Publishing and reviewing models on the Web

Dr. Andrius Armonas, MagicDraw Product Manager
Presentation agenda

• Introduction: the problem being solved
• Technologies supported by Cameo Systems Modeler for work product generation
  • Template-based reports
  • Generation of work products directly from the model
  • SysML Views&Viewpoints approach for document generation
  • SysML Views&Viewpoints approach for web content generation:
    • Publishing of models on the web
    • Reviewing published models on the web and tracking review progress
    • Integrating published models with Wikis
    • Customization of appearance and information fidelity of published models
Introduction: document-based SE
Introduction: single source of truth

Model repository

No Magic
Template-based reports
VTL template-based reporting

- The Apache Velocity Engine is a free open-source templating engine
- Velocity Template Language (VTL) is a scripting language used by the Velocity Engine
- MagicDraw VTL templates describe the following properties of the document:
  - Layout
  - Style
  - Header & footer
  - Static texts
  - Placeholders for Cameo Systems Modeler / MagicDraw elements
VTL template-based reporting

Generate Microsoft Word, Excel, PowerPoint, HTML, Open Office, XML documents or any other plain text report from the model

MagicDraw Report Engine

Properties

TEMPLATE

This image template will be filled from selected objects. The content of each object can be edited.

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VTL template-based reporting

Template:

<table>
<thead>
<tr>
<th>Blocks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#forrow ($block in $sorter.sort($Block, &quot;name&quot;))</td>
<td>$report.getComment($block) #endrow</td>
</tr>
<tr>
<td>$report.getIconFor($block)</td>
<td></td>
</tr>
<tr>
<td>$block.name</td>
<td></td>
</tr>
</tbody>
</table>

Resulting Word document:

<table>
<thead>
<tr>
<th>Blocks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brewer Valve</td>
<td>Brewer Valve component BR-458.</td>
</tr>
<tr>
<td>Brewing Channel</td>
<td></td>
</tr>
<tr>
<td>Brewing Group</td>
<td></td>
</tr>
<tr>
<td>Dispersion Screw</td>
<td></td>
</tr>
<tr>
<td>Drain Chamber</td>
<td></td>
</tr>
<tr>
<td>Drain Valve</td>
<td></td>
</tr>
</tbody>
</table>
Web reports

- Web reports 2.0
  - Full information from the model is published on the web
  - Easily customizable
MBSE web portal

- Only the most important information from the model is published on the web
- Views on the system from multiple perspectives
- Customizable by No Magic
- http://webreports.nomagic.com
MBSE web portal: basic commenting

Summary:
Pre-conditions

Description:
I cannot find pre-conditions of this use case.

Max. 1500 characters

Send

Increase reading items
Order items
Remove item
Item Reservation
MBSE web portal: basic commenting

Test / TEST-42
Pre-conditions

Details
- Type: Bug
- Status: OPEN (View Workflow)
- Priority: Critical
- Resolution: Unresolved
- Labels: None

Description
I cannot find pre-conditions of this use case.

Link to the content:
http://example.com/report.html/#Requirement__17_0
_1_1698042e_1326652123232_466083_39304

Two comments on the list
Comment text
Element URL
Automated generation of reports

Report generation machine

MagicDraw

Teamwork Server

HTTP Server

Generated reports / web portals (nightly)

Projects

Content
Demo of template-based reports
## Overview

<table>
<thead>
<tr>
<th>Technology</th>
<th>Target user group</th>
<th>Templates supported</th>
<th>Commenting supported</th>
<th>Customization can be done by</th>
<th>Customization technology</th>
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<tbody>
<tr>
<td>VTL templates for</td>
<td>Non-modelers and modelers</td>
<td>Yes</td>
<td>Yes, basic support</td>
<td>Customer</td>
<td>VTL scripting</td>
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<tr>
<td>documents (Word, Excel,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>etc.)</td>
<td></td>
<td></td>
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SysML Views&Viewpoints for document generation
**SysML Views & Viewpoints concept**

- Systems specifications are stored in models in MBSE
- Viewpoints specifies rules how to represent model in a suitable way to stakeholders
- The view is a representation of the system from the perspective of a viewpoint
- More information:
SysML Views & Viewpoints example

Generated content:

<table>
<thead>
<tr>
<th>#</th>
<th>Id</th>
<th>Name</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UN2</td>
<td>Fresh Milk</td>
<td>I want fresh milk.</td>
</tr>
<tr>
<td>2</td>
<td>UN3</td>
<td>Footprint</td>
<td>The footprint must be less than 1.5 square meters.</td>
</tr>
<tr>
<td>3</td>
<td>UN4</td>
<td>Hygiene Requirements</td>
<td>The device must meet the health requirements.</td>
</tr>
<tr>
<td>4</td>
<td>UN5</td>
<td>Efficient Work</td>
<td>The devices must work efficiently after 1 year.</td>
</tr>
<tr>
<td>5</td>
<td>UN6</td>
<td>Failure Rate</td>
<td>The failure rate can not be higher than 1 time a month for max. 1 hours</td>
</tr>
<tr>
<td>6</td>
<td>UN7</td>
<td>Money</td>
<td>The money must be kept safe.</td>
</tr>
<tr>
<td>7</td>
<td>UN8</td>
<td>Debit Card</td>
<td>I would like to pay by debit card.</td>
</tr>
<tr>
<td>8</td>
<td>UN9</td>
<td>Credit Card</td>
<td>I would like to pay by credit card.</td>
</tr>
<tr>
<td>9</td>
<td>UN10</td>
<td>Bills</td>
<td>The device must take bills up to 10 Euros.</td>
</tr>
<tr>
<td>10</td>
<td>UN11</td>
<td>Usability</td>
<td>The operation must be for all travelers and employees quick and easy to use.</td>
</tr>
<tr>
<td>11</td>
<td>UN12</td>
<td>UHT Milk</td>
<td>I want to UHT milk.</td>
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SysML Views & Viewpoints example
Demo of SysML Views&Viewpoints
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SysML Views & Viewpoints for web content generation
What is Cameo Collaborator?

MagicDraw (desktops)

Content creators - modelers

Provide content

Provide feedback

Provide content

Provide content

Provide content

Cameo Collaborator (web)

Model reviewers

Model readers/users

Model editors / contributors to models

The future
Use cases

Use cases:
• View & understand content
• Review and provide feedback on content
• Approve content

Types of users:
• Non-modelers (people who were not trained in MagicDraw nor are equipped with it)
• Modelers
Supported portals in the final product

- Systems Engineering
- Enterprise Architecture
- Business Architecture
- Software Engineering
- Full model template
Cameo Collaborator high level architecture

MagicDraw

Model
Views & Viewpoints model (SysML std.)

Cameo Collaborator Publisher

Publish model for review

Cameo Collaborator

Alfresco +
Extensions created by No Magic

Comments

No Magic
What is Alfresco?

Alfresco is enterprise-class document management system

- A single repository to manage any kind of electronic file
- Works on-premise and in the cloud
- Simple to use and easy to deploy
- Very extensible
- Has the metamodel underneath that can be customized
- Integrated workflow to manage complex business processes
- Fully-functional Alfresco Community edition available for free for commercial use, licensed under LGPL v3.0
Demo
Demo story

- Systems engineer
- Manager
- Subject matter expert
Demo story

Systems engineer: publish model
- Publish model to Cameo Collaborator
- Provide reviewers with a link to published model

Subject matter expert (SME), manager: review model
- Log in to Cameo Collaborator
- Make comments for model parts

Systems engineer: react to comments
- Filter unresolved comments
- Navigate to commented places, fix models & resolve comments
Demo

- Tracking review progress
- Integrating published models with Wikis
- Customization of appearance and information fidelity of published models
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Thanks!