

# VPAT Analysis

## Introduction to this Document

This document is intended to support analysis of Voluntary Product Accessibility Templates (VPAT). The VPAT is a tool prescribed by Section 508 of the Rehabilitation Act as a tool for vendors to report their own analysis, or a third party's objective analysis, of their product or service for accessibility. A purchaser may also commission or complete their own VPAT template for a product or service under consideration.

The VPAT provides a comprehensive list of features or qualities that products or services may need to ensure accessibility. Criteria in a VPAT are organized in tables, which usually indicate criteria, criterion level (A, AA, AAA), conformance achievement, and remarks.

- **The Criteria** are prescribed from Section 508 and the Web Content Accessibility Guidelines (WCAG).
- **The Criterion Level** indicates the stringency of accessibility requirements, with A being the most basic and AAA being the most comprehensive.
  - UT System calls for **A** and **AA levels** to be met.
- **Conformance Achievement** is usually identified as "Supports/Meets," "Partially Supports/Meets," "Does not Support/Meet" or "Not Applicable"
- **The Remarks** offer commentary regarding the conformance achievement and are particularly important for "Partially Supports" to clarify the extent.

A vendor producing a VPAT for a product or service doesn't mean that the product or service is in compliance with accessibility standards. Analysis of the VPAT is warranted, including analysis of the quality of the VPAT itself and analysis of the reported accessibility limitations in the VPAT.

This document is designed to provide conceptual and practical support for such analysis.

## VPAT Analysis and Accessibility

Accessibility isn't a binary – something isn't simply "accessible" or "not accessible," but accessible on a sliding scale. The VPAT may offer a good overview of "how accessible" a product or service is, as part of a comprehensive accessibility evaluation process.

Accessibility barriers (i.e., "does not support" in one or more criteria) may not affect all people, nor are they all accessibility barriers equally impactful. For example, a barrier that prevents access to auxiliary content is not as significant as a barrier that precludes any navigation at all or one that may trigger seizures. A thorough analysis not only identifies where there are accessibility limitations of the product or service, but who those limitations affect and how significantly people may be affected.

## Limitations of VPATs

Note that VPATs may have notable limitations, including:

1. May be (unintentionally) inaccurate, especially if conducted “in house” by vendor. A VPAT is only as good as the knowledge and skill of the person who completed it.
2. May focus on the accessibility potential of end products created by a tool, not the use of the tool to create end products (this is especially and almost invariably true of authoring tools).
  - a. Relatedly, just because an authoring tool, for example, *can* be used to develop accessible content doesn’t mean that authors *will* create accessible content. The latter is a question of training and procedural evaluation in development.
3. Versions of the same product can significantly differ. When receiving a VPAT, confirm that it matches the product being considered for purchase. The date on the VPAT should also be consistent with the release of the product.

## VPAT Red Flags

There are some “red flags” or obvious warnings to look for when conducting an initial evaluation of a VPAT. These include:

- “Supports” for each criterion with little or no meaningful commentary.
  - Very, very few products or services are fully accessible. A product that is listed with “supports” in every criterion often belies either an unskilled accessibility evaluator or a deceptive one.
- Relevant criterion is omitted from the table either altogether or noted as “n/a” when they are actually applicable.
  - It is a good idea to cross reference a VPAT with the full list of criteria to see if anything is omitted. Note that some criteria (such as 2.1.3) are at the AAA level, and thus may legitimately be omitted in VPATs that only cover A and AA.
  - Don’t take “n/a” at face value. Consider each criterion and decide for yourself if it may be applicable.
- Phrases such as “don’t know” or “not evaluated” are included.
  - While it is good that the vendor is honest about these things, this implies that the VPAT was completed by someone with limited knowledge or skill, and thus should be redone by a skilled individual.

The presence of one or more “red flags” is not a foolproof reason to reject a product. These all indicate that the VPAT should be reviewed and possibly recompleted by a neutral third party or UT representative.

## Generalized Evaluation of Accessibility Success Criterion and Barriers

The purpose of this section is to provide generalized commentary about how barriers in given criteria may affect individuals. This commentary should be considered in context of the purpose and people of the product or service, which may render these more- or less- significant.

For each criterion, the table provides examples of success, a general example of who is likely to be affected, how inaccessibility may affect them, as well as effort/expense estimation

## Accessibility Over Table 1: Success Criteria, Level A

Key for Effort/Expense to Accommodate

Implications or Inaccessibility	Interpretation
●○○	Minimal - no to low loss of access to relevant material.
●●○	Moderate -partial loss of access to relevant material.
●●●	Severe - complete loss of access to relevant content for some people

Effort/Expense Level	Interpretation
●○○	Usable by affected people with some inconvenience or experience loss, without significant modifications or accommodations -OR- Easy and inexpensive adjustments available.
●●○	Moderate/moderately expensive modification of the product/service or accommodation for the end user.
●●●	Specialized, real-time support or substantial re-creation from the vendor or creator.

Criteria	Examples of success	Who is likely to be affected if not accessible	Implications of inaccessibility	Effort/Expense to accommodate
<a href="#">1.1.1 Non-text Content</a>  “All non-text content that is presented to the user has a text alternative that serves the equivalent purpose, except for the situations listed below.”	<ul style="list-style-type: none"> <li>Alternative text or detailed captions provided with images.</li> <li>Description of data in tables or charts as hidden descriptive text or as part of surrounding narrative.</li> </ul>	<ul style="list-style-type: none"> <li>People who are blind or low-vision.</li> <li>People who are deaf or hard of hearing.</li> <li>People who are deaf-blind.</li> <li>People who have learning disabilities that make visual, spatial, or auditory analysis</li> </ul>	●●●	●●○

		difficult.		
<a href="#">1.2.1 Audio-only and Video-only (Prerecorded)</a>  “Prerecorded Audio-only An alternative for time-based media is provided that presents equivalent information for prerecorded audio-only content.  Prerecorded Video-only Either an alternative for time-based media or an audio track is provided that presents equivalent information for prerecorded video-only content.”	<ul style="list-style-type: none"> <li>• Transcript provided with speech audio.</li> <li>• Descriptive text representing silent movies.</li> <li>• Descriptive text representing demonstrative animation.</li> </ul>	<ul style="list-style-type: none"> <li>• People who are blind or low vision.</li> <li>• People who are deaf or hard of hearing.</li> <li>• People who are deaf-blind.</li> <li>• People who have learning disabilities that make visual or spatial processing difficult.</li> <li>• People who have learning disabilities that make auditory processing difficult.</li> </ul>	●●●	●●○
<a href="#">1.2.2 Captions (Prerecorded)</a>  “Captions are provided for all prerecorded audio content in synchronized media, except when the media is a media alternative for text and is clearly labeled as such.”	<ul style="list-style-type: none"> <li>• Presence of captions for all prerecorded synchronized media with spoken words.</li> </ul>	<ul style="list-style-type: none"> <li>• People who are deaf or hard of hearing.</li> <li>• Captions, in general, improve attention, retention and comprehension.</li> </ul>	●●●	●○○
<a href="#">1.2.3 Audio Description or Media Alternative (Prerecorded)</a>  “An alternative for time-based media or audio description of the prerecorded video content is provided for synchronized media, except when the media is a media alternative for text and is clearly	<ul style="list-style-type: none"> <li>• Presence of audio description for all prerecorded synchronized media with sound.</li> </ul>	<ul style="list-style-type: none"> <li>• People who are blind or low vision.</li> <li>• People who have learning disabilities that make visual or spatial processing difficult.</li> </ul>	●●●	●●●

labeled as such.”				
<a href="#">1.3.1 Info and Relationships</a>  “Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text.”	<ul style="list-style-type: none"> <li>Form fields use symbols as well as color to denote required fields.</li> <li>Tables use correct header and first column formatting.</li> <li>Assistive technology can be used to complete forms and other interactive content.</li> </ul>	<ul style="list-style-type: none"> <li>People of assistive technologies (varied)</li> <li>People who are blind or low vision.</li> <li>People who are deaf-blind.</li> </ul>	●●●	●●●
<a href="#">1.3.2 Meaningful Sequence</a>  “When the sequence in which content is presented affects its meaning, a correct reading sequence can be programmatically determined.”	<ul style="list-style-type: none"> <li>Reading software reads columns top-to-bottom, then left-to-right.</li> <li>Images with alt text are read in logical order with surrounding text.</li> </ul>	<ul style="list-style-type: none"> <li>People who are blind or low vision.</li> <li>People with dyslexia or other reading disabilities.</li> <li>People who use reading software.</li> </ul>	●●○	●●●
<a href="#">1.3.3 Sensory Characteristics</a>  “Instructions provided for understanding and operating content do not rely solely on sensory characteristics of components such as shape, color, size, visual location, orientation, or sound.”	<ul style="list-style-type: none"> <li>A system that announces correct or erroneous responses uses text <i>and</i> sound to indicate each.</li> <li>Information about a button’s location includes its spatial location <i>and</i> color.</li> </ul>	<ul style="list-style-type: none"> <li>People who are blind or low vision.</li> <li>People who are deaf or hard of hearing.</li> <li>People of assistive technologies (varied)</li> </ul>	●●○	●●●
<a href="#">1.4.1 Use of Color</a>  “Color is not used as the only visual means of conveying information, indicating an action, prompting a	<ul style="list-style-type: none"> <li>A line graph uses different color lines that also have shapes along them to differentiate.</li> </ul>	<ul style="list-style-type: none"> <li>People who are colorblind.</li> <li>People who are blind or low vision.</li> </ul>	●●○	●●○

response, or distinguishing a visual element.”	<ul style="list-style-type: none"> <li>Input fields use color <i>and</i> text (e.g., “required”) to alert people of required items.</li> </ul>			
<a href="#">1.4.2 Audio Control</a>  “If any audio... plays automatically for more than 3 seconds, either a mechanism is available to pause or stop the audio, or a mechanism is available to control audio volume independently from the overall system volume level.”	<ul style="list-style-type: none"> <li>An audio file begins playing automatically when a page is opened. However, the audio can be stopped by the user by selecting a "silent" link at the top of the page.</li> <li>A Flash splash page with sound that plays and then stops in less than 3 seconds.</li> </ul>	<ul style="list-style-type: none"> <li>People who are blind or low vision.</li> <li>People with some kinds of learning disabilities.</li> <li>Anyone who struggles to focus on content due to audio/visual distractions</li> </ul>	●●○	●○○
<a href="#">2.1.1 Keyboard</a>  “All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes, except where the underlying function requires input that depends on the path of the user's movement and not just the endpoints.”	<ul style="list-style-type: none"> <li>An application that uses drag and drop also supports "cut" and "paste" or form controls to move objects.</li> <li>A drawing program allows people to create, size, position and rotate objects from the keyboard.</li> <li><b>Exception-</b> A model helicopter flight training simulator passes as an exception because the nature of the simulator is to teach real-time behavior of a model helicopter.</li> </ul>	<ul style="list-style-type: none"> <li>People who are blind or low vision.</li> <li>People who have difficulty with fine motor control including those with tremors.</li> </ul>	●●●	●●●
<a href="#">2.1.2 No Keyboard Trap</a>  “If keyboard focus can be moved to a component of the page using a keyboard interface, then focus can be	<ul style="list-style-type: none"> <li>A widget allows people to add, remove or update items using the keyboard. The controls in the widget are part of the tab order within the interface,</li> </ul>	<ul style="list-style-type: none"> <li>People who are blind or low vision.</li> <li>People who have difficulty with fine motor control</li> </ul>	●●●	●●●

<p>moved away from that component using only a keyboard interface, and, if it requires more than unmodified arrow or tab keys or other standard exit methods, the user is advised of the method for moving focus away.”</p>	<p>allowing people to tab through the controls in the widget as well as to any links or controls that follow.</p> <ul style="list-style-type: none"> <li>When tabbing to a window or frame within an interface, people are always able to use the keyboard to navigate back out to the main or next content.</li> </ul>	<p>including those with tremors.</p>		
<p><a href="#">2.1.4 Character Key Shortcuts</a></p> <p>“If a keyboard shortcut is implemented in content using only letter (including upper- and lower-case letters), punctuation, number, or symbol characters, then at least one of the following is true:</p> <ul style="list-style-type: none"> <li>Turn off: A mechanism is available to turn the shortcut off;</li> <li>Remap: A mechanism is available to remap the shortcut to include one or more non-printable keyboard keys (e.g., Ctrl, Alt);</li> <li>Active only on focus: The keyboard shortcut for a user interface component is only active when that component has focus.</li> </ul>	<ul style="list-style-type: none"> <li>A mechanism is provided to allow people to disable character-key shortcuts. The character key shortcuts are not the only way to carry out these commands. A speech user disables the shortcuts and can prevent words that are picked up by the microphone from triggering single-key shortcuts.</li> </ul>	<ul style="list-style-type: none"> <li>People who are blind or low vision.</li> <li>People with dexterity issues</li> <li>People with some intellectual disabilities.</li> </ul>	●○○	●●○
<p><a href="#">2.2.1 Timing Adjustable</a></p> <p>For each time limit that is set by the</p>	<ul style="list-style-type: none"> <li>A Web site uses a client side time limit to help protect people who may step away</li> </ul>	<ul style="list-style-type: none"> <li>People with physical disabilities.</li> </ul>	●●○	●●○

<p>content, at least one of the following is true:</p> <ul style="list-style-type: none"> <li>• Turn off: The user is allowed to turn off the time limit before encountering it;</li> <li>• Adjust: The user is allowed to adjust the time limit before encountering it over a wide range that is at least ten times the length of the default setting;</li> <li>• Extend: The user is warned before time expires and given at least 20 seconds to extend the time limit with a simple action (for example, "press the space bar"), and the user is allowed to extend the time limit at least ten times;</li> <li>• Real-time Exception: The time limit is a required part of a real-time event (for example, an auction), and no alternative to the time limit is possible;</li> <li>• Essential Exception: The time limit is essential and extending it would invalidate the activity;</li> <li>• 20 Hour Exception: The time limit is longer than 20 hours.</li> </ul>	<p>from their computer. After a period of inactivity the Web page asks if the user needs more time. If it doesn't get a response – it times out.</p> <ul style="list-style-type: none"> <li>• A quiz application allows instructors to set time limits for questions or the quiz as a whole. The instructor disables this function or allows ample time for all people (noting the exceptions in the previous column).</li> </ul>	<ul style="list-style-type: none"> <li>• People who rely on assistive technology or accommodations that may take more time.</li> <li>• People with some learning disabilities.</li> <li>• People with some intellectual disabilities.</li> </ul>		
<a href="#">2.2.2 Pause, Stop, Hide</a>	<ul style="list-style-type: none"> <li>• An application helps people understand 'how things work' through animations that demonstrate processes.</li> </ul>	<ul style="list-style-type: none"> <li>• People with some learning disabilities.</li> <li>• People with some kinds of epilepsy.</li> </ul>	●○○	●●○



<p>For moving, blinking, scrolling, or auto-updating information, all of the following are true:</p> <ul style="list-style-type: none"> <li>● Moving, blinking, scrolling: For any moving, blinking or scrolling information that (1) starts automatically, (2) lasts more than five seconds, and (3) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it unless the movement, blinking, or scrolling is part of an activity where it is essential; and</li> <li>● Auto-updating: For any auto-updating information that (1) starts automatically and (2) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it or to control the frequency of the update unless the auto-updating is part of an activity where it is essential.</li> </ul>	<p>Animations have "pause" and "restart" buttons.</p> <ul style="list-style-type: none"> <li>● An animation has "freeze animation" button near the bottom of the animation and/or stops after 5 seconds.</li> </ul>	<ul style="list-style-type: none"> <li>● Anyone who is distracted by moving or auto-updating content.</li> </ul>		
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<p><a href="#">2.3.1 Three Flashes or Below Threshold</a></p> <p>“[Content does] not contain anything that flashes more than three times in any one second period, or the flash is below the general flash and red flash thresholds.”</p>	<ul style="list-style-type: none"> <li>● A Web site has video of muzzle flash of machine gun fire, but limits the size of the flashing image to a small portion of the screen below the flash threshold size.</li> <li>● A movie with a scene involving very bright lightning flashes is edited so that the lightning only flashes three times in any one second period.</li> </ul>	<ul style="list-style-type: none"> <li>● People with some kinds of epilepsy or other photosensitive seizure disorders.</li> </ul>	<p>●●●</p>	<p>●○○</p>
<p><a href="#">2.4.1 Bypass Blocks</a></p> <p>“A mechanism is available to bypass blocks of content that are repeated on multiple Web pages [or other interfaces].”</p>	<ul style="list-style-type: none"> <li>● An e-commerce website includes a long list of filters prior to the search results listing. A link above the list enables people to skip the filters and get to the product results quickly.</li> <li>● A long Word document has a table of contents that allows people to jump to key content.</li> </ul>	<ul style="list-style-type: none"> <li>● People who are blind or low vision.</li> <li>● People who rely on keyboard interfacing.</li> <li>● People with some kinds of learning or intellectual disabilities.</li> </ul>	<p>●○○</p>	<p>●○○</p>
<p><a href="#">2.4.2 Page Titled</a></p> <p>“Web pages [and files of all types] have titles that describe topic or purpose.”</p>	<ul style="list-style-type: none"> <li>● The descriptive title of an HTML Web page is marked up with the &lt;title&gt; element so that it will be displayed in the title bar of the user agent.</li> <li>● The title of a syllabus for a class is “Syllabus [Class Name, Term].”</li> </ul>	<ul style="list-style-type: none"> <li>● All people, for rapid identification and usability.</li> <li>● People who are blind or low vision.</li> <li>● People with certain learning or intellectual disabilities.</li> <li>● People with severe mobility impairments.</li> </ul>	<p>●○○</p>	<p>●○○</p>

<p><a href="#">2.4.3 Focus Order</a></p> <p>“If [an interface] can be navigated sequentially and the navigation sequences affect meaning or operation, focusable components receive focus in an order that preserves meaning and operability.”</p>	<ul style="list-style-type: none"> <li>● In an interface that contains a tree of interactive controls, the user can use the arrow keys to fully navigate the tree nodes.</li> <li>● In a document, images and tables are included “in line” to ensure logical focus order.</li> </ul>	<ul style="list-style-type: none"> <li>● People with mobility impairments.</li> <li>● People with disabilities that make reading difficult.</li> <li>● People who are blind or low vision.</li> </ul>	<p>●●○</p>	<p>●●○</p>
<p><a href="#">2.4.4 Link Purpose (In Context)</a></p> <p>“The purpose of each link can be determined from the link text alone or from the link text together with its programmatically determined link context, except where the purpose of the link would be ambiguous to people in general.”</p>	<ul style="list-style-type: none"> <li>● Content contains the sentence "Learn more about the Government of Ireland's Commission on Electronic Voting at Go Vote!" where "Go Vote!" is a link.</li> <li>● A list of books is available in three formats: HTML, PDF, and mp3 (a recording of a person reading the book). To avoid hearing the title of each book three times (once for each format), the first link for each book is the title of the book, the second link says "PDF" and the third says, "mp3."</li> </ul>	<ul style="list-style-type: none"> <li>● People who are blind or low vision.</li> <li>● People with some kinds of learning or intellectual disabilities.</li> </ul>	<p>●○○</p>	<p>●●○</p>
<p><a href="#">2.5.1 Pointer Gestures</a></p> <p>“All functionality that uses multipoint or path-based gestures for operation can be operated with a single pointer without a path-based gesture, unless a multipoint or path-based gesture is essential.”</p>	<ul style="list-style-type: none"> <li>● A platform that has a horizontal content slider can be activated by using the scroll bar, swiping, or arrow keys.</li> </ul>	<ul style="list-style-type: none"> <li>● People with mobility impairments.</li> <li>● People with some learning or cognitive disabilities.</li> </ul>	<p>●●○</p>	<p>●●○</p>

<p><a href="#">2.5.2 Pointer Cancellation</a></p> <p>“For functionality that can be operated using a single pointer, at least one of the following is true:</p> <ul style="list-style-type: none"> <li>• No Down-Event: The down-event of the pointer is not used to execute any part of the function;</li> <li>• Abort or Undo: Completion of the function is on the up-event, and a mechanism is available to abort the function before completion or to undo the function after completion;</li> <li>• Up Reversal: The up-event reverses any outcome of the preceding down-event;</li> <li>• Essential: Completing the function on the down-event is essential.”</li> </ul>	<ul style="list-style-type: none"> <li>• “For interface elements that have a single tap or long press as input, the corresponding event is triggered when the finger is lifted inside that element.”</li> <li>• “A drag-and-drop interface allows people to sort vertically stacked cards by picking up one card with the pointer (down-event), move it to a new position, and insert it at the new location when the pointer is released (up-event). Releasing the pointer outside the drop target area reverts the action, i.e., it moves the card back to the old position before the interaction started.”</li> </ul>	<ul style="list-style-type: none"> <li>• People who are blind or low vision.</li> <li>• People with some kinds of learning or intellectual disabilities.</li> <li>• People who have difficulty with fine motor control including those with tremors.</li> </ul>	<p>●●○</p>	<p>●●○</p>
<p><a href="#">2.5.3 Label in Name</a></p> <p>“For user interface components with labels that include text or images of text, the name contains the text that is presented visually.”</p>	<ul style="list-style-type: none"> <li>• Accessible name matches visible label.</li> <li>• Accessible name starts with visible label.</li> </ul>	<ul style="list-style-type: none"> <li>• People who utilize speech-to-text or text-to speech.</li> </ul>	<p>●●○</p>	<p>●●○</p>
<p><a href="#">2.5.4 Motion Actuation</a></p> <p>“Functionality that can be operated by device motion or user motion can also be operated by user interface components and responding to the</p>	<ul style="list-style-type: none"> <li>• People can choose settings that turn off motion-activated features.</li> <li>• Buttons are provided to perform the same functions as motion-activated features.</li> </ul>	<ul style="list-style-type: none"> <li>• People with mobility impairments preventing them from performing certain motions (shaking, tilting, gesturing)</li> </ul>	<p>●●○</p>	<p>●●●</p>

<p>motion can be disabled to prevent accidental actuation, except when:</p> <ul style="list-style-type: none"> <li>Supported Interface <ul style="list-style-type: none"> <li>The motion is used to operate functionality through an accessibility supported interface;</li> </ul> </li> <li>Essential <ul style="list-style-type: none"> <li>The motion is essential for the function and doing so would invalidate the activity.</li> </ul> </li> </ul>				
<p><a href="#">3.1.1 Language of Page</a></p> <p>“The default human language of each Web page can be programmatically determined.”</p>	<ul style="list-style-type: none"> <li>The default human language is identified by the lang attribute on the html page element.</li> </ul>	<ul style="list-style-type: none"> <li>People who are blind or low vision.</li> <li>People who use reading software.</li> <li>People with reading disabilities.</li> <li>People who speak another language.</li> </ul>	●●○	●○○
<p><a href="#">3.2.1 On Focus</a></p> <p>“When any user interface component receives focus, it does not initiate a change of context.”</p>	<ul style="list-style-type: none"> <li>A dropdown menu allows people to choose to jump to a new location rather than automatically jumping when the element receives the focus.</li> </ul>	<ul style="list-style-type: none"> <li>People with visual, cognitive, or motor limitations.</li> </ul>	●●○	●●○
<p><a href="#">3.2.2 On Input</a></p> <p>“Changing the setting of any user interface component does not automatically cause a change of context unless the user has been</p>	<ul style="list-style-type: none"> <li>A calendar creation form has radio buttons to set the type of entry. Additional fields appear when a button has been activated, but maintains the basic context.</li> </ul>	<ul style="list-style-type: none"> <li>People who are blind or low vision.</li> <li>People who use reading software.</li> <li>People with reading disabilities.</li> </ul>	●●○	●●●

advised of the behavior before using the component.”	<ul style="list-style-type: none"> <li>When entering a phone number separated into 3 fields, the focus automatically moves to the next field. (This behavior should be described at the beginning of the form)</li> </ul>			
<a href="#">3.3.1 Error Identification</a> “If an input error is automatically detected, the item that is in error is identified and the error is described to the user in text.”	<ul style="list-style-type: none"> <li>An alert in text is displayed when a form field is completed incorrectly.</li> <li>Multiple cues are provided (text and color/symbol) to identify errors.</li> </ul>	<ul style="list-style-type: none"> <li>People who are blind, low-vision, or color blind.</li> <li>People with cognitive, language, or learning disabilities.</li> </ul>	●●●	●●●
<a href="#">3.3.2 Labels or Instructions</a> “Labels or instructions are provided when content requires user input.”	<ul style="list-style-type: none"> <li>A field for entering a date contains text to indicate the correct format of the date.</li> <li>Fields labeled “Given Name” and “Family Name.”</li> <li>US phone number input is separated into three separate fields with labels for each field.</li> </ul>	<ul style="list-style-type: none"> <li>People who are blind or low vision.</li> <li>People who use reading software.</li> </ul>	●●●	●●●
<a href="#">3.3.7 Accessible Authentication</a> “For each step in an authentication process that relies on a cognitive function test, at least one other authentication method is available that does not rely on a cognitive function test, or a mechanism is available to assist the user in completing the cognitive function test.”	<ul style="list-style-type: none"> <li>Support for password entry by password managers to address the memorization cognitive function test, and</li> <li>copy and paste to help address transcription cognitive function test.</li> </ul>	<ul style="list-style-type: none"> <li>People who use assistive technologies.</li> </ul>	●●●	●●○
<a href="#">3.3.8 Redundant Entry</a> “Information previously entered by or provided to the user that is required to be entered again in the	<ul style="list-style-type: none"> <li>Auto-populated billing address option carried over from shipping address.</li> </ul>	<ul style="list-style-type: none"> <li>People with cognitive or memory difficulties.</li> </ul>	●○○	●●○

<p>same process and in the same user-session is either:</p> <ul style="list-style-type: none"> <li>• auto-populated, or</li> <li>• available for the user to select.</li> </ul> <p>Except when:</p> <ul style="list-style-type: none"> <li>• re-entering the information is essential,</li> <li>• the information is required to ensure the security of the content, or</li> <li>• previously entered information is no longer valid.”</li> </ul>	<ul style="list-style-type: none"> <li>• Exceptions - password strings, memory games, data in a new session,</li> </ul>			
<p><a href="#">4.1.1 Parsing</a></p> <p>“In content implemented using markup languages, elements have complete start and end tags, elements are nested according to their specifications, elements do not contain duplicate attributes, and any IDs are unique, except where the specifications allow these features.”</p>	<ul style="list-style-type: none"> <li>• User agents, including assistive technologies, can accurately interpret content.</li> <li>• Content is created using the rules of the formal markup language’s grammar.</li> <li>• Start and end tags are complete and nested correctly.</li> </ul>	<ul style="list-style-type: none"> <li>• People who are blind or low vision.</li> <li>• People who use reading software.</li> </ul>	●●●	●●●
<p><a href="#">4.1.2 Name, Role, Value</a></p> <p>“For all user interface components (including but not limited to: form elements, links and components generated by scripts), the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and</p>	<ul style="list-style-type: none"> <li>• Using aria-label to provide an invisible label where a visible label is unwise.</li> <li>• Using aria-labelledby to name user interface controls.</li> <li>• Using markup features to expose the name and role, allow user-settable properties.</li> </ul>	<ul style="list-style-type: none"> <li>• People who are blind or low vision.</li> <li>• People who use reading software.</li> </ul>	●●○	●●●



notification of changes to these items is available to user agents, including assistive technologies.”	<ul style="list-style-type: none"><li>● Using accessibility API features to expose names and notifications.</li></ul>			
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Accessibility for Authors, Table 2: Success Criteria, Level AA

Criteria	Examples of success	Who is likely to be affected if not accessible	Implications of inaccessibility	Effort/ Expense to accommodate
<a href="#">1.2.4 Captions (Live)</a>  “Captions are provided for all live audio content in synchronized media.”	<ul style="list-style-type: none"> <li>• A Web cast - a news organization provides a live, captioned Web cast.</li> <li>• A music Web cast - An orchestra provides captioning of each real-time Web performance, capturing lyrics and dialog as well as identifying non-vocal music by title, movement, and composer.</li> </ul>	<ul style="list-style-type: none"> <li>• People who are deaf or hard of hearing.</li> </ul>	●●●	●●●
<a href="#">1.2.5 Audio Description (Prerecorded)</a>  “Audio description is provided for all prerecorded video content in synchronized media.”	<ul style="list-style-type: none"> <li>• A movie with audio description.</li> </ul>	<ul style="list-style-type: none"> <li>• People who are blind, or have low-vision.</li> <li>• People with cognitive or learning disabilities.</li> </ul>	●●○	●●●
<a href="#">1.3.4 Orientation</a>  “Content does not restrict its view and operation to a single display orientation, such as portrait or landscape, unless a specific display orientation is essential.”	<ul style="list-style-type: none"> <li>• Online video site - A video is shown in either portrait or in landscape based on the user's chosen orientation.</li> <li>• Messaging website - A messaging website can display messages in both portrait and landscape orientations.</li> </ul>	<ul style="list-style-type: none"> <li>• People who are blind, or have low-vision.</li> <li>• People with mobility impairments.</li> </ul>	●○○	●○○

	<ul style="list-style-type: none"> <li>Check deposit in banking app - requires the device be in landscape mode to accurately capture an image of a check for deposit.</li> </ul>			
<p><a href="#">1.3.5 Identify Input Purpose</a></p> <p>“The purpose of each input field collecting information about the user can be programmatically determined when:</p> <ul style="list-style-type: none"> <li>The input field serves a purpose identified in the Input Purposes for user interface components section; and</li> <li>The content is implemented using technologies with support for identifying the expected meaning for form input data.”</li> </ul>	<ul style="list-style-type: none"> <li>A contact form using autofill - fields for name, street, post code, city, telephone number, and email address filled from values stored in the user's browser.</li> <li>An order form with separate billing and shipping address - fills in the address fields for billing address and a separate set of address fields for the shipping address</li> <li>A contact form using icons- A browser plugin inserts icons representing the person's name, home address, telephone number and email address to identify the input purpose visually.</li> </ul>	<ul style="list-style-type: none"> <li>People with language and memory related disabilities or disabilities that affect executive function and decision-making.</li> <li>People with cerebral palsy, stroke, head injury, motor neuron disease or learning disability sometimes prefer images for communication.</li> <li>People with motor impairments.</li> </ul>	●●○	●○○
<p><a href="#">1.4.3 Contrast (Minimum)</a></p> <p>“The visual presentation of text and images of text has a</p>	<ul style="list-style-type: none"> <li>Small text (under 14 or 18 points, depending on the font) has a contrast ratio of 4.5:1.</li> </ul>	<ul style="list-style-type: none"> <li>People who are blind, low-vision, or color blind.</li> </ul>	●●○	●●○

<p>contrast ratio of at least 4.5:1, except for the following:</p> <ul style="list-style-type: none"> <li>● Large Text: Large-scale text and images of large-scale text have a contrast ratio of at least 3:1;</li> <li>● Incidental: Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement.</li> <li>● Logotypes: Text that is part of a logo or brand name has no contrast requirement.”</li> </ul>	<ul style="list-style-type: none"> <li>● Exception: Text in logos may not have sufficient contrast.</li> </ul>			
<p><a href="#">1.4.4 Resize text</a></p> <p>Except for captions and images of text, text can be resized without assistive technology up to 200 percent without loss of content or functionality.</p>	<ul style="list-style-type: none"> <li>● A user with vision impairments increases the text size on a Web page in a browser from 1 em to 1.2 ems. While the user could not read the text at the smaller size, she can read the larger text. All the information on the page is still displayed when the</li> </ul>	<ul style="list-style-type: none"> <li>● People who have low-vision, viewing from too distant a display, or otherwise would benefit from larger text size.</li> </ul>		

	<p>larger font is used for the text.</p> <ul style="list-style-type: none"> <li>• A Web page contains a control for changing the scale of the page. Selecting different settings changes the layout of the page to use the best design for that scale.</li> <li>• A user uses a zoom function in his user agent to change the scale of the content. All the content scales uniformly, and the user agent provides scroll bars, if necessary.</li> </ul>			
<p><a href="#">1.4.5 Images of Text</a></p> <p>“If the technologies being used can achieve the visual presentation, text is used to convey information rather than images of text except for the following:</p> <p><b>Customizable</b> The image of text can be visually customized to the user's requirements;</p> <p><b>Essential</b></p>	<ul style="list-style-type: none"> <li>• A logo containing text: A Web site contains the organization's logo in the top left corner of each Web page. The logo contains logotype (text as part, or all, of the logo). The visual presentation of the text is essential to the identity of the logo and is included as a gif image which does not allow the text characteristics to be changed. The image has a text alternative.</li> <li>• Styled Headings: Rather than using bitmap images</li> </ul>	<ul style="list-style-type: none"> <li>• People with low vision (who may have trouble reading the text with the authored font family, size and/or color).</li> <li>• People with visual tracking problems (who may have trouble reading the text with the authored line spacing and/or alignment).</li> <li>• People with cognitive disabilities that affect reading.</li> </ul>	●●○	●●○

A particular presentation of text is essential to the information being conveyed.	<p>to present headings in a specific font and size, an author uses CSS to achieve the same result.</p> <ul style="list-style-type: none"> <li>• A quote: A Web page contains a quote. The quote itself is presented as italicized text, indented from the left margin.</li> </ul>			
<p><a href="#">1.4.10 Reflow</a></p> <p>Content can be presented without loss of information or functionality, and without requiring scrolling in two dimensions for:</p> <ul style="list-style-type: none"> <li>• Vertical scrolling content at a width equivalent to 320 CSS pixels;</li> <li>• Horizontal scrolling content at a height equivalent to 256 CSS pixels.</li> <li>• Except for parts of the content which require two-dimensional layout for usage or meaning.</li> </ul>	<ul style="list-style-type: none"> <li>• Content can be presented without loss of information or functionality, and without requiring scrolling in two dimensions for: <ul style="list-style-type: none"> <li>○ Vertical scrolling content at a width equivalent to 320 CSS pixels;</li> <li>○ Horizontal scrolling content at a height equivalent to 256 CSS pixels.</li> </ul> </li> <li>• <b>Exception</b> for parts of the content which require two-dimensional layout for usage or meaning.</li> </ul>	<ul style="list-style-type: none"> <li>• People using various devices to access the material (e.g., computer, tablet, smart phone).</li> </ul>	●○○	●●○
<a href="#">1.4.11 Non-text Contrast</a>	<ul style="list-style-type: none"> <li>• Status icons on an application's dashboard (without associated text)</li> </ul>	<ul style="list-style-type: none"> <li>• People who have low-vision or color contrast insensitivity.</li> </ul>	●●○	●○○

<p>The visual presentation of the following have a contrast ratio of at least 3:1 against adjacent color(s):</p> <p><b>User Interface Components</b> Visual information required to identify user interface components and states, except for inactive components or where the appearance of the component is determined by the user agent and not modified by the author;</p> <p><b>Graphical Objects</b> Parts of graphics required to understand the content, except when a particular presentation of graphics is essential to the information being conveyed.</p>	<p>have a 3:1 minimum contrast ratio.</p> <ul style="list-style-type: none"> <li>• A text input has a dark border around the white editable area.</li> <li>• A graph uses a light background and ensures that the colors for each line have a 3:1 contrast ratio against the background.</li> </ul>			
<p><a href="#">1.4.12 Text Spacing</a></p> <p>In content implemented using markup languages that support the following text style properties, no loss of content or functionality occurs by setting all of the following and by changing no other style property:</p>	<ul style="list-style-type: none"> <li>• Text fits within the bounds of its containing box without being cut off.</li> <li>• Text fits within the bounds of its containing box without overlapping other boxes.</li> </ul>	<ul style="list-style-type: none"> <li>• Everyone/general readability/usability</li> <li>• People who have low-vision</li> <li>• People with dyslexia</li> </ul>	●●○	●○○

<ul style="list-style-type: none"> <li>• Line height (line spacing) to at least 1.5 times the font size;</li> <li>• Spacing following paragraphs to at least 2 times the font size;</li> <li>• Letter spacing (tracking) to at least 0.12 times the font size;</li> <li>• Word spacing to at least 0.16 times the font size.</li> <li>• Exception: Human languages and scripts that do not make use of one or more of these text style properties in written text can conform using only the properties that exist for that combination of language and script.</li> </ul>				
<p><a href="#">1.4.13 Content on Hover or Focus</a></p> <p>Where receiving and then removing pointer hover or keyboard focus triggers additional content to become visible and then hidden, the following are true:</p> <ul style="list-style-type: none"> <li>• Dismissible</li> <li>• Hoverable</li> <li>• Persistent</li> </ul>	<ul style="list-style-type: none"> <li>• Labels that appear on hover are positioned in a way that do not block content and/or can be dismissed with the escape key as needed.</li> </ul>	<ul style="list-style-type: none"> <li>• People who have low-vision.</li> <li>• Users who increase cursor size</li> <li>• People with intellectual disabilities</li> <li>• People with low pointer accuracy.</li> </ul>	<p>●○○</p>	<p>●●○</p>

Exception: The visual presentation of the additional content is controlled by the user agent and is not modified by the author.				
<a href="#">2.4.5 Multiple Ways</a>  More than one way is available to locate a Web page within a set of Web pages except where the Web Page is the result of, or a step in, a process.	<ul style="list-style-type: none"> <li>• Provide a search mechanism</li> <li>• Links between pages or sections.</li> <li>• Interactive table of contents or menu</li> </ul>	<ul style="list-style-type: none"> <li>• Everyone, to have easier access to sections.</li> <li>• Persons with intellectual disabilities</li> </ul>	●○○	●○○
<a href="#">2.4.6 Headings and Labels</a>  Headings and labels describe topic or purpose.	<ul style="list-style-type: none"> <li>• A tool, site, or application uses meaningful and descriptive headers for all sections, menus, and content consistently.</li> </ul>	<ul style="list-style-type: none"> <li>• People with reading disabilities</li> <li>• People who are blind or have low vision.</li> <li>• Everybody, for quicker visual access to sought after information.</li> </ul>	●○○	●○○
<a href="#">2.4.7 Focus Visible</a>  Any keyboard operable user interface has a mode of operation where the keyboard focus indicator is visible.	<ul style="list-style-type: none"> <li>• When text fields receive focus, a vertical bar is displayed in the field, indicating that the user can insert text, OR all of the text is highlighted, indicating that the user can type over the text.</li> <li>• When a user interface control receives focus, a</li> </ul>	<ul style="list-style-type: none"> <li>• People who use the keyboard as a primary interactive.</li> <li>• People with some types of learning disabilities.</li> </ul>	●○○	●●○



	visible border is displayed around it.			
<a href="#">3.1.2 Language of Parts</a>  The human language of each passage or phrase in the content can be programmatically determined except for proper names, technical terms, words of indeterminate language, and words or phrases that have become part of the vernacular of the immediately surrounding text.	<ul style="list-style-type: none"> <li>Where English is the primary language used in a site or application, occasional use of foreign phrases are coded as such.</li> </ul>	<ul style="list-style-type: none"> <li>People who use screen readers.</li> <li>People with certain cognitive, language and learning disabilities.</li> <li>People who use captions or reading software.</li> </ul>	●○○	●○○
<a href="#">3.2.3 Consistent Navigation</a> “Navigational mechanisms that are repeated on multiple Web pages within a set of Web pages occur in the same relative order each time they are repeated, unless a change is initiated by the user.”	<ul style="list-style-type: none"> <li><b>A consistently located control</b> A search field is the last item on every Web page in a site. Users can quickly locate the search function.</li> <li><b>An expanding navigation menu</b> A navigation menu includes a list of seven items with links to the main sections of a site. When a user selects one of these items, a list of subnavigation items is inserted into the top-level navigation menu.</li> </ul>	<ul style="list-style-type: none"> <li>People who have low-vision, viewing from too distant a display, or use screen magnification.</li> <li>People with spatial or memory difficulties.</li> </ul>	●●○	●●○

	<ul style="list-style-type: none"> <li>• <b>Consistently positioned skip navigation controls</b> A "skip navigation" (or "skip to main content") link is included as the first link on every page in a Web site. The link allows users to quickly bypass heading information and navigational content and begin interacting with the main content of a page.</li> <li>• <b>Skip to navigation link</b> Navigational content is consistently located at the end of each page in a set of Web pages. A "skip to navigation" link is consistently located at the beginning of each page so that keyboard users can easily locate it when needed.</li> </ul>			
<a href="#">3.2.4 Consistent Identification</a> “Components that have the same functionality within a set of Web pages are identified consistently.”	<ul style="list-style-type: none"> <li>• <b>Example 1: Document Icon:</b> A document icon is used to indicate document download throughout a site. The text alternative for the icon always begins with the word “Download,” followed by a shortened form of the document title. Using</li> </ul>	<ul style="list-style-type: none"> <li>• People who have low-vision, or rely on text alternatives.</li> </ul>	●●○	●●○

	<p>different text alternatives to identify document names for different documents is a consistent use of text alternatives.</p> <ul style="list-style-type: none"> <li>● <b>Example 2: Check Mark:</b> A check mark icon functions as "approved", on one page but as "included" on another. Since they serve different functions, they have different text alternatives.</li> </ul>			
<p><a href="#">3.3.3 Error Suggestion</a>            "If an input error is automatically detected and suggestions for correction are known, then the suggestions are provided to the user, unless it would jeopardize the security or purpose of the content."</p>	<ul style="list-style-type: none"> <li>● <b>Additional Help for Correcting An Input Error:</b> The result of a form that was not successfully submitted describes an input error in place in the page along with the correct input and offers additional help for the form field that caused the input error.</li> <li>● <b>Suggestions from a Limited Set of Values:</b> An input field requires that a month name be entered. If the user enters "12," suggestions for correction may include</li> </ul>	<ul style="list-style-type: none"> <li>● People who have low-vision, viewing from too distant a display, or otherwise would benefit from larger text size.</li> </ul>	●●○	●●○

	<ul style="list-style-type: none"> <li>○ A list of the acceptable values, e.g., "Choose one of: January, February, March, etc."</li> <li>○ A description of the set of values, e.g., "Please provide the name of the month."</li> <li>○ The conversion of the input data interpreted as a different month format, e.g., "Do you mean 'December'?"</li> </ul>			
<p><a href="#">3.3.4 Error Prevention (Legal, Financial, Data)</a></p> <p>"For Web pages that cause legal commitments or financial transactions for the user to occur, that modify or delete user-controllable data in data storage systems, or that submit user test responses, at least one of the following is true:</p> <p><b>Reversible</b> Submissions are reversible.</p> <p><b>Checked</b> Data entered by the user is checked for input errors and</p>	<ul style="list-style-type: none"> <li>● Order confirmation - A Web retailer offers on-line shopping for customers. When an order is submitted, the order information—including items ordered, quantity of each ordered item, shipping address, and payment method—are displayed so that the user can inspect the order for correctness. The user can either confirm the order or make changes.</li> <li>● Stock sale - A financial services website lets users</li> </ul>	<ul style="list-style-type: none"> <li>● People with reading disabilities.</li> <li>● People with fine motor functioning difficulties.</li> </ul>	●●●	●●○

<p>the user is provided an opportunity to correct them.</p> <p><b>Confirmed</b></p> <p>A mechanism is available for reviewing, confirming, and correcting information before finalizing the submission.”</p>	<p>buy and sell stock online. When a user submits an order to buy or sell stock, the system checks to see whether or not the market is open. If it is after hours, the user is alerted that the transaction will be an after-hours transaction, is told about the risks of trading outside of regular market hours, and given the opportunity to cancel or confirm the order.</p>			
<p><a href="#">4.1.3 Status Messages</a></p> <p>“A status message is a defined term in WCAG. There are two main criteria that determine whether something meets the definition of a status message:</p> <ul style="list-style-type: none"> <li>the message provides information to the user on the success or results of an action, on the waiting state of an application, on the progress of a process, or on the existence of errors;</li> <li>the message is not delivered via a change in context.”</li> </ul>	<ul style="list-style-type: none"> <li>After a user presses a Search button, the page content is updated to include the results of the search, which are displayed in a section below the Search button. The change to content also includes the message "5 results returned" near the top of this new content. This text is given an appropriate role for a status message. A screen reader announces, "Five results returned".</li> <li>After a user enters incorrect text in an input called Postal Code, a</li> </ul>	<ul style="list-style-type: none"> <li>People who are blind, low-vision, or use assistive technologies such as screen readers.</li> <li>People with cognitive difficulties.</li> </ul>	●●○	●●○

<p>“In situations where status text is entirely removed, its absence may itself convey information about the status. The most obvious example of this is where a message is displayed that the system is "busy" or "waiting". For a sighted user, when this text disappears, it is normally an indication that the state is now available. However non-sighted users would be unaware of this change, unless the end of the waiting state results in a change of context for the user. Where updating the visible message (e.g., to "system available") is not feasible, the use of a non-visible status message, such as "system available", ensures equivalent status information is provided. “</p>	<p>message appears above the input reading "Invalid entry". The screen reader announces, "Invalid entry" or "Postal code, invalid entry".</p>			
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