Tools for Visualizing Web Accessibility
Large Difference Between Standard and Alternatives

Difficult for sighted web designers to imagine difficulties for visually impaired...

**Standard**
Eye-movement-based exploration with visual cues

**Audio**
Keyboard-based exploration without visual cues
Jazz provides open collaboration across the software and systems lifecycle

**COMMUNITY**
*Transparent collaboration and exchange of ideas*

**PLATFORM**
*Open Services for Lifecycle Collaboration and Integration Services*

**PRODUCTS**
*Application lifecycle tools that leverage the Jazz platform*

*Application frameworks and toolkits*
Effective collaboration for remediating accessibility issues

Defects can link to accessibility requirements

Accessibility defects link to Test Execution results

Accessibility Test Execution Results link to accessibility defects
Visualization Techniques in Rational Policy Tester 8.5 “Dynamic Assessment plug-in”

- Colorblind Simulations
- Reading order visualization
- Blind usability visualization
Welcome to TimesPeople

Get Started

Welcome, daisuke_sato

Latest Activity

Skip to article

My Account
Welcome, daisuke_sato
Log Out
Help
- Manage My Account
- Create Alert
- Manage Alerts
TimesPeople
- Home Page
- Today's Paper
- Video
- Most Popular
- Times Topics

Energy & Environment
- World
- U.S.
- NYTimes.com
How can you assess reading order of this page?

1.3.2 Meaningful Sequence: When the sequence in which content is presented affects its meaning, a correct reading sequence can be programmatically determined. (Level A)
Reading Order Visualization

The best analytics win

On a smarter planet, big data means bigger opportunities

See how it's done →
Reading Order Visualization (2)
Navigation Guidelines in WCAG 2.0

2.4.1 Bypass Blocks:
A mechanism is available to bypass blocks of content that are repeated on multiple Web pages. (Level A)

2.4.10 Section Headings:
Section headings are used to organize the content. (Level AAA)
Reaching Time Visualization

(a) Original

(b) Visualization (Inaccessible)

(c) Visualization (With skip-link)

(d) Visualization (With headings)
Blind Usability Visualization - Algorithm

Page Navigation Structure

1 Skip to main content
2 Mast Header
3 Navigation Links
4 Article
5 Related links
6 Footer

Graph Presentation

1
2H
2C
3H
3C
4H
4C
5H
5C
6H
6C

3 sec
2 sec
12 sec
4 sec
30 sec
3 sec
50 sec
3 sec
20 sec
3 sec
20 sec

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Examples of Images with Color Problems

Original Image

Simulated
Example of Color Deficiency Simulation - Do not rely only on colors

Simulation
Summary of Rational Policy Tester Visualization Functions

- Improve productivity and accuracy of Web accessibility evaluation (inspection) during development

- Reduce cost to train developers and auditors
Advanced visualization techniques
WAI-ARIA Generation

- The metadata for reading order is completely separated from the original content
  - The metadata is created with an ARIA “flowto” concept.
    <div aria-flowto="next" >first</div>
    <div>skipped</div>
    <div id="next" >second</div>
- The metadata can be used to modify the source of the content or to change the live DOM on the client browsers.

ARIA: http://www.w3.org/TR/wai-aria
Reading Order for Digital Books
miChecker

- Official Web accessibility evaluation support tool for JIS X 8341-3:2010
  - Accessibility novice can learn about Web accessibility by the tool
  - Combination of the tool and worksheet reduces accessibility evaluation workload
- Developed by Ministry of Internal Affairs and Communications, Japan
- Contributed to ACTF project in 2011

Worksheet for accessibility evaluation

Users can import miChecker’s evaluation result into worksheet.
Conclusion

- Visualization techniques improve accuracy and productivity of accessibility inspections

- Visualization techniques can be effective education methods.

- Rational Policy Tester 8.5
Related Resources

- Rational Policy Tester Accessibility Edition
  

- Eclipse Accessibility Tools Framework (ACTF)
  
  http://www.eclipse.org/actf/

- Hironobu Takagi, Chieko Asakawa, Kentarou Fukuda, and Junji Maeda.
  SIGACCESS Access. Comput. 77-78 (September 2003), 177-184.
  
  http://doi.acm.org/10.1145/1029014.1028662

- Hironobu Takagi
  
Thank YOU!