

From www.eclipse.org/osee to deployment Tutorial

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Agenda

- Installation & Setup
- OSEE
 - What is it?
 - Background Information
- Architecture
 - Network Layout
- T. Rex Software Company
- Data Model
- Version Control
- Variant Management
- Break

Before we begin...

- This is an interactive session: feel free to ask questions
- Tell us about yourself
 - Background Info
 - Operating Systems
- Tutorial based on OSEE 0.7.0
- The tutorial materials are available at http://www.eclipse.org/osee/OSEE_eclipsecon2009_tutorial_materials.zip

Requirements

- System Requirements (non-eclipse)
 - System with at least 1GB of RAM
 - Java Runtime Environment (JRE) 1.6 or higher
 - Microsoft Office (For Demo Only)
- Eclipse Dependencies
 - Eclipse 3.4.2 SDK
 - org.eclipse.gef
 - org.eclipse.draw2d
 - org.eclipse.birt
 - org.eclipse.datatools
 - The easiest solution is the Ganymede Eclipse install
Eclipse IDE for Java and Report Developers

Installation

- Database
 - Run the PostgreSQL installer, located under the “PostgreSQL” folder, for your OS using the following settings
 - Default install path
 - Default data directory
 - Password “Postgre1”
 - Port 5432
 - Default Locale
 - On last screen uncheck “Launch Stack Builder”
 - Setup database accounts and schemas by executing the bash/bat script for your OS located under the “PostgreSQL” folder
 - Save db password using pgadmin
 - osee_db_setup.bat – Windows
 - osee_db_setup.sh – Others
 - For more information or for the files mentioned above visit
 - http://www.eclipse.org/osee/documentation/installation/postgresql_install.php

Installation - continued

- JRE

- Ensure the JRE 1.6 is in the path by typing java – version at a command prompt

- OSEE Client

- Extract the Eclipse base zip for your OS located under “Eclipse Base” to a short path and then launch eclipse
 - From the Eclipse update manager, install the update sites located under “OseeClient”
 - org.ecilpse.osee_integration_build_incubation.zip
 - osee.add.ons.updatesite.zip

Initialization

- Launch Application Server
 - Execute the launch script for your OS located under "OseeApplicationServer"
 - osee_app_server.bat – Windows
 - osee_app_server.sh - Others
 - Wait until the server finishes the start up procedure
 - Do not close the console
- Database Initialization
 - In a command prompt change to the eclipse install dir

```
eclipsec -application org.eclipse.osee.framework.database.configClient -vmargs -Xmx512m  
-Dosee.log.default=INFO -Dosee.application.server=http://localhost:8089  
-Dosee.authentication.protocol=trustAll -Dosee.prompt.on.db.init=false  
-Dosee.choice.on.db.init="OSEE Demo Database"
```

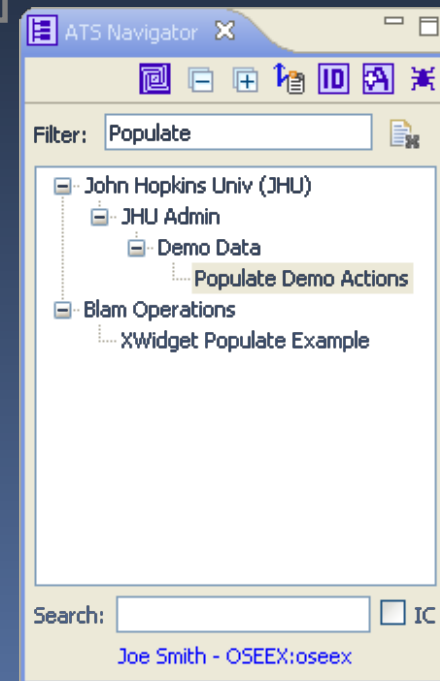
- Once db init completes, type exit in the server console

Populate Demo Data

- Launch Application Server
- Launch OSEE Client

```
eclipse -vmargs -Xmx512m  
-Dosee.application.server=http://localhost:8089  
-Dosee.authentication.protocol=demo
```

- Switch to the ATS Perspective
 1. Window
 2. Open Perspective
 3. ATS
 - In the ATS Navigator Window
 - Type “**Populate**” in the Filter text box
 - Press ‘**Enter**’ to add filter
 - Double-click on the “**Populate Demo Actions**” item
 - **Wait for operation to complete**



What is OSEE?

- OSEE is a tightly integrated environment designed to support lean engineering principles across a product's full life-cycle in the context of an overall systems engineering approach.

Background

- OSEE began was first deployed to develop Boeing's next generation Apache Helicopter
- It provides
 - An integrated tool set
 - End-to-end traceability
 - Variant configuration management
 - Integrated workflows and processes
 - A Comprehensive issue tracking system
 - Deliverable document generation
 - Real-time project tracking and reporting
 - Validation and verification of mission software

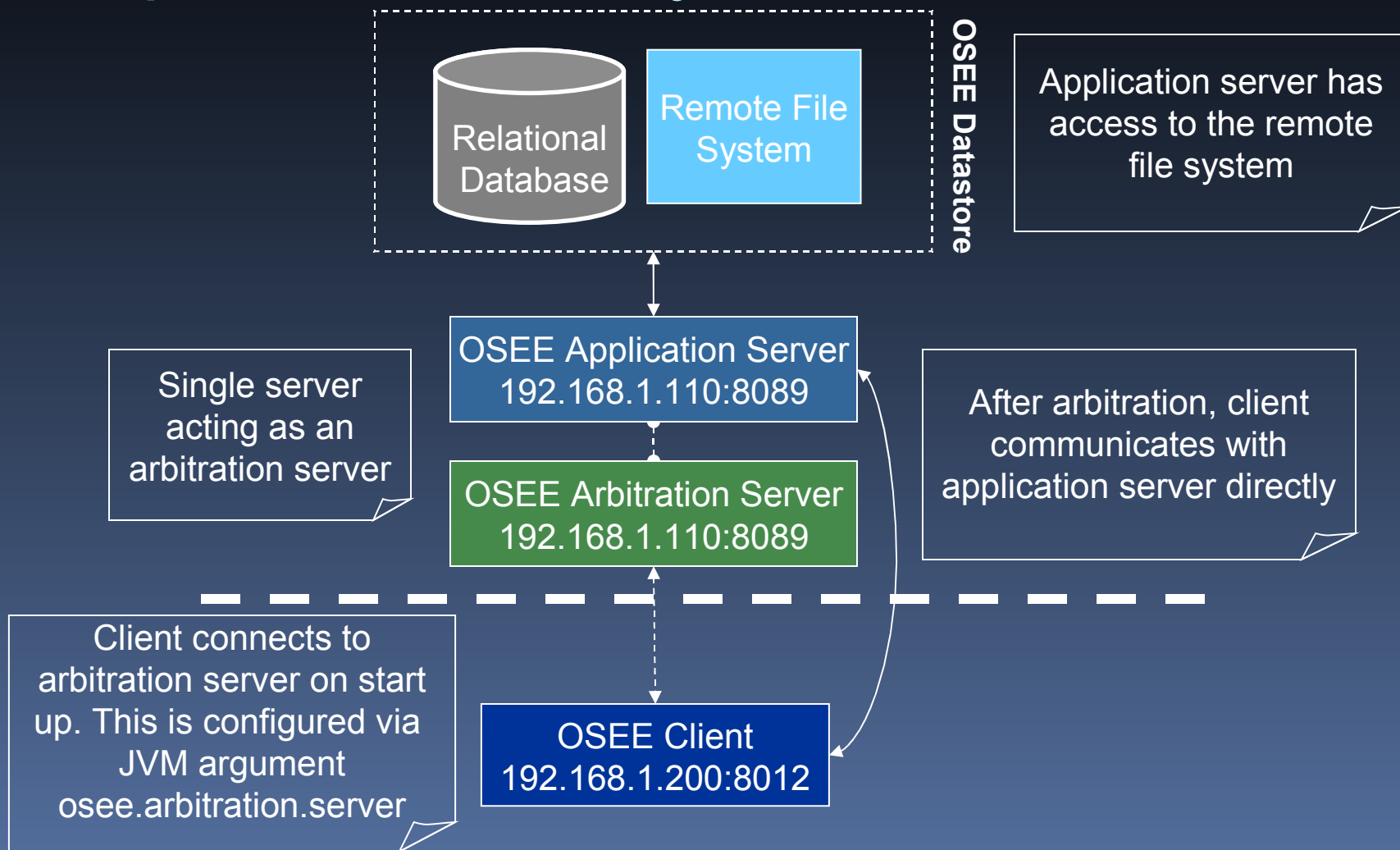
Background - continued

- As an eclipse project
 - Milestones
 - Initial source committed on Dec 8, 2007 (~140K LOC)
 - Project proposal approved on July 10, 2007
 - Test environment framework submitted Spring 2009 (37K LOC)
- OSEE is used to engineer itself

Architecture

- Initially OSEE was architected as a heavy client
 - Direct client-to-database interactions
- Migrating into a Thin-Client/Server architecture
 - Utilizing OSGI on server-side
 - Flexible deployment and maintenance
 - Address scalability and load management

Simple Network Layout



Exemplary Applications										Extensible Frameworks														
Training Services										OSEE Application Framework														
Database Analyzer																								
Task Scheduling																								
Security																								
Reporting																								
Unit Testing																								
Real Time Testing																								
Results Analyzer																								
Messaging																								
Reporting																								
Publishing																								
Rules Framework																								
Blam Operations																								
Visualization																								
Requirement Mgmt																								
Document Mgmt																								
Process Mgmt																								
Rich Traceability																								
Metrics																								
Workflow Config																								
Team Config																								
Building/Releasing																								
Project Mgmt/Planning																								
Multi Configuration																								
Backup/Restore																								
Java/C/C++/Ada Dev																								
Application Development					Configuration Management					Systems Engineering					Requirements Management					Testing Environment				
Eclipse Platform										Object-Oriented Persistence														
										Session Mgmt & Authentication														
										Version Control														
										Access Control														
										Data Store Adapter														
										Multi-Level Branching														
										Multi-Level Transactions														
										Dynamic Artifact Model														
										Dynamic Searching API														
										Indexing & Tagging														
Remote Event Service																								
Extensible Rendering																								
Plugin Dev Utilities																								
Java Virtual Machine					JNI (Peer-to-Peer)					OSGI					Relational DB									
Operating System (Windows, Linux, OSX, Solaris)																								

T. Rex Software Company

- 15 years in the business
- Developing software for medical applications
- Waterfall development cycle
- Isolated teams using disconnected tools to track issues
 - Requirements - using spreadsheets
 - Code – problem change report database
 - Test – spreadsheets and emails
- Status is reported weekly via emails to team leads who then flow information to project managers



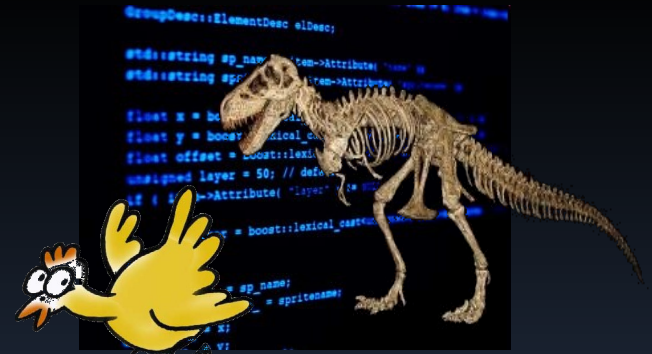
T. Rex Software Company

- Inefficiencies/Cost
 - Software license fees
 - Steep learning curve
 - Data redundancies
 - Weak knowledge management
 - Issues fall through the cracks
 - Poor Planning
 - Lagging metrics



SAW-TSR Project

- Project with many challenges
- Must develop a Surgical Assistant Workstation for Tele-operated Surgical Robots (SAWTSR)
- Project was 40% under funded
- Stringent requirements on software quality
 - Medical application
 - Severe consequences of faulty software
- Project must meet a company wide initiative to streamline processes
- If T. Rex does not make a change, the contract will be lost



Why should T. Rex use OSEE?

- Full life-cycle engineering environment
- Open source extensible platform
- Benefits of eclipse community
- Tightly integrated
 - Common data model
 - Version control
 - Change management
 - Workflows and processes
 - Supports multiple databases
- Zero license cost

Company is ready to evolve!

Management decides to use OSEE

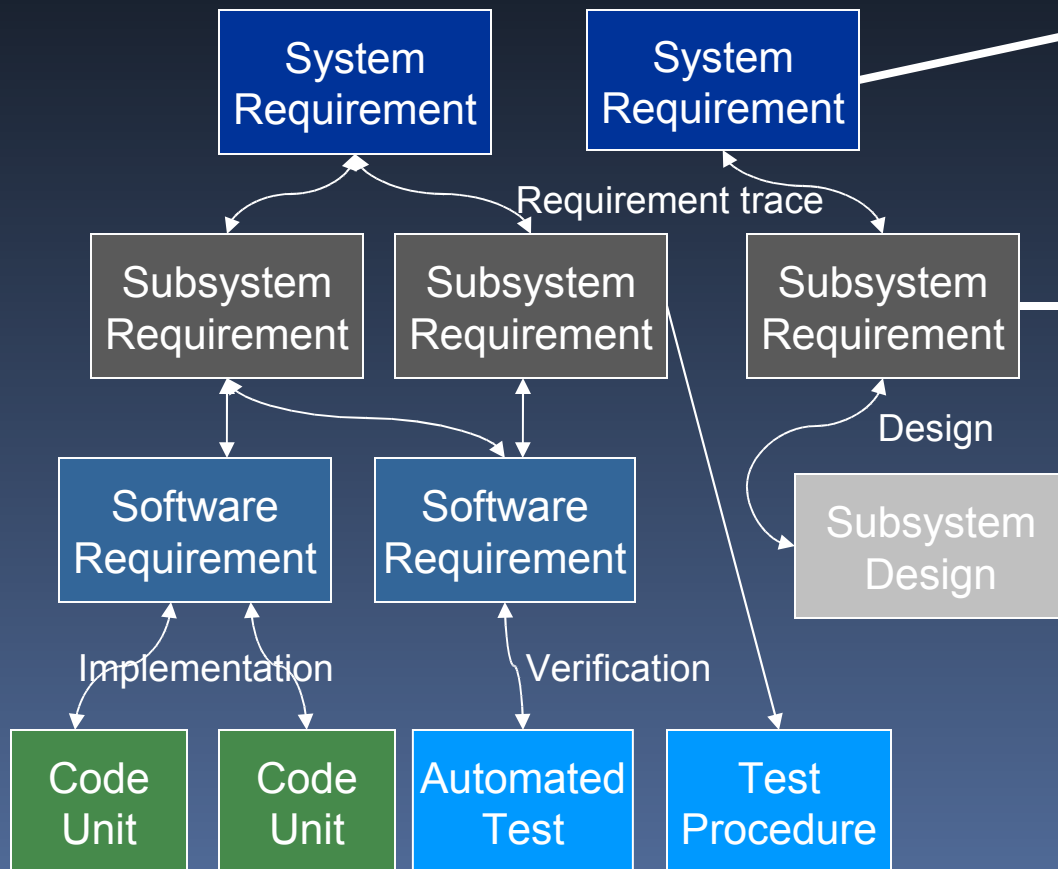


Where do we begin?

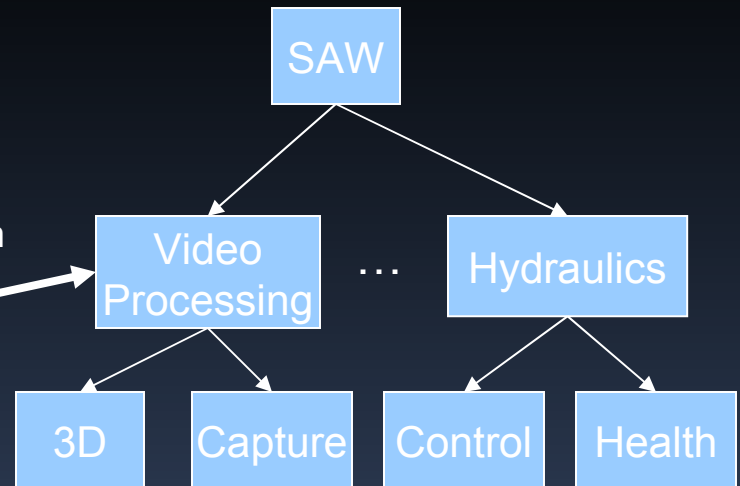
- Analyze data produced during life-cycle
 - Project produces various files
 - System Level Requirements
 - Software Level Requirements
 - System Requirements
 - Source Code
 - Test Source
 - Test Results
- Determine how data relates to one another

Document Trace

Requirements Traceability



Product Decomposition



Understanding the OSEE Data Model

- Artifact
 - Main OSEE data object consisting of attributes
 - Artifact type - blue print for instance creation
 - Artifact types can inherit from one another
 - All artifacts inherit from “Artifact” (similar to Object in Java)

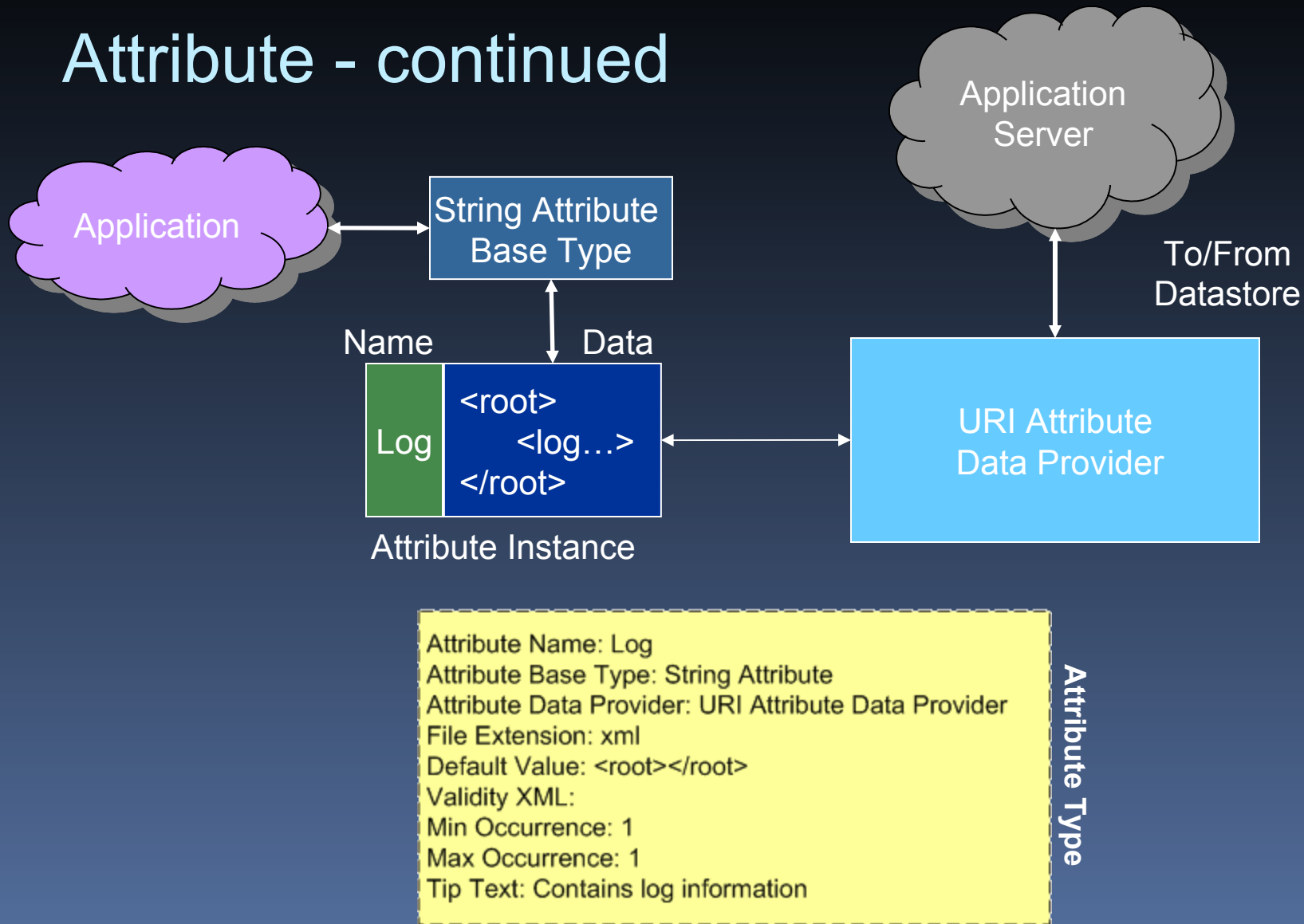
Attribute

- Key / Value pair representing a single data element
- Attribute type - blue print for instance creation
- Attribute base type is used to convert raw data into a native type or other object
- Attribute base types
 - String
 - Word Templated Content
 - Word Whole Document
 - Date
 - Boolean
 - Integer
 - Floating Point
 - Enumeration

Attribute - continued

- Attribute backing data managed by an attribute data provider
 - Transfers data between client/server
 - Can be extended to serve data from outside OSEE data store
- Attribute type also defines whether the attribute is searchable and how to tag the data

Attribute - continued

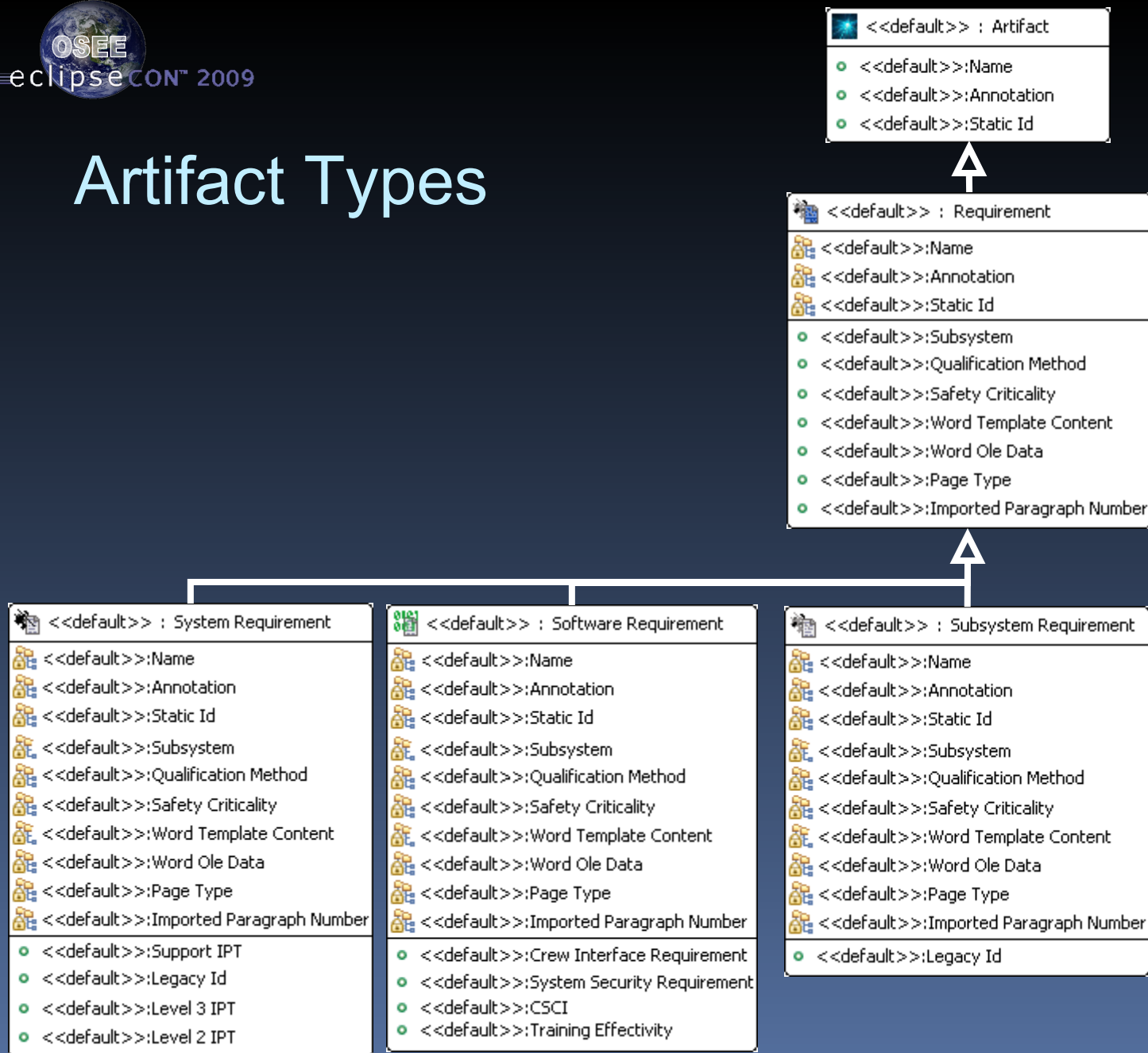


Relation

- Relates two or more artifact types
- Relation type - blue print for instance creation
 - Relation type
 - What type allowed on side A
 - What type allowed on side B
 - Multiplicity (1 to 1, 1 to Many, Many to Many)



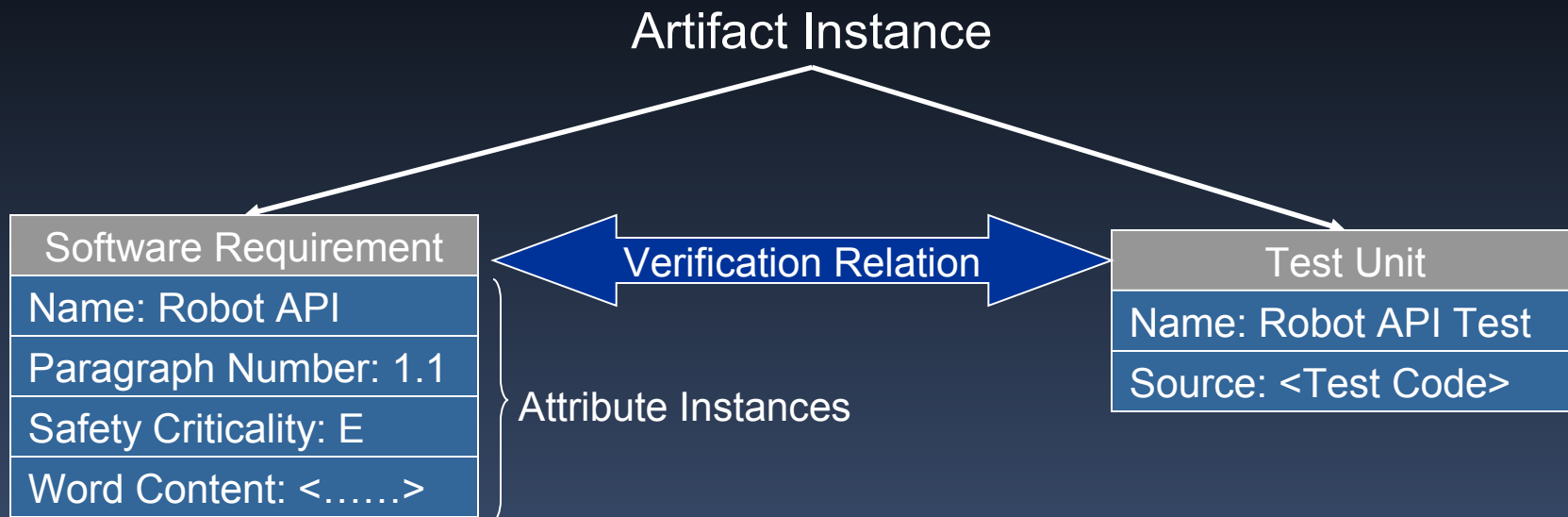
Artifact Types



Inherited Attributes

Inherited Attributes

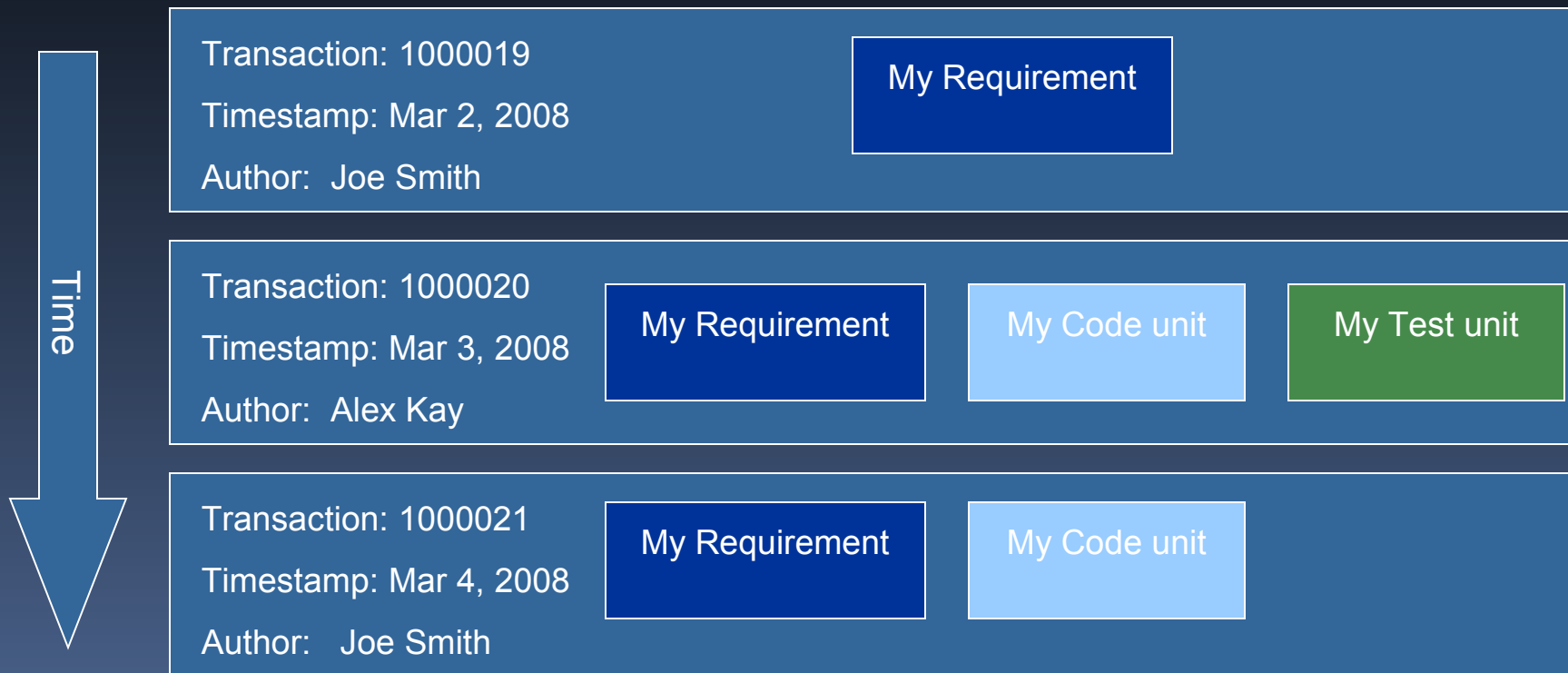
Artifacts



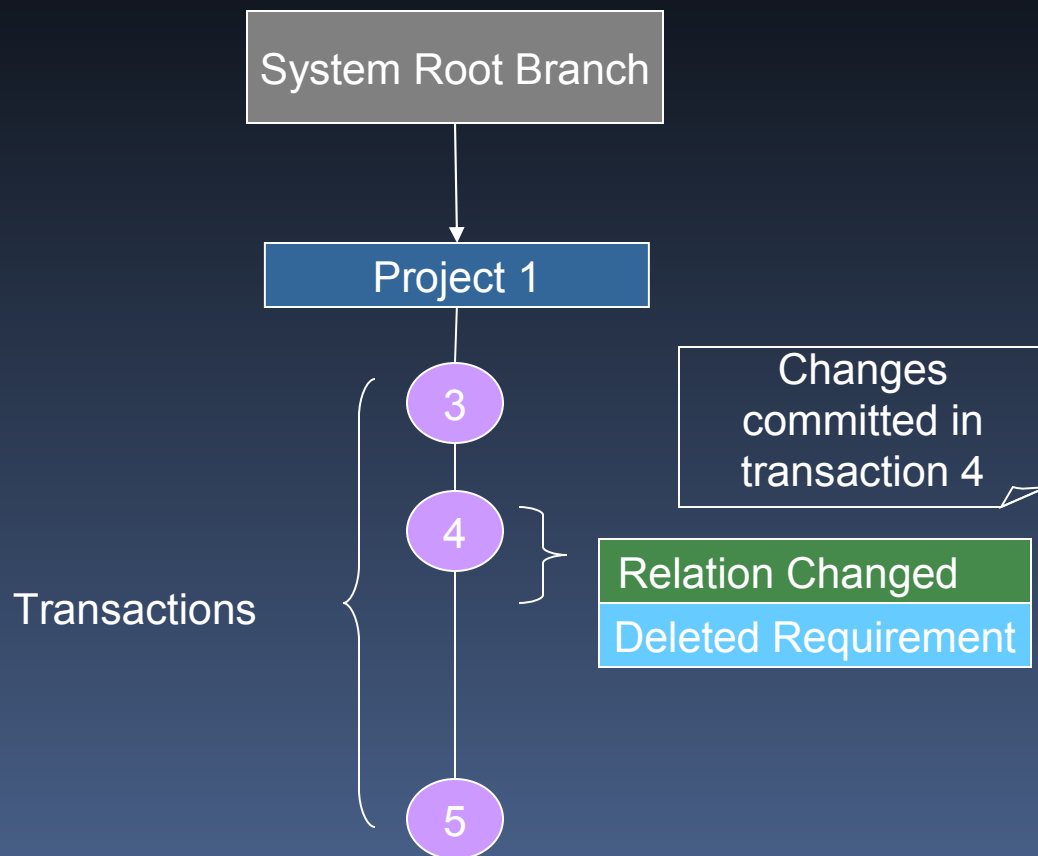
Version Control

- Changes to artifacts, attributes, and relations are tracked by the system
- Changes are managed by a transaction based version control system using fine grained change identification
- Data managed under branches

Transaction

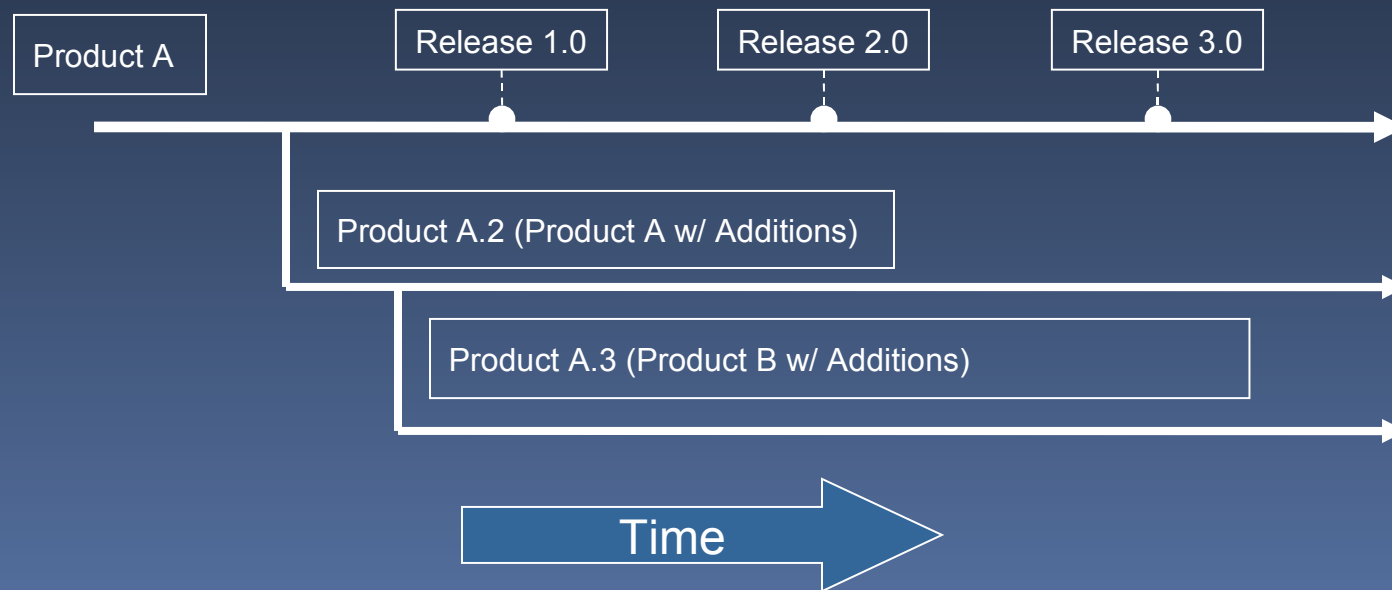


Branch



Variant Management

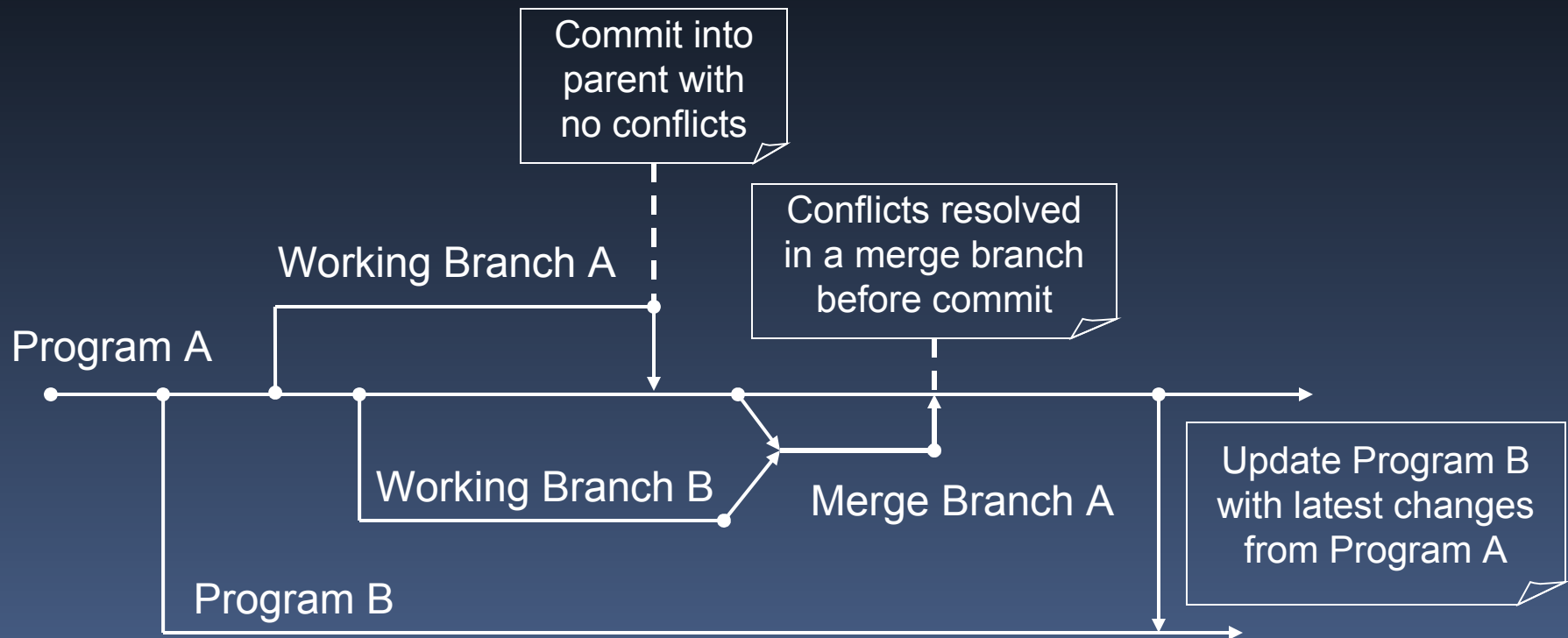
- Product lines share common baseline data throughout all variants
- Changes to the baseline product can be easily merged to the variant product lines



Branching

- Branching
 - Used to create a variant of the parent branch
 - Updates can be performed to obtain changes from the parent branch into the child
- A variant branch can be committed back into its parent
 - Change conflicts are resolved via merging

Branching - continued



BREAK

From www.eclipse.org/osee to deployment Tutorial (Part II: All in a days work)

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Agenda

- T. Rex with OSEE
 - Products & Teams
 - Variants
 - Scenario Roles
 - Project Workflows
- Scenario: All in a days work
 - Search Requirements
 - Create Action
 - Requirement Team Workflow
 - Add Decision Review
 - Change Implementation
 - Code Team Workflow
 - Add Tasks
 - Test Team Workflow
 - Privileged Edit
 - Status
 - Create Peer-To-Peer Review
 - Add new Workflow

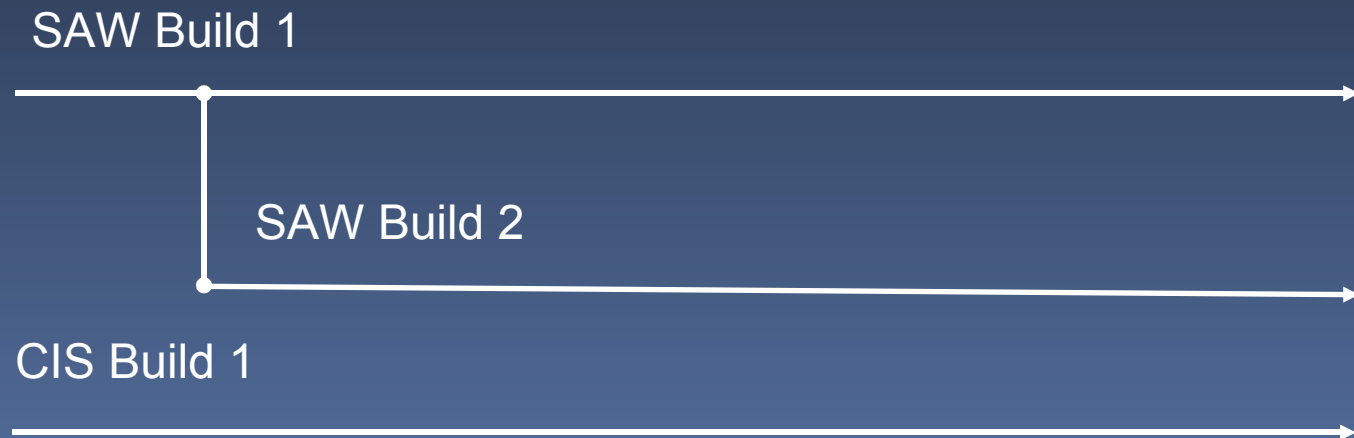
Project has been using OSEE for
a couple of months now

Products & Teams

- SAW – Surgical Assistant Workstation –
 - **Teams:** Requirements, Code, Test, HW, SW Design
- CIS – Dummy Project
 - **Teams:** Requirements, Code, Test, SW Design
- Facilities Team
- IT Team
 - Computers, Backups, Network
- Tools Team
- Website Team
- Processes Team

Project Variants

- Surgical Assistant Workstation - SAW
 - Build 1
 - Build 2
- CIS Build 1 – Dummy Project
- Work is performed in working branches which are then committed back into their respective parent branch

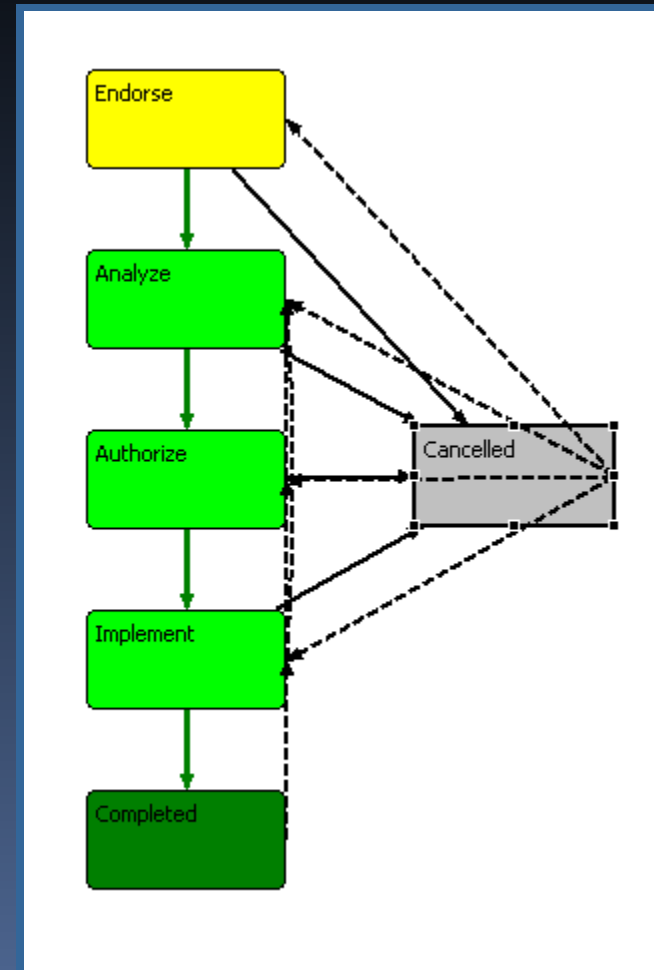


Roles

- Project Manager
 - Requirement
 - Lead
 - Developer
 - Code
 - Lead
 - Developer
 - Test
 - Lead
 - Developer

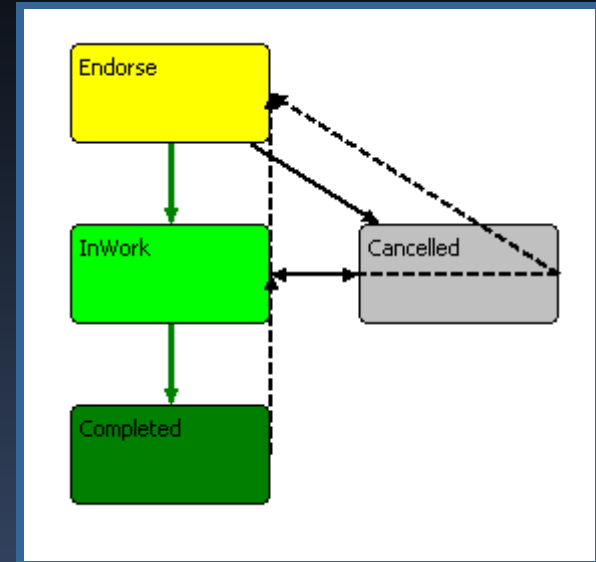
Workflow 1

- Requirements
- Code
- Test
- SW Design
- Tools
- Process



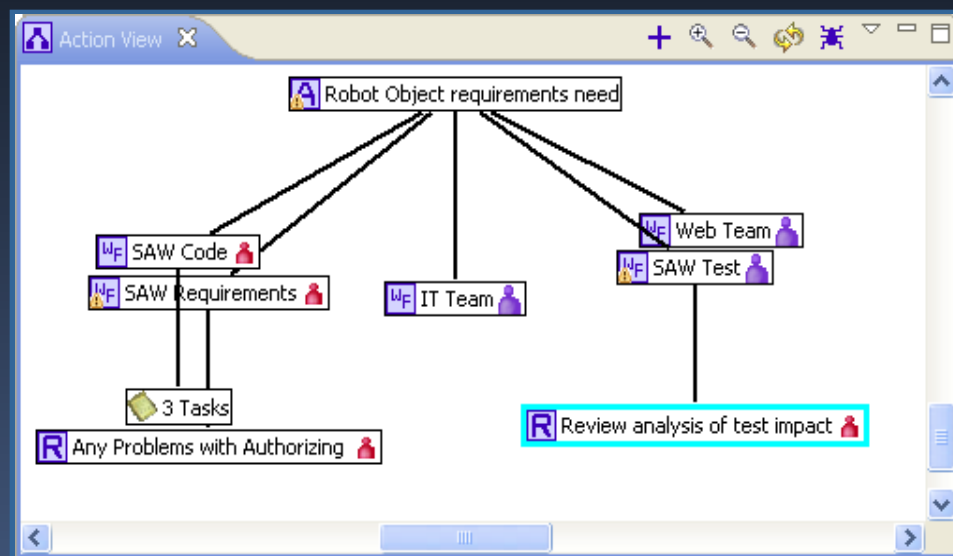
Workflow 2

- Web
- Facilities



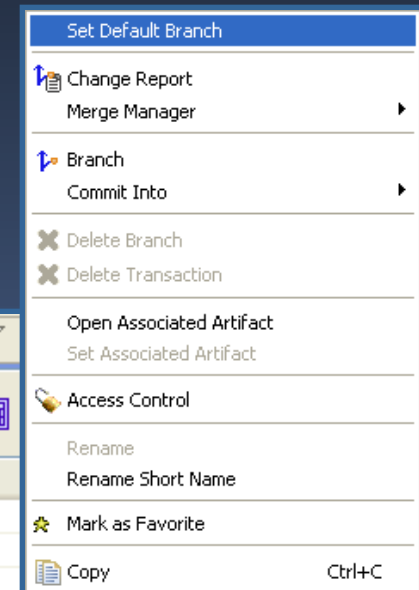
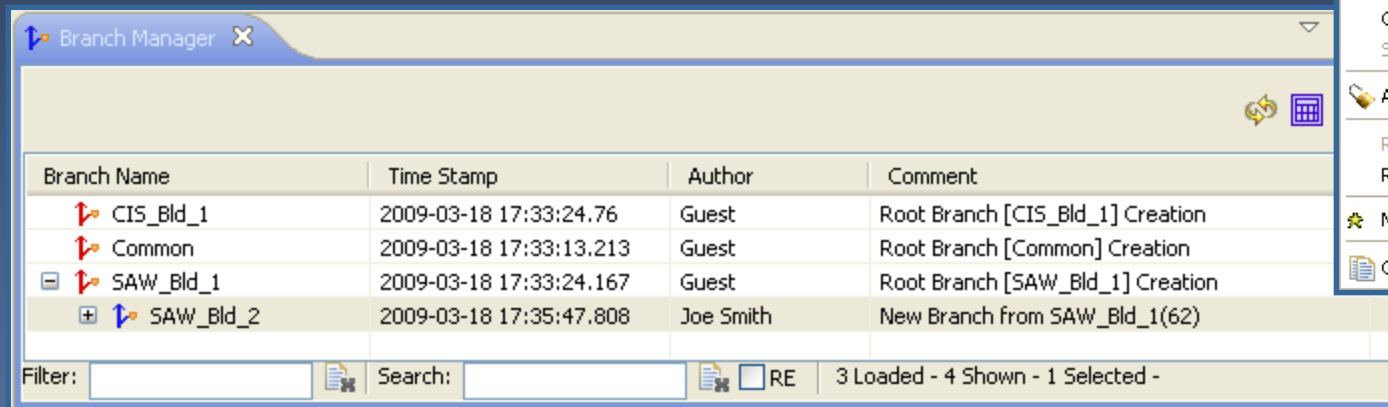
Scenario

- Joe Smith finds a problem in a requirement impacting the following teams:
 - Code
 - Test
 - Website
 - IT
- Reviews needed:
 - Decision Review off Code Team Workflow
 - Peer Review off Test Team Workflow
- Perform tasks off Code Team Workflow



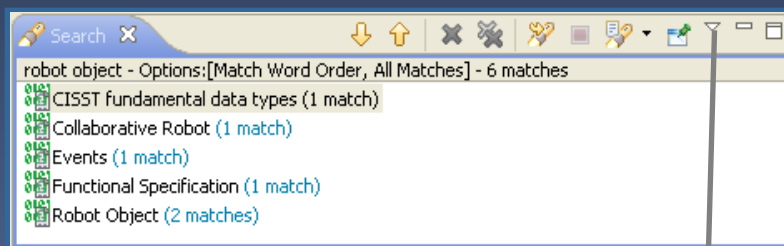
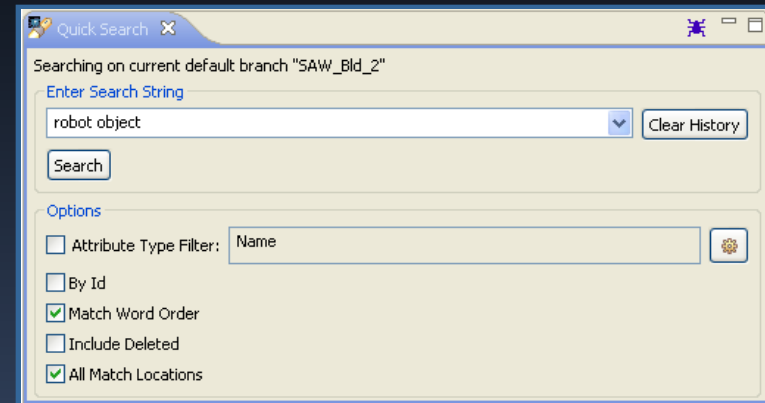
User searches for a requirement

- Switch to the Define perspective
 - Window->Open Perspective->Define
- Set “SAW_Bld_2” as the default branch
 - Click on the Branch Manager View
 - If the view is not open
 - Select Window->Show View->Branch Manager
 - Right-Click on “SAW_Bld_2”
 - Select “Set Default Branch”

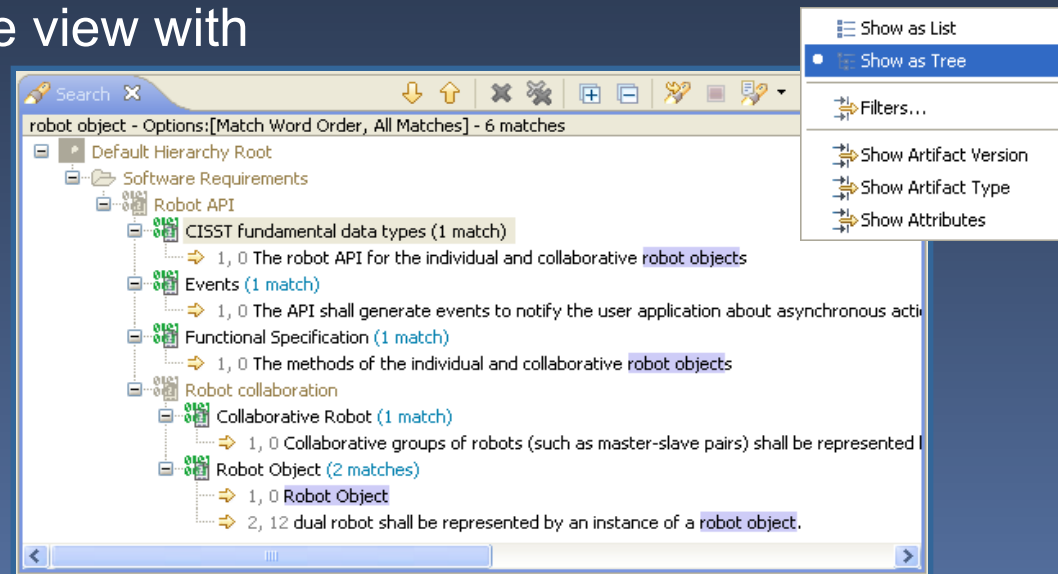


User searches for a requirement

- Search for Item
 - Click on the Quick Search View
 - Enter “robot object” in the search string text box
 - Check the “Match Word Order” option
 - Check the “All Match Locations” option
 - Click the search button
- Search results as list or tree view with match locations



Select View



User explores the robot object requirement

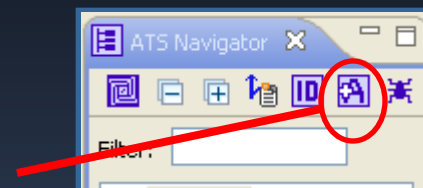
- From the search results view
 - Right-Click on the “Robot Object” software requirement
 - Select each of the following from the pop-up menu individually
 - Reveal Artifact in Explorer
 - Resource History
 - Open With Artifact Editor
 - Click on the attribute tab
 - Click on the relation tab
 - Open With MS Word Preview
 - Sky Walker

- Robot Object (software requirement) relates to other artifacts



User creates an action

- Create an action against the “Robot Object Requirement”
- Switch to the ATS Perspective
 - Window->Open Perspective->ATS
- Click on the New Action icon in ATS Navigator
 - Fill-in the Create ATS Action Dialog:

A screenshot of the 'Create ATS Action' dialog box, Step 1. The title bar says 'Create ATS Action'. The main text says 'Enter title and select impacted items.' There is a 'Title:' text box containing 'Robot Object requirement needs more detail'. Below it is a 'Select Actionable Items:' section with a 'Filter:' text box. A tree view shows a hierarchy of items: CIS CSCI, Facilities, Processes, SAW CSCI, SAW Code, SAW HW, SAW Requirements (checked), SAW SW Design, SAW Test, and Tools. At the bottom is a 'De-Select All' button and a set of navigation buttons: '?', '< Back', 'Next >', 'Finish', and 'Cancel'.

Next

A screenshot of the 'Create ATS Action' dialog box, Step 2. The title bar says 'Create ATS Action'. The main text says 'Enter description, priority, change type and select Finish.' There is a 'Description:' text box containing 'See title'. Below it are fields for 'Change Type:' (set to 'Problem'), 'Priority:' (set to '3'), and 'Deadline:' (a dropdown menu). There is a checkbox for 'Validation Required' which is unchecked. Below that is a 'User Community:' section with a list box containing 'Other', 'Processes', 'Program 1' (selected), 'Program 2', and 'Tools'. At the bottom is a set of navigation buttons: '?', '< Back', 'Next >', 'Finish', and 'Cancel'.

User creates an action

Automatically
assigned to
team lead

[SAW Requirements] - Robot Object requirement needs more detail

Robot Object requirement needs more detail

Current State: Endorse Assignee(s): Joe Smith Team: SAW Requirements Created: 03/20/2009 04:30 PM Originator: Joe Smith Action Id: PZYB8 Team Workflow Id: R0R0R

Action Actionable Items: SAW Requirements
Team Actionable Items: SAW Requirements

Endorse - Current State assigned to Joe Smith

Statistics

Total Percent: 0
Total Estimated Hours: 0.00
Total Hours Spent: 0.00
Target Version:
State Percent Complete: 0
State Estimated Hours: 0.00
State Hours Spent: 0.00
Remaining Hours: Error
Estimated Hours not set.

Operation

Add Favorite
Subscribe
Privileged Edit
Add Decision Review
Add PeerToPeer Review

"Endorse" State Assignee(s): Joe Smith

Title: Robot Object requirement needs more detail

Description:
See title

Proposed Resolution:

Change Type: Problem Priority: 3 Deadline:

Validation Required: ☐

Work Package:

User Community: Other
Processes
Program 1
Program 2
Tools

Transition to Analyze Assignee(s): Joe Smith

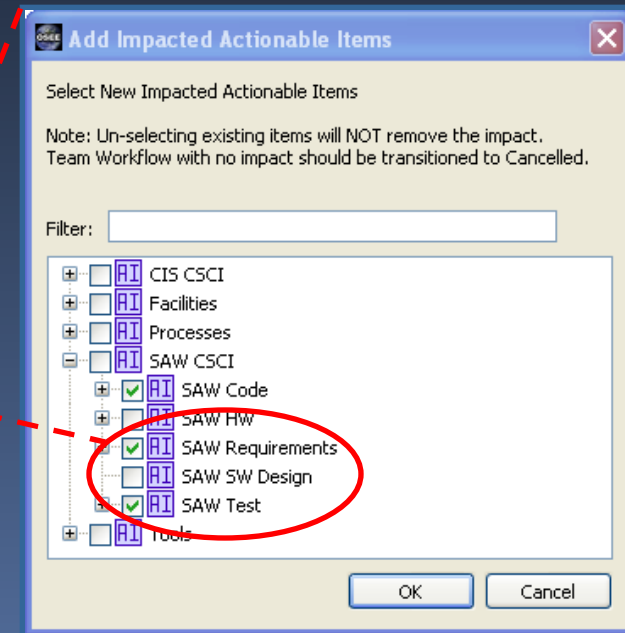
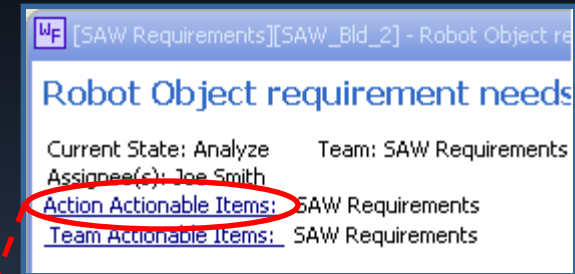
Workflow Tasks History Relations Details Metrics

Requirements lead approves requirement team workflow

- Requirements Team Lead - Joe
 - Endorses Action
- Sets Target Version
 - SAW Build 2 (the next version)
- Changes priority to 2
- Transitions state to “Analyze”
 - This is where the lead would normally assign another user to complete the work
 - NOTE: We will not change the assigned user for the demo

Requirements developer analyzes requirement team workflow

- Requirements Developer - Joe
 - Analyzes Action
- Sets proposed resolution to “Fix It”
- Change will impact code and test
- Add code and test workflows
 - Select “Actionable Items” hyperlink
 - Add SAW Code
 - Add SAW Test
- Action View shows new workflows
- Email has been sent to leads
- Transitions to Authorize

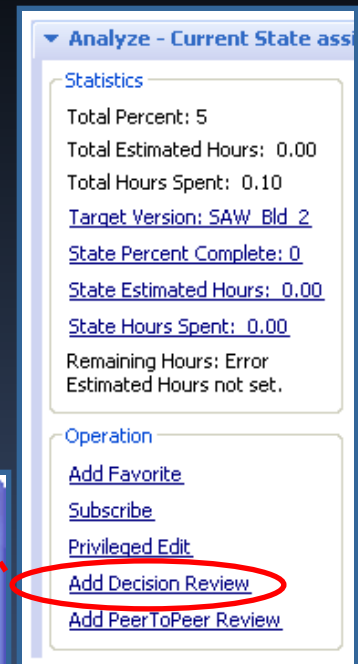
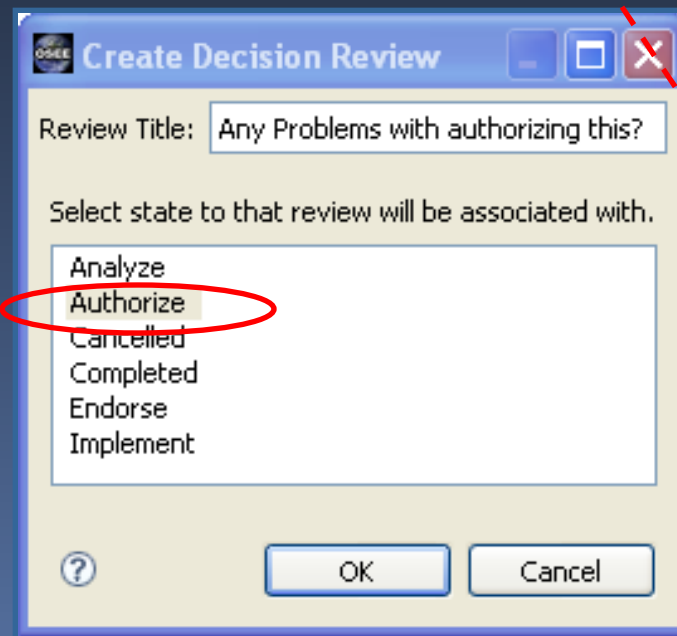


Requirements lead begins to authorize the requirement team workflow

- Requirements Team Lead - Joe
 - Authorizes Action
- Sets Work Package to A324324A
- Team lead needs concurrence from Kay (The Manager)
 - A decision review is needed

Requirements lead creates a decision review

- Create Decision Review
 - Select Add Decision Review
 - Fill-in the Create Decision review Dialog:



Requirements lead prepares the decision review

- Prepare Review
 - Set Review Blocks to Transition
 - Set Estimated Hours to 3
 - Assign to Alex Kay
 - Transition the review

*Any Problems with authorizing this? x

Any Problems with authorizing this?

Current State: Prepare Created: 03/20/2009 05:16 PM Originator: Joe Smith Action Id: PZYB8 Review Id: 45959
Assignee(s): Joe Smith
This "Decision Review" is review of "Demo Req Team Workflow" "[Robot Object requirement needs more detail](#)" - ROROR

▼ Prepare - Current State assigned to Joe Smith

Statistics
Total Percent: 0
Total Estimated Hours: 0.00
Total Hours Spent: 0.00
[State Percent Complete: 0](#)
[State Estimated Hours: 0.00](#)
[State Hours Spent: 0.00](#)
Remaining Hours: Error
Estimated Hours not set.

Operation
[Add Favorite](#)
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"Prepare" State Assignee(s): Joe Smith
Title: Any Problems with authorizing this?
Decision Review Options:
Yes;Followup;<Joe Smith>
No;Completed;
Description:
Related To State: Authorize
Review Blocks: Transition
Deadline:
Estimated Hours: 3
Transition to Decision Assignee(s)

Workflow Tasks History Relations Details Metrics

Select users to transition to.

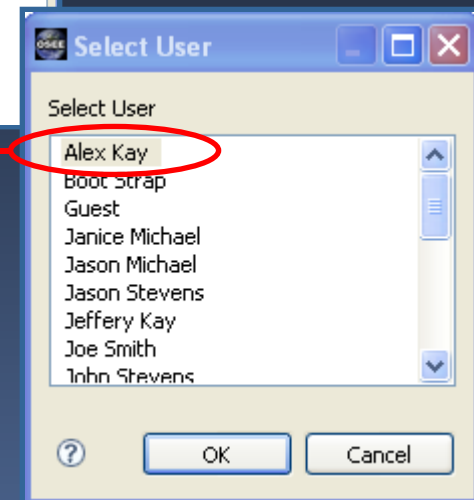
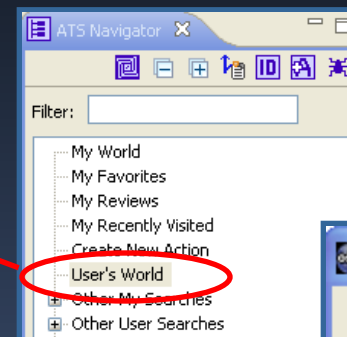
- ☐ Joe Smith
- ☒ Alex Kay
- ☐ Boot Strap
- ☐ Guest
- ☐ Janice Michael
- ☐ Jason Michael
- ☐ Jason Stevens

Select All Deselect All

? OK Cancel

Manager approves the change

- Alex Kay checks his assigned work
- Runs “My World”
 - Select “User’s World”
 - Select Alex Kay
- From Alex Kay’s “User’s World”
 - Select the “Decision Review”
 - Kay decides Yes
 - Transitions the Review to Completed



Requirements lead completes authorization

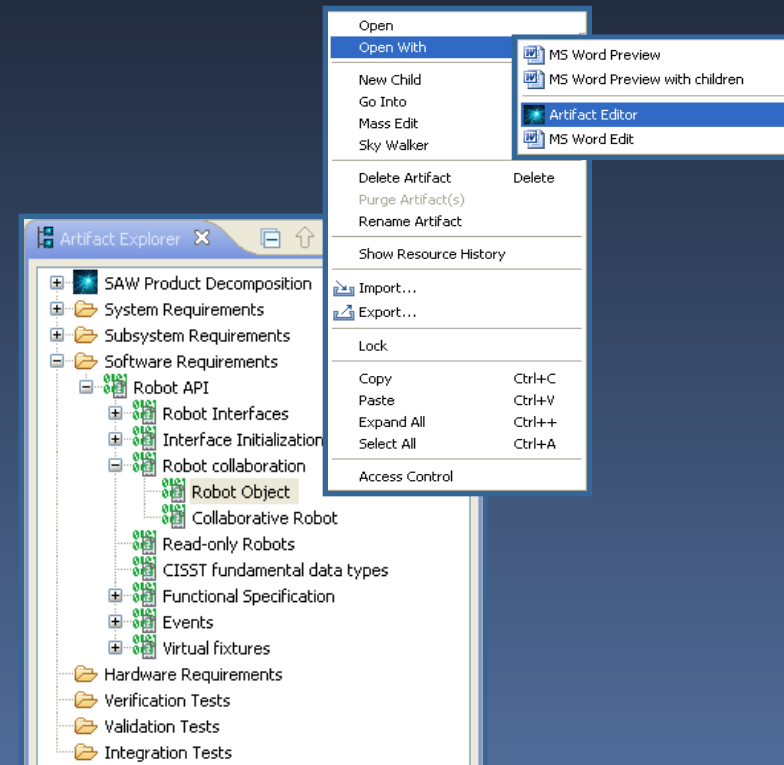
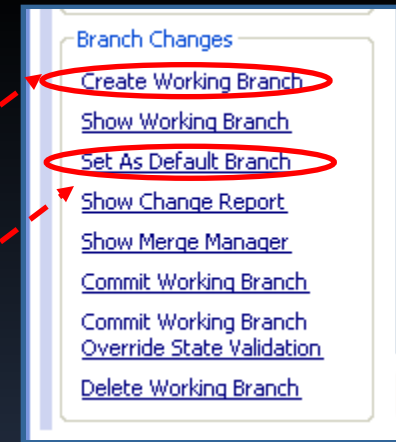
- Sets Estimated Hours to 2.5
- Transition to Implement

Notice that before Alex Kay had completed the decision review, Joe was not able to transition to the next state



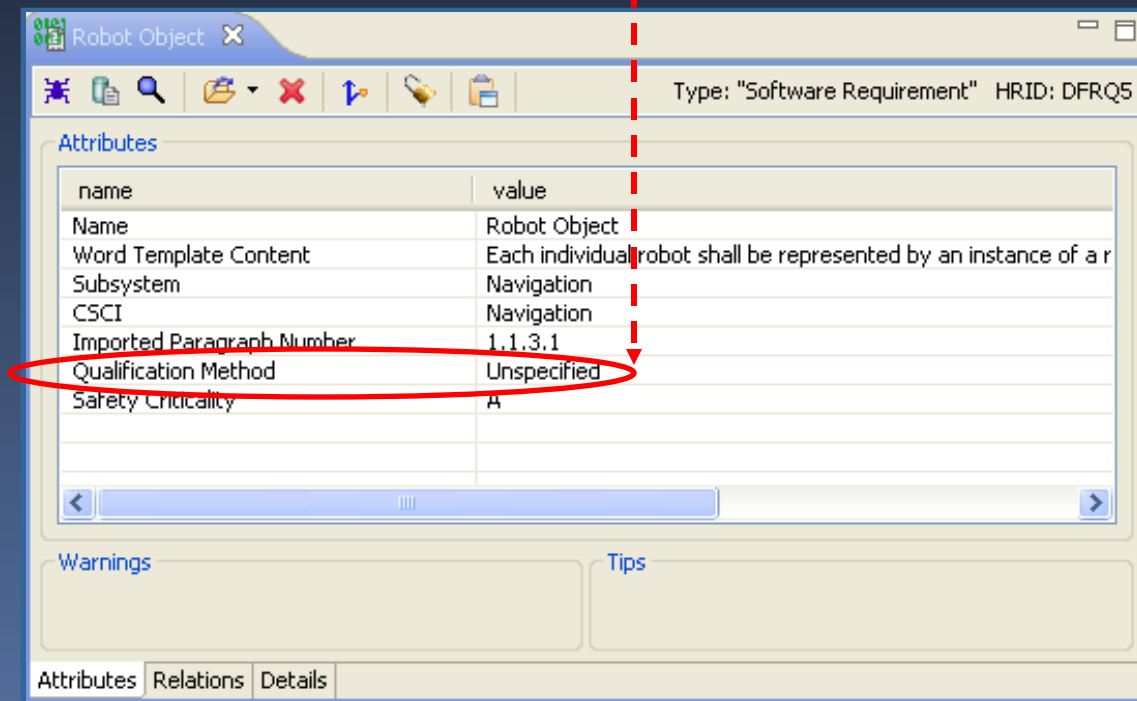
Requirements developer implements a change

- From the Implement State
 - Select “Create Working Branch”
 - Set the working branch as the default branch
- Using Artifact Explorer, navigate to the “Robot Object” software requirement
- Right-Click on “Robot Object”
- From the pop-up menu, select “Open With”
- Select “Artifact Editor”



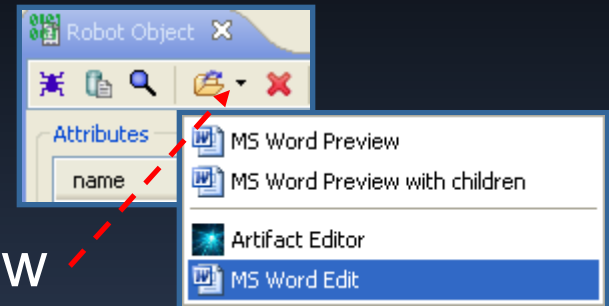
Requirements developer implements a change

- Select the attributes tab
- Change Qualification Method to Inspection
- Save by clicking File->Save



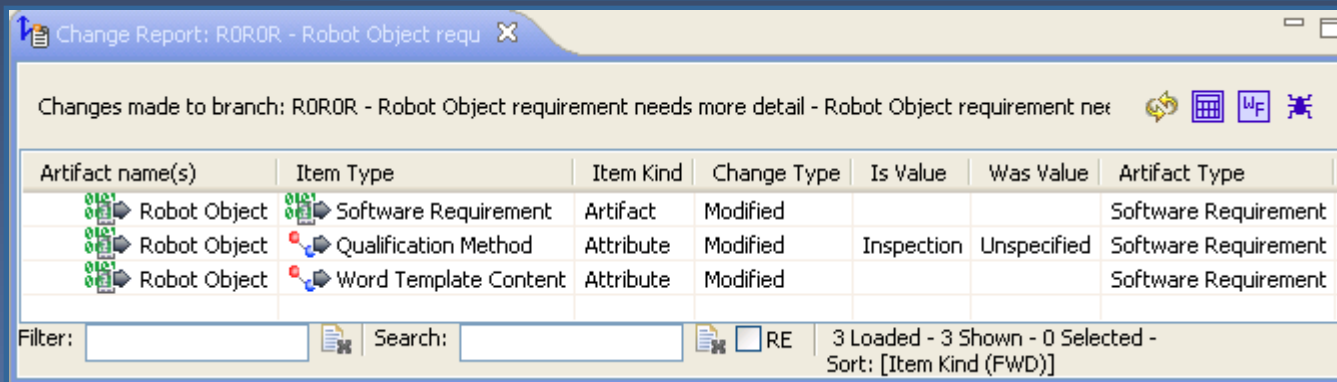
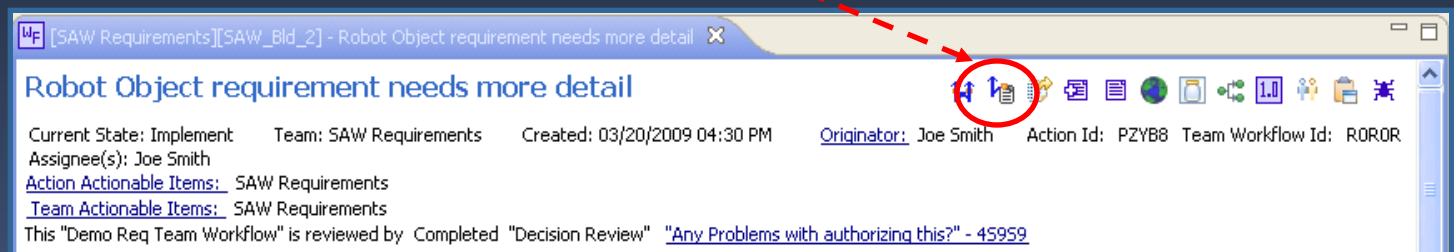
Requirements developer implements a change

- From the “Artifact Editor’s” toolbar
 - Click on “Open With” down arrow
 - Select MS Word Edit
 - NOTE: If you don't have MS Word, just watch
- Insert into word document
 - “Need more information here.”
- Save document and close
 - “Artifact Editor’s” Word Template Content Attribute should update accordingly



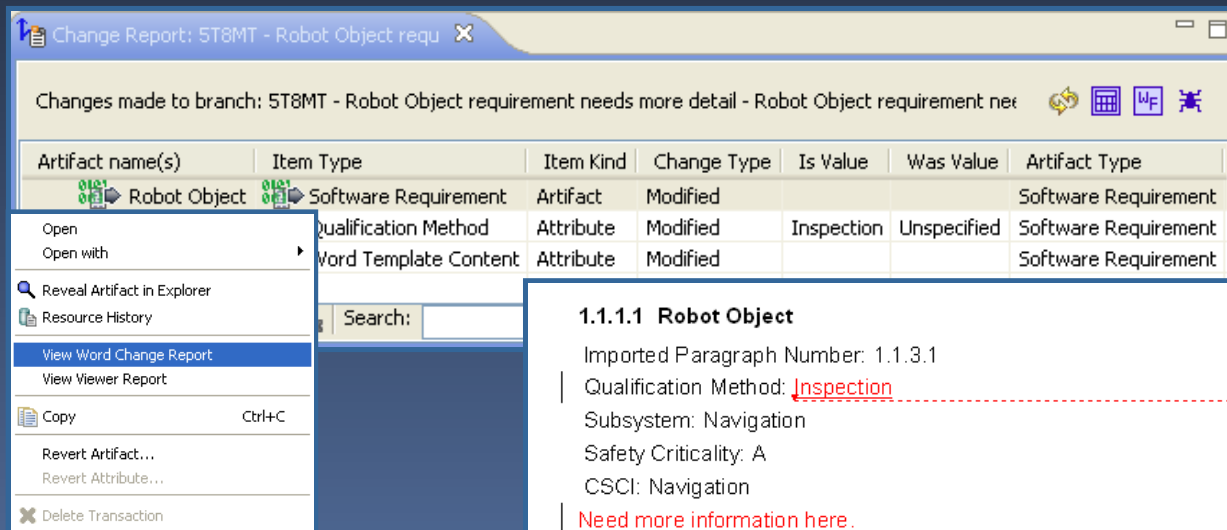
Requirements developer implements a change

- Switch to the Workflow Editor
- Select “Show Change Report” from the tool bar item



Requirements developer implements a change

- From the Change Report View
- Right-click on the “Robot Object” software requirement
- Select “View Word Change Report” from the pop-up menu



Change Report: 5T8MT - Robot Object requ

Changes made to branch: 5T8MT - Robot Object requirement needs more detail - Robot Object requirement nee

Artifact name(s)	Item Type	Item Kind	Change Type	Is Value	Was Value	Artifact Type
Robot Object	Software Requirement	Artifact	Modified			Software Requirement
	Qualification Method	Attribute	Modified	Inspection	Unspecified	Software Requirement
	Word Template Content	Attribute	Modified			Software Requirement

Open
Open with
Reveal Artifact in Explorer
Resource History
View Word Change Report
View Viewer Report
Copy Ctrl+C
Revert Artifact...
Revert Attribute...
Delete Transaction

1.1.1.1 Robot Object

Imported Paragraph Number: 1.1.3.1

Qualification Method: Inspection

Subsystem: Navigation

Safety Criticality: A

CSCI: Navigation

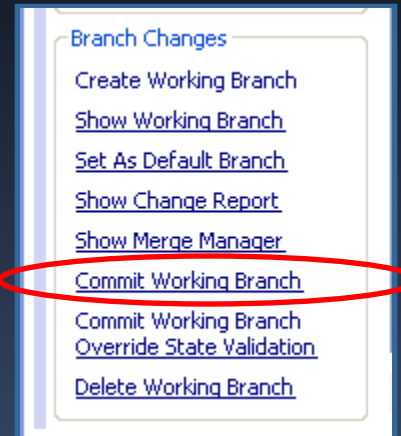
[Need more information here.](#)

Each individual robot shall be represented by an instance of a robot object. The methods of that object shall provide the API for a single robot. This is analogous to the "manipulator" commands in the daVinci research API.

Deleted: Unspecified

Requirements developer implements a change

- Select "Commit Working Branch" to apply changes to the parent branch
"SAW_Bld_2"
- Transition to Complete

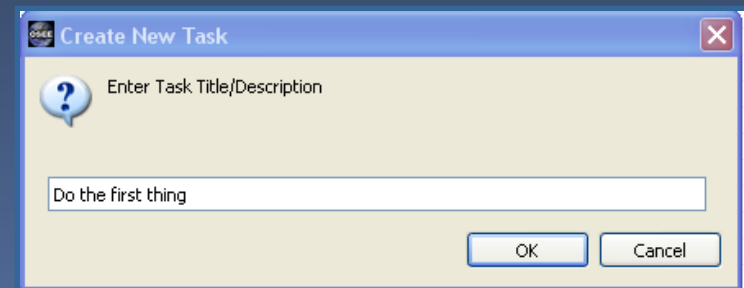
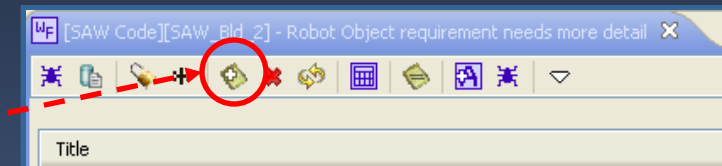
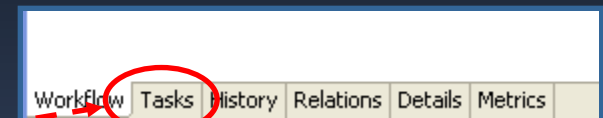


Code lead endorses code team workflow

- Sets Work Package to A234532
- Transitions to Analyze

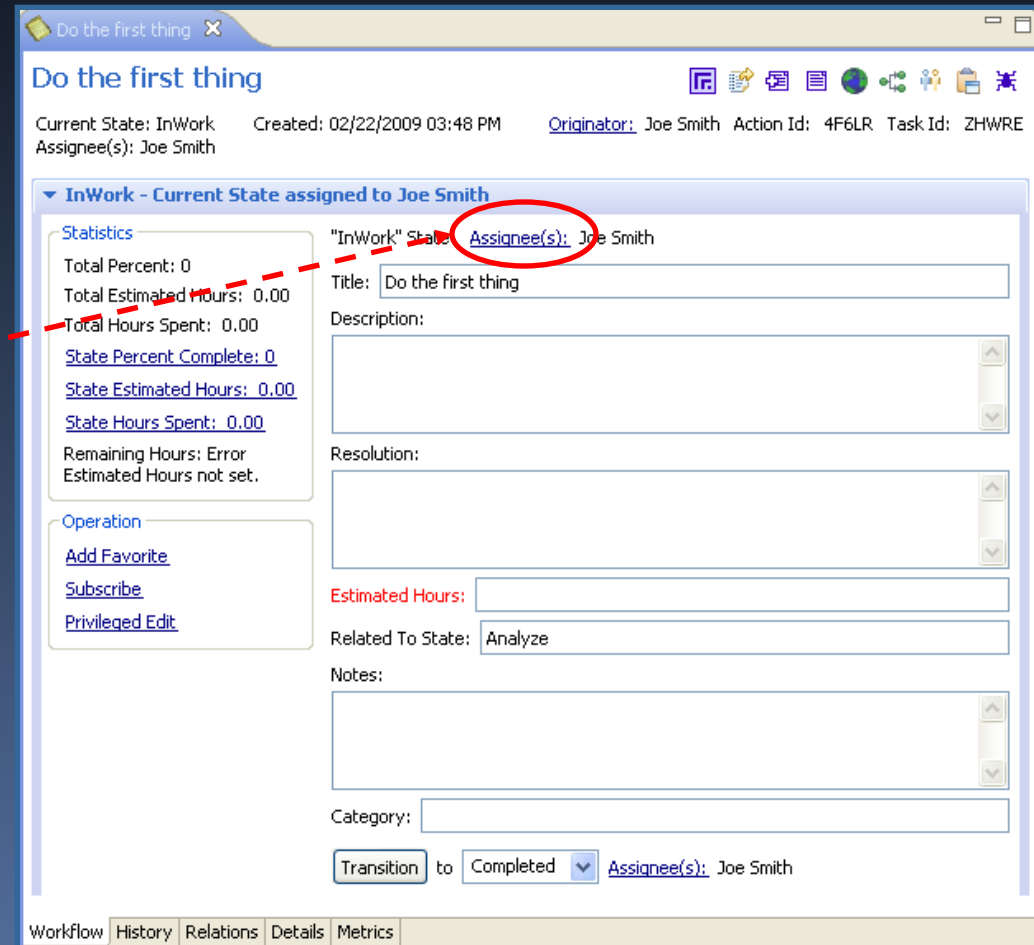
Code developer analyzes team workflow

- Sets Estimated Hours to 10
- Analysis Requires Tasks
 - Switch to the Tasks Page by clicking on the Task Tab
 - Add a Task by clicking on the “New Task” tool bar item
 - In the “Create New Task” dialog enter “Do the first thing”
 - Click “OK” to close the dialog



Code developer analyzes team workflow

- Double-click on the new task to open the Task Editor
- Click on Assignee(s) to assign a different user
- Close Task Editor
- Add two more tasks
- Transition code team workflow to Authorize



Do the first thing

Current State: InWork Created: 02/22/2009 03:48 PM Originator: Joe Smith Action Id: 4F6LR Task Id: ZHWRE

Assignee(s): Joe Smith

InWork - Current State assigned to Joe Smith

Statistics

Total Percent: 0
Total Estimated Hours: 0.00
Total Hours Spent: 0.00
State Percent Complete: 0
State Estimated Hours: 0.00
State Hours Spent: 0.00
Remaining Hours: Error
Estimated Hours not set.

Operation

[Add Favorite](#)
[Subscribe](#)
[Privileged Edit](#)

"InWork" State: **Assignee(s): Joe Smith**

Title: Do the first thing

Description:

Resolution:

Estimated Hours:

Related To State: Analyze

Notes:

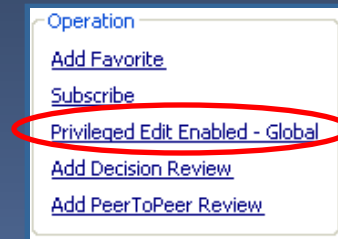
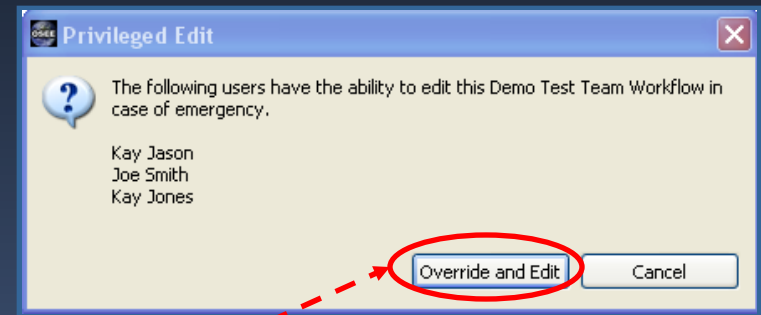
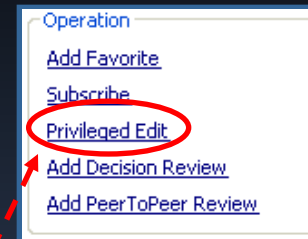
Category:

Transition to Completed **Assignee(s): Joe Smith**

Workflow History Relations Details Metrics

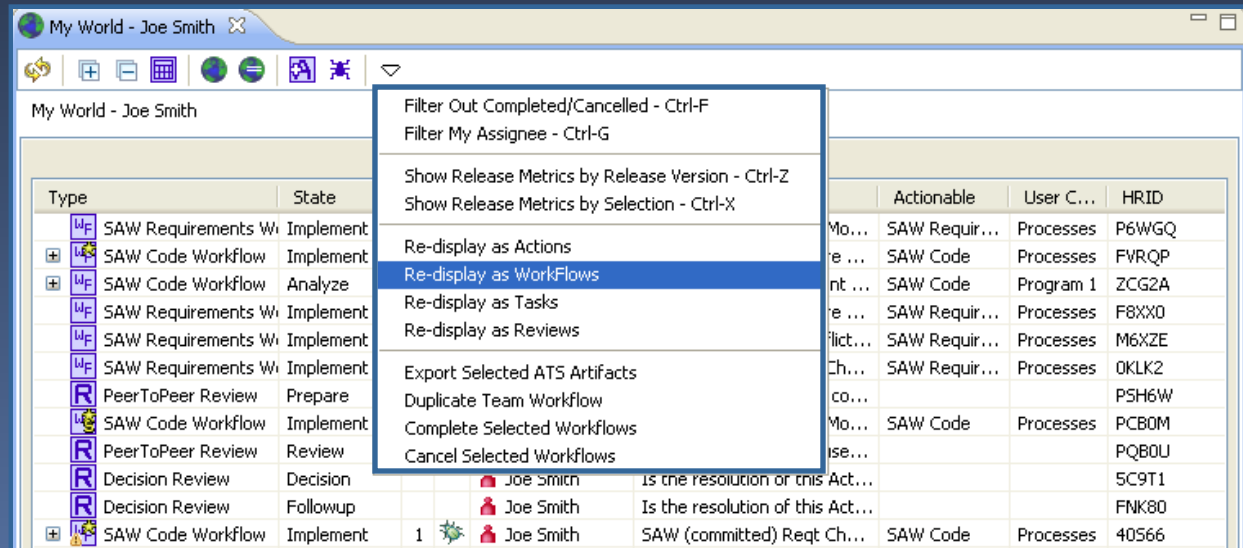
Test lead endorses test team workflow

- Test Lead – Joe
 - Estimates the work
- Kay Jones is not in today and estimates are due...
- Joe will need to get edit privileges to transition the workflow
- Click on “Privileged Edit” to display the “Privileged Edit” dialog
- Click on “Override and Edit”
- Transition To Analyze
- Set Estimated Hours to “25”



Manager wants status

- Manager – Alex Kay
 - Needs status report
- Select “World”
- Redisplay as workflows



The screenshot shows a window titled "My World - Joe Smith" with a toolbar and a table of workflows. A context menu is open over the table, showing options like "Filter Out Completed/Cancelled - Ctrl-F", "Re-display as WorkFlows", and "Export Selected ATS Artifacts".

Type	State	Actionable	User C...	HRID
SAW Requirements W...	Implement	Mo...	SAW Requir...	Processes P6WGQ
SAW Code Workflow	Implement	e ...	SAW Code	Processes FVRQP
SAW Code Workflow	Analyze	nt ...	SAW Code	Program 1 ZCG2A
SAW Requirements W...	Implement	e ...	SAW Requir...	Processes F8XX0
SAW Requirements W...	Implement	ilct...	SAW Requir...	Processes M6XZE
SAW Requirements W...	Implement	Ch...	SAW Requir...	Processes OKLK2
PeerToPeer Review	Prepare	co...		PSH6W
SAW Code Workflow	Implement	Mo...	SAW Code	Processes PCB0M
PeerToPeer Review	Review	ise...		PQB0U
Decision Review	Decision			5C9T1
Decision Review	Followup			FNK80
SAW Code Workflow	Implement	1	Joe Smith	SAW (committed) Reqt Ch... SAW Code Processes 40566

Manager wants status

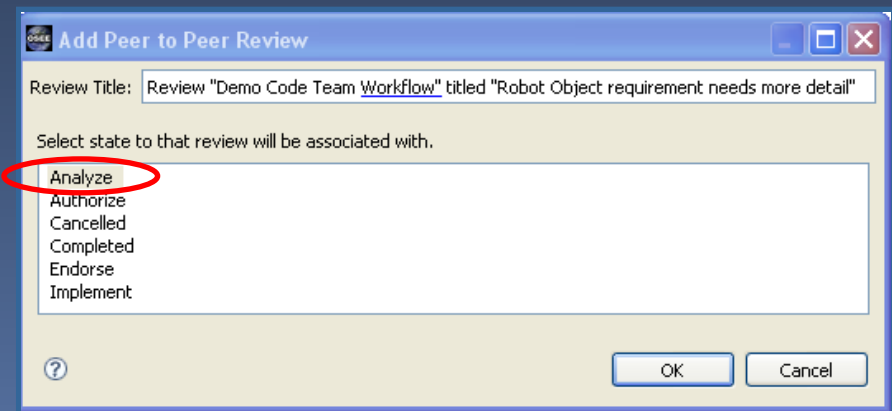
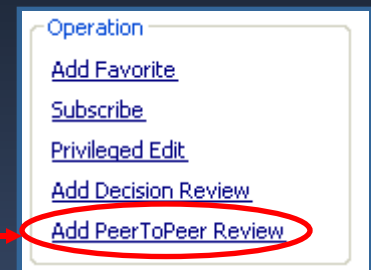
- Click on “Metrics Tab” to open the Metrics Page
- Set “Estimated Completion Date” to 2 Days from the current date
- Kay won't make it (slacker); Joe will

Code developer adds a peer review

- Code Developer – Joe
 - Realizes he needs a peer review for Analysis

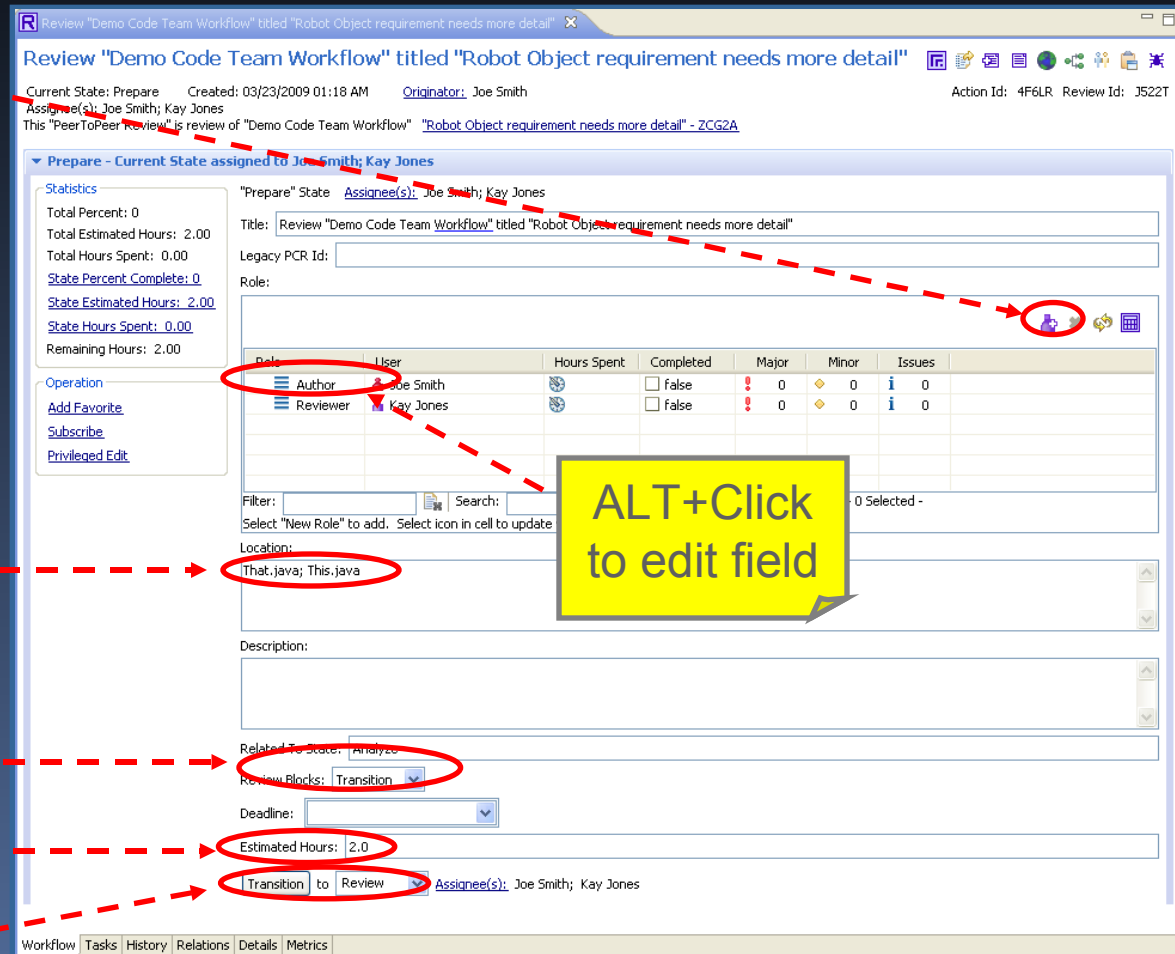
- Add Peer-To-Peer Review

- Click on the “Add PeerToPeer Review” hyperlink
 - In the “Add Peer to Peer Review” dialog, select “Analyze” state
 - Click “Ok”



Code developer adds a peer review

- Click on the New Role tool item to add 2 reviewers
- Set one of the roles to “Author” and the other to “Reviewer”
 - Edit the “Role” field so by clicking on the field while pressing the “ALT” key
- Set Location to “That.java; This.java”
- Set Blocking to “Transition”
- Set Estimated Hours to “2”
- Transition to Review



Review "Demo Code Team Workflow" titled "Robot Object requirement needs more detail"

Current State: Prepare Created: 03/23/2009 01:18 AM Originator: Joe Smith
 Assignee(s): Joe Smith; Kay Jones
 This "PeerToPeer Review" is review of "Demo Code Team Workflow" "Robot Object requirement needs more detail" - ZCG2A

Action Id: 4F6LR Review Id: JS22T

Prepare - Current State assigned to Joe Smith; Kay Jones

Statistics

Total Percent: 0
 Total Estimated Hours: 2.00
 Total Hours Spent: 0.00
 State Percent Complete: 0
 State Estimated Hours: 2.00
 State Hours Spent: 0.00
 Remaining Hours: 2.00

Operation

Add Favorite
 Subscribe
 Privileged Edit

"Prepare" State Assignee(s): Joe Smith; Kay Jones

Title: Review "Demo Code Team Workflow" titled "Robot Object requirement needs more detail"

Legacy PCR Id:

Role:

Role	User	Hours Spent	Completed	Major	Minor	Issues
Author	Joe Smith		<input type="checkbox"/> false	0	0	0
Reviewer	Kay Jones		<input type="checkbox"/> false	0	0	0

Filter: Search: 0 Selected -

Select "New Role" to add. Select icon in cell to update

Location:
 That.java; This.java

Description:

Related To: State Analyze

Review Blocks: Transition

Deadline:

Estimated Hours: 2.0

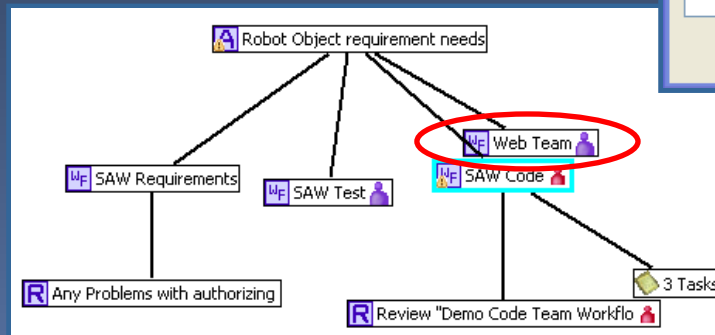
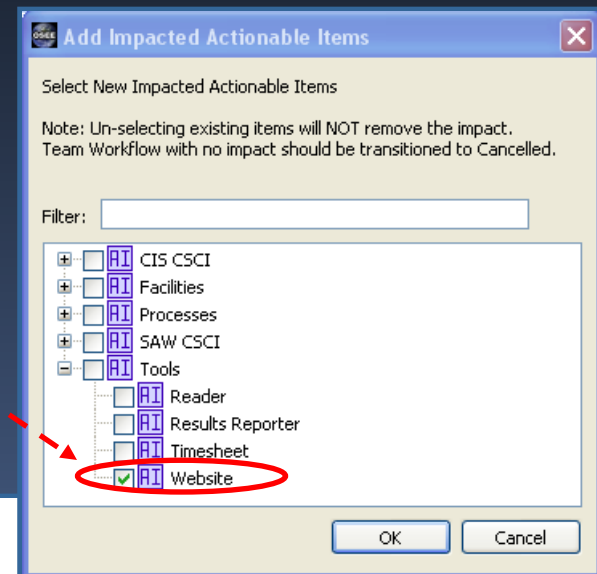
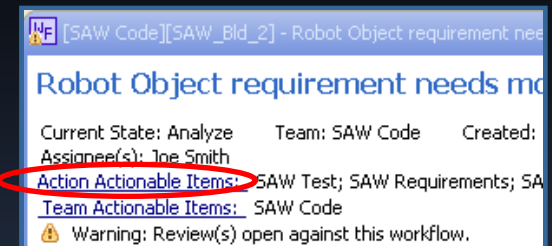
Transition to Review Assignee(s): Joe Smith; Kay Jones

Workflow Tasks History Relations Details Metrics

ALT+Click to edit field

Code developer creates a tool team workflow

- Code Developer – Joe
 - Realizes the change will affect the Tools Team
- Select the “Action Actionable Items” hyperlink from the SAW Code Workflow
- Select “Website” from the “Add Impacted Actionable Items” dialog
- Workflows are created for the Website Team



BREAK

From www.eclipse.org/osee to deployment Tutorial (Part III)

Ryan Brooks
Donald Dunne
Roberto Escobar

Boeing
Mesa, AZ

Agenda

- Deployment: Things to consider
- Administrator Access
- Creating a Baseline Branch
- Customizing the data model
- Importing the data model
- ATS Configuration
- Extensibility

Deployment: Items to Consider

- Remote access to data store
- Hardware considerations
 - Database server
 - Application server
- Requirements
 - Microsoft Office
 - Database Server
 - PostgreSQL
 - Oracle Server

Granting Administrator Access

- Set Default Branch to Common
- Open the User Groups Folder
- Open “OseeAdmin” with Artifact Editor
- Click on the Relations Tab
- Perform a Quick Search
 - Check the Attribute Type Option
 - Ensure it is set to Name
 - Uncheck all other options
- Drag and Drop the user “Joe Smith” into the Users relation
- You are now an OSEE Admin

Creating a Baseline Branch

- Ensure you have OSEE Admin privileges
- Refresh the branch manager view
- You should now be able to see the “System Root” branch
- Right-click on the “System Root” branch and select “Branch” from the pop-up menu
- A child branch of the “System Root” branch will be created

Data Model Customization

- The data model in OSEE is extensible and user configurable
- Users can define new artifact, attribute, and relation types and their constraints such as multiplicity and applicability
- Type inheritance allows similar types to be defined and modified without tedious redundancy because similar types inherit what is common from their super type

Data Model Customization - Spreadsheet

- The OSEE data model is defined using a tabular format involving 5 tables.
- The full data model can be defined using a single spreadsheet or be divided among multiple spreadsheets that can reference types defined in any spreadsheet.
- See the following xml spreadsheet [OseeTypes_ProgramAndCommon.xml](#) for an example.

Data Model Customization – Table 1 - Artifact

- Factory Class – Retired in 0.7.0
- Artifact Type Name - Any valid UTF-8 characters with a max length of 75 bytes
- Super Type Name - The super artifact type from which this type will inherit associated attributes and relations. Another concrete artifact type or an abstract one that exists only in data model definition.

Data Model Customization – Table 2 - Attributes

- Attribute Base Type - Fully qualified java class name of a class that extends `org.eclipse.osee.framework.skynet.core.attribute`.
The typical and simplest case is to specify one of the built-in types (`StringAttribute`, `BooleanAttribute`, etc...) If a custom java type that extends `Attribute` is needed, then that type should be specified here.
- Attribute Type Name - Any valid UTF-8 characters with a max length of 500 bytes
- File Extension - Any valid UTF-8 characters with a max length of 50 bytes; only applies when using the `org.eclipse.osee.framework.skynet.core.UriAttributeDataProvider`
- Tagger ID - If the attribute's content is to be included in the search index for the quick search, use `DefaultAttributeTaggerProvider`, otherwise leave blank.
- Default Value - The initial value given an attribute upon initialization, this may be left blank
- Validity Xml - For the attribute base type `org.eclipse.osee.framework.skynet.core.EnumeratedAttribute`, specifies the valid enumerations. For example, `<Page_Type><Enum>Portrait</Enum><Enum>Landscape</Enum></Page_Type>`
- Min Occurrence - The framework with prevent having less than this number of this attribute type on a single artifact
- Max Occurrence - The framework with prevent adding more than this number of this attribute type to a single artifact
- Tip Text - Text to describe an attribute. Any valid UTF-8 characters with a max length of 4000 bytes

Data Model Customization – Table 3 - Artifact Type / Attribute Type Mapping

- Artifact Type Name - Exact name of an artifact type defined above (or previously)
- Attribute Type Name - Exact name of an attribute type defined above (or previously) to be associated with the corresponding artifact type

Data Model Customization – Table 4 - Relation Type

- Relation Type Name - Any valid UTF-8 characters with a max length of 50 bytes
- Side A Name - Descriptive name for the A side of the relation. Any valid UTF-8 characters with a max length of 50 bytes
- A to B Phrase - An optional phrase that describe the relation between the artifacts from the side A perspective. Any valid UTF-8 characters with a max length of 50 bytes
- Side B Name - Descriptive name for the B side of the relation. Any valid UTF-8 characters with a max length of 50 bytes
- B to A Phrase - An optional phrase that describe the relation between the artifacts from the side B perspective. Any valid UTF-8 characters with a max length of 50 bytes
- Short Name - Five or less characters is typical. This abbreviated name is used in the user interface when space is at a premium
- Ordered - Yes to have artifacts on the same side of this relation type use a user defined ordered, otherwise No

Data Model Customization – Table 5 - Artifact Type / Relation Type Mapping

- Artifact Type - Exact name of an artifact type defined above (or previously)
- Relation Type - Exact name of a relation type defined above (or previously)
- Side A Max - An artifact of type "Artifact Type" can be on side "A", "Side A Max" number of times for relation links of type "Relation Type"
- Side B Max - An artifact of type "Artifact Type" can be on side "B", "Side B Max" number of times for relation links of type "Relation Type"

Data Model - Add Artifact, Attribute and Relation

- Open [OseeTypes_ProgramAndCommon_New.xml](#) spreadsheet (5 highlighted lines were added)
- Added Artifact Type: System Function
- Added Attribute Type: Safety Criticality
 - Enumeration:<Criticality><Enum>A</Enum><Enum>B</Enum><Enum>C</Enum><Enum>D</Enum><Enum>E</Enum></Criticality>
- Added Artifact to Attribute Mapping
- Added Relation Type: Design
- Added Relation to Artifact Mapping

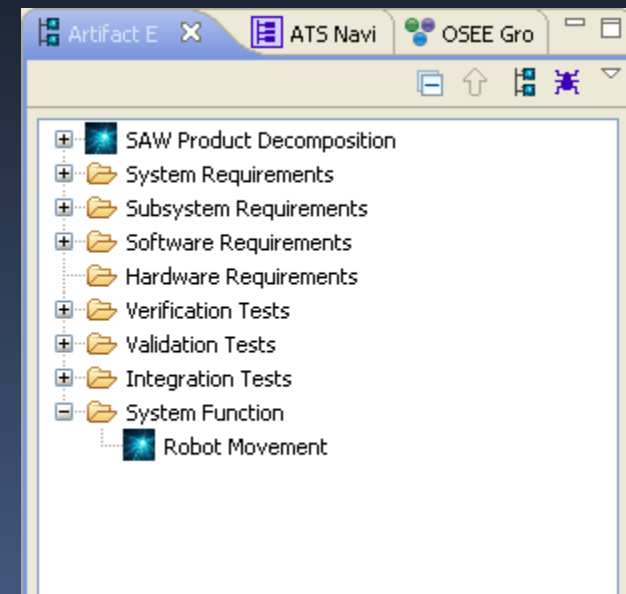
Import OSEE Data Model

- To import changes to the data model for an existing OSEE database:
 - File -> New -> Other -> OSEE -> Osee Types
 - Select File “[OseeTypes_ProgramAndCommon_New.xml](#)”
 - Select Branch “Common”
 - Select Finish
- To automatically import the data model during database initialization use the extension point `org.eclipse.osee.framework.skynet.core.OseeTypes`

Import OSEE Data Model – Try It - 1

Let's create a "System Function" folder and a new "System Function" artifact

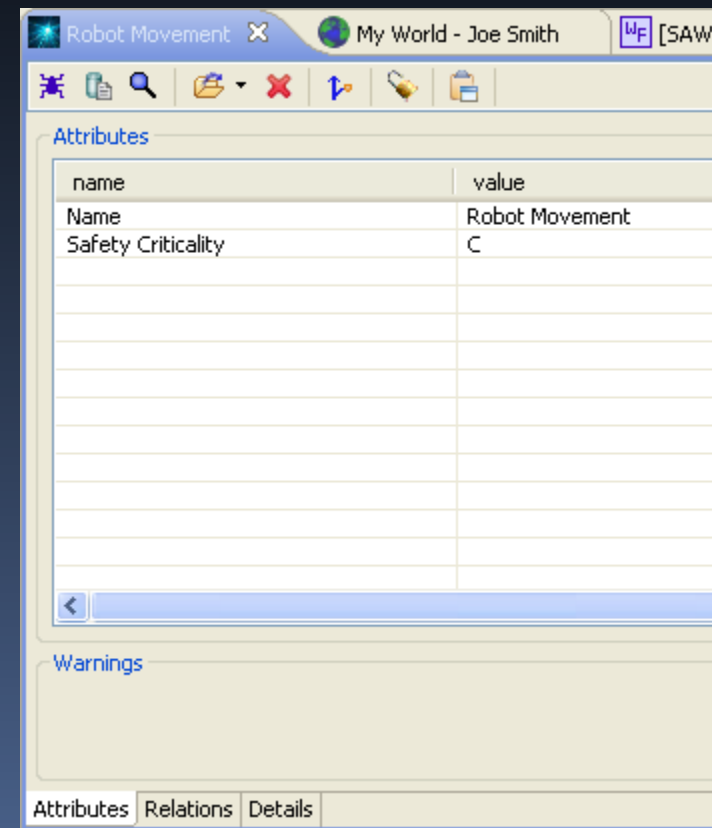
- Set Default Branch -> SAW_Bld_1
- In Artifact Explorer, right-click -> New Folder -> Name: "System Function"
- Select "System Function" -> right-click -> New Child -> "System Function" -> Name: "Robot Movement"



Import OSEE Data Model – Try It - 2

Let's set the “Safety Criticality” attribute of our new “Robot Movement” system function.

- In Artifact Explorer, Double-click to open new “System Function” artifact called “Robot Movement”
- Switch to the attributes tab of the “Robot Movement” artifact
- Modify the “Safety Criticality” value to “C”
- Save

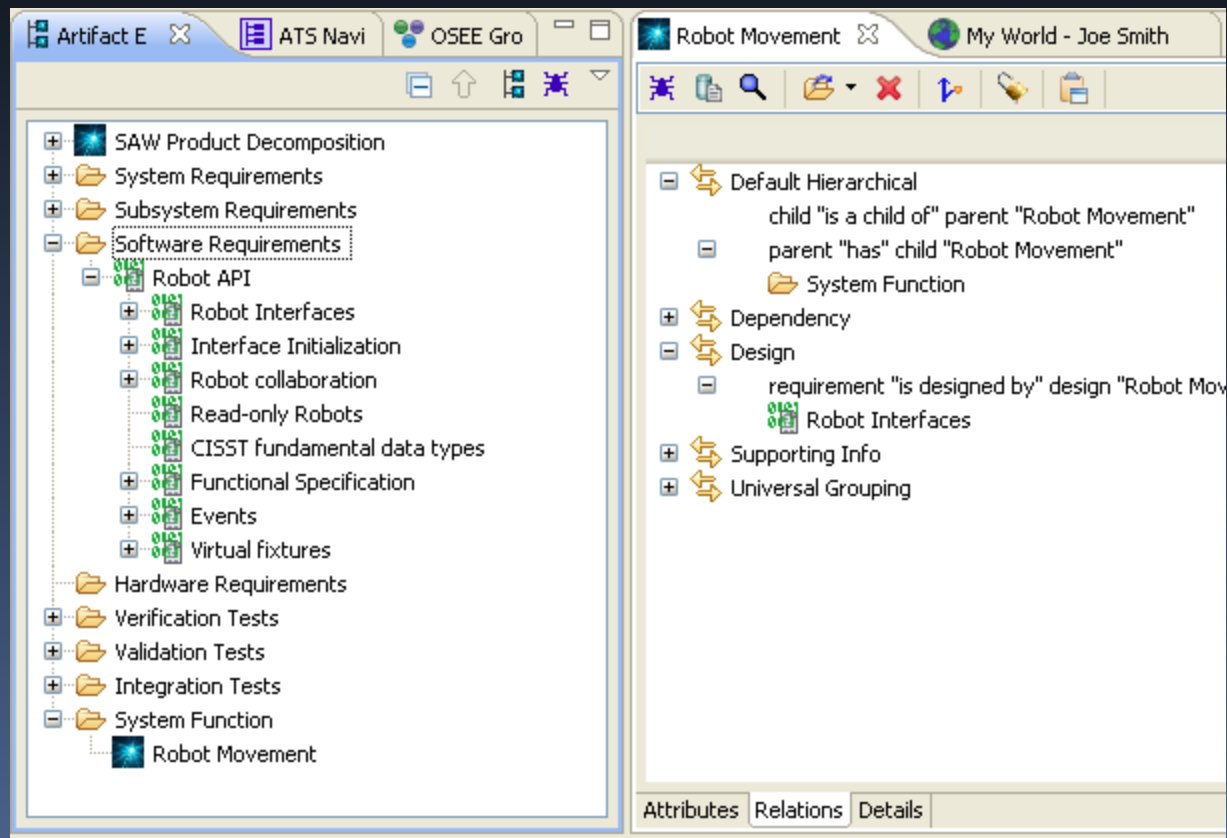


Import OSEE Data Model – Try It - 3

Let's drag an existing Software Requirement into the new “Robot Movement” “System Function” artifact.

- In Artifact Explorer, Double-click to open new “System Function” artifact called “Robot Movement”
- Switch to the relations tab of the “Robot Movement” artifact
- Under “Software Requirements” -> drag any requirement into “Design” relation
- Save

Import OSEE Data Model – Success!

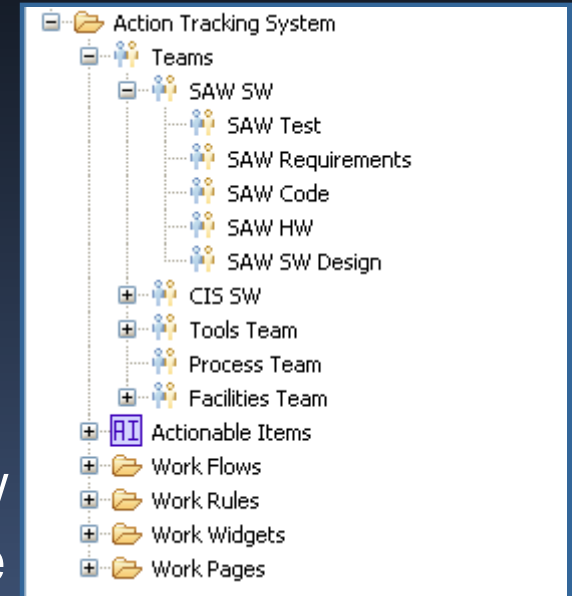


ATS Configuration

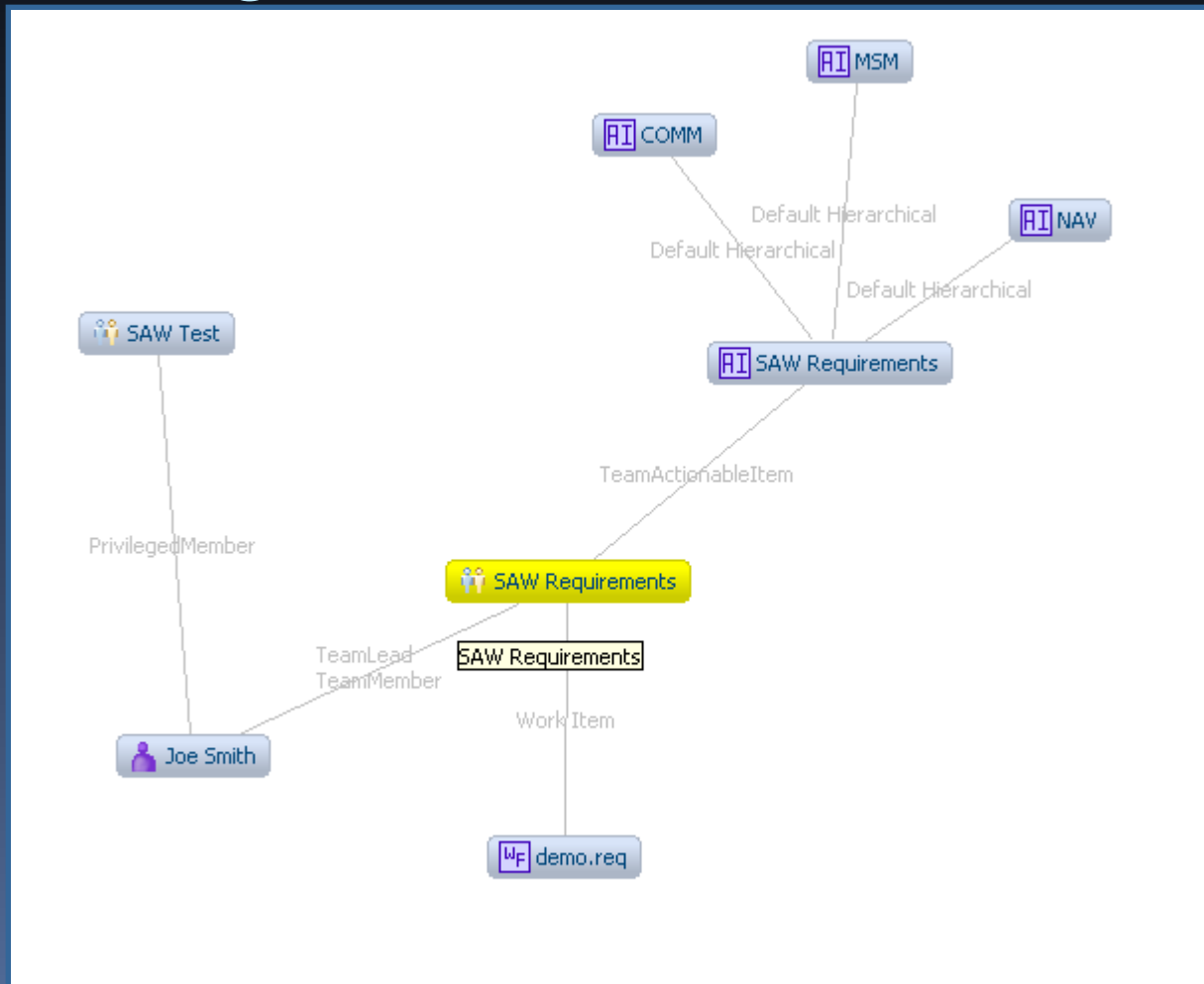
- ATS uses OSEE framework Artifacts, Attributes and Relations to store configuration information
- Configuration changes can be done using framework editors and views
- Configurations can be done dynamically in OSEE without need for code release
- Major changes such as new widget types, advanced algorithms for assignment/routing, customized searching can be done through Eclipse extension points

ATS Configuration – Team Definition

- Artifact in OSEE represents a team that is responsible for performing work
- Configured with users that perform roles
 - Team Lead – Endorses Team Workflow, Assigns Work
 - Team Member – Performs Work on Team
 - Privileged Member – Able to override assignee and edit any field in Team Workflow
- Related to Actionable Items that they are responsible for
- Related to Workflow Configuration that defines how this team does it's work

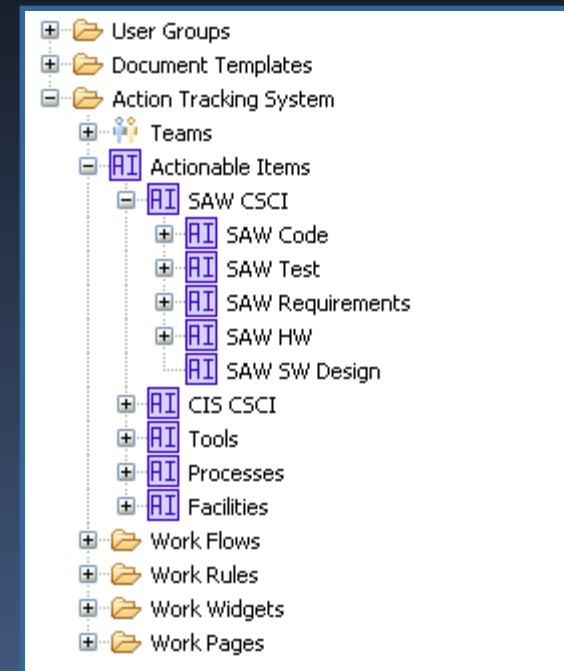


ATS Configuration – Team Definition



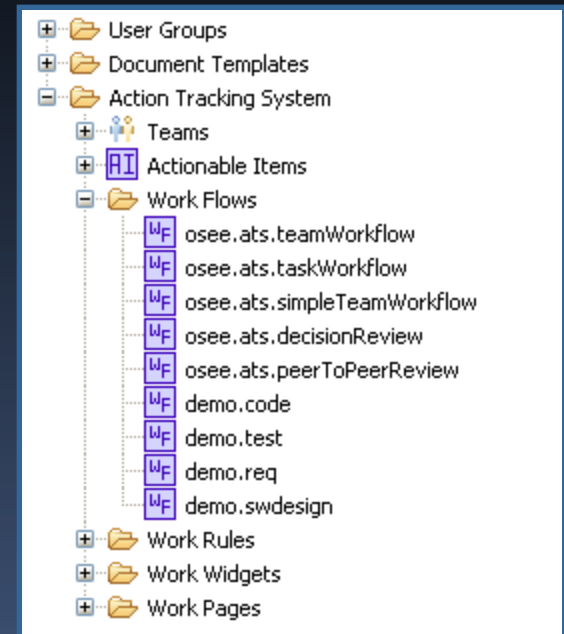
ATS Configuration – Actionable Item

- Artifact in OSEE represents a real or conceptual object that the user would write an Action against
- Active Flag enables items to be retired
- Related to Team Definitions that are responsible for them

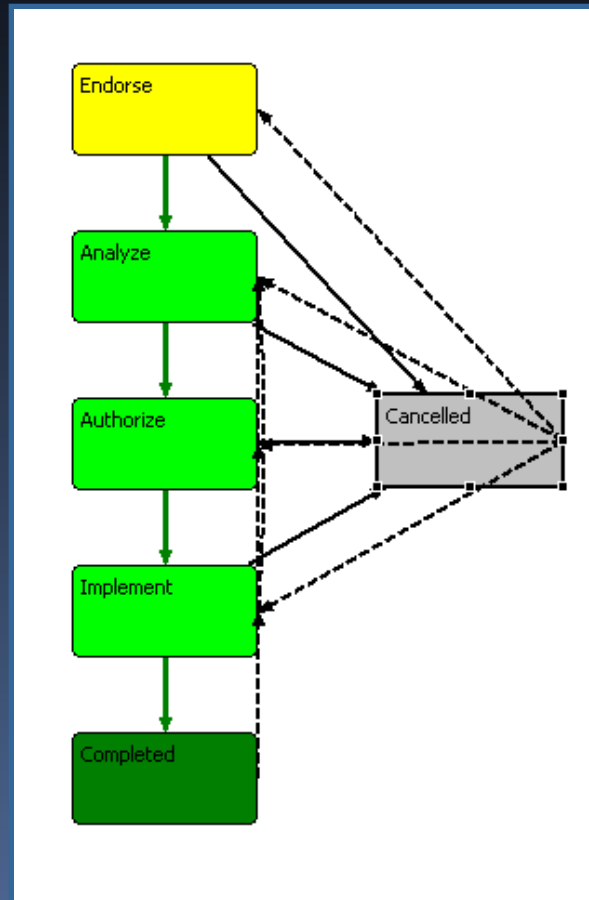


ATS Configuration – Work Flows

- Artifact in OSEE represents a how a team performs it's work
- Represented by a state machine with Work Pages being states
- Related to Team Definitions uses them
- Related to Work Pages and Work Rules that apply

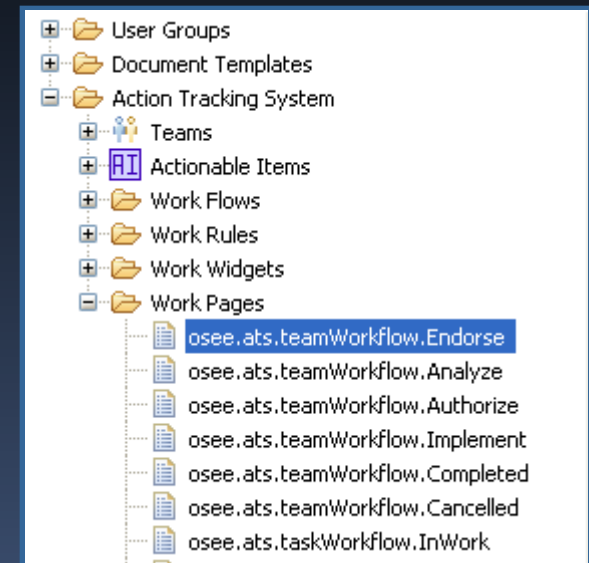


ATS Configuration – Work Flows



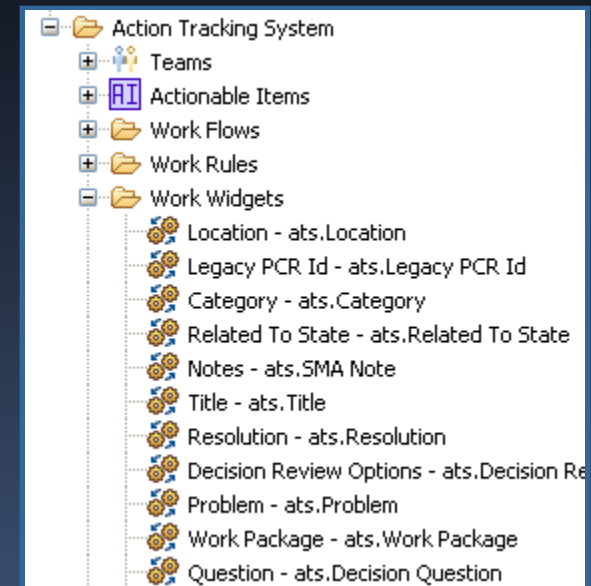
ATS Configuration – Work Pages

- Artifact in OSEE that represents a state in a Work Flow
- Represented by a state machine with Work Pages being states
- Related to Work Flow they belong to
- Related to Work Rules and Work Widgets



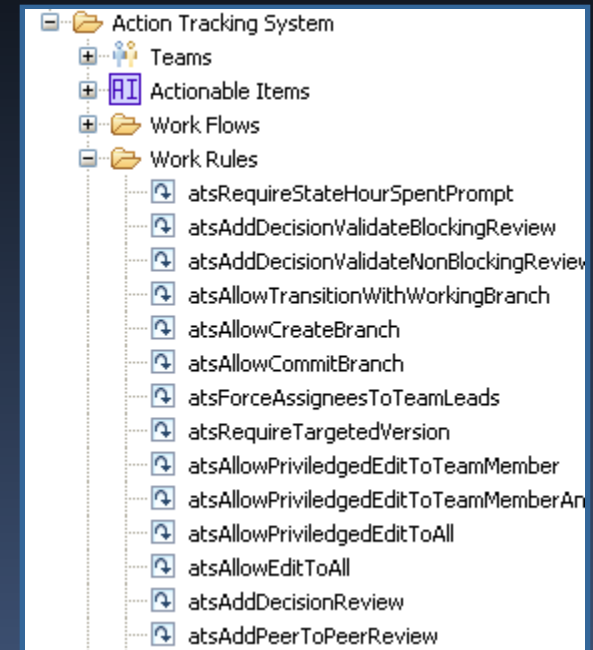
ATS Configuration – Work Widgets

- Artifact in OSEE that represents a single Widget to display for a Work Page
- Contains some formatting information
- Includes information relating widget contents to storage attribute
- Related to Work Page they belong to

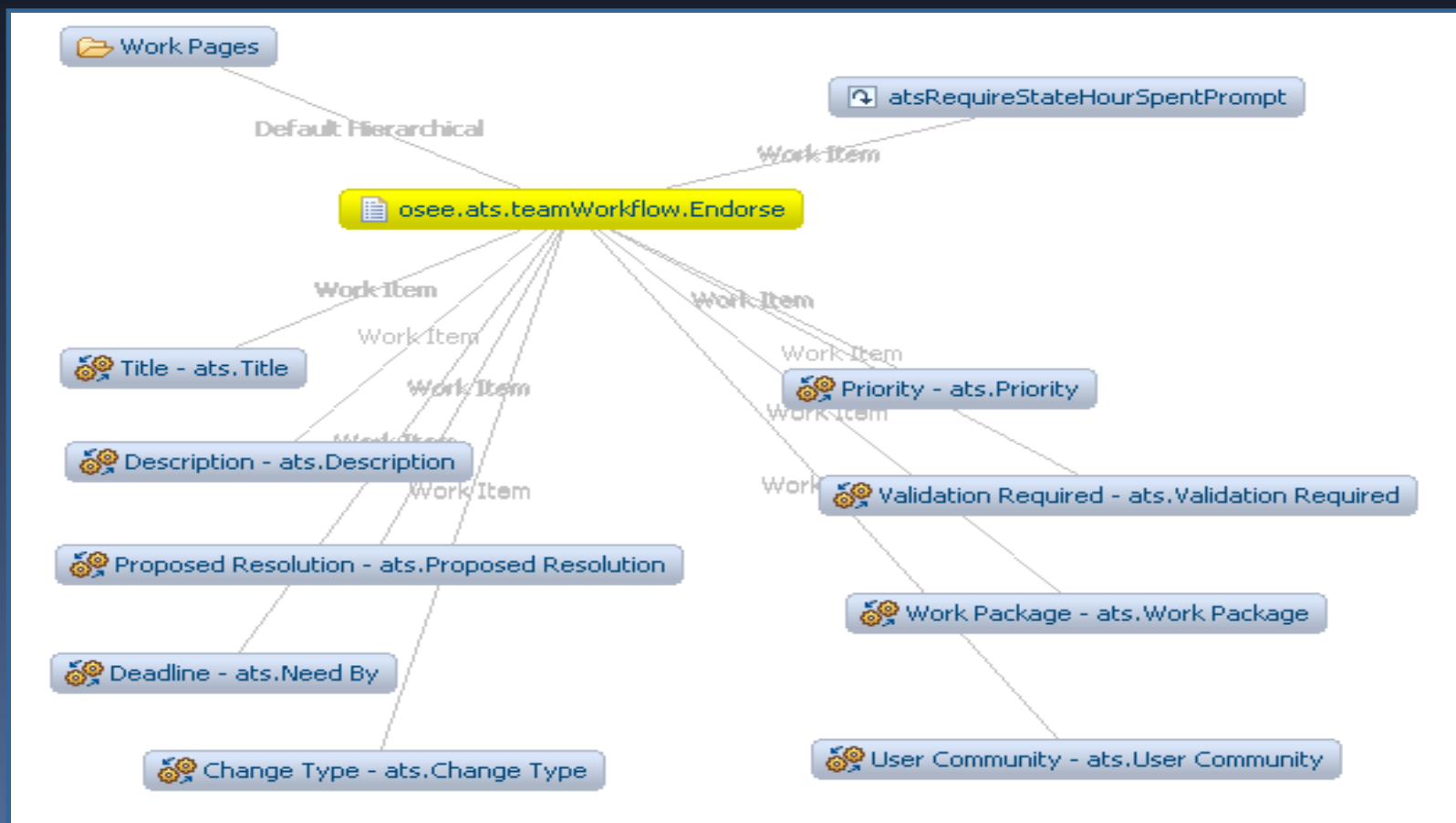


ATS Configuration – Work Rules

- Artifact in OSEE that represents a rule to be applied to Work Flow or Work Page
- Backed by code that provides the functionality described
- ATS provides built in rules for use by work flows
- New rules can provided through extension points

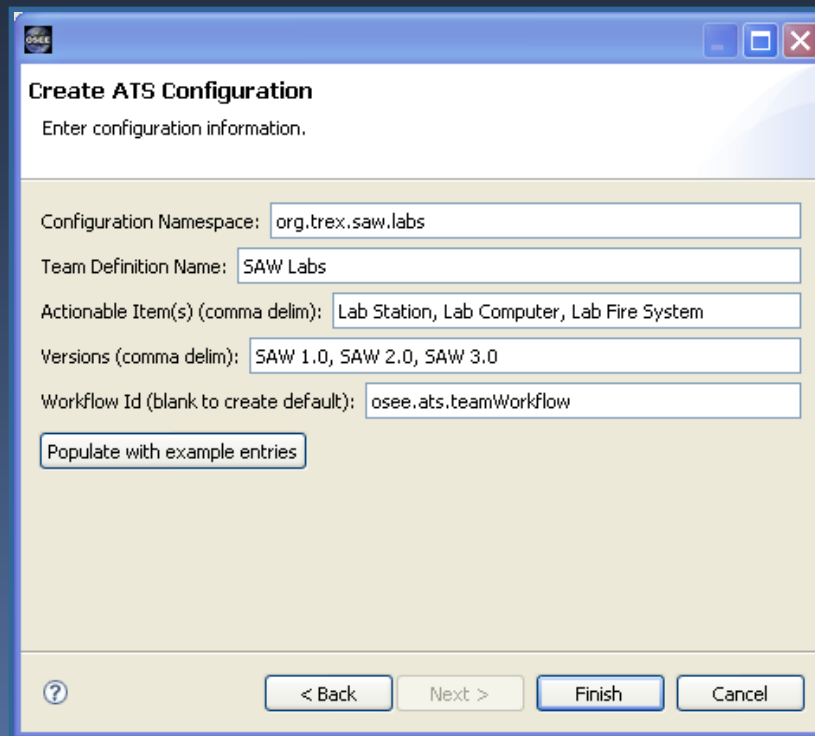


ATS Configuration – Work Pages, Widgets, Rules



T. Rex – Let's track a new SAW Lab

- File -> New -> Other -> OSEE ATS -> Create ATS Configuration
- Select “Populate with example entries” button



Create ATS Configuration
Enter configuration information.

Configuration Namespace:

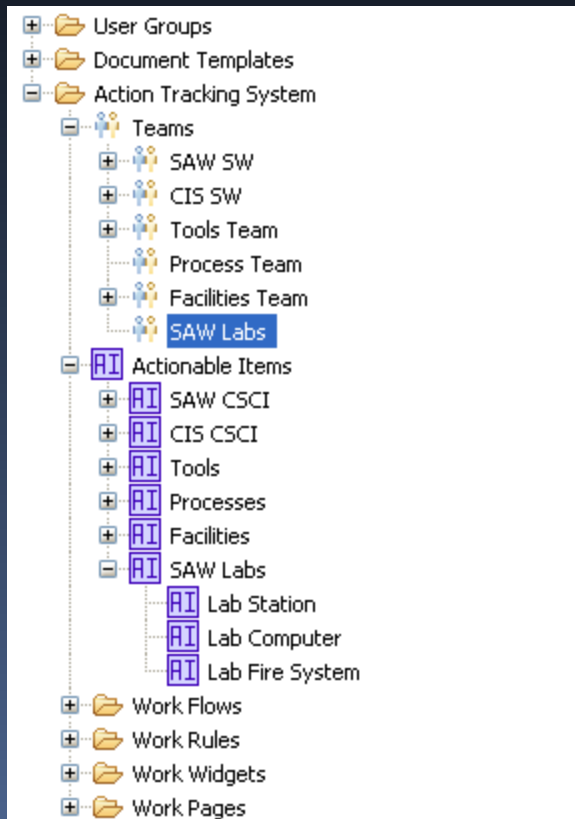
Team Definition Name:

Actionable Item(s) (comma delim):

Versions (comma delim):

Workflow Id (blank to create default):

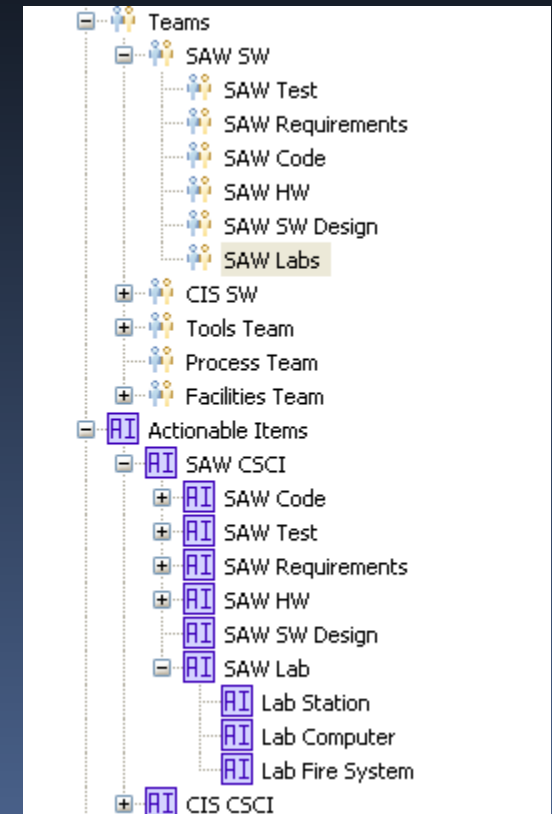
Re-Organize Team Definitions and Actionable Items



In Artifact Explorer:

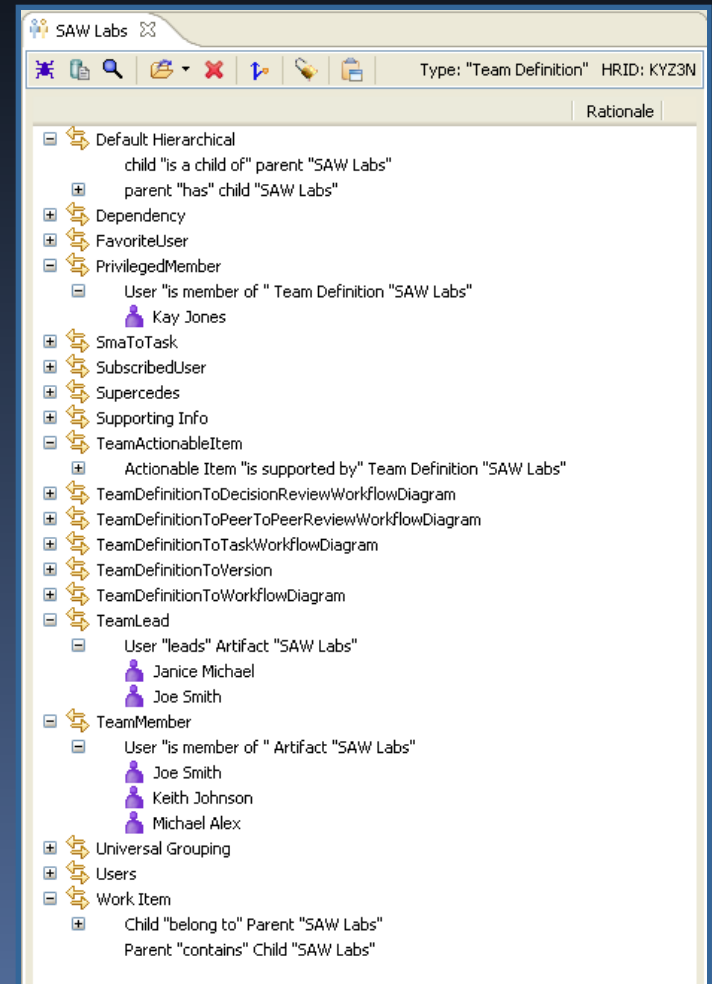
- Move New “SAW Labs” Team Definition under “SAW SW” Team
- Move New “SAW Lab” Actionable Items under “SAW CSCI” Item

becomes



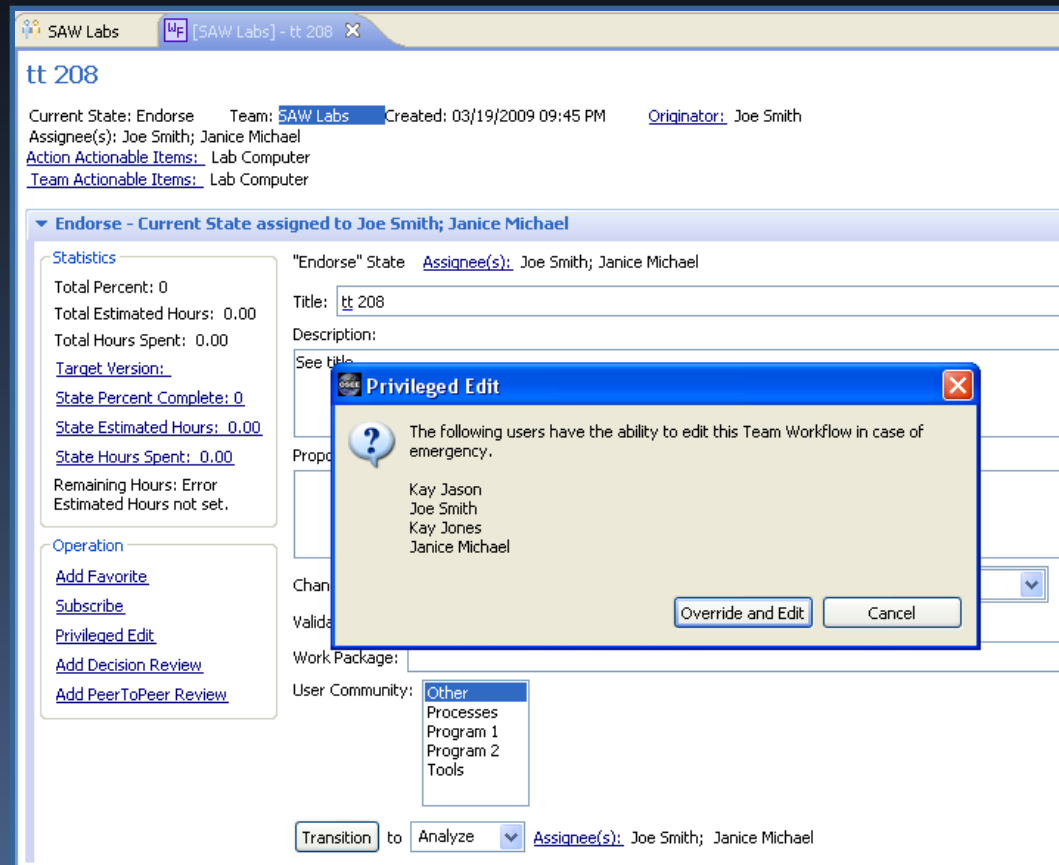
Configure Team Leads and Members

- Search Pulldown – Artifact Search – Artifact Type – User – Add Filter - Search
- From Search Results:
 - Drag “Janice Michael” to TeamLead
 - Drag “Keith Johnson” and “Michael Alex” to TeamMember
 - Drag “Kay Jones” to Privileged Member
 - Save



Let's Try It...

- ATS Navigator – New Action – Lab Computer Actionable Item
- Complete Action Wizard
- Notice:
 - Endorse State assigned to both leads “Janice” and “Joe”
 - Privileged Edit allows “Kay Jones” to override



SAW Labs [SAW Labs] - tt 208

tt 208

Current State: Endorse Team: SAW Labs Created: 03/19/2009 09:45 PM Originator: Joe Smith
 Assignee(s): Joe Smith; Janice Michael
 Action Actionable Items: Lab Computer
 Team Actionable Items: Lab Computer

▼ Endorse - Current State assigned to Joe Smith; Janice Michael

Statistics

Total Percent: 0
 Total Estimated Hours: 0.00
 Total Hours Spent: 0.00
Target Version:
State Percent Complete: 0
State Estimated Hours: 0.00
State Hours Spent: 0.00
 Remaining Hours: Error
 Estimated Hours not set.

Operation

[Add Favorite](#)
[Subscribe](#)
[Privileged Edit](#)
[Add Decision Review](#)
[Add PeerToPeer Review](#)

"Endorse" State Assignee(s): Joe Smith; Janice Michael

Title: tt 208

Description:

See title

Propo

Chan

Valida

Work Package:

User Community: Other
 Processes
 Program 1
 Program 2
 Tools

Transition to Analyze Assignee(s): Joe Smith; Janice Michael

Privileged Edit

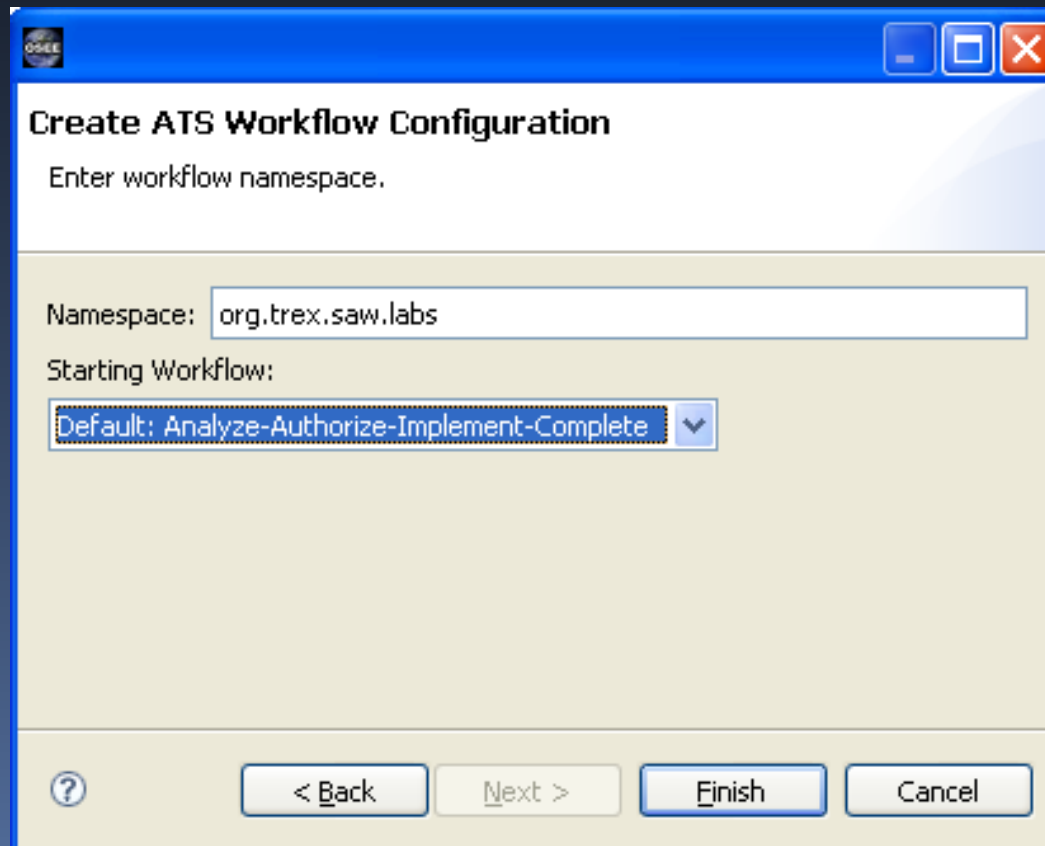
The following users have the ability to edit this Team Workflow in case of emergency.

Kay Jason
 Joe Smith
 Kay Jones
 Janice Michael

Override and Edit Cancel

Labs Team wants a different workflow

- File -> New -> Other -> OSEE ATS -> Create ATS Workflow



Create ATS Workflow Configuration

Enter workflow namespace.

Namespace:

Starting Workflow:

▼

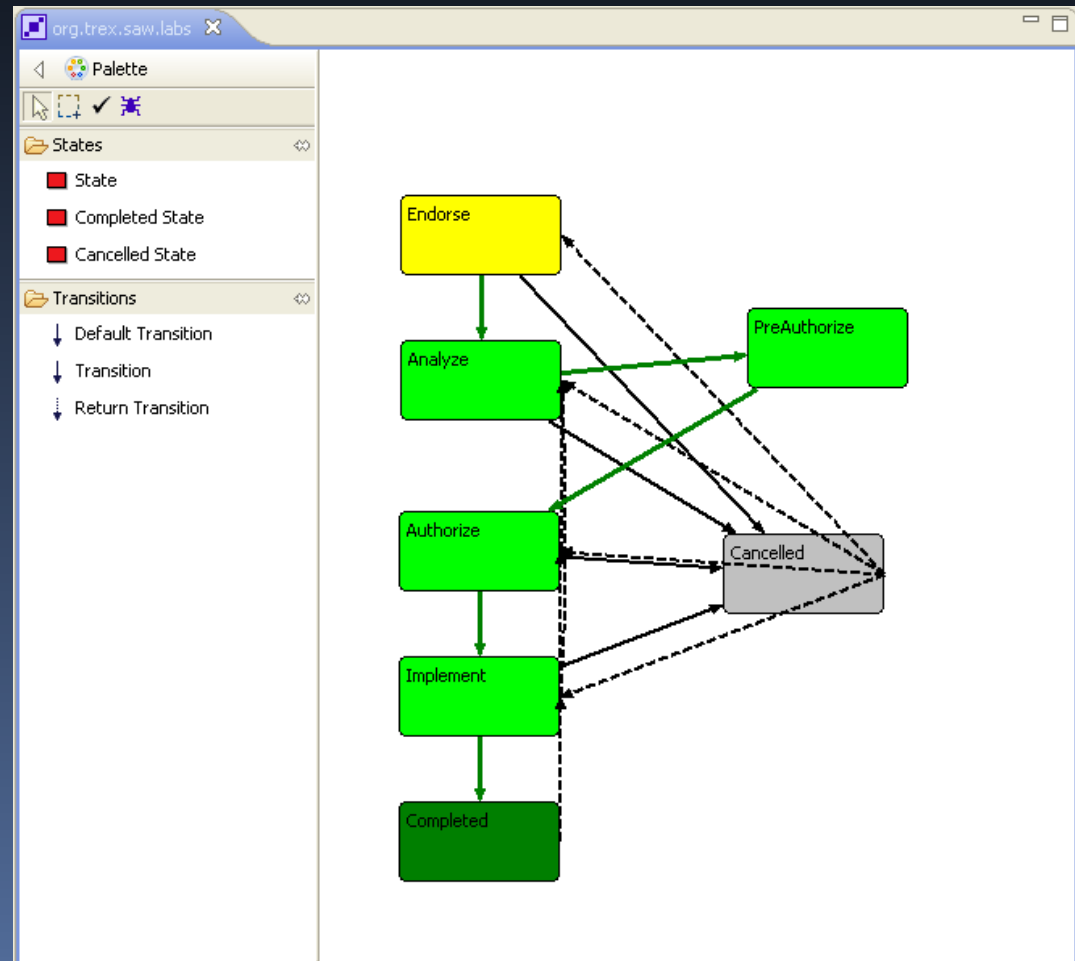
? < Back Next > Finish Cancel

Set new Labs team workflow config

- Double-click “SAW Lab” Team Definition
- Switch to Relations tab
- Expand “Work Item”
- Select item “osee.ats.teamWorkflow” and right-click – “Delete Relation”
- From Artifact Explorer, drag workflow “org.trex.saw.labs” to Work Item – Child
- Save
- Restart OSEE

Add a PreAuthorize state...

- Click “State” and click in editor area
- Add “Default Transition” from Analyze to PreAuthorize and from PreAuthorize to Authorize
- In Properties view, change state name to PreAuthorize (Note: id will be updated automatically)
- Save



Let's try new PreAuthorize state

- ATS Navigator –
New Action – Lab
Computer
Actionable Item
- Complete Action
Wizard
- Transition through
to “Implement”
state and note that
new PreAuthorize
state exists

The screenshot shows the SAW Labs application interface. The main window displays the 'tt 208' workflow page. The 'Current State' is 'Endorse', and the 'Team' is 'SAW Labs'. The 'Assignee(s)' are 'Joe Smith; Janice Michael'. The 'Originator' is 'Joe Smith'. The 'Action Actionable Items' and 'Team Actionable Items' are both 'Lab Computer'.

The 'Endorse - Current State assigned to Joe Smith; Janice Michael' section is expanded, showing the 'Statistics' and 'Operation' tabs. The 'Statistics' tab displays the following information:

- Total Percent: 0
- Total Estimated Hours: 0.00
- Total Hours Spent: 0.00
- Target Version:
- State Percent Complete: 0
- State Estimated Hours: 0.00
- State Hours Spent: 0.00
- Remaining Hours: Error
- Estimated Hours not set.

The 'Operation' tab displays the following links:

- Add Favorite
- Subscribe
- Privileged Edit
- Add Decision Review
- Add PeerToPeer Review

The 'Privileged Edit' dialog box is open, showing the following text:

The following users have the ability to edit this Team Workflow in case of emergency.

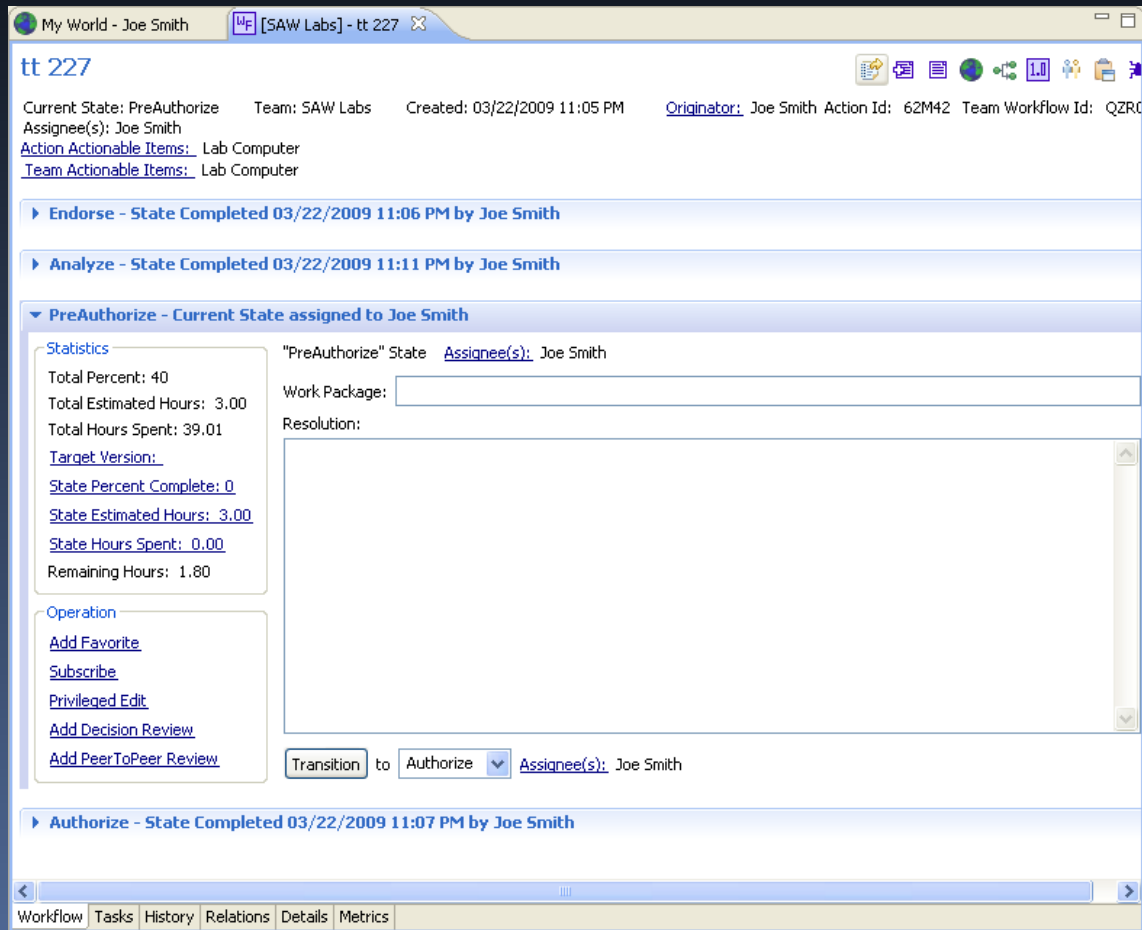
- Kay Jason
- Joe Smith
- Kay Jones
- Janice Michael

The dialog box has 'Override and Edit' and 'Cancel' buttons.

The 'Transition' section at the bottom shows a dropdown menu with 'Analyze' selected, and the 'Assignee(s)' are 'Joe Smith; Janice Michael'.

PreAuthorize needs some widgets

- Artifact Explorer
- Double-click
“org.trex.saw.labs.PreAuthorize” “Work Page”
- Switch to Relations tab
- Drag in Resolution and Work Package widgets from “Work Widgets”
- Restart OSEE and open Action from “My World”



The screenshot displays the OSEE web application interface for a specific action, 'tt 227'. The browser window title is 'My World - Joe Smith'. The page header shows the action name 'tt 227' and a toolbar with various icons. The main content area is divided into several sections:

- Current State:** PreAuthorize. **Team:** SAW Labs. **Created:** 03/22/2009 11:05 PM. **Originator:** Joe Smith. **Action Id:** 62M42. **Team Workflow Id:** QZRC.
- Assignee(s):** Joe Smith.
- Action Actionable Items:** Lab Computer.
- Team Actionable Items:** Lab Computer.

Below the header, there are two status bars:

- Endorse - State Completed 03/22/2009 11:06 PM by Joe Smith**
- Analyze - State Completed 03/22/2009 11:11 PM by Joe Smith**

The main section is titled **PreAuthorize - Current State assigned to Joe Smith**. It contains two panels:

- Statistics:**
 - Total Percent: 40
 - Total Estimated Hours: 3.00
 - Total Hours Spent: 39.01
 - [Target Version:](#)
 - [State Percent Complete: 0](#)
 - [State Estimated Hours: 3.00](#)
 - [State Hours Spent: 0.00](#)
 - Remaining Hours: 1.80
- Operation:**
 - [Add Favorite](#)
 - [Subscribe](#)
 - [Privileged Edit](#)
 - [Add Decision Review](#)
 - [Add PeerToPeer Review](#)

On the right side of the 'PreAuthorize' section, there is a form with the following fields:

- "PreAuthorize" State:** [Assignee\(s\):](#) Joe Smith
- Work Package:** [Empty text box]
- Resolution:** [Large empty text area]

At the bottom of the 'PreAuthorize' section, there is a transition bar:

Transition to **Authorize** [Assignee\(s\):](#) Joe Smith

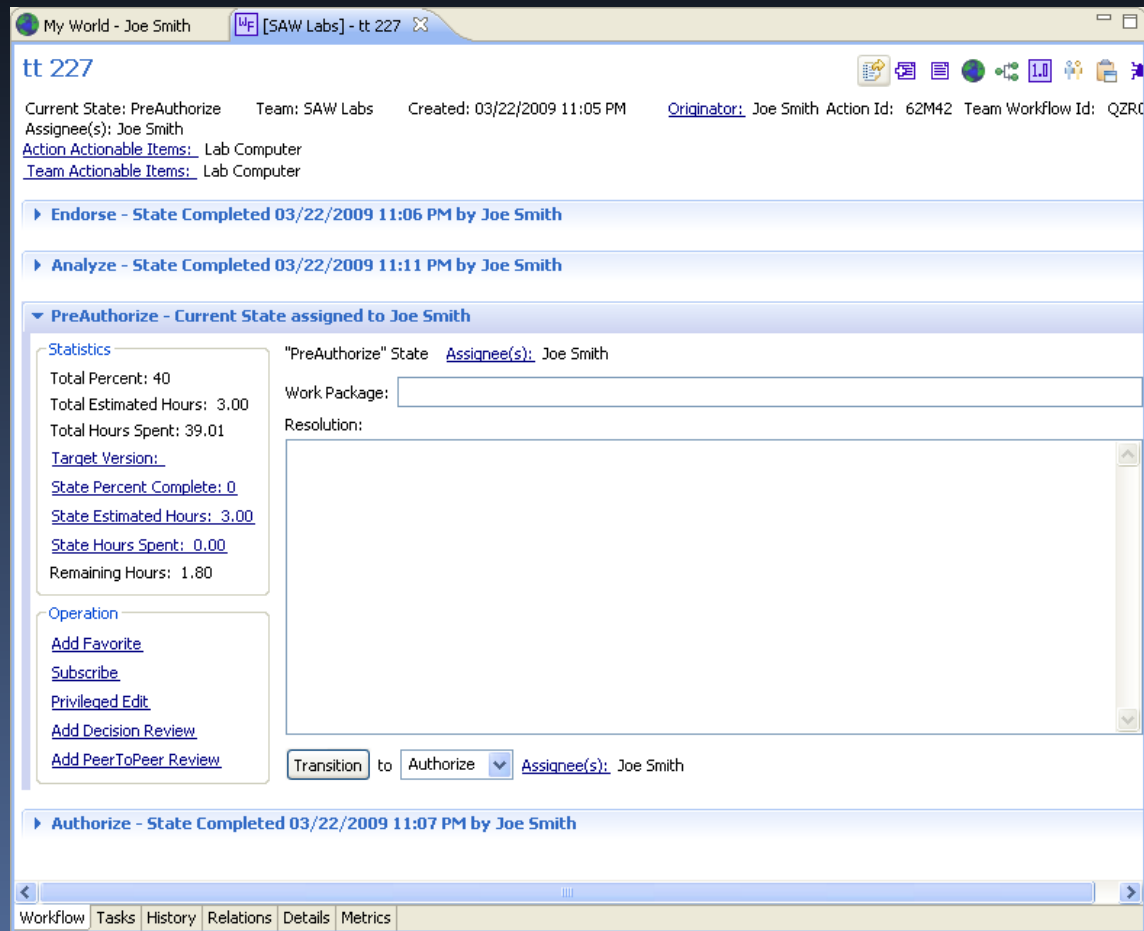
Below the transition bar, there is another status bar:

- Authorize - State Completed 03/22/2009 11:07 PM by Joe Smith**

The bottom of the page features a navigation bar with tabs: Workflow, Tasks, History, Relations, Details, and Metrics.

PreAuthorize needs a Rule

- Artifact Explorer
- Double-click
“org.trex.saw.labs.PreAuthorize” “Work Page”
- Switch to Relations tab
- Drag in
“atsRequireTargetedVersion”
rule from “Work Rules”
- Restart OSEE and open
Action from “My World”
- Transition back to Analyze,
then PreAuthorize, then
Implement – Get stopped
until set “Targeted Version”



The screenshot displays the OSEE web interface for artifact 'tt 227'. The top navigation bar shows 'My World - Joe Smith' and '[SAW Labs] - tt 227'. The main content area is titled 'tt 227' and shows the current state as 'PreAuthorize'. Key information includes: Team: SAW Labs, Created: 03/22/2009 11:05 PM, Originator: Joe Smith, Action Id: 62M42, and Team Workflow Id: QZRC. Below this, there are sections for 'Endorse' and 'Analyze' states, both completed by Joe Smith. The 'PreAuthorize' section is expanded, showing statistics (Total Percent: 40, Total Estimated Hours: 3.00, Total Hours Spent: 39.01) and a 'Target Version' field. The 'Operation' section lists actions like 'Add Favorite', 'Subscribe', 'Privileged Edit', 'Add Decision Review', and 'Add PeerToPeer Review'. A 'Transition' button is visible, set to 'Authorize' with 'Assignee(s): Joe Smith'. The bottom navigation bar includes tabs for Workflow, Tasks, History, Relations, Details, and Metrics.

My World - Joe Smith [SAW Labs] - tt 227

tt 227

Current State: PreAuthorize Team: SAW Labs Created: 03/22/2009 11:05 PM [Originator:](#) Joe Smith Action Id: 62M42 Team Workflow Id: QZRC

[Assignee\(s\):](#) Joe Smith

[Action Actionable Items:](#) Lab Computer

[Team Actionable Items:](#) Lab Computer

► **Endorse - State Completed 03/22/2009 11:06 PM by Joe Smith**

► **Analyze - State Completed 03/22/2009 11:11 PM by Joe Smith**

▼ **PreAuthorize - Current State assigned to Joe Smith**

Statistics

Total Percent: 40
Total Estimated Hours: 3.00
Total Hours Spent: 39.01

[Target Version:](#)

[State Percent Complete:](#) 0
[State Estimated Hours:](#) 3.00
[State Hours Spent:](#) 0.00
Remaining Hours: 1.80

Operation

[Add Favorite](#)
[Subscribe](#)
[Privileged Edit](#)
[Add Decision Review](#)
[Add PeerToPeer Review](#)

"PreAuthorize" State [Assignee\(s\):](#) Joe Smith

Work Package:

Resolution:

Transition to Authorize [Assignee\(s\):](#) Joe Smith

► **Authorize - State Completed 03/22/2009 11:07 PM by Joe Smith**

Workflow Tasks History Relations Details Metrics

Advanced customization / extensibility

- New Attributes can be added to Team Workflow artifacts
- New Widgets can be created
 - Simple – attribute with existing XWidget xml
 - Advanced – new XWidget with attribute or other storage (artifacts, relations, etc...)
- New Rules can be created
- Teams and States can have java backed algorithms that enforce or automate tasks (eg: emailing team leads, requiring review if estimated hours > 30, etc...)

Other Extensibility

- Provide customized editors for artifacts
- Attribute Data Providers
- Renderers
- Indexed based taggers
- Authentication Protocols
- Resource Management Protocols
- Artifact Types and Factories
- Customized Dictionaries
- XWidget Providers

We have made it to the end!

- Feedback Questionnaire
- See you tonight at 7:30 pm - Great America 2 for Birds of a Feather
- Other OSEE Talks at EclipseCon 2009
 - “XViewer - An SWT Widget with the power of the spreadsheet”
 - Wednesday Mar. 25th 4:50 pm - Room 203/204
 - “An Integrated Test Environment for Systems Engineering”
 - Wednesday Mar. 25th 11:30 pm - Room 203/204
 - “Unlocking the OSEE Core Framework”
 - Thursday Mar. 26th 10:40 am – Grand Ballroom B

- For further help with OSEE
 - <http://www.eclipse.org/osee>
 - Newsgroup (Do not use the Mailing List)
 - Documentation
 - FAQs

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- Show diagram of each team's workflow
- - Diagram of Action, Workflows, Reviews, Tasks
- - Diagram of Team Definitions and Actionable Items
- - Work Flows, Pages, Widgets, Rules
- - Versions
- - Groups
- - Users / User Groups

- - Configuration of ATS
- - ATS Configuration
- - New -> Other -> OSEE ATS -> ATS Configuration
- - Configuration Namespace: org.myCompany.labs
- - Team Definition Name: Labs Team
- - Actionable Item(s): Lab 1, Lab 2, Lab Door, Lab Computer
- - Versions:
- - Workflow Id: osee.ats.defaultTeamWorkflow