ICT Accessibility. Current trends and open topics

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WCAG 2.0 assessment. The problem

Goals of WCAG 2.0
- Technology independence
- Testability

Results
- New structure (principles, guidelines, success criteria)
- Additional documentation (techniques and failures)
- New wording for the requirements (success criteria)

And conformity assessment?
- Is it more effective, efficient and satisfactory than WCAG 1.0?
**WCAG 2.0 assessment. Challenges**

1. Accessibility supported...
   - “Ways of using technologies that are accessibility supported”
   - Complicated concept...
   - ... and, who defines which ways of using technologies are accessibility supported?
   - Context-dependent
   - Example: Adobe Flash

2. Testability of success criteria
   - The wording of success criteria was created to be more objective
   - They should be easier to evaluate
   - So far, research results demonstrate the opposite

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**WCAG 2.0 assessment. Testability**


**WCAG 2.0 assessment. Challenges**

3. Openness of techniques and failures

- The techniques document is “alive”
- A new version with more techniques was published in October 2010, another in January 2012...
- … and the newest one in September 2014!
- The number of “common failures” is low
- … and they are essential for evaluation

4. Aggregation of partial results

- If the evaluation proceeds by individual criteria and individual elements, what is the final result?
- Is it the same to fail in one of 10 images or in one of 100 images?
- Are all the images in one web page of equal relevance?

**WCAG 2.0 assessment. Tools**

There are few tools

- TAW online (beta)
- AChecker (Toronto University)
- Total validator
- Hera FFX 2.1
- … are there more tools?

Tools and WCAG 2.0

- How to deal with the granularity of element-technique-criterion-guideline-principle?
- What happens when all the techniques fail for a given element? Does the element fails or is expert evaluation required?
- Is it important to closely follow WCAG 2.0 structure?
- How to generate useful assessment reports?
WAI EVAL-TF

Goal

- To develop an internationally harmonized methodology for evaluating the conformance of websites to WCAG 2.0, that supports different contexts, such as for self-assessment or third-party evaluation of small or larger websites

Status

- Started: August, 2011
- Published as a W3C Note in July 2014
- http://www.w3.org/TR/WCAG-EM/

More information

- Task force: http://www.w3.org/WAI/ER/2011/eval/eval-tf
eLearning accessibility. The problem

There are two issues
- Platform accessibility... for all user roles
- Learning content accessibility

Platform accessibility
- LMS (Learning Management Systems)
- Today, no one LMS is known to be 100% accessible

Learning content accessibility
- The Design for All approach is not enough
- Example: how to teach the concepts “big/small” to a blind child?
- One solution: alternative learning objects
- Adaptation to the user is required

Alternative learning content

Rationale
- Not every learning content is adequate for every learner...
  ... due to learning styles, functional diversity, technological diversity
- Thus, for each concept several learning objects are created, and each one fits one different context of use
- One of those learning objects is the “main” one

Implementation
- There are metadata systems enabling to relate a learning object with its alternative versions
- These system also enable to describe the contexts of use applicable for each alternative
Adaptation

Rationale

• Each user has different preferences and needs
• And he or she can use several devices
• The system can adapt the user experience according to these parameters

Implementation

• There are metadata systems for representing user preferences and needs (ISO/IEC 24751-2:2008)
• There are metadata systems for representing device characteristics (W3C CC/PP)
• A LMS can match this information with alternative learning objects and automatically choose the best fit

eLearning Accessibility. References


Accessibility of touch-based interfaces

Touch-based interfaces: issues

Persons with no vision
- They are unable to see the screen, so they don’t know where to touch
- User interface elements cannot be discerned using touch
- Partial solution: VoiceOver in iOS, Talkback in Android

Persons with limited dexterity
- Touch-based interfaces are too sensitive
- There is a need of configure tolerance parameters
- Unresolved... although there is AssistiveTouch for iOS 5/6/7/8
- ... and switch & scan support in iOS 7/8

Persons who cannot use their hands
- Alternatives needed for command and data input
- One option: speech recognition
- ... examples: Siri, “Ok Google”, Cortana
# Touch-based interfaces. References


Global Public Inclusive Infrastructure

The concept
- To combine cloud computing, web services and platform services
- To enable accessibility that is simpler, more inclusive, ubiquitous and cheaper: “anytime, anywhere, any computer access”

Components
- 1. A mechanism to determine personal needs and to store these needs for use when needed
- 2. A mechanism to use these user preferences to invoke accessibility features anywhere in any device
- 3. Tools and infrastructure to enable AT developers and vendors to develop and market new solutions

More information
- http://gpii.net
- http://cloud4all.info/
- http://www.prosperity4all.eu/

Relevant conferences and journals
Conferences

ASSETS (http://assets14.sigaccess.org/)
ICCHP (http://www.icchp.org/)
W4A (http://www.w4a.info/2014/)
CHI (http://chi2014.acm.org/)
Interact (http://www.interact2013.org/)

Journals

Universal Access in the Information Society
Behaviour & Information Technology
Human-Computer Interaction
Journal of Human-Computer Studies
Interacting with Computers
Practical exercise 3

Subject

- Document with the state of the art on one topic related to ICT accessibility
- Students will make a short presentation in the classroom

Deadlines

- Presentations: December 18th or January 15th
- Document: January 15th
Instructions

Document

• Length: 20-40 pages
• Font size: not bigger than 12 pt.
• Single spacing
• Margins: maximum 3 cm

Presentation

• Time for presenting: 10-15 minutes
• Up to 5 minutes for questions
• Format: PowerPoint or PDF
• Send the presentation the day before

Subject ideas

Crowdsourcing of accessibility services
Videogame accessibility
GPII an similar projects
W3C Website Accessibility Conformance Evaluation Methodology
Accessibility of eLearning platforms (LMS)
Accessibility of eLearning objects
Accessibility of mobile devices (including touch-based)
Augmented reality for accessibility
Accessibility for cognitive disabilities
Accessibility of digital documents
Video relay services
Accessible user experience
Subject assignment

1. **Subject from the list**
   a) Choose a subject from a Doodle poll:
      http://doodle.com/xh3wz3kmii5pyvdd

2. **Subject outside the list**
   a) Send an email to both teachers with the subject and a short abstract
   b) The assignment will be confirmed by email (priority by arrival order)
   c) Assignments will be published on the web

3. **Deadline to close assignments: November 26\(^{th}\)**
   □ Students without agreed assignments will be assigned by us

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