



Testing for accessibility and WCAG 2.0 compliance

Shadi Abou-Zahra

W3C, Austria

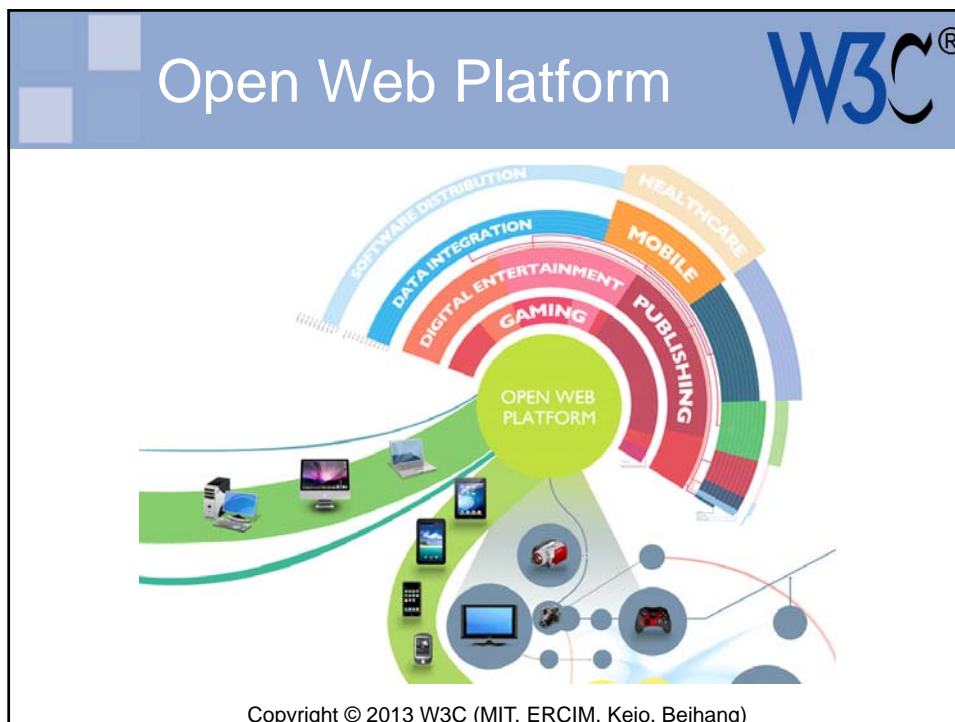
Advancing Expertise in Software Testing



Web Accessibility Testing

Shadi Abou-Zahra
W3C Web Accessibility Initiative (WAI)
<http://www.w3.org/People/shadi/>

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)



Accessibility Imperative

The Web has become an essential part of society:

- 15-20% of the population has cognitive, hearing, physical, neurological, speech, or visual disability
- Rapidly growing ageing population also affected
- Benefits for ~57% of the population (Microsoft)
- Business benefits and increased market share
- Legal requirements in many parts of the world

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

Accessibility Features



Examples of web accessibility features include:

- Text alternatives for images, video, and sound
- Marking-up headings, lists, and other structures
- Labels and instructions for forms and controls
- Consistent labeling, interaction, and behavior
- Adaptable content (text size, color, spacing, ...)
- Understandable instructions, messages, ...

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

WCAG 2.0



Web Content Accessibility Guidelines (WCAG) 2.0:

- Internationally recognized accessibility standard
- Applies to web applications including on mobile
- Authorized W3C translations in 10+ languages
- Also available as ISO/IEC 40500:2012
- Being applied to software (US Section 508, EC Mandate 376) – interpretation in “WCAG2ICT”

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

WCAG 2.0 Structure

The Web Accessibility Initiative (WAI) is part of the World Wide Web Consortium (W3C) that develops:

- 4 Principles
 - 12 Guidelines
 - 25 Level A Success Criteria
 - 13 Level AA Success Criteria
 - 23 Level AAA Success Criteria
- Conformance Requirements

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

WCAG 2.0 Principles

Four core principles of WCAG 2.0:

- **P** – Perceivable
- **O** – Operable
- **U** – Understandable
- **R** – Robust

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

WCAG 2.0 Guidelines

Examples of WCAG 2.0 guidelines:

- **Guideline 2.1 Keyboard Accessible** – Make all functionality available from a keyboard
- **Guideline 3.3 Input Assistance** – Help users avoid and correct mistakes

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

WCAG 2.0 Criteria

Examples of WCAG 2.0 success criteria:

- **1.1.1 Non-Text Content** – All non-text content that is presented to a user has a text alternative that serves the equivalent purpose (Level A)
- **2.2.4 Interruptions** – Interruptions can be postponed or suppressed by the user, except interruptions involving an emergency (Level AAA)

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

WCAG 2.0 Structure

The Web Accessibility Initiative (WAI) is part of the World Wide Web Consortium (W3C) that develops:

- 4 Principles
 - 12 Guidelines
 - 25 Level A Success Criteria
 - 13 Level AA Success Criteria
 - 23 Level AAA Success Criteria
- Conformance Requirements

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

Test Procedures

WCAG 2.0 techniques contain test procedures:

- **Technique H36:**
 1. For all input elements that have a type attribute value of “image”, check for the presence of an alt attribute
 2. Check that the alt attribute indicates the button’s function

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

WCAG 2.0 Techniques

Techniques are non-normative, non-exclusive, and non-exhaustive documentation of approaches:

- **Sufficient Techniques** – minimum requirement
- **Advisory Techniques** – further improvement
- **Common Failures** – often encountered issues

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

Quick Reference

Customize this Quick Reference

Technologies:

- HTML Techniques (always shown)
- Show CSS techniques and failures
- Show Synchronized Media techniques and failures
- Show SMIL techniques and failures
- Show Client-side Scripting techniques and failures
- Show Server-side Scripting techniques and failures
- Show WAI-ARIA techniques and failures

Levels:

- Show Level A Success Criteria
- Show Level AA Success Criteria
- Show Level AAA Success Criteria

Sections:

- Show Sufficient Techniques and Failures
- Show Advisory Techniques

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

Evaluation Tools

Many tools exist to help testing for WCAG 2.0:

- Automated website crawlers
- In-page and per-page tools
- Focused tools (eg. colors, ...)
- Built into web authoring tools
- Combination of all the above

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

Evaluation Process

Website Accessibility Conformance Evaluation
Methodology (WCAG-EM) 1.0 – working draft:

1. Define the evaluation scope
2. Explore the target website
3. Select representative sample
4. Audit the selected sample
5. Report evaluation findings

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

Participation

Many ways to participate and contribute:

- Uptake and use of W3C/WAI resources
- Translation and promotion of materials
- Review of drafts and providing feedback
- Active participation in Working Groups
- Increased W3C Member organizations
- Opportunities for sponsoring W3C/WAI

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)

Thank You

Shadi Abou-Zahra, W3C/WAI
Activity Lead, WAI International Program Office
<http://www.w3.org/People/shadi/>
shadi@w3.org

Copyright © 2013 W3C (MIT, ERCIM, Keio, Beihang)