Section 508 Checklist for §1194.21 Software Applications and Operating Systems

(a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.

   Can you navigate and use all aspects of the application with the keyboard?

(b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.

   Are all of the accessibility options that were previously set still available?

(c) A well defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that Assistive Technology can track focus and focus changes.

   Is the focus well defined?

(d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to Assistive Technology. When an image represents a program element, the information conveyed by the image must also be available in text.

   Can the screen reader distinguish and read all controls such as checkboxes, menus and toolbars to the user?

(e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.

   Do individual icons mean the same thing throughout the application?
(f) Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.

**Is all text presented in the application readable by assistive technologies?**

(g) Applications shall not override user selected contrast and color selections and other individual display attributes.

**Does the software not override the users color and contrast settings?**

(h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.

**If animated objects exist, does the information conveyed by the animated object exist in another method?**

(i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

**If color is used to convey information, is the information displayed in another method?**

(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.

**If users can adjust color and contrast settings, is a variety of color and contrast settings available to choose from?**

(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.

**If any flashing or blinking objects exist, are the frequencies less than 2 Hz and greater than 55Hz?**

(l) When electronic forms are used, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.

**Can you navigate and follow links and forms with the keyboard?**

**Can the electronic forms be used with assistive technologies?**

For more information, please contact GMU Assistive Technology Initiative: ATI@gmu.edu or 703-993-9815
Section 508 Web-based Intranet and Internet Information and Applications

(a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).

- Are ALT tags provided for every image?
- Are ALT tags provided for every hotspot on an image map?
- Are ALT tags provided for every animated image?
- Are ALT tags provided for every applet?
- Are ALT tags provided for Programmatic objects?
- Are ALT tags provided for Images used as list bullets?
- Are ALT tags provided for Images used as spacers?
- Are ALT tags provided for every image-type button in forms?
- Do audio files have transcripts?
- Do video files have captions?

(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.

- If there is a video presentation on your Web Page, does the auditory or text equivalent synchronize with the video?

(c) WebPages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.

- Does the page avoid using color to convey information? (e.g. Click on the red link to proceed?)
(d) Documents shall be organized so they are readable without requiring an associated style sheet.

Can the page be viewed without style sheets? To test: Disable style sheets in your browser’s preferences, and see if the information is still clear and available.

(e) Redundant text links shall be provided for each active region of a server-side image map.

Are redundant text links provided for each region of a server-side image map?

(f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.

Are client-side image maps being used instead of server-side except where a geometric shape is not available for client-side?

(g) Row and column headers shall be identified for data tables.

Are column and row headers identified in data tables?

(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.

Are data cells and header cells associated?

(i) Frames shall be titled with text that facilitates frame identification and navigation

Do all frames have descriptive titles?

(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

Does the page avoid using blinking text and/or images?

Does the page avoid using effects that cause the screen to "flicker” as pages are loaded?

(k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.

Is there an equivalent text alternative page for this page if inaccessible?
(l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by Assistive Technology.

Are accessible alternatives provided for scripts and applets that are inaccessible with assistive technologies?

(m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).

If a page uses plug-ins, applets, etc. is a link to that plug-in or applet provided?

(n) When electronic forms are designed to be completed on-line, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.

For all form controls implicitly associated with labels, are the labels properly positioned?

Can you navigate and follow links and forms with the keyboard?

Can the form be used with assistive technologies?

(o) A method shall be provided that permits users to skip repetitive navigation links.

Is there a way to skip over a group of links?

(p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.

Does the page avoid automatic redirects, automatic refreshing, etc?

For more information please, contact GMU Assistive Technology Initiative: ATI@gmu.edu or 703-993-9815
Section 508 Checklist for §1194.23 Telecommunications

(a) Telecommunications products or systems which provide a function allowing voice communication and which do not themselves provide a TTY functionality shall provide a standard non-acoustic connection point for TTYs. Microphones shall be capable of being turned on and off to allow the user to intermix speech with TTY use.

Does the telecommunications product/system (which provides functions allowing voice communication but which does not itself provide a TTY functionality) provide a standard non-acoustic connection point for TTYs?

Are any microphones capable of being turned on and off to allow the user to intermix speech with TTY use?

(b) Telecommunications products which include voice communication functionality shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.

Do telecommunications products (which include voice communication functionality) support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols?

(c) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.

Are voice mail, auto-attendant, and interactive voice response telecommunications systems usable by TTY users with their TTYs?
(d) Voice mail, messaging, auto-attendant, and interactive voice response telecommunications systems that require a response from a user within a time interval, shall give an alert when the time interval is about to run out, and shall provide sufficient time for the user to indicate more time is required.

Do voice mail, messaging, auto-attendant, and interactive voice response telecommunications systems (that require a response from a user within a time interval) give an alert when the time interval is about to run out?

Or does it provide sufficient time for the user to indicate that more time is required?

(e) Where provided, caller identification and similar telecommunications functions shall also be available for users of TTYs, and for users who cannot see displays.

If provided, are caller identification and similar telecommunications functions also available for users of TTYs and for users who cannot see displays?

(f) For transmitted voice signals, telecommunications products shall provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, at least one intermediate step of 12 dB of gain shall be provided.

For transmitted voice signals, do telecommunications products provide a gain adjustable up to a minimum of 20 dB?

For incremental volume control, is at least one intermediate step of 12 dB of gain provided?

(g) If the telecommunications product allows a user to adjust the receive volume, a function shall be provided to automatically reset the volume to the default level after every use.

Is there an option where volume can be reset automatically?

(h) Where a telecommunications product delivers output by an audio transducer which is normally held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.

Is there a means provided for effective magnetic wireless coupling to hearing technologies?
(i) Interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) shall be reduced to the lowest possible level that allows a user of hearing technologies to utilize the telecommunications product.

Is there an option to reduce to lowest possible level that allows a user of hearing technologies to use the telecommunications product?

(j) Products that transmit or conduct information or communication, shall pass through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide the information or communication in a usable format. Technologies which use encoding, signal compression, format transformation, or similar techniques shall not remove information needed for access or shall restore it upon delivery.

Have products that transmit or conduct information or communication, been passed through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide the information or communication in a usable format?

Have technologies which use encoding, signal compression, format transformation, or similar techniques not removed information needed for access or have the capability to restore it upon delivery?

(k) (1) Products which have mechanically operated controls or keys, shall comply with the following: Controls and keys shall be tactilely discernible without activating the controls or keys.

If product has mechanically operated controls or keys, are controls and keys tactilely discernible without activating the controls or keys?

(k) (2) Controls and keys shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls and keys shall be 5 lbs. (22.2 N) maximum.

If the product has mechanically operated controls or keys, are controls and keys operable with one hand and do not require tight grasping, pinching, or twisting of the wrist?

If product has mechanically operated controls or keys, is force required to activate controls/keys 5 lbs. (22.2 N) maximum?
(k) (3) If key repeat is supported, the delay before repeat shall be adjustable to at least 2 seconds. Key repeat rate shall be adjustable to 2 seconds per character.

If the product has mechanically operated controls or keys, and key repeat is supported, is the delay before repeat adjustable to at least 2 seconds?

If the product has mechanically operated controls or keys, and key repeat is supported, is the repeat rate adjustable to 2 seconds per character?

(k) (4) The status of all locking or toggle controls or keys shall be visually discernible, and discernible either through touch or sound.

If product has mechanically operated controls or keys, is the status of all locking or toggle controls or keys visually discernible, and discernible either through touch or sound?

For more information, please contact GMU Assistive Technology Initiative: ATI@gmu.edu or 703-993-9815
Section 508 Checklist for §1194.24 Video and Multimedia

a) All analog television displays 13 inches and larger, and computer equipment that includes analog television receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals. As soon as practicable, but not later than July 1, 2002, widescreen digital television (DTV) displays measuring at least 7.8 inches vertically, DTV sets with conventional displays measuring at least 13 inches vertically, and stand-alone DTV tuners, whether or not they are marketed with display screens, and computer equipment that includes DTV receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals.

Is the display an analog measuring more than 13 inches diagonally, a digital measuring more than 7.8 inches vertically, a stand-alone digital television tuner, or computer equipment that includes digital television receiver or display circuitry?

Does the receiver contain caption decoder circuitry?

(b) Television tuners, including tuner cards for use in computers, shall be equipped with secondary audio program playback circuitry.

Is the television tuner or tuner card equipped with secondary audio program playback circuitry?

(c) All training and informational video and multimedia productions which support the agency’s mission, regardless of format, that contain speech or other audio information necessary for the comprehension of the content, shall be open or closed captioned.

Does the video or multimedia production support the agency’s mission?

Does the video or multimedia production contain speech or other audio information necessary for the comprehension of the content?

Is the speech or other audio information open or closed-captioned?
(d) All training and informational video and multimedia productions which support the agency’s mission, regardless of format, that contain visual information necessary for the comprehension of the content, shall be audio described.

- Does the video or multimedia production support the agency’s mission?
- Does the video or multimedia production contain visual information necessary for the comprehension of the content?
- Is the visual information audio described?

(e) Display or presentation of alternate text presentation or audio descriptions shall be user-selectable unless permanent.

- Are the alternate text presentation or audio descriptions permanent?
- Can the user turn on and off the alternate text presentation or audio descriptions?

For more information, please contact GMU Assistive Technology Initiative: ATI@gmu.edu or 703-993-9815
Section 508 Checklist for §1194.25 Self Contained Products

(a) Self contained products shall be usable by people with disabilities without requiring an end-user to attach assistive technology to the product. Personal headsets for private listening are not Assistive Technology.

   Are products usable by people with disabilities without requiring them to attach AT to product? (Personal headsets for private listening are not AT.)

(b) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.

   If a timed response is required, is the user alerted and given sufficient time to indicate more time is required?

(c) Where a product utilizes touch screens or contact-sensitive controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).

   If product uses touch screens or contact-sensitive controls, are controls/keys tactiley discernible without activating controls or keys?

   If the product utilizes touch screens or contact-sensitive controls, are controls and keys operable with one hand and do not require tight grasping, pinching, or twisting of the wrist?
If product uses touch screens or contact-sensitive controls, is force required to activate controls and keys 5 lbs. (22.2 N) maximum?

If product uses touch screens or contact-sensitive controls, and key-repeat is supported, is the delay before repeat adjustable to at least 2 seconds?

If product uses touch screens or contact-sensitive controls, and key-repeat is supported, is repeat rate adjustable to 2 seconds per character?

If product uses touch screens or contact-sensitive controls, is status of all locking or toggle controls or keys visually discernible, and discernible either through touch or sound?

(d) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.

If biometric forms of user identification or control are used, is an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, provided?

(e) When products provide auditory output, the audio signal shall be provided at a standard signal level through an industry standard connector that will allow for private listening. The product must provide the ability to interrupt, pause, and restart the audio at anytime.

If products provide auditory output, is the audio signal provided at a standard signal level through an industry standard connector that will allow for private listening?

If products provide auditory output, does the product provide the ability to interrupt, pause, and restart the audio at any time?
(f) When products deliver voice output in a public area, incremental volume control shall be provided with output amplification up to a level of at least 65 dB. Where the ambient noise level of the environment is above 45 dB, a volume gain of at least 20 dB above the ambient level shall be user selectable. A function shall be provided to automatically reset the volume to the default level after every use.

If the product delivers voice output in a public area, is incremental volume control provided with output amplification up to a level of at least 65 dB?

If the product delivers voice output in a public area, and the ambient noise level of the environment is above 45 dB, is a volume gain of at least 20 dB above the ambient level user selectable?

If the product delivers voice output in a public area, is there a function provided to automatically reset the volume to the default level after every use?

(g) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

Are other of means besides color coding used to convey information, indicate an action, prompt a response, or distinguish a visual element?

(h) When a product permits a user to adjust color and contrast settings, a range of color selections capable of producing a variety of contrast levels shall be provided.

If a product permits a user to adjust color and contrast settings, is a range of color selections capable of producing a variety of contrast levels provided?

(i) Products shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

Is the product designed to avoid screen flickering with a frequency greater than 2 Hz and lower than 55 Hz?
Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following:

1. The position of any operable control shall be determined with respect to a vertical plane, which is 48 inches in length, centered on the operable control, and at the maximum protrusion of the product within the 48 inch length.

2. Where any operable control is 10 inches or less behind the reference plane, the height shall be 54 inches maximum and 15 inches minimum above the floor.

3. Where any operable control is more than 10 inches and not more than 24 inches behind the reference plane, the height shall be 46 inches maximum and 15 inches minimum above the floor.

4. Operable controls shall not be more than 24 inches behind the reference plane.

For more information, please contact GMU Assistive Technology Initiative: ATI@gmu.edu or 703-993-9815
Section 508 Checklist for §1194.26 Desktop and Portable Computers

(a) All mechanically operated controls and keys shall comply with §1194.23 (k) (1) through (4).

Are all mechanically operated controls and keys operable with one hand and do not require tight grasping, pinching, or twisting of the wrist?

Is the force required to activate controls and keys 5 lbs. (22.2 N) maximum?

If key repeat is supported, is the delay before repeat adjustable to at least 2 seconds?

If key repeat is supported, is the repeat rate adjustable to 2 seconds per character?

Is the status of all locking or toggle controls or keys visually discernible, and discernible either through touch or sound?

(b) If a product utilizes touch screens or touch-operated controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).

If the product uses touch screens or touch-operated controls, is the force required to activate controls and keys 5 lbs. (22.2 N) maximum?

If the product uses touch screens or touch-operated controls, and key-repeat is supported, is the delay before repeat adjustable to at least 2 seconds?
If the product uses touch screens or touch-operated controls, and key-repeat is supported, is the repeat rate adjustable to 2 seconds per character?

If the product uses touch screens or touch-operated controls, is the status of all locking or toggle controls or keys visually discernible, and discernible either through touch or sound?

(c) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.

If biometric forms of user identification or control are used, is there an alternative form of identification or activation, which does not require the user to possess particular biological characteristics?

(d) Where provided, at least one of each type of expansion slots, ports and connectors shall comply with publicly available industry standards.

If provided, is at least one of each type of expansion slots, ports and connectors compliant with publicly available industry standards?

For more information, please contact GMU Assistive Technology Initiative: ATI@gmu.edu or 703-993-9815
Section 508 Standards for §1194.31 Functional Performance Criteria

(a) At least one mode of operation and information retrieval that does not require user vision shall be provided, or support for Assistive Technology used by people who are blind or visually impaired shall be provided.

Is there a mode of operation and information retrieval that does not require vision?

Is there support for Assistive Technology used by people who are blind or visually impaired?

(b) At least one mode of operation and information retrieval that does not require visual acuity greater than 20/70 shall be provided in audio and enlarged print output working together or independently, or support for Assistive Technology used by people who are visually impaired shall be provided.

Is there a mode of operation or support for Assistive Technology used by people who are visually impaired?

(c) At least one mode of operation and information retrieval that does not require user hearing shall be provided, or support for Assistive Technology used by people who are deaf or hard of hearing shall be provided.

Is there a mode of operation or support for Assistive Technology used by people who are deaf or hard of hearing?

For more information, please contact GMU Assistive Technology Initiative: ATI@gmu.edu or 703-993-9815
Section 508 Standards for §1194.41 Information, Documentation and Support

(a) Product support documentation provided to end-users shall be made available in alternate formats upon request, at no additional charge.

Is documentation available in alternate formats?

(b) End-users shall have access to a description of the accessibility and compatibility features of products in alternate formats or alternate methods upon request, at no additional charge.

Is access provided to a description of accessibility and compatibility features of the product in alternate formats?

(c) Support services for products shall accommodate the communication needs of end-users with disabilities.

Do support services for products accommodate the communication needs of end-users with disabilities?

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ATI@gmu.edu or 703-993-9815