Accessibility Tools Framework (ACTF)
Project Creation Review
September 17th, 2007

Chieko Asakawa, IBM
Mike Paciello, The Paciello Group
## Background

- New Technologies, New Standards, and Lack of Tools

<table>
<thead>
<tr>
<th>Evolution of runtime technologies</th>
<th>Current and coming accessibility standards and APIs</th>
<th>Existing accessibility check or repair tools</th>
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<tbody>
<tr>
<td>Traditional HTML</td>
<td><strong>Section 508</strong>, WCAG 1.0, 2.0, ISO/IEC Guide 71, ISO/DIS 9241-151, etc.</td>
<td>Bobby, WebKing, RAVEN, aDesigner, etc.</td>
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<tr>
<td>Web 2.0 (DHTML / AJAX)</td>
<td><strong>Section 508</strong>, WCAG 2.0, WAI-ARIA, ISO/IEC Guide 71, ISO/DIS 9241-151, MSAA (<strong>IAccessible2</strong>)</td>
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<tr>
<td>Flash</td>
<td><strong>Section 508</strong>, ISO/IEC Guide 71, MSAA</td>
<td>LIFT, AccRepair for Flash</td>
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<td>Eclipse RCP (SWT)</td>
<td><strong>Section 508</strong>, ISO/IEC Guide 71, SWT Accessibility, MSAA (<strong>IAccessible2</strong>)</td>
<td>RAVEN</td>
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<tr>
<td>OpenDocument Format (ODF)</td>
<td><strong>Section 508</strong>, ISO/IEC Guide 71, ODF 1.1 spec, ODF 1.2 spec.</td>
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### Runtime technology innovation goes on.

### Standards and APIs in blue bold face will be standardized or updated in 2007 to 2008.

### Lack of tools
Project Goal

Accelerate adoption of new accessibility standards, and accelerate research and development activities for next generation accessibility tools.

- Provide an extensible and comprehensive framework for accessibility tools.
- Allow developers to build various types of accessibility tools on top of ACTF.
  - Alternative interfaces for Persons with Disabilities (PwD)
  - Assistive technology simulation tools
  - Compliance validation and usability visualization tools
  - Accessibility check plugins for IDEs
  - …
- Contribute to other Eclipse projects
  - Cooperate with other Eclipse projects as closely as possible.
    - BIRT, TPTP, WTP, EclipseLink, RAP, Orbit, …
  - Help accessibility enhancement of other Eclipse projects.
  - Work towards making all development and authoring tools on Eclipse generate accessible artifacts.
Architecture details

- Validation part
  - Provide extensible accessibility validation features with initial support for HTML, OpenDocument Format (ODF), Flash, Java Swing, Eclipse SWT, and accessibility APIs such as Microsoft Active Accessibility (MSAA) and IAccessible2.
  - Developers can customize validation rules by using XML configuration files or through Java APIs.

- Presentation part
  - Provide reusable view components that will be useful to create accessibility evaluation tools.
  - Provide a visual representation of the PwD users’ usability of content or applications.
  - Provide an extensible accessibility report generator built on BIRT.

- Alternative interface part
  - Provide middleware components for making multimedia content controllable via alternative input methods, for adding audio descriptions/captions, and for transforming user interfaces by using external metadata.

- Infrastructure part
  - Provide comprehensive and unified access mechanism to user interfaces of applications and object models of various kinds of content.
  - Provide middleware for managing components and dataflow in the framework on top of the Eclipse platform.
  - Allow reports to persist on media such as JDBC-driven databases and in file systems. We plan to use EclipseLink.
IBM will make an initial code contribution that will encompass the core functionality for the ACTF project including:

- Framework components
  - Extensible validation engine and validation manager
  - Blind visualization engine
  - Image simulation engine
  - Reusable view components
  - Infrastructure middleware
- Exemplary implementations
  - Accessibility API probe tool implementation
  - Accessibility check tool implementation
  - Alternative interface implementation for multimedia content
  - Alternative interface implementation for ODF documents

- Binary-only distribution of code is currently available on IBM alphaWorks
Organization

- Proposed project leaders
  - Chieko Asakawa, IBM
  - Mike Paciello, The Paciello Group

- Identified Committers
  - 16 people will work as committers from the 8 organizations below
    (see next 2 slides for list of individual details)
  - Center for Mathematics and Computer Science, Netherlands
  - IBM Corporation, US
  - International Webmasters Association/HTML Writers Guild (IWA/HWG), US
  - State University of New York at Stony Brook, US
  - The Paciello Group, US
  - University of Toronto, Canada
  - University of Washington, US
  - Web Accessibility Tools Consortium (WAT-C)

- Mentors
  - Naci Dai (WTP PMC, e teration a.s.)
  - Ed Merks (Modeling PMC, IBM Corporation)

- Interested parties
  - Actuate Corporation, US
  - Adobe Systems Incorporated, US
  - BIRT Project, Eclipse Foundation
  - BrailleNet, France
  - Japan Braille Library, Japan
  - Mozilla foundation, US
  - Royal National Institute of Blind People (RNIB), UK
  - SAP AG, Germany
  - SAS Institute Inc., US
  - SIG-UAI, Internet Technology Research Committee (ITRC), Japan
  - The Carroll Center for the Blind, US
  - Technosite (ONCE Foundation), Spain
  - Tokyo Institute of Technology, Japan
  - University of Manchester, UK
  - Vision Australia, Australia
## Project Leads and Initial Committers

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Role</th>
<th>Experience and connection with the ACTF project</th>
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<tbody>
<tr>
<td>Chieko Asakawa</td>
<td>IBM</td>
<td>Co-Lead</td>
<td>Chieko is a Co-Lead of the ACTF project. She is an IBM Distinguished Engineer and led the research and development of the voice browser <em>Home Page Reader</em>, accessibility check/visualization tool <em>aDesigner</em> and accessibility Internet browser for multimedia <em>aiBrowser</em>.</td>
</tr>
<tr>
<td>Mike Paciello</td>
<td>The Paciello Group</td>
<td>Co-Lead</td>
<td>Mike is a Co-Lead of the ACTF project. He is the Founder of TPG and now working as the Co-Chair of the TEITAC Advisory Committee for 508/255 Standards Update, and has been working on accessibility standards, assistive technology, and accessibility interface design for more than 20 years.</td>
</tr>
<tr>
<td>Kentarou Fukuda</td>
<td>IBM</td>
<td>Committer</td>
<td>Kentarou is a member of the ACTF team and is the technical lead of the Infrastructure and Presentation parts of ACTF. He also develops portions of the ACTF. He has been an accessibility researcher for 6 years and is one of the originators of the <em>aDesigner</em>. He has been an Eclipse plug-in developer for 4 years.</td>
</tr>
<tr>
<td>Mike Squillace</td>
<td>IBM</td>
<td>Committer</td>
<td>Mike is a member of the ACTF team and technical lead of the validation engine and associated UI components. He is a member of the IBM Human Ability and Accessibility Center and was one of the co-architects of the IBM Rule-based Accessibility Validation Environment (RAVEN). He has been an Eclipse plug-in developer for 3 years.</td>
</tr>
<tr>
<td>Hisashi Miyashita</td>
<td>IBM</td>
<td>Committer</td>
<td>Hisashi is a member of the ACTF team and is the technical lead of the Alternative interface part of ACTF. He also develops portions of the ACTF. He is one of the originators of the <em>aiBrowser</em> and has been an Eclipse plug-in developer for 4 years. His research topic includes accessibility, XML, and Database.</td>
</tr>
<tr>
<td>Hironobu Takagi</td>
<td>IBM</td>
<td>Committer</td>
<td>Hiro is a member of the ACTF team with focuses on the Presentation and Alternative Interface parts. He is one of the originators of the <em>aDesigner</em> and <em>aiBrowser</em>. He has been an accessibility researcher for 7 years and developed the blind usability visualization function of <em>aDesigner</em>.</td>
</tr>
<tr>
<td>Takashi Itoh</td>
<td>IBM</td>
<td>Committer</td>
<td>Takashi is a member of the ACTF team with focuses on the Infrastructure, Presentation, and Validation parts. He is a member of IBM Research and is one of the originators of the <em>Home Page Reader</em>. He has been an Eclipse plug-in developer for 4 years.</td>
</tr>
<tr>
<td>Bill Carter</td>
<td>IBM</td>
<td>Committer</td>
<td>Bill is a member of the ACTF team with a focus on the use of the framework for the enhancement of the accessibility support features of IDEs. He has worked in IBM's Linux accessibility team, and is currently researching accessibility issues in the 3D Internet. He has 25 years of experience in C/C++, Java, Python, and Web application development.</td>
</tr>
<tr>
<td>Steve Falknner</td>
<td>The Paciello Group</td>
<td>Committer</td>
<td>Steve is a member of the ACTF team with focuses on Validation Rules and Documentation. He is the originator of the <em>Web Accessibility Toolbar</em> testing tool. He has been working as an accessibility consultant for 6 years.</td>
</tr>
<tr>
<td>Will Pearson</td>
<td>The Paciello Group</td>
<td>Committer</td>
<td>Will is a member of the ACTF team with a focus on the Validation Rules and Alternative Interfaces components. He has worked in the field of accessibility for five years. He currently works as an academic researcher in the HCI area. He also is a currently recognized as a Most Valuable Professional (MVP) by Microsoft for the contributions he has made to the blind software developer community.</td>
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### Initial Committers (Cont’d)

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<tr>
<td>Zeljko Obrenovic</td>
<td>Center for Mathematics and Computer Science</td>
<td>Committer</td>
<td>Zeljko is a member of the ACTF team with focuses on the Alternative Interface and Infrastructure parts. He developed several solutions for the integration of alternative interaction modalities within Web browsers. He has been a Java developer for 6 years.</td>
</tr>
<tr>
<td>Roberto Scano</td>
<td>IWA/HWG</td>
<td>Committer</td>
<td>Roberto is a member of the ACTF team with focuses on the Validation and Documentation parts. He is the Advisory Committee Representative of IWA/HWG inside W3C and a member of WCAG/ATAG. He is one of the originators of the accessible CMS &lt;fruibile/&gt;. He has worked as a Web accessibility consultant for 5 years.</td>
</tr>
<tr>
<td>I.V. Ramakrishnan</td>
<td>State University of New York at Stony Brook</td>
<td>Committer</td>
<td>I.V. Ramakrishnan is a member of the ACTF team with a focus on the Alternative Interface part. He leads the development of HearSay, an NSF-funded non-visual Web Browser. He has worked for several years on the development of Web technologies. He is a Professor of Computer Science at SUNY.</td>
</tr>
<tr>
<td>Simon Harper</td>
<td>University of Manchester</td>
<td>Committer</td>
<td>Simon is a member of the ACTF team with focuses on the Validation Rules and Presentation parts. He is one of the originators of the Semantic Transcoding methodology for reverse engineering websites; and has been working on user-centered Web accessibility for 10 years.</td>
</tr>
<tr>
<td>David Bolter</td>
<td>University of Toronto</td>
<td>Committer</td>
<td>David is a member of the ACTF team and is interested in DHTML accessibility checking. He has been an accessibility developer for over 10 years producing enabling technologies and infrastructure.</td>
</tr>
<tr>
<td>Simon Bates</td>
<td>University of Toronto</td>
<td>Committer</td>
<td>Simon is a member of the ACTF team and is interested in automated accessibility testing and in the Validation Rules part of ACTF. He has been developing accessibility infrastructure and applications for 6 years and developing in Java for 7 years.</td>
</tr>
<tr>
<td>Jeffrey P. Bigham</td>
<td>University of Washington</td>
<td>Committer</td>
<td>Jeffrey is a member of the ACTF team with focuses on Alternative Interface components and Infrastructure. He has developed several projects targeting improved accessibility for blind Web users. He has been a researcher focused on Web technology for 5 years and is a founding member of the WebInSight Web accessibility project at the University of Washington.</td>
</tr>
<tr>
<td>Makoto Ueki</td>
<td>WAT-C</td>
<td>Committer</td>
<td>Makoto is a member of the ACTF team with focuses on Validation Rules, Documentation and Internationalization. He is a member of the W3C/WAI WCAG working group and works for WCAG 2.0. He contributed to a Japanese accessibility guideline JIS X 8341 as a workgroup member. He has been a Web accessibility consultant for 6 years.</td>
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Schedule / Timeline

- July 6\textsuperscript{th}, 2007: Project proposal posted
- September 17\textsuperscript{th}, 2007: Creation review

- 3Q-4Q, 2007: Start initial code submission process
  Start discussion with other Eclipse projects
  Prototype and planning

- 1Q, 2008: Milestone build 0.1 release
Q&A

- Project Proposal
  http://www.eclipse.org/proposals/ACTF

- Newsgroup
  news://news.eclipse.org/eclipse.technology.actf

- Comments and Votes:
  https://bugs.eclipse.org/bugs/show_bug.cgi?id=196763

Thank you!