“In a broad sense, accessibility simply means ensuring that a given page on the Web is able to be accessed. Accessibility is not about disability; rather, it’s about people getting to the shared information that the vision of the Web has made manifest.”

— Holzschlag, M.E. 2006 (forward of "Web Accessibility" by Thatcher et al)
Designing for Disability Guidelines
Common Problems
Tools and Assistive Technologies
Current Research & Future Work

Designing for Disability
“Providing accessibility means removing barriers that prevent people with disabilities from participating in substantial life activities, including the use of services, products, and information.”

— Bergman & Johnson 1995
Direct Access

Assistive Access

[Vanderheiden 1991]
Designs for Low Vision & Blind
Braille Display
Screen Reader Software
OCR and Text to Speech
Screen Magnification
CAMPAIGN ET KIT, WE'VE JUST BEEN TOLD THAT AL QAEDA DID
Designs for Deaf
Telecommunications Device for the Deaf (TDD)
Closed Captioning
ShowSounds
“Web accessibility means that people with disabilities can use the Web. More specifically, Web accessibility means that people with disabilities can perceive, understand, navigate, and interact with the Web, and that they can contribute to the Web. Web accessibility also benefits others, including older people with changing abilities due to aging.”

— W3C
Guidelines
W3C Guidelines

Web Content Accessibility Guidelines Working Group (WCAG WG)

Thank You, John

25 March 2008
John Slatin, who was Co-Chair of the Web Content Accessibility Guidelines (WCAG) Working Group in 2005 and 2006 passed away last night. He will be dearly missed by all of us on the working group both for his contributions and for what he brought to the whole process: his energy, his good humor, his patience and his insight. His loss is a loss to us all and to the field of accessibility as a whole. Thank you John.

For those who want more information, John and his wife Anna have chronicled his experiences on his blog “Leukemia Letters”, and information about services will be posted there.

Announcements and Meetings

- WCAG 2.0 Candidate Recommendation published 30 April 2008
- Instructions for Commenting on WCAG 2.0 Documents

Public Working Drafts

A WCAG 2.0 Candidate Recommendation was published 30 April 2008. This document is accompanied by other support materials:

http://www.w3.org/WAI/GL/
W3C Guidelines

1. Content
   The information in a Web page or Web application: natural information such as text, images, and sounds code or markup that defines structure, presentation, etc.
2. Web browsers, media players, and other “user agents”
3. Assistive technology, in some cases - screen readers, alternative keyboards, switches, scanning software, etc.
4. Users’ knowledge, experiences, & in some cases, adaptive strategies using the Web
5. Developers
   Designers, coders, authors, etc., including developers with disabilities and users who contribute content
6. Authoring tools
   Software that creates Web sites
7. Evaluation tools
8. Web accessibility evaluation tools, HTML validators, CSS validators, etc.

http://www.w3.org/WAI/intro/components
W3C Guidelines

WAI Guidelines and Techniques

1. WAI guidelines define how to implement alternative text for accessibility in the different components
2. Authoring Tool Accessibility Guidelines (ATAG) addresses authoring tools
3. Web Content Accessibility Guidelines (WCAG) addresses
4. Web content, and is used by developers, authoring tools, and accessibility evaluation tools
5. User Agent Accessibility Guidelines (UAAG) addresses
6. Web browsers and media players, including some aspects of assistive technologies

http://www.w3.org/WAI/intro/atag.php
Perceivable

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<th>Tues</th>
<th>Wed</th>
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<td><img src="thunder.gif" alt="partly cloudy" /></td>
<td><img src="thunder.gif" alt="image" /></td>
<td><img src="thunder.gif" alt="rain" /></td>
<td><img src="thunder.gif" alt="snow" /></td>
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<tr>
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</tr>
</tbody>
</table>
Operable
Understandable
Robust
Common Problems
* F62: Failure of SC 4.1.1 due to insufficient information in DOM to determine specific relationships in HTML.
* F60: Failure of SC 3.2.5 due to launching a new window when a user enters text into an input field.
* F59: Failure of SC 4.1.2 due to using script to make div or span a user interface control in HTML.
* F58: Failure of SC 2.2.1 due to using server-side techniques to automatically redirect pages after a time-out.
* F57: Failure of SC 4.2.1 and 4.2.3 caused by defaulting to non-conforming version as a result of content negotiation.
* F56: Failure of SC 2.1.1 due to using script to remove focus when focus is received.
* F54: Failure of SC 2.1.1 due to using only pointing-device-specific event handlers (including gesture) for a function.
* F53: Failure of SC 3.2.1 due to opening a new window as soon as a new page is loaded without prior warning.
* F52: Failure of SC 2.2.2 due to using the blink element.
* F51: Failure of SC 1.1.1 due to providing a text alternative that is not null. (e.g. alt="spacer" or alt="image") for Images that should be ignored by AT.
* F50: Failure of SC 2.2.5 due to using meta refresh with a time-out.
* F49: Failure of SC 1.3.3 due to changing the meaning of content by positioning information with HTML layout tables.
* F48: Failure of SC 1.3.1 due to using text alternatives that are not alternatives (e.g. filenames or placeholder text) for decorative purposes.
* F47: Failure of SC 1.3.3 due to using white space characters to control spacing within a word.
* F46: Failure of SC 1.3.1 due to using structural markup in a way that does not represent relationships in the content.
* F45: Failure of SC 2.2.6 due to having a session time-out without a mechanism for saving user's input and re-establishing that information upon re-authentication.
* F44: Failure of SC 3.2.2 due to automatically submitting a form and presenting new content without prior warning when the last field in the form is given a value.
* F43: Failure of SC 4.1.1 due to insufficient information in DOM to determine one-to-one relationships (e.g., between labels with same id) in HTML.
* F42: Failure of SC 4.2.1 and 4.2.3 due to not providing a method for the user to find the alternative conforming version of a non-conforming Web unit.
* F41: Failure of SC 2.2.1, 2.2.5, and 3.2.5 due to using meta redirect with a time-out.
* F40: Failure of SC 2.2.1 due to using meta redirect with a time-out.
* F39: Failure of SC 1.1.1 due to providing a text alternative that is not null. (e.g. alt="spacer" or alt="image") for Images that should be ignored by AT.
* F38: Failure of SC 1.1.1 due to omitting the alt-attribute for non-text content used for decorative purposes only in HTML.
* F37: Failure of SC 3.2.2 due to launching a new window without prior warning when the status of a radio button, check box or select list is changed.
* F36: Failure of SC 3.2.2 due to automatically submitting a form and presenting new content without prior warning when the last field in the form is given a value.
* F35: Failure of SC 1.3.1 and 1.3.3 due to using white space characters to create multiple columns in plain text content.
* F34: Failure of SC 1.3.1 due to using white space characters to format tables in plain text content.
* F33: Failure of SC 1.3.1 and 1.3.3 due to using white space characters to create multiple columns in plain text content.
* F32: Failure of SC 1.3.3 due to using white space characters to control spacing within a word.
* F31: Failure of SC 3.2.4 due to using two different labels for the same function on different pages.
* F30: Failure of SC 1.1.1 due to using text alternatives that are not alternatives (e.g. filenames or placeholder text) for decorative purposes.
* F29: Failure of SC 1.3.5 due to using markup that results in inconsistent DOMs in user agents.
* F28: Failure of SC 4.1.1 due to using markup that results in inconsistent DOMs in user agents.
* F27: Failure of SC 1.3.1 due to having a text alternative that does not include information that is conveyed by color in the image.
* F26: Failure of SC 1.3.5 due to using non-text mark alone to convey information.
* F25: Failure of SC 2.4.3 due to the title of a Web unit not identifying the contents.
* F24: Failure of SC 1.4.1 due to specifying foreground colors without specifying background colors or vice versa.
* F23: Failure of SC 3.2.5 due to changing the context when the user removes focus from a form element.
* F22: Failure of SC 3.2.5 due to opening windows that are not requested by the user.
* F21: Failure of SC 1.4.2 due to playing a sound longer than 3 seconds where there is no mechanism to turn it off.
* F20: Failure of SC 1.1.1 and 4.1.2 due to not updating text alternatives when changes to non-text content occur.
* F19: Failure of SC 4.2.1 and 4.2.3 due to not providing a method for the user to find the alternative conforming version of a non-conforming Web unit.
* F18: Failure of SC 1.3.3 due to changing the meaning of content by positioning information with CSS.
* F17: Failure of SC 4.1.1 due to insufficient information in DOM to determine specific relationships in HTML.
* F16: Failure of SC 2.2.3 due to including scrolling content where there is not a mechanism to pause and restart the content.
* F15: Failure of SC 4.1.2 due to implementing custom controls that do not use an accessibility API for the technology, or do so incompletely.
* F14: Failure of SC 1.3.5 due to identifying content only by its shape or location.
* F13: Failure of SC 1.3.2 due to having a text alternative that does not include information that is conveyed by color in the image.
* F12: Failure of SC 2.2.6 due to having a session time-out without a mechanism for saving user's input and re-establishing that information upon re-authentication.
* F11: Failure of SC 2.2.2 due to using text-decoration: blink without a mechanism to stop it in less than three seconds.
* F10: Failure of SC 2.1.1 due to combining multiple content formats in a way that traps users inside one format type.
* F9: Failure of SC 3.2.5 due to changing the context when the user removes focus from a form element.
* F8: Failure of SC 2.2.1 due to using server-side techniques to automatically redirect pages after a time-out.
* F7: Failure of SC 4.2.1 and 4.2.3 caused by defaulting to non-conforming version as a result of content negotiation.
* F6: Failure of SC 4.1.1 due to insufficient information in DOM to determine specific relationships in XML.

Finding Failures

http://www.w3.org/TR/2006/WD-WCAG20-TECHS-20060427/
Effective

Not as effective
Tools and Assistive Technologies
OCR and Text to Speech Demo
Current Research and Future Work
Accessing Accessibility

Literacy
Kaphingst et al 2006, *Accessibility of Web Sites Containing Colorectal Cancer Information to Adults with Limited Literacy*

Accessibility Standards
Providenti & Zai 2007, *Web accessibility at academic libraries: standards, legislation, and enforcement*

Bigham et al 2007 *WebInSitu: a comparative analysis of blind and sighted browsing behavior*

Dawe 2006, *Desperately seeking simplicity: how young adults with cognitive disabilities and their families adopt assistive technologies*
Accessing Adoption cont.

Web Designers

Lazar et al 2004, 'Improving web accessibility: a study of webmaster perceptions'
Tools that Improve Accessibility

**Motor Impairment**

Gajos 2007, *Automatically generating user interfaces adapted to users' motor and vision capabilities*

Gajos 2008, *Improving the performance of motor-impaired users with automatically-generated, ability-based interfaces*
Tools that Improve Accessibility

Vision Impairment

Bigham et al 2006, WebInSight: Making Web Images Accessible

Ahn et al 2006 Improving accessibility of the web with a computer game
Next Steps