### [Current Section 508 and Section 255 Standards](http://www.access-board.gov/)

The Access Board, an independent Federal agency, develops and maintains accessibility design criteria for the physical environment, transit vehicles, telecommunications equipment, and electronic and information technology.

Current Accessibility Standards are

* Section 255 – [Telecommunication Act Accessibility Guidelines](http://www.access-board.gov/telecomm/) (1998), govern accessibility and usability of telecommunication devices
* Section 508 - [Electronic and Information Technology (EIT) Accessibility](http://www.access-board.gov/508.htm) Standards(2000), govern all IT resources including electronic and web content and applications, multimedia and software

### [Revised Section 508 Accessibility Standards](http://www.access-board.gov/sec508/refresh/report/)

In July 2006 Access Board created TEITAC (Telecommunications and Electronic and Information Technology Advisory Committee) to update Section 508 and Section 255 standards and make recommendations to Access Board. It consisted of 41 members from industry, government, international, and disabilities advocacy groups.

The draft report of the recommendations was presented to Access Board in April 2008 and has been under review and input (<http://www.access-board.gov/sec508/refresh/report/>). The “Advance Notice of Proposed Rulemaking (ANPRM)” will be published in the Federal Register in March 2010, with a 90-day period for public comment. This Advance Notice is a step a Notice of Proposed Rulemaking (NPRM). The date of the NPRM is not known at this time.

### Reasons for Revising the Standards

Accessibility for people with a disability is becoming a global issue with many contrives developing standards. Rapid pace of innovation and technological advancement in Information and Communication Technology (ICT) is pushing the need for standards and guidelines that can easily understand and implemented. Issues considered:

* Technology changes and convergence
  + Across EIT categories and telecommunication devices
  + New Products, features
  + Assistive Technology changes
* Environment changes
  + Web is now a platform for application development, computing, content delivery, learning, commerce and information dissemination
  + AT is being standardized as general use technology
  + Computing platforms – web, cloud and remote computing
* Need for harmonization over many standards
  + Evolving standards to meet converging and changing needs and environments
  + 508 covers EIT resource and WCAG covers web content accessibility
  + Globalization of accessibility – multiple international standards
  + Frequent requests for clarification
* Changing people’s needs, expectations and experience

In addition they want the guidelines to be easily understood and as much as possible the provisions should be testable. The committee recommended that the

Guidelines coordinate with WCAG 2.0 Standards to ensure harmonization across standards and eliminate conflicts for developers

* For web content, conforming to WCAG 2.0 AA level should be considered compliance for Section 508 user interface and web content (Requirements 3 and 5)
* As much as possible provisions should be testable

### Testing for Compliance

While the Committee did not create any specific test methods for the provisions in the standards they provided a statement of how a test might be developed. The goal for testing was to find a balance between testing method that is precise and unambiguous without being over prescriptive so as to stifle innovation. Each provision is referenced with testing term like “inspection,” “measure (formal test),” and “expert review”

* **Inspection:** Requirements must be either observable or easily measurable (using automated tools) and require no interpretation or judgment in determining whether the standards are met.
* **Measure (Formal Test)**:  These tests may require specialized tools (software) that check for tester selected accessibility criteria and/or by formal user testing.
* **Expert Evaluation/Review**.  Review of accessibility and functionality of a provision by a subject matter expert (SME) This method extends inspection by requiring expert knowledge and judgment.

The requirements in the revised guidelines are stated under **Section 3.**  **Interface and Electronic Content and Section 5. Audio and Video Content** Besides a definition for each requirement, they give a rational for the it and additional information which includes how it harmonizes with WCAG 2.0 guidelines, its testability and the disability it covers.

***3. Requirements for User Interface and Electronic Content***

***5. Requirements for Audio and/or Video Content***

3-A**: Color:** Color must not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

3-B: **Contrast:** Presentation of TEXT, and images of TEXT, in electronic documents must have a CONTRAST RATIO of at least 5:1

3-C: **Size, Shape, Location**: Instructions provided for understanding information and operating on-screen user interfaces must not rely solely on shape, size, visual location, or orientation of components

3-D: **User Preferences**: Applications must provide a mode that utilizes platform settings for color, contrast, font type, font size, and focus cursor. In the absence of platform settings for color and contrast, all TEXT (and images of text) must have a CONTRAST RATIO of at least 5:1

3-E: **Color Adjustment:** When a user function is provided to adjust color and contrast settings, at least one color selection capable of producing a minimum luminosity CONTRAST RATIO of 7:1 must be provided.

3-F: **Non-text Objects**: All NON-TEXT OBJECTS that are presented to the user must have a TEXT alternative that presents equivalent information, except for the situations listed below.

3-G: **Human Language**: When supported in the technologies of electronic documents, the default human language of electronic document must be PROGRAMMATICALLY DETERMINABLE

3-H: **Language of Parts**: When supported in the technology of electronic documents, the human language of each passage or phrase in electronic documents must be PROGRAMMATICALLY DETERMINABLE

3-I: **Pausing**: A mechanism must be provided to pause moving, BLINKING, or scrolling information that lasts for more than three seconds unless it is part of an activity where the moving, BLINKING, or scrolling is essential.

3-J: **Flashing (Content and User Interfaces)**: CONTENT or user interfaces must not contain anything that FLASHES more than 3 times in any one second period or the FLASHING must be below the GENERAL FLASH AND RED FLASH THRESHOLDS FOR CONTENT AND USER INTERFACES.

3-K: **Consistent Identification**: Components from a single source that have the same functionality within a product must be identified consistently.

3-L: **Audio Turnoff**: When any audio plays automatically for more than 3 seconds, there must be a mechanism to pause or stop the audio, or a mechanism to control audio volume that can be set to be a different level from the system volume level. This provision does not apply to emergency messages regarding risk of personal injury or loss of property or data, or to audio messages required by law.

3-M: **Reading Sequence**: When the sequence in which information is presented affects its meaning, a reading sequence that conveys the intended meaning must be PROGRAMMATICALLY DETERMINABLE. The navigation sequence must be consistent with the reading sequence.

3-N: **Link Purpose**: On Web pages, it must be possible to determine the purpose of each link from the link TEXT or the link TEXT together with its PROGRAMMATICALLY DETERMINABLE link context.

3-O: **Information and Relationships**: Information and relationships conveyed through presentation of electronic documents must be either PROGRAMMATICALLY DETERMINABLE or available in TEXT, and notification of changes to these must be available to user agents, including assistive technologies. This includes data tables and form elements

3-P: **User Interface Components (no consensus)**: Work on this provision was not complete. Please see the drafts and other discussion material in [Section 7](http://www.access-board.gov/sec508/refresh/report/#7)

3-Q: **Disruption of Access Features**: Applications must not, except by specific user request, disrupt the features of the platform that are defined, in the documentation intended for application developers, as having an accessibility usage.

3-R: **Timing**: For each time limit that is set by the product, at least one of the following must happen; turn off, adjust and reset

3-S: **Keyboard Operation**: Where products have a KEYBOARD or a KEYBOARD INTERFACE, or run on a device that has a KEYBOARD or KEYBOARD INTERFACE, all functionality of the product operable through the electronic user interface must be operable through the KEYBOARD, or a KEYBOARD INTERFACE.

3-SS: **Visual Indication of Keyboard Shortcuts (no consensus)**: Work on this provision was not complete. Please see the drafts and other discussion material in [Section 7](http://www.access-board.gov/sec508/refresh/report/#7)

3-U: **AT Interoperability (partial consensus)**: Work on this provision was not complete. Please see the drafts and other discussion material in [Section 7](http://www.access-board.gov/sec508/refresh/report/#7).

3-V: **Accessibility Services**: PLATFORM SOFTWARE must provide access to a set of services that enable applications running on the platform to interact with ASSISTIVE TECHNOLOGY sufficient to enable compliance with the "AT interoperability" and "User Interface Components" provisions.

3-W: **Multiple Ways**: There must be more than one way available to locate CONTENT within a set of Web pages where CONTENT is not the result of, or a step in, a process. For example, providing a site map, index, table of contents, or search would be sufficient

3-X: **Labels or Instructions:** LABELS or instructions must be provided when CONTENT requires user input.

3-Y: **On Focus**: When any component in CONTENT or electronic documents receives focus through navigation by KEYBOARD or other keypads, it must not initiate a change of context.

3-Z: **On Input**: Changing the setting of any user interface component in web pages must not automatically cause a change of context unless the user has been advised of the behavior before using the component.

3-AA: **Error Identification**: If an input error is automatically detected in CONTENT or electronic documents, the item that is in error must be identified and described to the user in TEXT.

3-BB: **Headings and Labels**: Headings and LABELS must describe the topic or purpose. Note:  Labels and headings do not need to be lengthy. A word or even a single character may suffice if it provides an appropriate cue to finding and navigating content.

5-A: **Captions and Transcripts:** Materials containing video and/or audio, regardless of format, that contain speech or other audio information necessary for the comprehension of the CONTENT,

5-B: **Video Description**: Materials containing video and/or audio, regardless of format, that contain visual information necessary for the comprehension of the CONTENT

**5-C: Interactive Elements**: SYNCHRONIZED MEDIA containing INTERACTIVE ELEMENTS, such as options for selection and access to segments of the CONTENT, must include a mode of operation for selection consistent with applicable

These standards are a set of Requirements the developers must consider during the design phase. Web Content Accessibility Guidelines (WACG 2) developed by W3C are the technical specifications on how to meet the Requirements for Communication and Information Technology (CIT) stated in the revised Section 508 Standards.

## [WCAG 2.0 Guidelines](http://www.w3.org/TR/2007/WD-WCAG20-20071211/" \l "guidelines)

The recommendations in draft provisions (TEITAC) seem well aligned with WCAG 2.0 technical provisions and will eliminate conflict for developers

Following WCAG 2.0 guidelines will make content accessible to a wider range of people with disabilities, including sensory, physical, learning disabilities, cognitive limitations, photosensitivity and combinations of these and more usable for users in general.

WCAG 2.0 consists of four principles that provide the foundation for Web accessibility, 12 guidelines with testable success criteria which are three levels A, AA, AAA. The success criteria are written as testable statements that are not technology-specific. (<http://www.w3.org/WAI/WCAG20/quickref/>). Overview of WCAG 2.0 is available at (http://www.w3.org/WAI/WCAG20/quickref/20071211/Overview.php) and Techniques for how to meet WCAG 2.0 can be found at [http://www.w3.org/TR/WCAG20-TECHS/.](http://www.w3.org/TR/WCAG20-TECHS/)

### Principles and Guidelines

1. [Perceivable](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#perceivable) -- Information and user interface components must be presentable to users in ways they can perceive
2. 1.1 Text Alternatives: [Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, Braille, speech, symbols or simpler language.](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#text-equiv)
3. 1.2 Time Based Media [Provide synchronized alternatives for synchronized media](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#media-equiv)
4. 1.3 Adaptable: [Create content that can be presented in different ways (for example simpler layout ) without losing information or structure](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#content-structure-separation)
5. 1.4 Distinguishable: [Make it easier for users to see and hear content including separating foreground from background](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#visual-audio-contrast)
6. [Operable](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#operable) -- User interface components and navigation must be operable.

2.1 Keyboard Accessible--[Make all functionality available from a keyboard](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#keyboard-operation)

2.2 Sufficient Time: [Provide users with disabilities enough time to read and use content](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#time-limits)

2.3 Seizures: [Do not design content in a way that is known to cause seizures](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#seizure)

2.4 Navigable: [Provide ways to help users with disabilities navigate, find content and determine where they are](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#navigation-mechanisms)

3. [Understandable](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#understandable) – Information and functionality of the items of user interface must be understandable

3.1 Readable: [Make text content readable and understandable](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#meaning)

* 1. Predictable: [Make Web pages appear and operate in predictable ways](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#consistent-behavior)

3.3 Input Assistance: [Help users avoid and correct mistakes](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#minimize-error)

4. [Robust](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#robust):

4.1 Compatible: [Maximize compatibility with current and future user agents, including assistive technologies](http://www.w3.org/TR/2007/WD-WCAG20-20071211/#ensure-compat)

### Mapping proposed (TEITAC) Section 508, Current Section 508 and WCAG 2.0

|  |  |  |
| --- | --- | --- |
| **Proposed Section 508** | **Current Section 508** | **WCAG 2.0** |
| **3-A** Color | 1194.21(i), 1194.22(c), 1194.25(h) | 1.4.1 Use of Color (Level A) |
| **3-B** Contrast | 1194.21(j) | 1.4.3 Contrast (Level AA) |
| **3-C** Size, Shape, Location |  | 1.3.3 Sensory Characteristics (Level A) |
| **3-D** User Preferences | 1194.21(g) | 1.4.6 Contrast (Minimum) (Level AA) |
| **3-E** Color Adjustment | 1194.21(j) | 1.4.6 Contrast (Enhanced) (Level AAA) |
| **3-F** Non-text Objects | 1194.22(a) | 1.1.1 Non-text Content (Level A) |
| **3-G** Human Language |  | 3.1.1 Language of Page (Level A) |
| **3-H** Language of Parts |  | 3.1.2 Language of Parts (Level AA) |
| **3-I** Pausing | 1194.21(h) | 2.2.2 Pausing (Level AA) |
| **3-J** Flashing (Content and User Interfaces) | 1194.21(k), 1194.22(j), 1194.25(i) | 2.3.1 Three Flashes or Below Threshold (Level A) |
| **3-K** Consistent Identification | 1194.21(e) | 3.2.4 Consistent Identification (Level AA) |
| **3-L** Audio Turnoff | 1194.25(e) | 4.2 Audio Control (Level A) |
| **3-M** Reading Sequence | 1194.22(d) | 1.3.2 Meaningful Sequence (level A) |
| **3-N** Link Purpose |  | 2.4.4 Link Purpose (Context) (Level A) |
| **3-O** Information and Relationships | 1194.22(g), 1194.22(h), 1194.22 (i), 1194.22(n), 1194.22(o), 1194.21(l) | 1.3.1 Information and Relationships (Level A) |
| **3-P** User Interface Components | 1194.21(l), 1194.22(l), 1194.22(n) | 4.1.2 Name, Role, Value (Level A) |
| **3-Q** Disruption of Access Features | 1194.21(b) |  |
| **3-R** Timing | 1194.22(p), 1194.23(d), 1194.25(b) | 2.2.1 Timing (Level A) |
| **3-S** Keyboard Operation | 1194.21(a), 1194.21(e), 1194.21(f), 1194.21(k), 1194.21(l), 1194.21(m) | 2.1.1 Keyboard (Level A) |
| **3-T** Focus Indicator | 1194.21(c) |  |
| **3-U** AT Interoperability | 1194.21(d), 1194.21(c), 1194.21(f), 1194.21(m) |  |
| **3-V** Accessibility Services |  |  |
| **3-VV** Assistive Technology |  | 2.4.5 Multiple Ways (Level AA) |
| **3-W** Multiple Ways |  | 3.3.4 Labels or Instructions (Level AA) |
| **3-X** Labels or Instructions |  | 3.2.1 On Focus (Level A) |
| **3-Y** On Focus |  | 3.2.2 On Input (Level A) |
| **3-Z** On Input |  | 3.3.1 Error Identification (Level A) |
| **5-A** Captions and Transcripts | 1194.24(c) | 2.4.6 Labels Descriptive (Level AA) |
| **5-B** Video Description | 1194.24(d) | 1.2.1 Captions (Prerecorded) (Level A)  1.2.3 Captions (Live) (Level AA) |
| **5-C** Interactive Elements | 1194.24(d), 1194.22(b) | 1.2.2 Audio Description or Full Text Alternative (Level A) 1.2.4 Audio Description (Level AA) |