



OpenOffice.org

Conference 2008 Beijing
世界开源大会

Accessibility in IBM Lotus Symphony

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Agenda

- [What is IBM Lotus Symphony](#)
- Accessibility in IBM Lotus Symphony
- Accessibility Cooperation with Open Source community
- Summary & Questions/Answers



IBM Lotus® Symphony™ Overview



- A set of office productivity applications
 - Create, edit, share documents, spreadsheets, and presentations
 - Can handle the majority of tasks required by end users
 - Support OpenDocument Format (ODF)
 - Support Microsoft® Office and other formats
- Available at *no charge* to anyone and everyone
 - www.ibm.com/software/lotus/symphony
 - Web-based support and community forums



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Accessibility Enhancements in Symphony

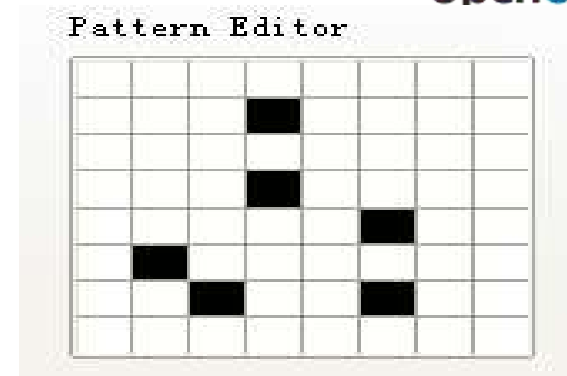


- Supplied full keyboard access, visual focus and high contrast support
- Provided accessible information through MSAA & IAccessible2 API for all user interface controls and document areas
- Gained support from popular Assistive Technology (AT) tools – Jaws & Window-Eyes
- Accessible file format interoperability

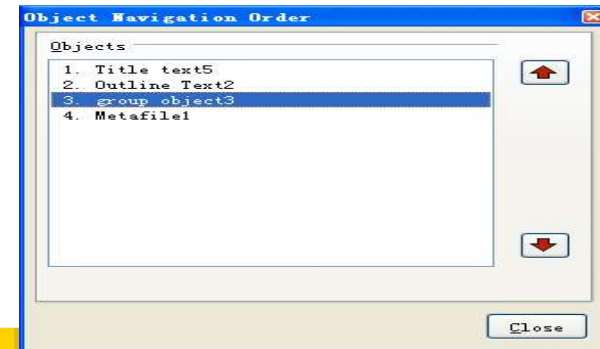
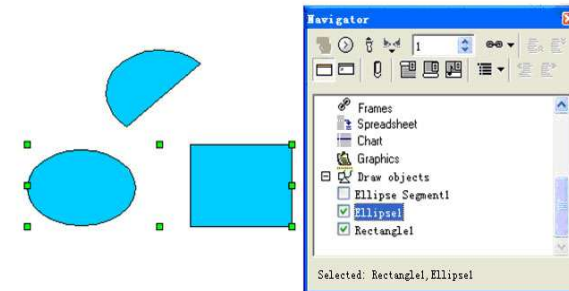


Keyboard Access for All Functions

- Keyboard support for customized controls



- Usable keyboard access in editing area
 - Insert/navigate/manipulate object in editing area by keyboard
 - Customized keyboard sequence for Presentation



Expose Accessibility Information through Standard API

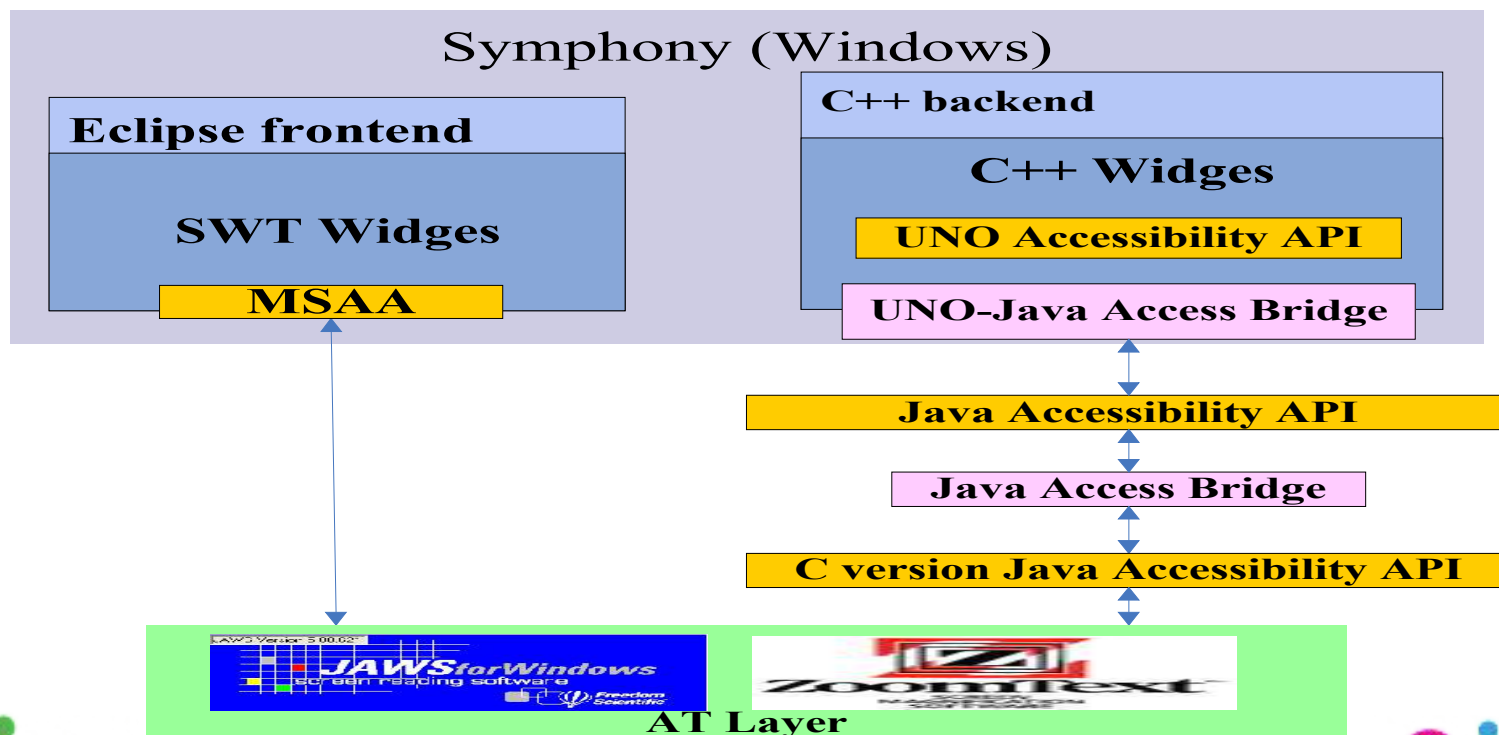


- Architecture Replacement
 - Original Java Architecture Overview
 - New MSAA & IAccessible2 Architecture Implementation
- Enhance the existing dialog controls
- Support for customized controls
- Support for document specific functions



Original Symphony's Java Architecture

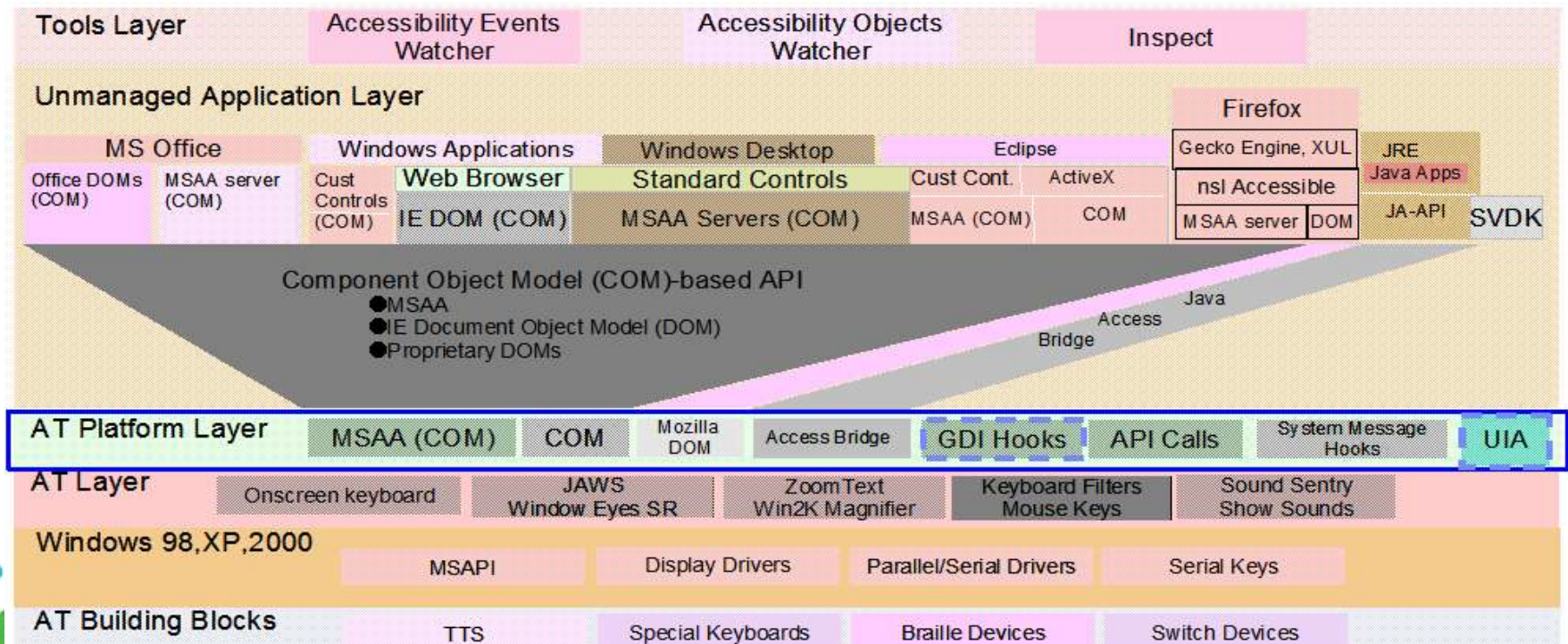
- Easy mapping between UNO and Java with cross-platform support
- Multiple Accessibility architectures exist
- Multiple bridges – Performance, Stability and Memory issues
- Java Accessibility API is not well supported by AT



MSAA – Enhancements Needed

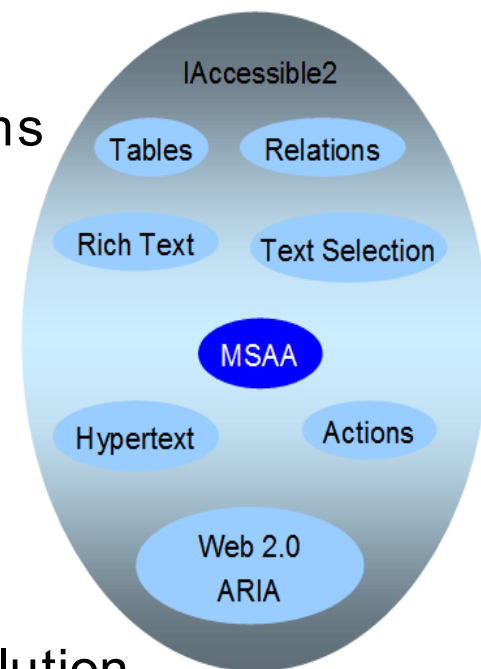


- Released in 1995 to assist dialog and menu reading
- No support for Advanced Controls, Rich Text, Tables, Hyperlinks, or Relations etc needed for ODF and Web 2.0
- AT tools augment with an OSM (Off-Screen Model), and heuristics sometimes based on application specific behavior



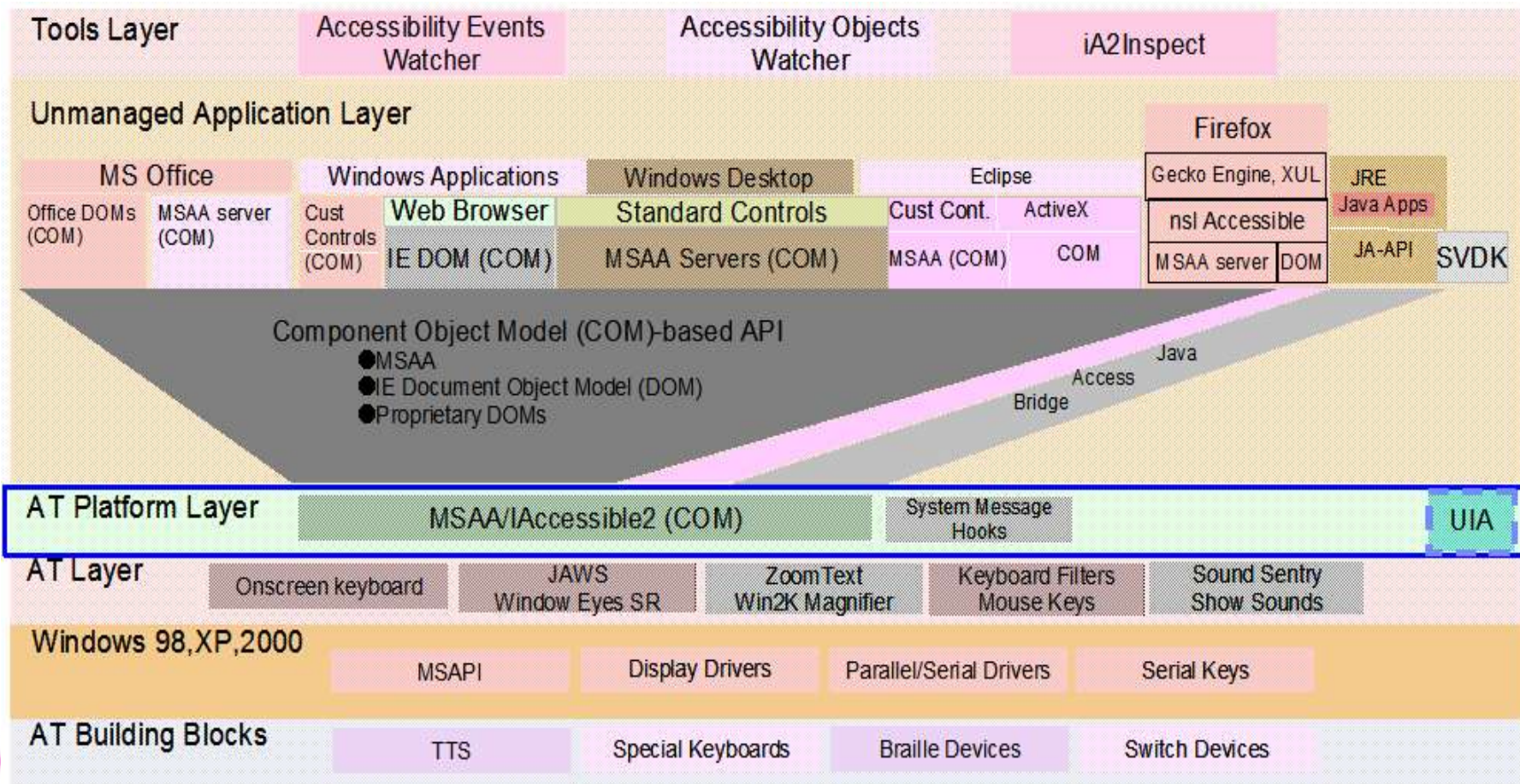
New Accessibility API -- IAccessible2

- Engineered to facilitate communication of rich semantics and behaviors from applications to Assistive Technology (AT) products
- Leverages and extends existing MSAA paradigms
 - Build on existing foundation – COM & Windows events
 - Without changing or duplicating MSAA behaviors
 - Continuing advantage of “in-process”
 - Applications can incrementally add new interfaces
 - ATs can incrementally add new behaviors
- Jointly developed with AT vendors and IBM application developers to ensure a complete solution
- IAccessible2 is a robust solution usable across many different applications: Symphony, Firefox and Eclipse



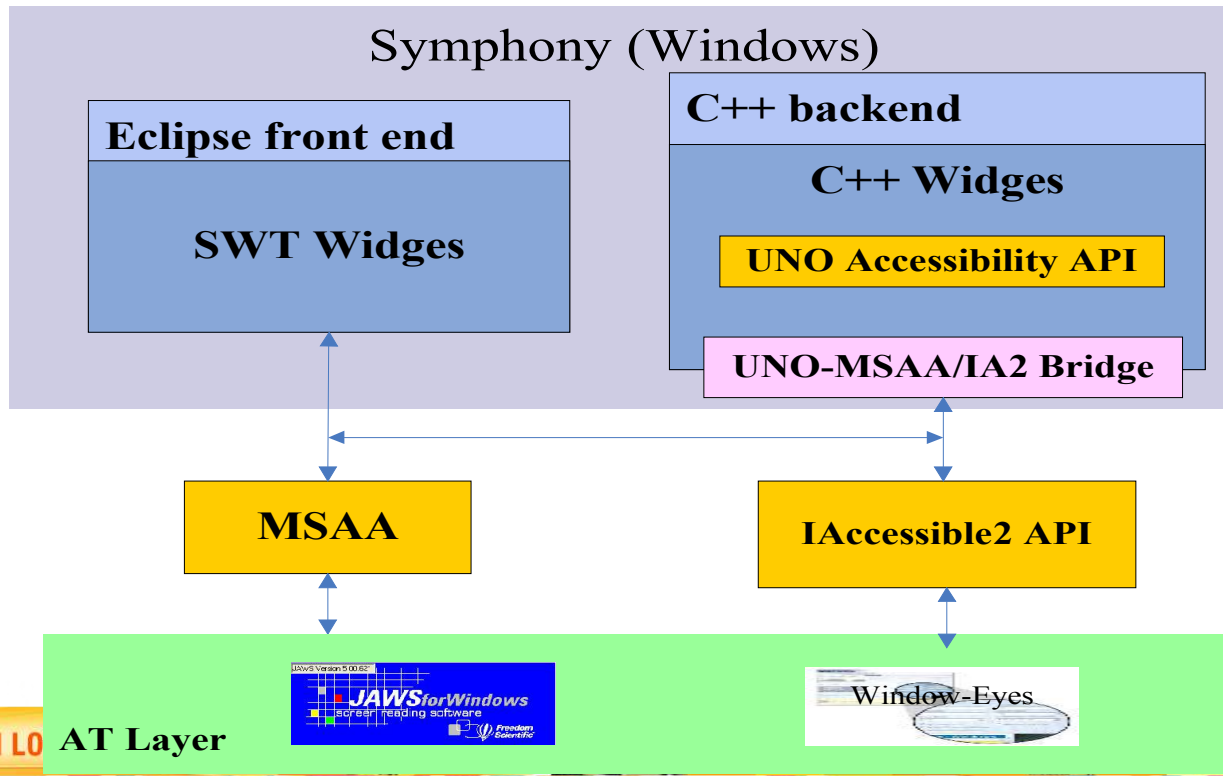
<http://www.linuxfoundation.org/en/Accessibility/IAccessible2>

Simplified, Fast AT Platform Layer with IAccessible2



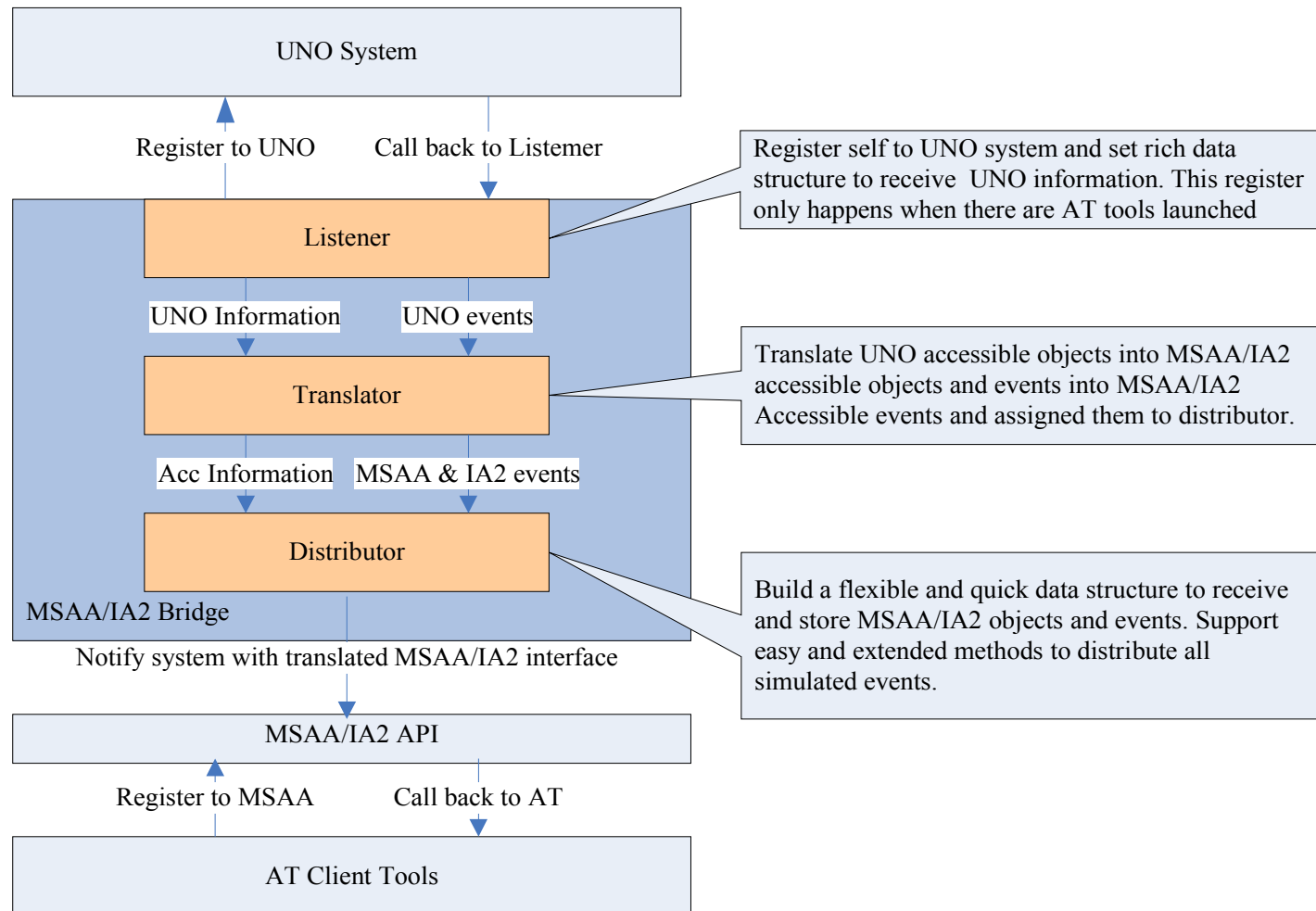
New MSAA & IAccessible2 Accessibility Architecture

- Better stability and performance
- Rich document support by utilizing IAccessible2
- Consistent API behaviors for C++ and Eclipse widgets
- Better support from AT tools



Abstract Work Flow of UNO-MSAA/IA2

Bridge



Enhancement for Dialog Controls

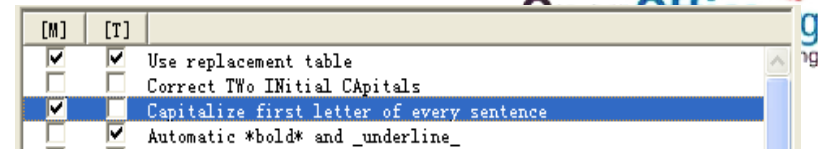


- Support level information for tree control
 - Indicate the depth, sibling and children information
- Add grouping relation support for dialog controls
 - For the controls which are in a logical group
- Support table header for table control
- Modify the event sequence behavior to be compliant with standard controls
 - Refer to standard Windows controls and Firefox controls



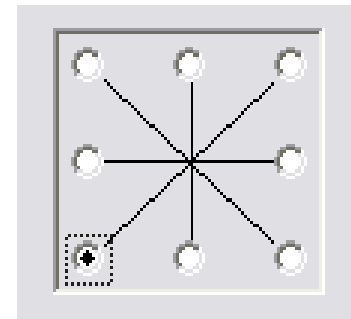
Support for Customized Controls

- Re-design the UI element

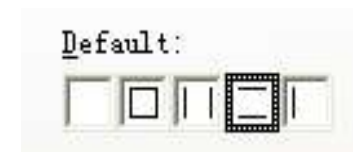
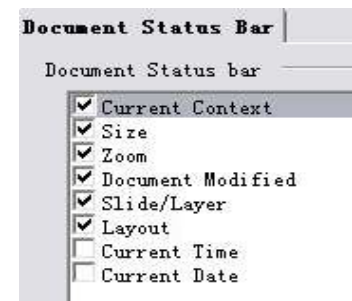


Always	Font	Replace with
<input type="checkbox"/>	Times	Arial
<input checked="" type="checkbox"/>	Bold	System

- Add special support in UNO Accessibility layer



- Enhance the deficient functions



Support for Document Specific Functions



- Word Processing Editor
 - Heading, Note, Header, Footer (New IA2Role)
 - Bullet & Numbering, Revision Mode (IAccessibleText::attributes)
 - Column, Section, Line, Page (IAccessible2::attributes)

- Spreadsheet
 - Cell Attributes, Cell Formula, Cell Note (IAccessible2::attributes)

- Presentation
 - Slide Show Mode (Present internal objects with logical layout order)
 - Bullet & Numbering (IAccessibleText::attributes)

- General
 - Image map, Hyperlink, Text selection, Table & Table header, etc

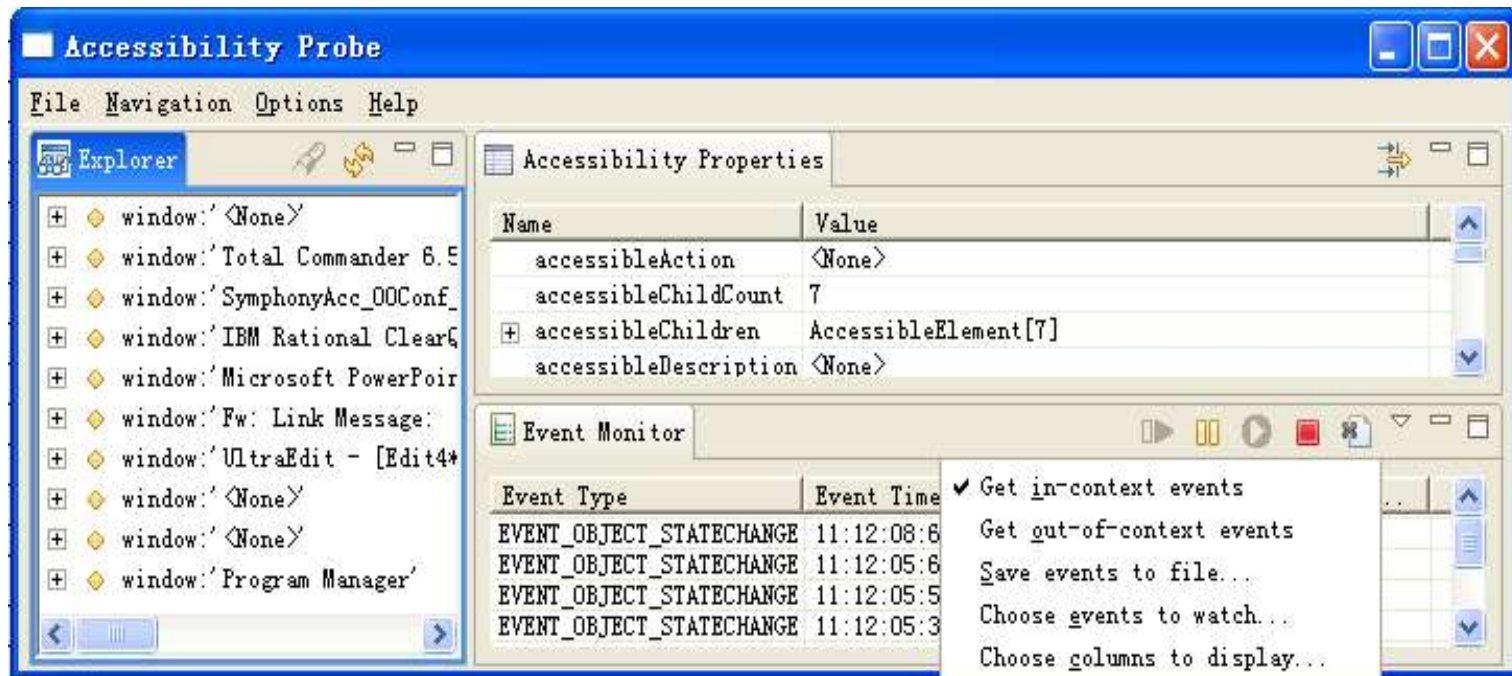
- Document
 - File path and File type (IAccessible2::attributes)



IAccessible2 Unit Test tools -- AccProbe



- Based on Eclipse and provides MSA or IAccessible2 hierarchy view
- Powered by Raven (Rules-based Accessibility Validation Environment)
- Combine Inspect32, AccExplore, and AccEvent's functionalities
- More customization and easy-to-use for testing and debugging



Accessible file format interoperability



- Supported all accessibility required tags for Microsoft Office and ODF file formats
- Export accessible PDF format
 - Tagged PDF is supported
 - Accessibility full check passed
 - Spreadsheet can be exported with one single table in tag tree to be logically consistent with original data model
 - Special support for document objects, such as form controls, shapes, tables, bullet & numbering, hyperlinks and annotations, etc



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Accessibility Cooperation with Open Source community



- IBM joined the OpenOffice.org community in Sep, 2007
- IBM is contributing IAccessible2 code to Open Source Community
 - IAccessible2 specification already contributed to Linux Foundation:
<http://www.linux-foundation.org/en/Accessibility/IAccessible2>
 - IAccessible2 implementation is being contributed to OpenOffice.org
 - 1st stage: MSAA & IAccessible2 bridge – finished
 - 2nd stage: MSAA & IAccessible2 support for 3 editors in OpenOffice 3.x – ongoing
 - IAccessible2 implementation has been done in Firefox 3



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IBM Lotus Symphony Accessibility – In Summary



- IAccessible2 specification
 - Extends Microsoft Active Accessibility for usable access to documents, table, links, rich text, etc
 - Eliminate Windows reverse engineering needed to fill API gaps
- IBM Lotus Symphony's Accessibility is well supported
 - Full Keyboard access for all functions
 - MSAA/IAccessible2 support for all UI controls and editing objects
 - Good support from popular AT tools
 - Enhanced accessibility for supported file formats

Symphony is one of the most accessible productivity tools which support ODF



Thanks!

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www.OOabeijing2008.com



Reference: Symphony Sessions

- ▶ IBM Lotus Symphony Technical Overview
- ▶ Lotus Symphony extension model
- ▶ [Accessibility in Symphony](#)
- ▶ Symphony performance improvement best practices
- ▶ Introduction of SMIL Animation and Implementation in IBM Lotus Symphony
- ▶ Properties Sidebar, make editing much easier
- ▶ Learn more about office users - Feature usage study by document element statistics
- ▶ Visualize Writer Document Structure for Productive Development

