Requirements Change Management in Integrated Environment

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About Me

Saulius Pavalkis

- **Director of Products Development**
- **Solutions architect** consulting companies as: Ford, SGT, Abbott, Raytheon, UTAS.
- Former **Analyst** on the MagicDraw R&D team for over 10 years.
- **Major expertise area** is MBSE, Requirements engineering, PLM, PLE.
- **Ph.D.** from Kaunas University of Technology (KTU) in model traceability area. Former **researcher** at Kaunas University of Technology on multimillion projects.
- **Research and technical articles** in model-based solutions some of them are available in modeling community blog (blog.nomagic.com).
Agenda

1. Requirements Import Methods Overview
2. Sample Configuration Management Case
3. Sample Change Management Case
4. Demo
5. Q&A
System Engineering Process

Requirements management is major point of systems engineering

Source: Clarus Concept of Operations. Publication No. FHWA-JPO-05-072, Federal Highway Administration (FHWA), 2005
SysML allows transferring requirements and storing them in the model.
Model and Text Integration

- Model and Text Integration

Legend

- Derived Requirements
- Owned Requirements
- Satisfied by Blocks
- Verified by Test Cases

Table:

<table>
<thead>
<tr>
<th>#</th>
<th>Id</th>
<th>Text</th>
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<tbody>
<tr>
<td>1</td>
<td>S02</td>
<td>Avert magnetic stripe skimming and PIN stealing</td>
</tr>
<tr>
<td>2</td>
<td>S02.1</td>
<td>Prevent abuse of OS and reduce the attack surface of the ATM OS platform (Windows) and BIOS.</td>
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<tr>
<td>3</td>
<td>S02.2</td>
<td>Prevent exploitation of public domain vulnerabilities in the Open Protocols stack.</td>
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<tr>
<td>4</td>
<td>S02.3</td>
<td>Reduce attack surface from public and private networks.</td>
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<td>5</td>
<td>S02.4</td>
<td>Prevent abuse by software suppliers.</td>
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<td>6</td>
<td>S02.5</td>
<td>Use effective network isolation and intrusion detection/mitigation tools.</td>
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<tr>
<td>7</td>
<td>S02.6</td>
<td>Trace/track OS activity.</td>
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<td>8</td>
<td>S02.7</td>
<td>Protect sensitive functions and enforcement mechanisms for appropriate key-loading procedures.</td>
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<tr>
<td>9</td>
<td>S02.8</td>
<td>Protect against unauthorized changes.</td>
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<tr>
<td>10</td>
<td>S02.9</td>
<td>Protect against the unauthorized remote control of the application.</td>
</tr>
<tr>
<td>11</td>
<td>S02.10</td>
<td>Protect again unauthorized installation of software.</td>
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The Truth is in the Models™
Distributed Data Sources

However, in many cases requirements are created or managed in an external source
Tools’ Interoperability

Requirements import and update using various standards and tools:

• Microsoft Excel and Comma Separated Value (CSV) format
• Requirements Interchange Format and OMG standard (ReqIF)
• Open Services for Lifecycle Collaboration (OSLC)
• Cameo DataHub (for direct interoperability with Rational DOORS)
## Tools’ Interoperability (2)

### Comparison of methods:

<table>
<thead>
<tr>
<th>Method\use for</th>
<th>Data Linking</th>
<th>Requirements Update</th>
<th>Update by Internal Element ID</th>
<th>Links Update</th>
<th>Hierarchy Update</th>
<th>Interchange with DOORS &amp; DOORS NG</th>
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</thead>
<tbody>
<tr>
<td>Paste from MS Excel</td>
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<td>CSV Import</td>
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<tr>
<td>ReqIF</td>
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<tr>
<td>OSLC Link (DataHub)</td>
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<tr>
<td>Direct Integration (DataHub)</td>
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</table>
Configuration Management

Recommendations:

- Set different project permissions for different teams
- Use LDAP for all servers: CEDW, Cameo Collaborator
- Use “sticky” versions or branches for baselines
Change Management

Capabilities and workflow:

1. Update user needs
   - Check impact
   - Update conceptual design
   - Request approval
   - Update baseline

2. Import user needs
   - Import conceptual design
   - Check impact
   - Update logical design
   - Request approval
   - Update baseline

3. Stakeholder
   - [Update required]
   - Review and approve
   - [approved]

4. Conceptual Design Team
   - Import user needs
   - Check impact
   - Update conceptual design
   - Request approval
   - Update baseline

5. Logical Design Team
   - Import conceptual design
   - Check impact
   - Update logical design
   - Request approval
   - Update baseline

6. Physical Design Team
   - Import using: Excel / CSV importer, ReqIF, DataHub.
   - Project dif
   - Suspect Links
   - Cameo Collaborator
   - CEDW
Demo

1. Overview project and configuration
2. Update user needs
3. Check impact for logical design
4. Suggest logical design change
5. Review and approve them
Questions and Answers
Thank You!

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