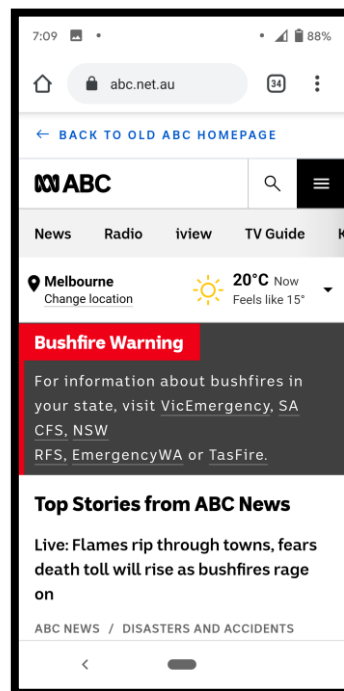
Normal Display Size

Figure 43: **Content increases in display size (normal display size)**



Largest display size

Figure 44: **Content increases in display size (largest display size)**



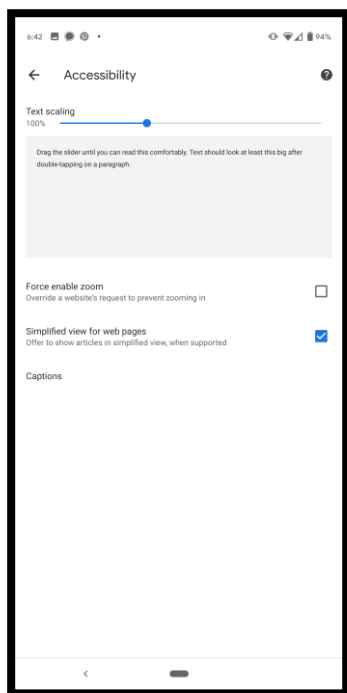
10.10: Increase text size (Android Chrome)

All actionable items and content can be accessed and activated with Increase text size enabled on Android Chrome.

About this requirement

When in Chrome, go to **Settings** > **Accessibility** > and using the **Text Scaling** slider, increase the text from 100% to 200%.

Figure 45: **Android text scaling options**



How to test

1. Open the **Chrome browser** and review the site
2. Change the text size to 200%
3. Does all text content increase in size?
4. Does all the content in the browser reflow accordingly, without obscuring any other non-text elements?

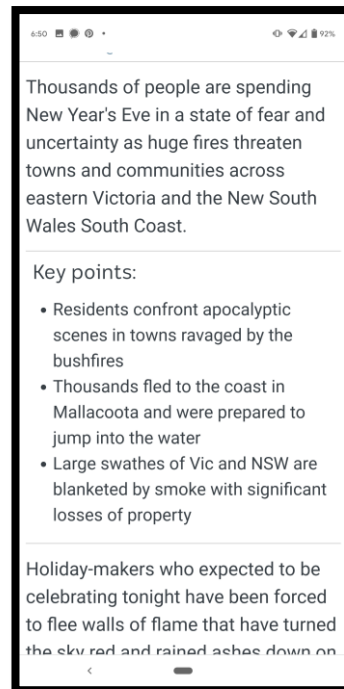
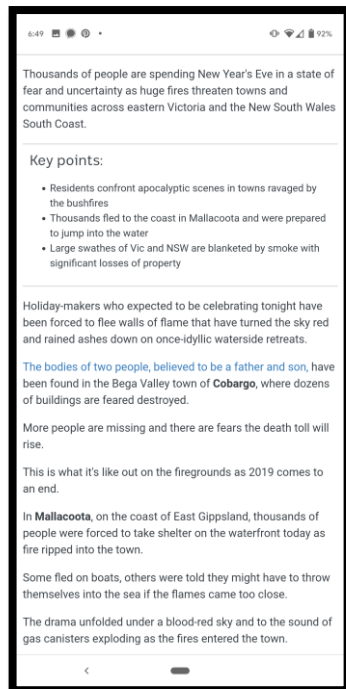
Examples

Pass 1 - All text increases in size

In the ABC website all the text increases.

Figure 46: **All text increases in size (normal text size)**

Figure 47: **All text increases in size (200% text size)**



10.11: Simplified view

All actionable items and content can be accessed and activated with Simplified View enabled on Android Chrome.

About this requirement

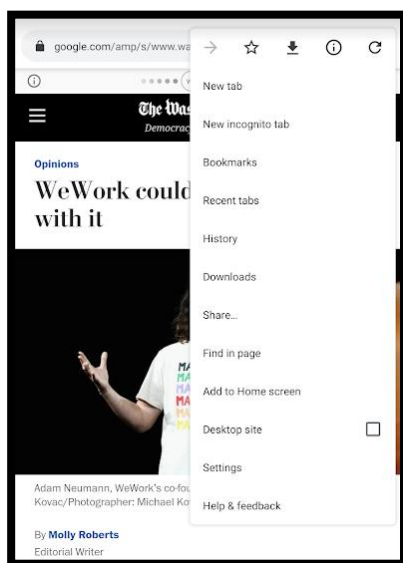
To turn on Simplified view on Android Chrome you need to navigate to Chrome and activate the vertical ellipsis in the top right corner. Select **Settings** and then **Accessibility**. Select the option "Simplified view for web pages". When a simplified view of a page is available it will appear at the bottom of the screen.

Figure 48: **Vertical ellipsis menu button in Chrome**



Drop-down menu once the vertical ellipsis has been selected:

Figure 49: **Chrome dropdown menu**

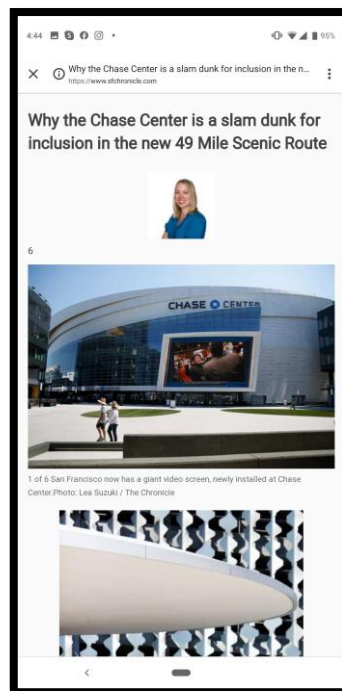


Article on San Francisco Chronicle with simplified view option visible at the bottom of the screen:

Figure 50: **"Show simplified view" option**

The simplified view of the article:

Figure 51: **Simplified view activated**



How to test – Android Chrome

1. Open the **Chrome browser** on Android
2. Identify all pages with one main block of text.
3. Increase the text size to 200%.
4. Does the text change size appropriately?
5. Ensure that extraneous content is not shown, and the only content visible is the main block of content (with headings)
6. Ensure the text does not overlap or obstruct other elements on the page.

Examples – Simplified view (Android)

Pass 1 – Simplified view

The New York Times supports Simplified View. With Simplified View enabled the navigation, header, login and subscribe information is removed from the screen.

Normal View

Figure 52: **Simplified view available (normal view)**

Simplified View

Figure 53: **Simplified view available (activated)**



Pass 2 – Simplified view

In the Travel Codex website, the Simplified view removes the header and advertisement.

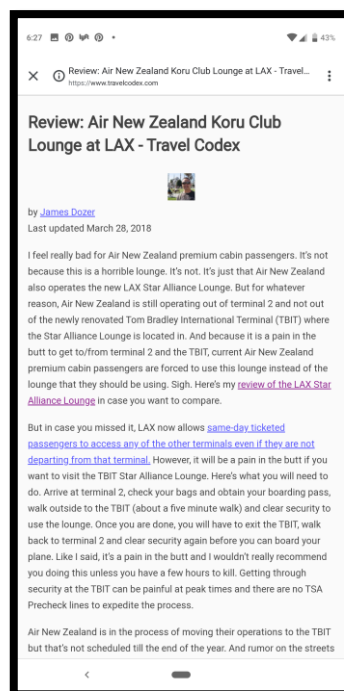
Normal view

Figure 54: **Simplified view available (normal view)**



Simplified view

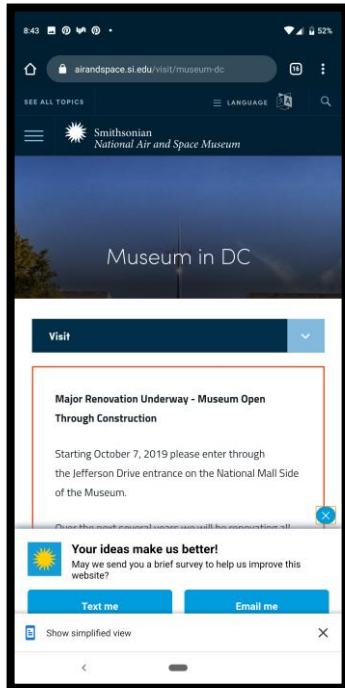
Figure 55: **Simplified view available (activated)**



Pass 3 – Simplified view can be used

In the Air and Space website, the ad is underneath the Simplified view so that users can still access the ad and the Simplified view option.

Figure 56: **Simplified view can be used**



7. Samsung test cases

7.1: Voice assistant for Samsung (Samsung)

All actionable items and content can be accessed and activated by Voice Assistant on Samsung.

About this requirement

Samsung devices include a built-in screen reader called "Voice Assistant," however TalkBack can still be installed as part of the Accessibility Suite (found in the Google Play Store). Voice Assistant can be activated by accessing Settings → Accessibility → Screen Reader → Voice Assistant.

How to test

1. With Voice Assistant on, open a web page.
2. Swipe through the site.
3. As you swipe, the content will be read out loud.
4. Verify that all content can be read by Voice Assistant and that the text being read by Voice Assistant matches what is on screen.
5. Verify that all actionable items can be accessed and controlled by Voice Assistant. It is imperative that all actionable items are accurately labelled and described.

Examples

Pass

There are currently no example passes documented for this requirement.

8. Kindle test cases

Help for Kindle

Kindle Fire devices include an Accessibility User's Guide, located by swiping down from the top of the screen to open Quick Settings. Then navigate to Settings → Accessibility → Accessibility User's Guide. The User's Guide includes information for VoiceView, screen magnification, braille displays, and subtitles. Accessibility help can also be found on the amazon website at

<https://www.amazon.com/gp/help/customer/display.html?nodeId=201829310&OpenInBrowser=1>

12.1: VoiceView for Kindle (Kindle)

All actionable items and content can be accessed and activated by VoiceView on Kindle.

About this requirement

Kindle Fire devices include a built-in screen reader called "VoiceView". To enable VoiceView, swipe down from the top of the screen to open Quick Settings. Then navigate to Settings → Accessibility → VoiceView Screen Reader, and check VoiceView. A tutorial will be started at the first launch of the screen reader.

How to test

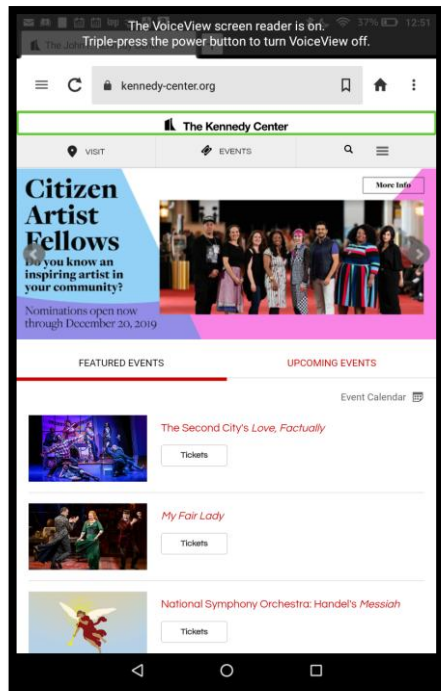
1. With VoiceView on, open a web page in the Silk browser.
2. Swipe through the mobile site.
3. As you swipe, the content will be read out loud.
4. Verify that all content can be read by VoiceView and that the text being read by VoiceView matches what is on screen.
5. Verify that all actionable items can be accessed and controlled by VoiceView. It is imperative that all actionable items are accurately labelled and described.

Examples

Pass 1 - Content read by VoiceView

In the content of the browser, each finger swipe by the user focuses on an area of the page and reads that area out loud.

Figure 57: **Content read by VoiceView**



Acknowledgements

Relationship to existing Accessibility testing standards

This document is based on:

- W3C Web Content Accessibility Guidelines, Version 2.0
- W3C Web Content Accessibility Guidelines, Version 2.1
- BBC Mobile Accessibility Guidelines
- AccessibilityOz Mobile Testing Methodology
- TPG Mobile Testing Guide

ICT Accessibility Testing Symposium Mobile Site Sub-Committee

This document was developed by the ICT Accessibility Testing Symposium Mobile Sub-Committee. Members include: Gian Wild (Co-Chair), Peter McNally (Co-Chair), Brent Davis, Corbb O'Connor, Karen Herr, Kathryn Weber-Hottleman, Kathy Eng, Laura Renfro, Megha Rajopadhye, Mona Rekhi, Morgan Lee Kestner, Rafal Charlampowicz, Ryan Pugh, Steve Sawczyn, Sunish Gupta, Tom Lawton and Chris Law.

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