Accessibility Tools Framework (ACTF)

Project Creation Review

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Background

- New Technologies, New Standards, and Lack of Tools

Evolution of runtime technologies	Current and coming accessibility standards and APIs	Existing accessibility check or repair tools
Traditional HTML	**Section 508,** WCAG 1.0&**2.0**, ISO/IEC Guide 71, ISO/DIS 9241-151, etc.	**Bobby, WebKing, RAVEN, aDesigner, etc.**
Web 2.0 (DHTML / AJAX)	**Section 508**, **WCAG 2.0**, **WAI-ARIA,** ISO/IEC Guide 71, ISO/DIS 9241-151, MSAA (**IAccessible2**)	?
Flash	**Section 508,** ISO/IEC Guide 71, MSAA	LIFT, AccRepair for Flash
Eclipse RCP (SWT)	**Section 508,** ISO/IEC Guide 71, SWT Accessibility, MSAA (**IAccessible2**)	RAVEN
OpenDocument Format (ODF)	**Section 508,** ISO/IEC Guide 71, ODF 1.1 spec, **ODF 1.2** spec.	?
⋮	⋮	????

Runtime technology innovation goes on.

Standards and APIs in **blue bold face** will be standardized or updated in 2007 to 2008.
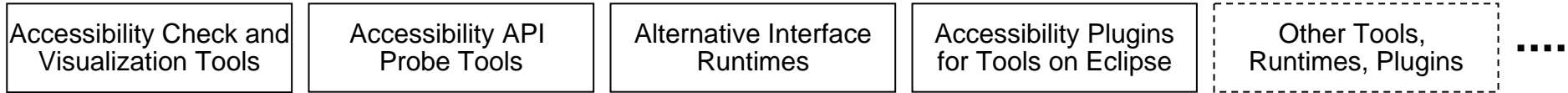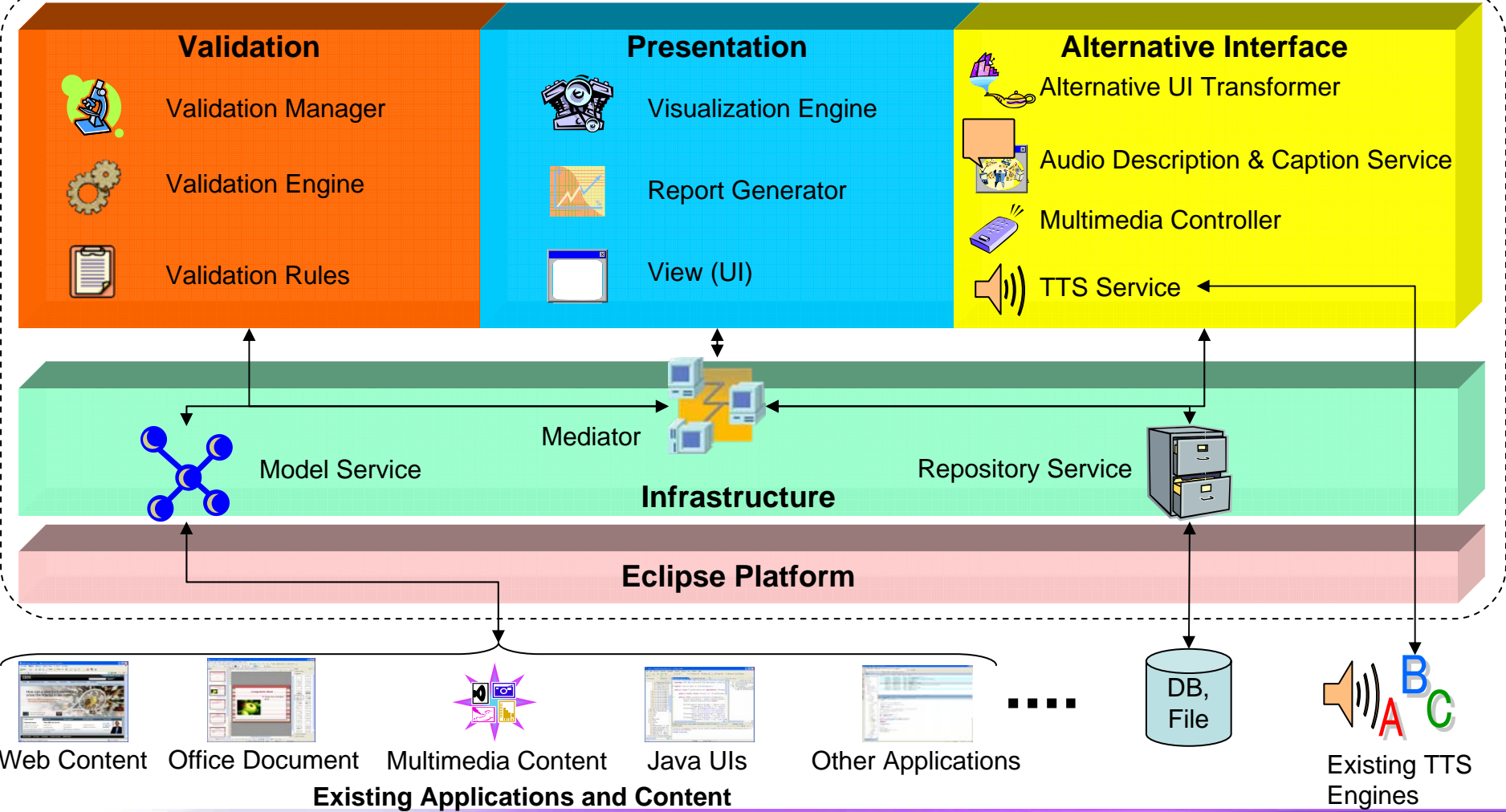
Lack of tools

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

Tools and Runtimes on top of ACTF

Accessibility Check and Visualization Tools	Accessibility API Probe Tools	Alternative Interface Runtimes	Accessibility Plugins for Tools on Eclipse	Other Tools, Runtimes, Plugins

Accessibility Tools Framework (ACTF)

Validation

- Validation Manager
- Validation Engine
- Validation Rules

Presentation

- Visualization Engine
- Report Generator
- View (UI)

Alternative Interface

- Alternative UI Transformer
- Audio Description & Caption Service
- Multimedia Controller
- TTS Service

Mediator

Model Service

Repository Service

Infrastructure

Eclipse Platform

Web Content   Office Document   Multimedia Content   Java UIs   Other Applications

DB, File

Existing TTS Engines

Existing Applications and Content

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.

Initial Code Contribution

- 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
  - http://www.alphaworks.ibm.com/tech/adesigner
  - http://www.alphaworks.ibm.com/tech/raven

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, eteration 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

Name	Affiliation	Role	Experience and connection with the ACTF project
Chieko Asakawa	IBM	Co-Lead	Chieko is a Co-Lead of the ACTF project. She is an IBM Distinguished Engineer and she led the research and development of the voice browser *Home Page Reader*, accessibility check/visualization tool *aDesigner* and accessibility Internet browser for multimedia *aiBrowser*.
Mike Paciello	The Paciello Group	Co-Lead	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.
Kentarou Fukuda	IBM	Committer	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 *aDesigner*. He has been an Eclipse plug-in developer for 4 years.
Mike Squillace	IBM	Committer	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.
Hisashi Miyashita	IBM	Committer	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 *aiBrowser* and has been an Eclipse plug-in developer for 4 years. His research topic includes accessibility, XML and Database.
Hironobu Takagi	IBM	Committer	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 *aDesigner* and *aiBrowser*. He has been an accessibility researcher for 7 years and developed the blind usability visualization function of aDesigner.
Takashi Itoh	IBM	Committer	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 *Home Page Reader.* He has been an Eclipse plug-in developer for 4 years.
Bill Carter	IBM	Committer	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.
Steve Faulkner	The Paciello Group	Committer	Steve is a member of the ACTF team with focuses on Validation Rules and Documentation. He is the originator of the *Web Accessibility Toolbar* testing tool. He has been working as an accessibility consultant for 6 years.
Will Pearson	The Paciello Group	Committer	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.

Initial Committers (Cont'd)

Name	Affiliation	Role	Experience and connection with the ACTF project
Zeljko Obrenovic	Center for Mathematics and Computer Science	Committer	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.
Roberto Scano	IWA/HWG	Committer	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 *<fruibile />*. He has worked as a Web accessibility consultant for 5 years.
I.V. Ramakrishnan	State University of New York at Stony Brook	Committer	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.
Simon Harper	University of Manchester	Committer	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.
David Bolter	University of Toronto	Committer	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.
Simon Bates	University of Toronto	Committer	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.
Jeffrey P. Bigham	University of Washington	Committer	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.
Makoto Ueki	WAT-C	Committer	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.

Schedule / Timeline

- July 6th, 2007:   Project proposal posted
- September 17th, 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

- 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!