MagicDraw 18.0

MagicDraw 18.0 release goals

- Integrate MagicDraw with the new Cameo Enterprise Data Warehouse technology
- Introduce new Cameo Requirements Modeler plugin (based on SysML) with basic requirements modeling capabilities
- Add Glossary support
- Analyze models using new metrics
- Increase modeling performance
- Support UML 2.5
- Enhance support for viewing inherited elements, scripting, and instances

Cameo Enterprise Data Warehouse integration (not publicly available yet)

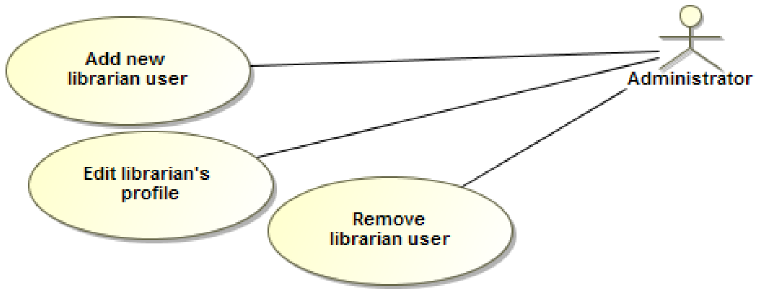
MagicDraw-CEDW integration benefits:

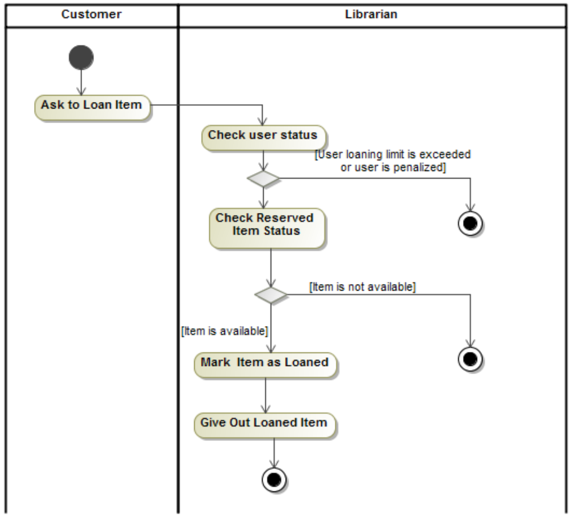
- Fast project load, commit and update (lazy load support)
- RBAC support

NEW PLUGIN FOR MODEL-BASED REQUIREMENTS MANAGEMENT

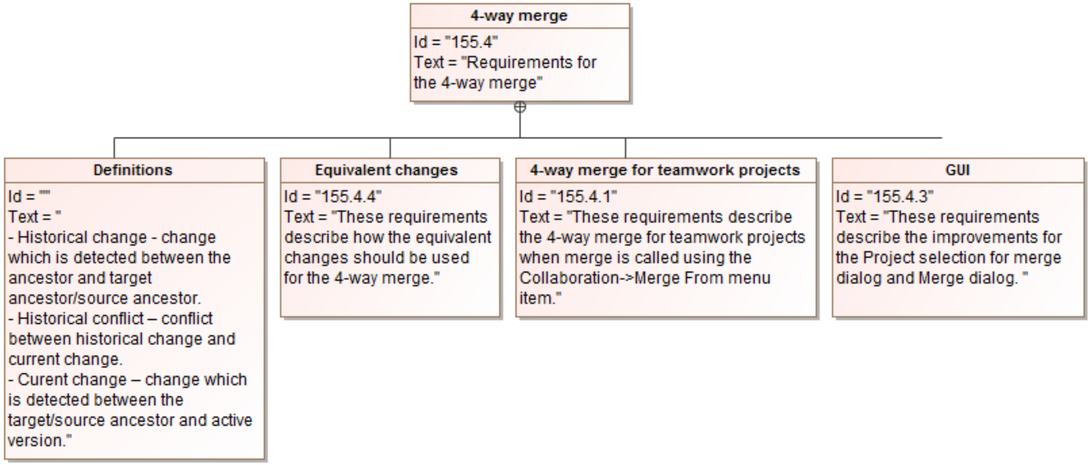
Problem (1)

- Software engineers have Use Cases in MagicDraw to specify requirements





- Software engineers WANT MORE :



4-way merge
Id = "155.4"
Text = "Requirements for the 4-way merge"

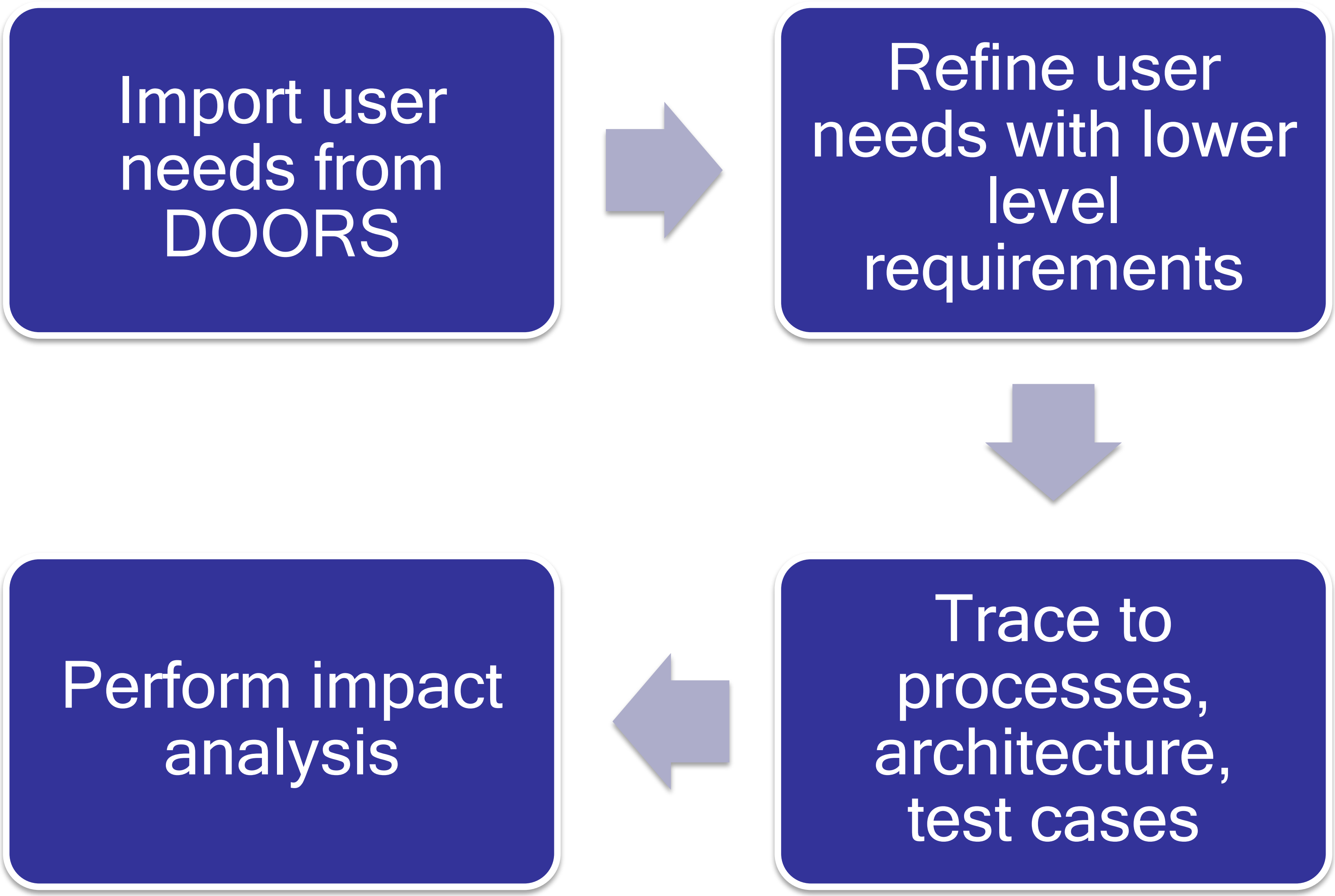
Definitions
Id = ""
Text = "
- Historical change - change which is detected between the ancestor and target ancestor/source ancestor.
- Historical conflict – conflict between historical change and current change.
- Curent change – change which is detected between the target/source ancestor and active version."

Equivalent changes
Id = "155.4.4"
Text = "These requirements describe how the equivalent changes should be used for the 4-way merge."

4-way merge for teamwork projects
Id = "155.4.1"
Text = "These requirements describe the 4-way merge for teamwork projects when merge is called using the Collaboration->Merge From menu item."

GUI
Id = "155.4.3"
Text = "These requirements describe the improvements for the Project selection for merge dialog and Merge dialog. "

Problem (2)



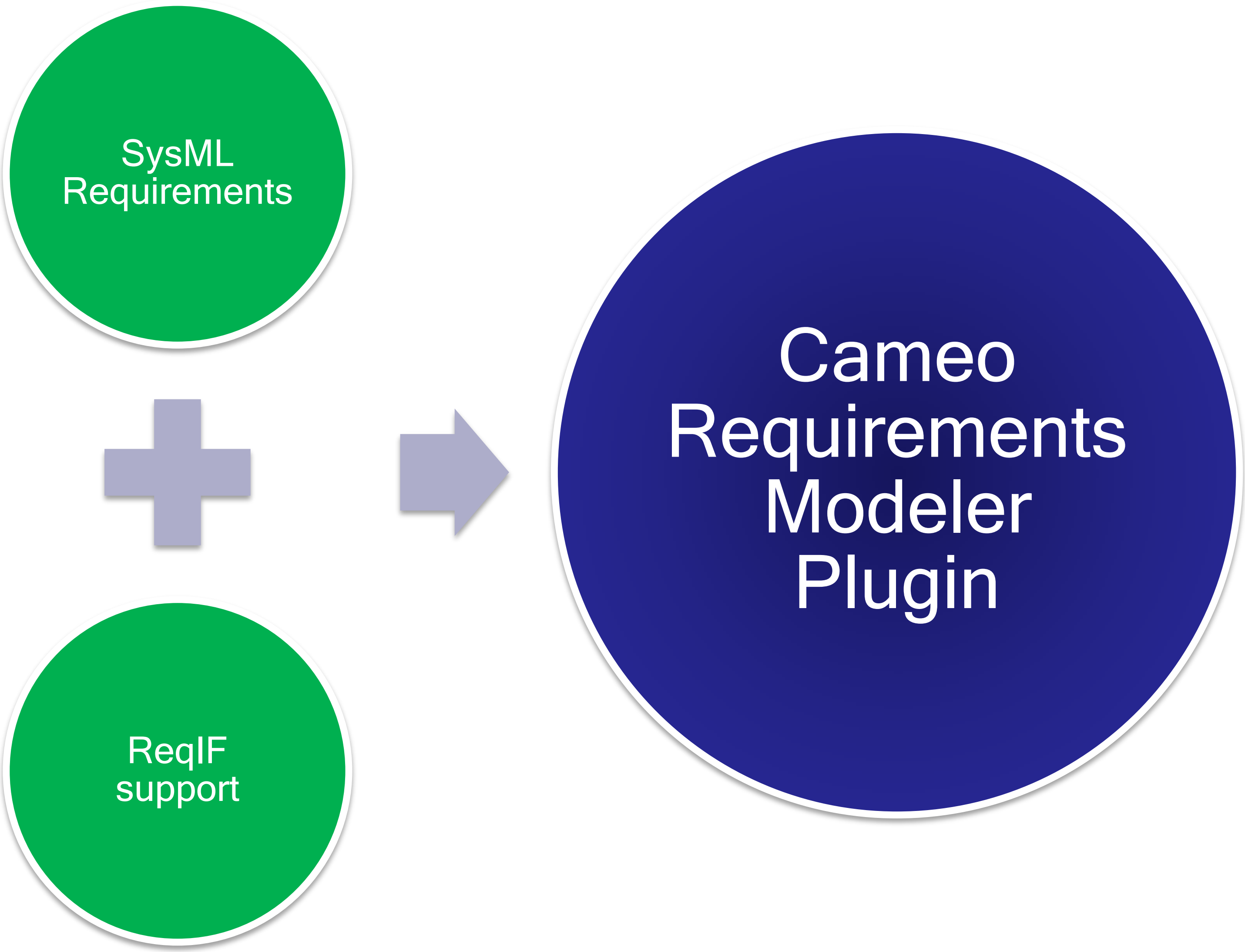
Import user needs from DOORS

Refine user needs with lower level requirements

Trace to processes, architecture, test cases

Perform impact analysis

Product concept



SysML Requirements

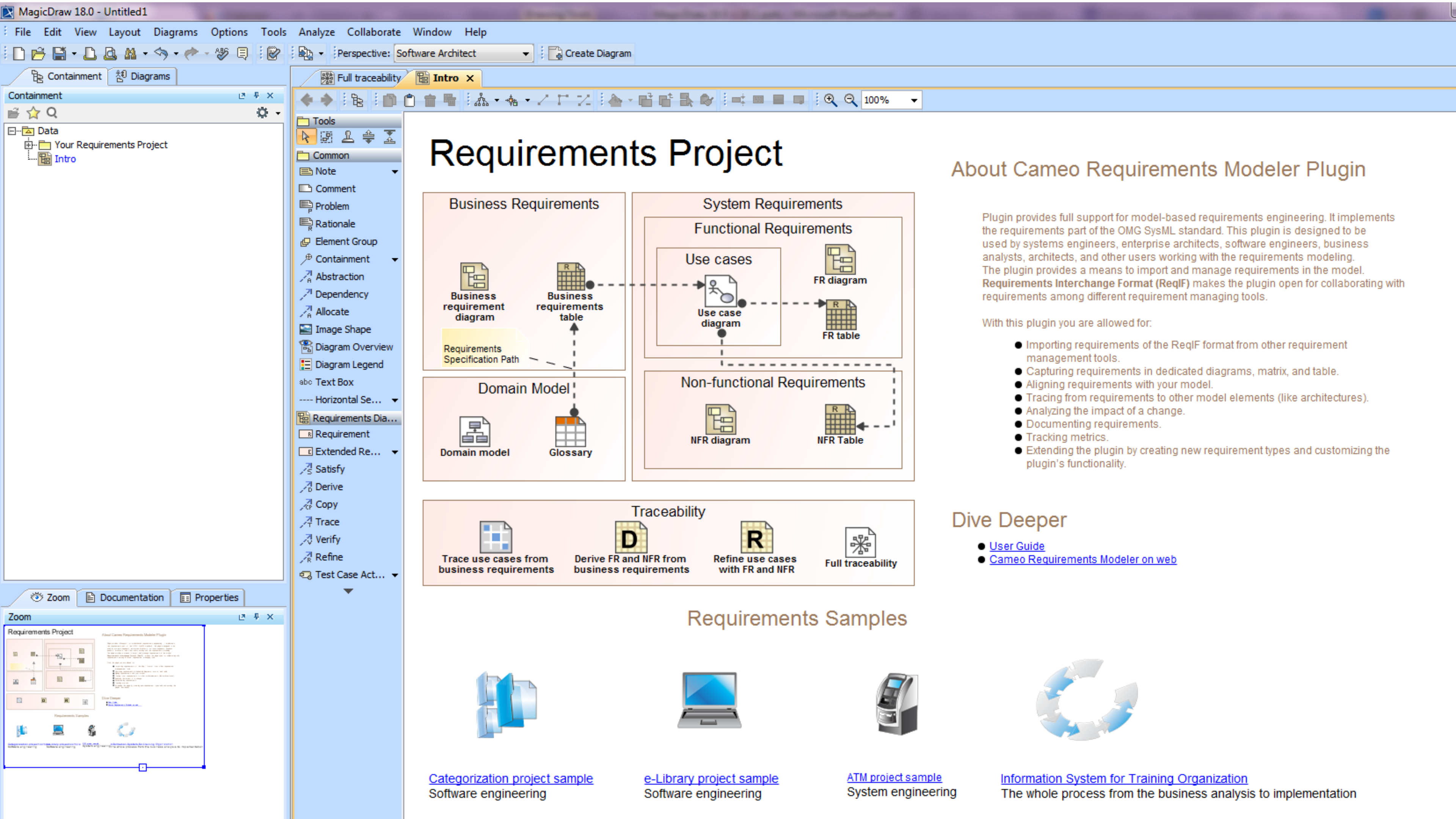
ReqIF support

Cameo Requirements Modeler Plugin

New Value Propositions

- Easy startup and development
- Easily identify the scope and impact of a change
- Requirements Integration
- Automatically identify coverage gaps
- Improved support for metrics
- A new Web Portal for non-MagicDraw users

Easy startup and development



Requirements Project

About Cameo Requirements Modeler Plugin

Plugin provides full support for model-based requirements engineering. It implements the requirements part of the OMG SysML standard. This plugin is designed to be used by systems engineers, enterprise architects, software engineers, business analysts, architects, and other users working with the requirements modeling. The plugin provides a means to import and manage requirements in the model. **Requirements Interchange Format (ReqIF)** makes the plugin open for collaborating with requirements among different requirement managing tools.

With this plugin you are allowed for:

- Importing requirements of the ReqIF format from other requirement management tools.
- Capturing requirements in dedicated diagrams, matrix, and table.
- Aligning requirements with your model.
- Tracing from requirements to other model elements (like architectures).
- Analyzing the impact of a change.
- Documenting requirements.
- Tracking metrics.
- Extending the plugin by creating new requirement types and customizing the plugin's functionality.

Dive Deeper

- User Guide
- Cameo Requirements Modeler on web

Requirements Samples

Categorization project sample
Software engineering

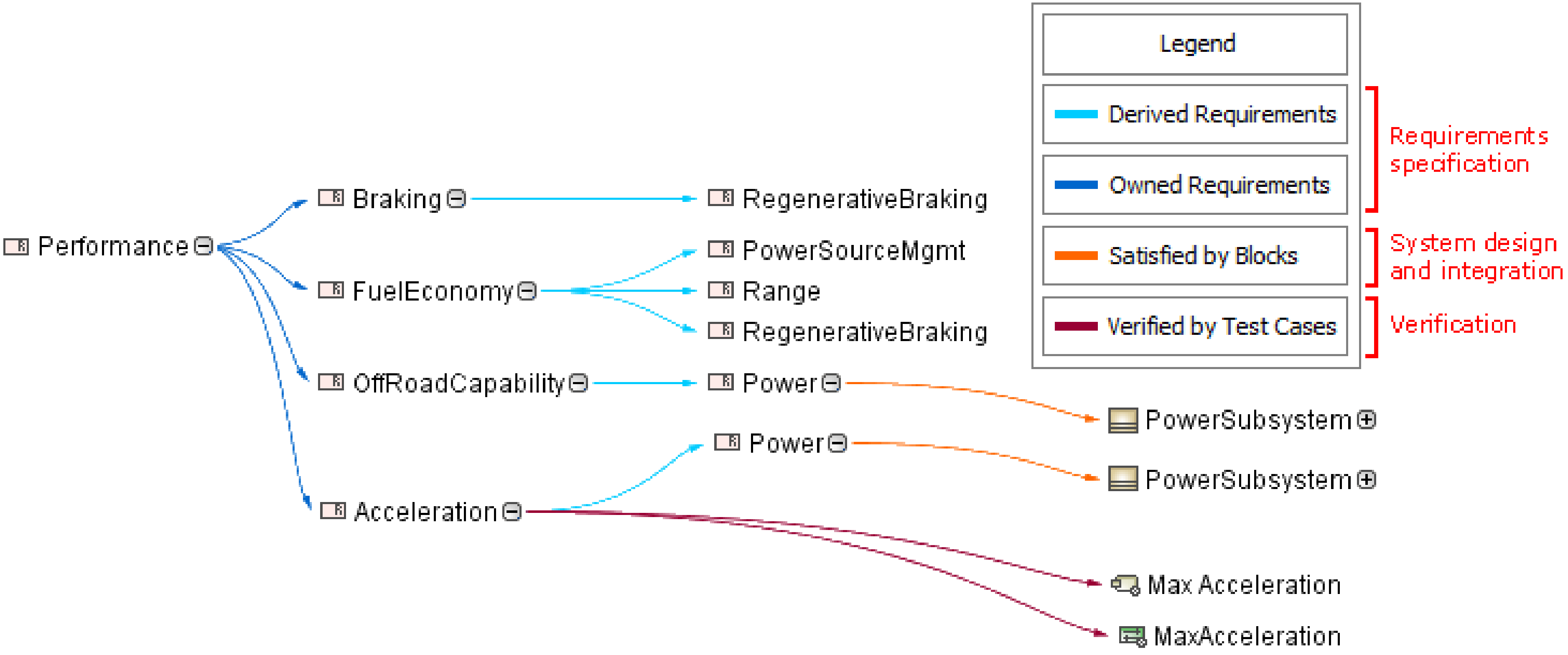
e-Library project sample
Software engineering

ATM project sample
System engineering

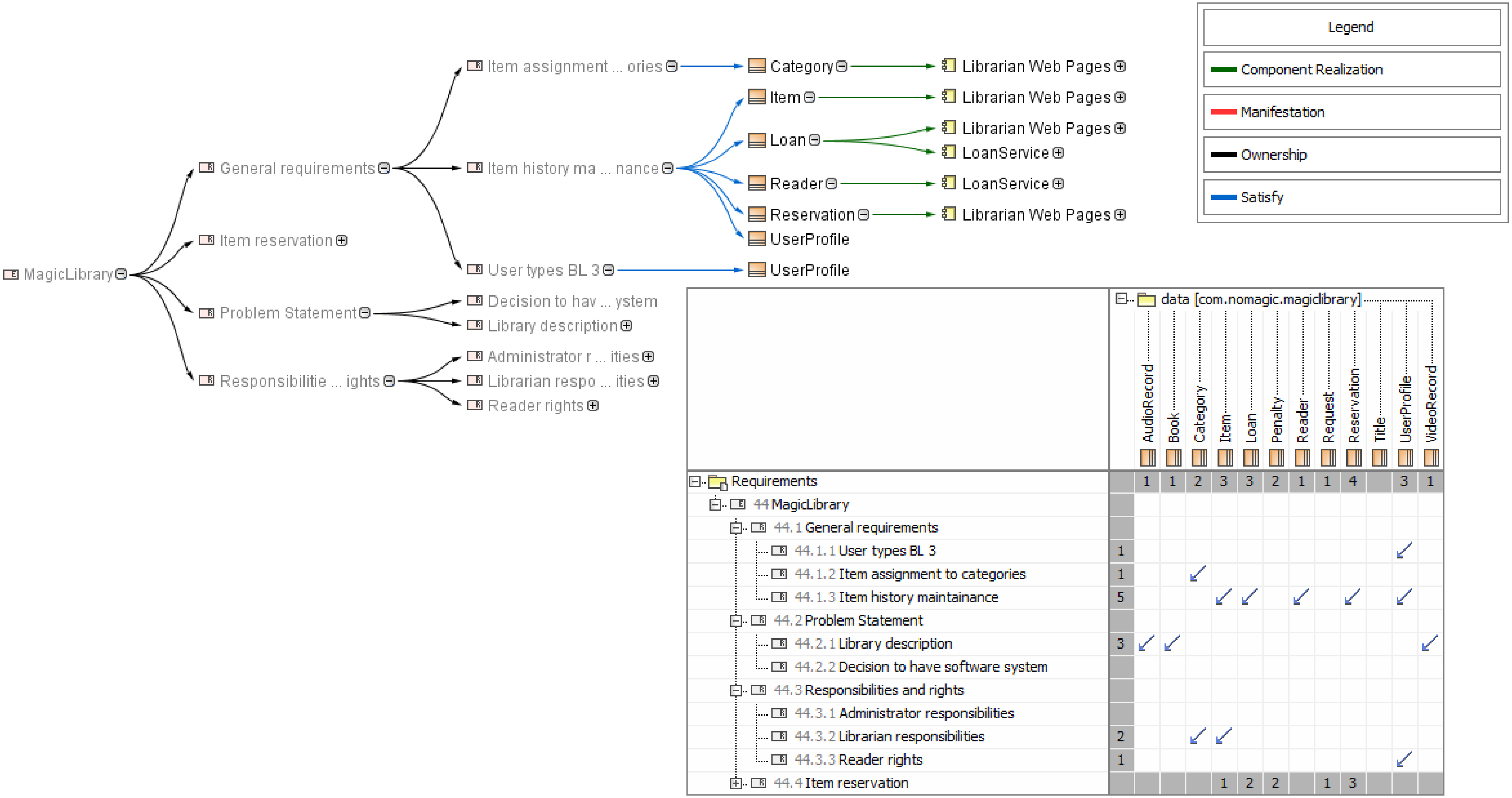
Information System for Training Organization
The whole process from the business analysis to implementation

Easily identify the affects of changes

- Trace from requirements to other model elements of business, software, or systems architectures



Easily identify the affects of changes



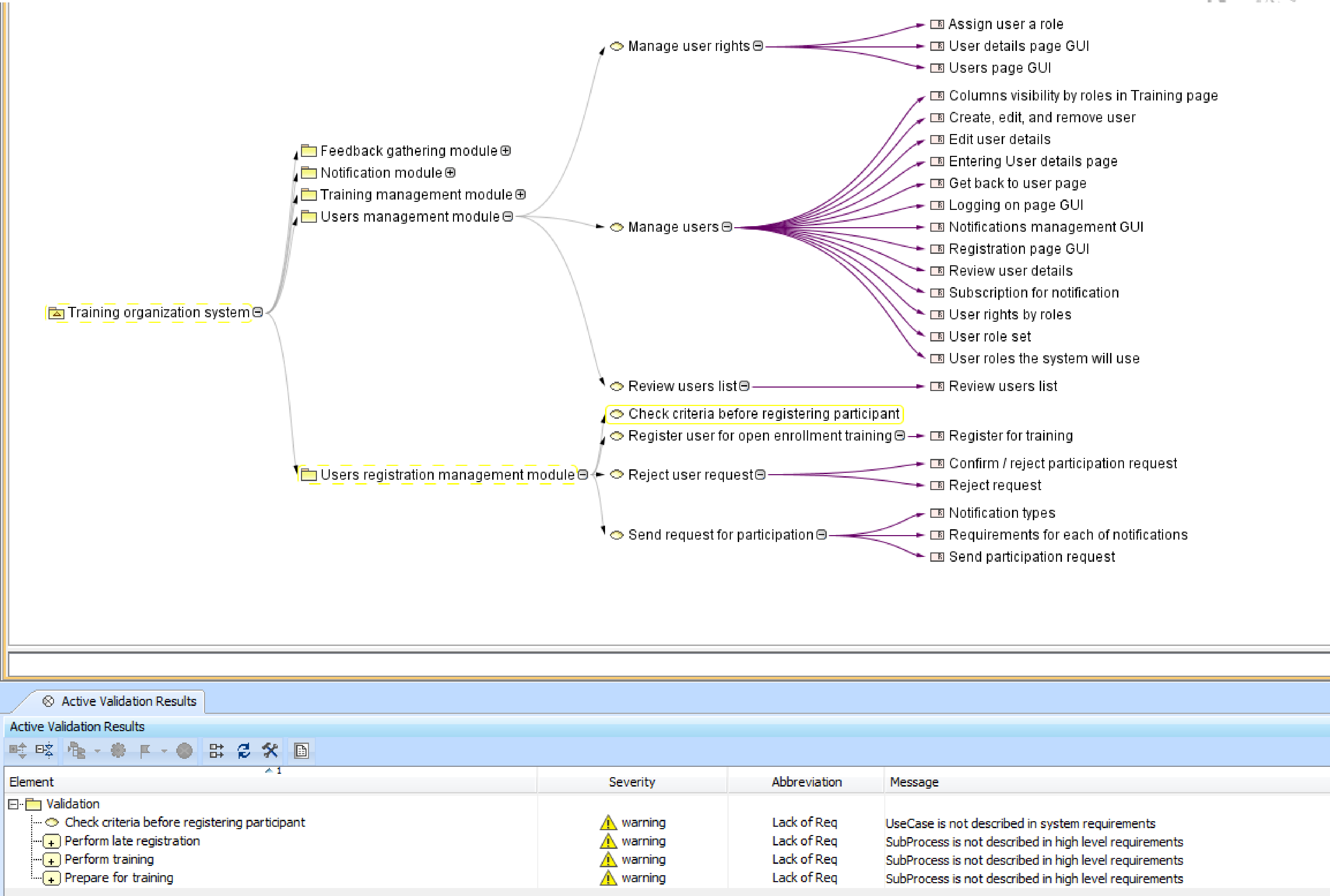
		AudioRecord	Book	Category	Item	Loan	Penalty	Reader	Request	Reservation	Title	UserProfile	VideoRecord
Requirements		1	1	2	3	3	2	1	1	4		3	1
44 MagicLibrary													
44.1 General requirements													
44.1.1 User types BL 3	1											↙	
44.1.2 Item assignment to categories	1			↙									
44.1.3 Item history maintainance	5				↙	↙		↙		↙		↙	
44.2 Problem Statement													
44.2.1 Library description	3	↙	↙										↙
44.2.2 Decision to have software system													
44.3 Responsibilities and rights													
44.3.1 Administrator responsibilities													
44.3.2 Librarian responsibilities	2			↙	↙								
44.3.3 Reader rights	1											↙	
44.4 Item reservation					1	2	2		1	3			

data [com.nomagic.magiclibrary]

Requirements Integration

- Cameo DataHub provides seamless integration with IBM DOORS and RequisitePro
- Import requirements in a standardized ReqIF file from other requirements management tools, such as IBM DOORS 9.4 and 9.5, IBM DOORS Next Generation, PTC Integrity, Polarion, and Siemens TeamCenter
- Capture requirements in dedicated diagrams, matrices, and tables
- Customize the Requirements plugin and create new requirement types

Automatically identify coverage gaps



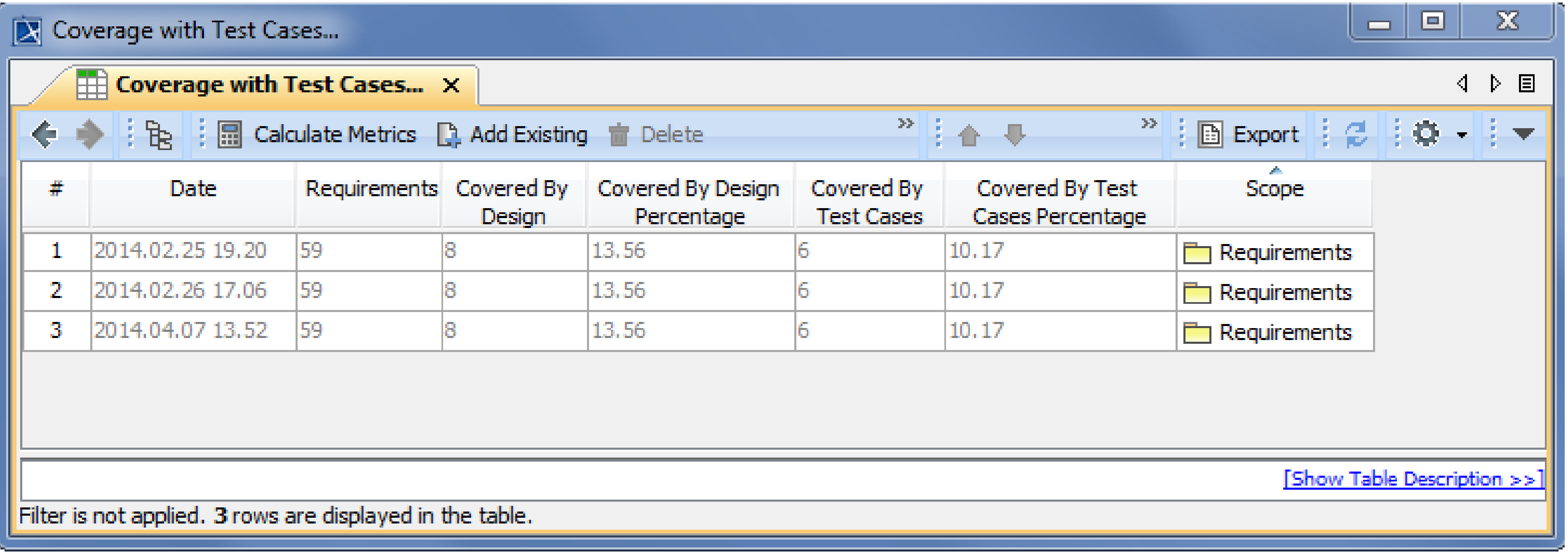
Training organization system
Feedback gathering module
Notification module
Training management module
Users management module
Users registration management module
Manage user rights
Manage users
Review users list
Check criteria before registering participant
Register user for open enrollment training
Reject user request
Send request for participation
Assign user a role
User details page GUI
Users page GUI
Columns visibility by roles in Training page
Create, edit, and remove user
Edit user details
Entering User details page
Get back to user page
Logging on page GUI
Notifications management GUI
Registration page GUI
Review user details
Subscription for notification
User rights by roles
User role set
User roles the system will use
Review users list
Register for training
Confirm / reject participation request
Reject request
Notification types
Requirements for each of notifications
Send participation request
Active Validation Results

Active Validation Results

Element	Severity	Abbreviation	Message
Validation			
Check criteria before registering participant	warning	Lack of Req	UseCase is not described in system requirements
Perform late registration	warning	Lack of Req	SubProcess is not described in high level requirements
Perform training	warning	Lack of Req	SubProcess is not described in high level requirements
Prepare for training	warning	Lack of Req	SubProcess is not described in high level requirements

Value propositions

- Improved support for metrics
  - Custom metrics
  - Coverage by design
  - Coverage by test cases

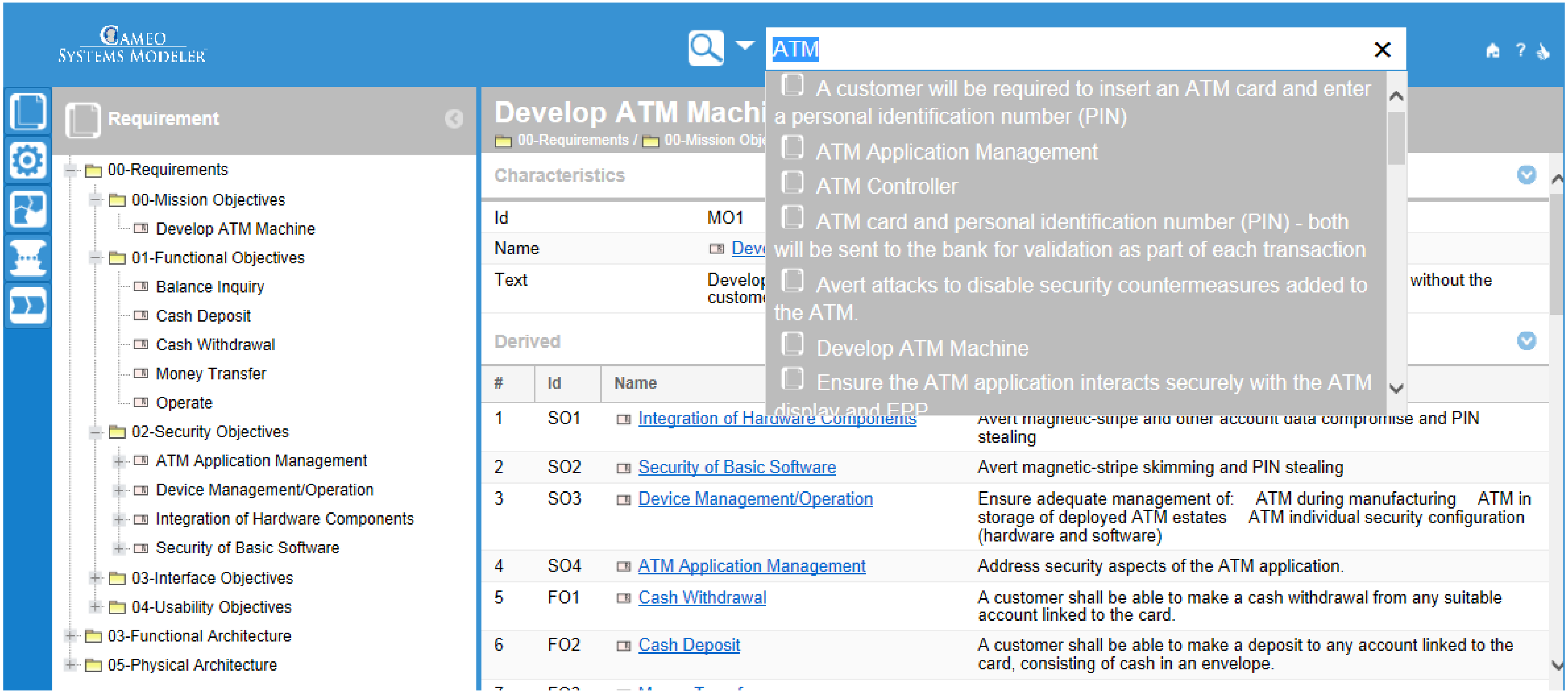

Coverage with Test Cases...
Coverage with Test Cases...
Calculate Metrics
Add Existing
Delete
Export
[Show Table Description >>]

#	Date	Requirements	Covered By Design	Covered By Design Percentage	Covered By Test Cases	Covered By Test Cases Percentage	Scope
1	2014.02.25 19.20	59	8	13.56	6	10.17	Requirements
2	2014.02.26 17.06	59	8	13.56	6	10.17	Requirements
3	2014.04.07 13.52	59	8	13.56	6	10.17	Requirements

Filter is not applied. 3 rows are displayed in the table.

Value propositions

- New Web Portal



ATM ✕

- A customer will be required to insert an ATM card and enter a personal identification number (PIN)
- ATM Application Management
- ATM Controller
- ATM card and personal identification number (PIN) - both will be sent to the bank for validation as part of each transaction
- Avert attacks to disable security countermeasures added to the ATM.
- Develop ATM Machine
- Ensure the ATM application interacts securely with the ATM display and EPP

Requirement

- 00-Requirements
  - 00-Mission Objectives
    - Develop ATM Machine
  - 01-Functional Objectives
    - Balance Inquiry
    - Cash Deposit
    - Cash Withdrawal
    - Money Transfer
    - Operate
  - 02-Security Objectives
    - ATM Application Management
    - Device Management/Operation
    - Integration of Hardware Components
    - Security of Basic Software
  - 03-Interface Objectives
  - 04-Usability Objectives
- 03-Functional Architecture
- 05-Physical Architecture

Develop ATM Machi

00-Requirements / 00-Mission Obje

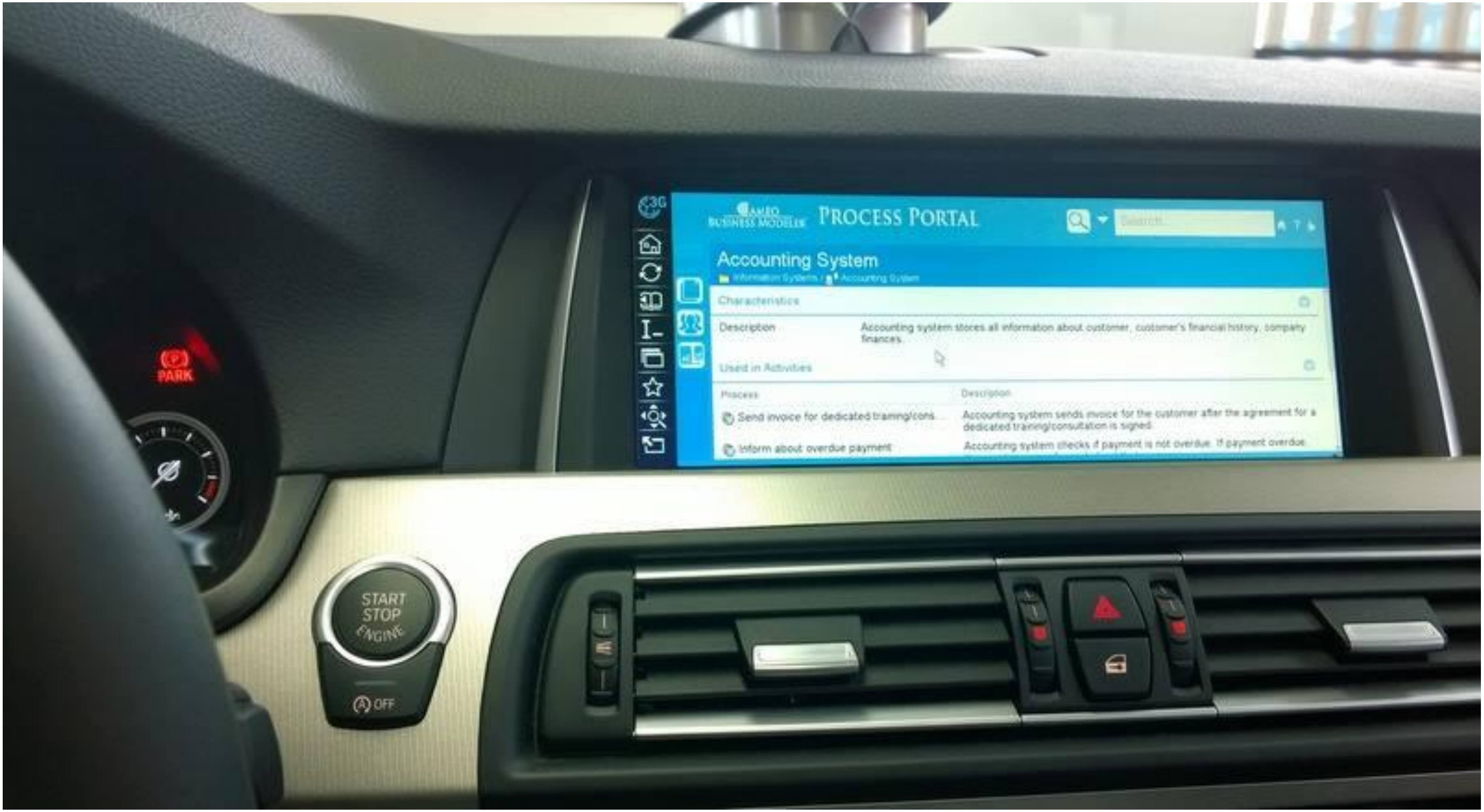
Characteristics

Id	MO1
Name	Deve
Text	Develop custom without the

Derived

#	Id	Name	
1	SO1	Integration of Hardware Components	Avert magnetic-stripe and other account data compromise and PIN stealing
2	SO2	Security of Basic Software	Avert magnetic-stripe skimming and PIN stealing
3	SO3	Device Management/Operation	Ensure adequate management of: ATM during manufacturing ATM in storage of deployed ATM estates ATM individual security configuration (hardware and software)
4	SO4	ATM Application Management	Address security aspects of the ATM application.
5	FO1	Cash Withdrawal	A customer shall be able to make a cash withdrawal from any suitable account linked to the card.
6	FO2	Cash Deposit	A customer shall be able to make a deposit to any account linked to the card, consisting of cash in an envelope.
7	FO3	Money Transf	

Process portal works in the new BMW 535 ☺



CAMEO BUSINESS MODELER PROCESS PORTAL

Search...

Accounting System

Information Systems / Accounting System

Characteristics

Description: Accounting system stores all information about customer, customer's financial history, company finances.

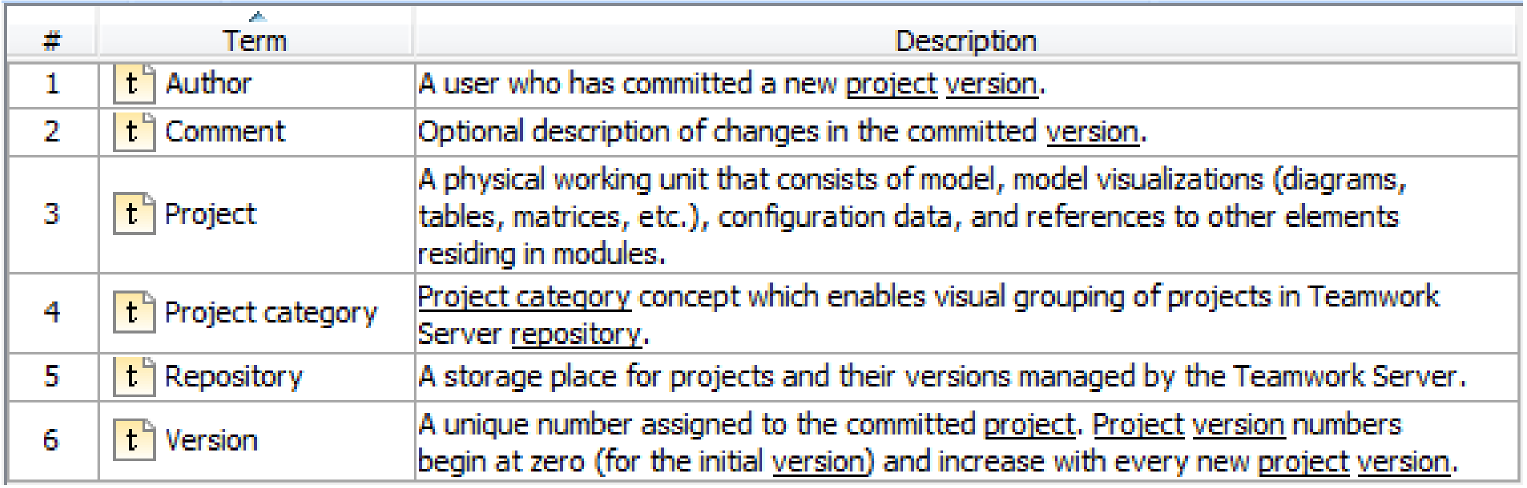
Used in Activities

Process	Description
Send invoice for dedicated training/cons...	Accounting system sends invoice for the customer after the agreement for a dedicated training/consultation is signed.
Inform about overdue payment	Accounting system checks if payment is not overdue. If payment overdue

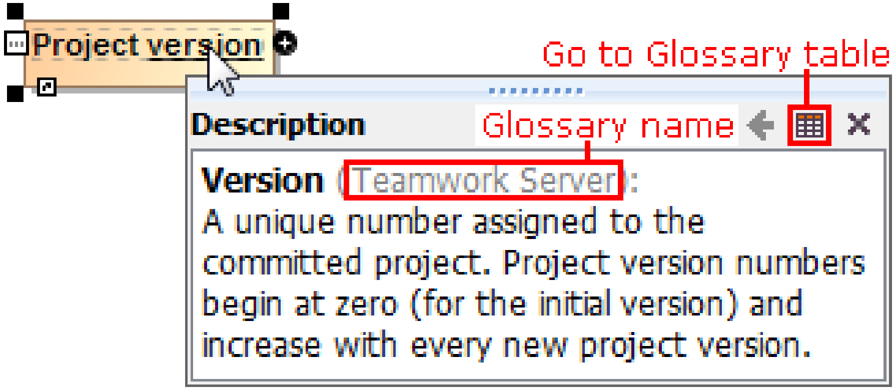
NEW GLOSSARY SUPPORT

Glossary

- Define your terms in one place and later use them consistently in your project



#	Term	Description
1	Author	A user who has committed a new project version.
2	Comment	Optional description of changes in the committed version.
3	Project	A physical working unit that consists of model, model visualizations (diagrams, tables, matrices, etc.), configuration data, and references to other elements residing in modules.
4	Project category	Project category concept which enables visual grouping of projects in Teamwork Server repository.
5	Repository	A storage place for projects and their versions managed by the Teamwork Server.
6	Version	A unique number assigned to the committed project. Project version numbers begin at zero (for the initial version) and increase with every new project version.



Go to Glossary table

Glossary name

Version (Teamwork Server):
A unique number assigned to the committed project. Project version numbers begin at zero (for the initial version) and increase with every new project version.

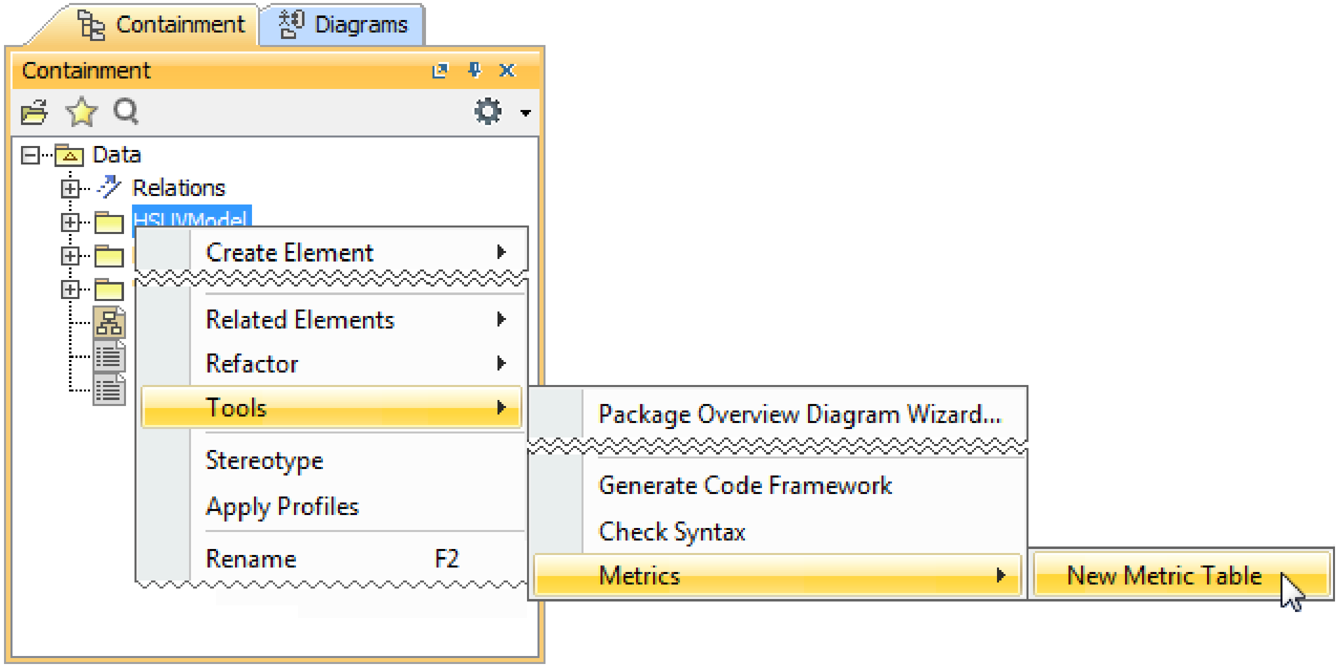
A NEW APPROACH FOR MANAGING METRICS

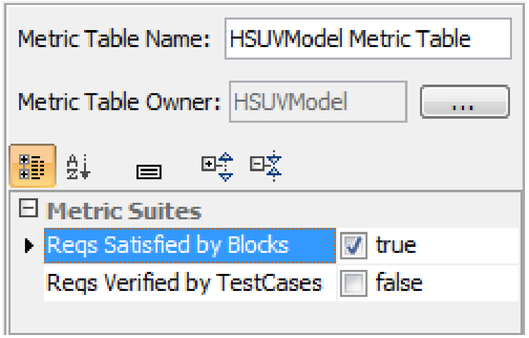
New metrics support

With this new approach you can:

- Create metric suites
- Track your metrics over time
- Use parameters to calculate metrics
- Easily customize the presentation of the metrics in the Metric Table

Create custom Metric Tables



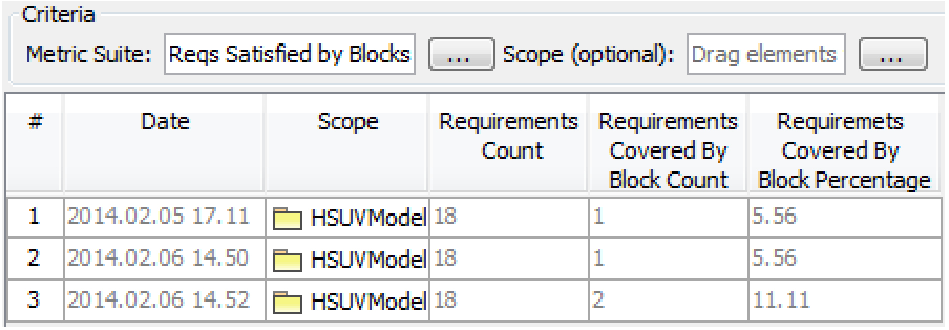


Metric Table Name: HSUVModel Metric Table

Metric Table Owner: HSUVModel ...

Metric Suites

Reqs Satisfied by Blocks	☑ true
Reqs Verified by TestCases	☐ false

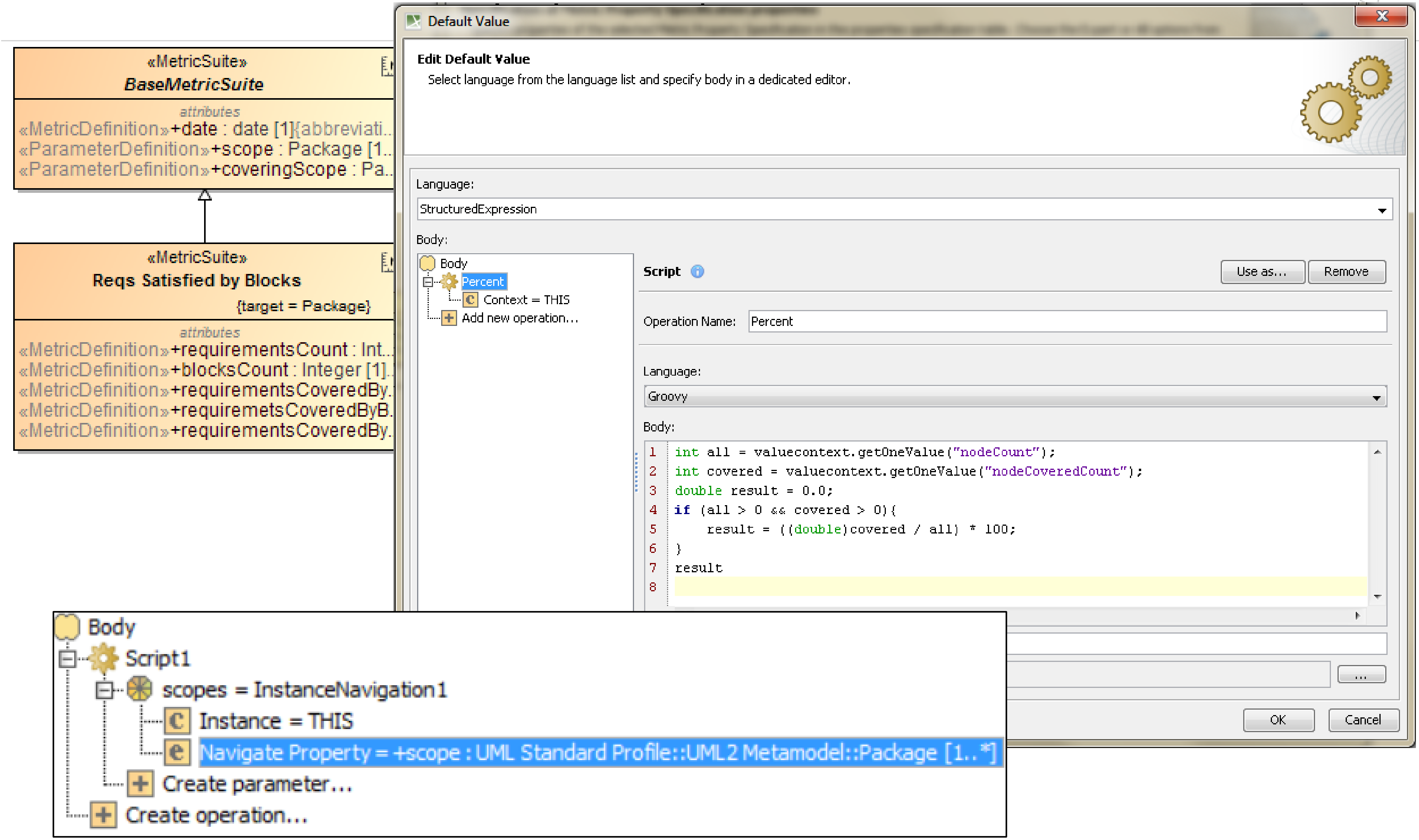


Criteria

Metric Suite: Reqs Satisfied by Blocks ... Scope (optional): Drag elements ...

#	Date	Scope	Requirements Count	Requirements Covered By Block Count	Requiremets Covered By Block Percentage
1	2014.02.05 17.11	HSUVModel	18	1	5.56
2	2014.02.06 14.50	HSUVModel	18	1	5.56
3	2014.02.06 14.52	HSUVModel	18	2	11.11

Easy metrics definition



«MetricSuite»
BaseMetricSuite

attributes
«MetricDefinition»+date : date [1]{abbreviati...
«ParameterDefinition»+scope : Package [1...
«ParameterDefinition»+coveringScope : Pa...

«MetricSuite»
Reqs Satisfied by Blocks
{target = Package}

attributes
«MetricDefinition»+requirementsCount : Int...
«MetricDefinition»+blocksCount : Integer [1]...
«MetricDefinition»+requirementsCoveredBy...
«MetricDefinition»+requiremetsCoveredByB...
«MetricDefinition»+requirementsCoveredBy...

Default Value

Edit Default Value
Select language from the language list and specify body in a dedicated editor.

Language: StructuredExpression

Body:

- Body
  - Percent
    - Context = THIS
  - Add new operation...

Script

Operation Name: Percent

Language: Groovy

Body:

```
int all = valuecontext.getOneValue("nodeCount");
int covered = valuecontext.getOneValue("nodeCoveredCount");
double result = 0.0;
if (all > 0 && covered > 0){
    result = ((double)covered / all) * 100;
}
result
```

- Body
  - Script1
    - scopes = InstanceNavigation1
      - Instance = THIS
      - Navigate Property = +scope : UML Standard Profile::UML2 Metamodel::Package [1..*]
    - Create parameter...
  - Create operation...

INTERFACE ENHANCEMENTS

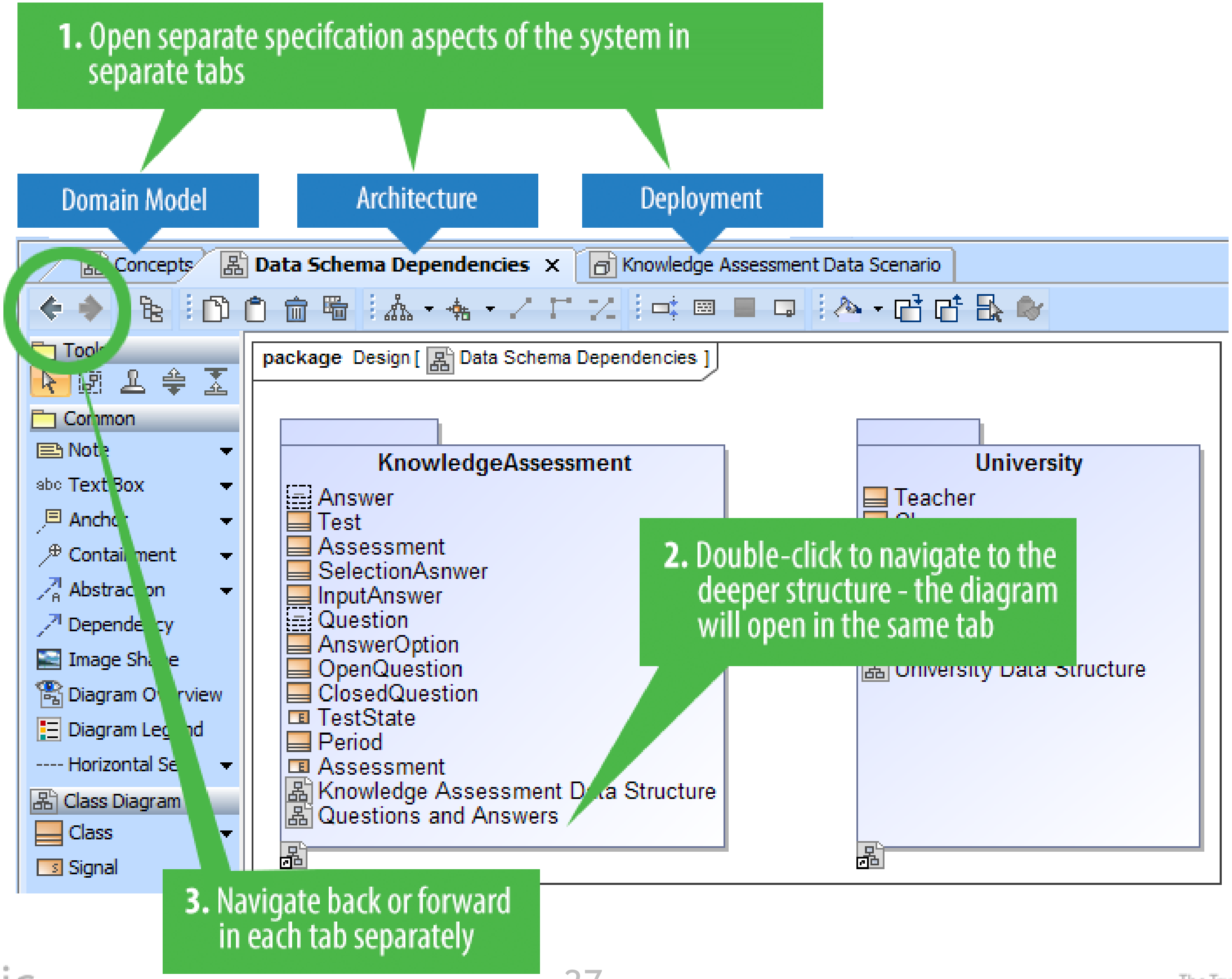
Interface Enhancements

- Path layout
- Tab Browsing
- Creating diagrams
- Using shape compartments
- Shortcut menus
- Managing symbol properties
- Displaying inherited properties
- New Instance tables
- Improved support for scripting languages
- Document Modeling plugin

Path layout improvements

- Paths now avoid overlapping other symbols, substantially reducing the diagram editing to clean up the paths.
- Future enhancement to redraw paths when changing the size one of the connected shapes.

Tabbed browsing: analyze different aspects of the system in separate tabs



1. Open separate specifcation aspects of the system in separate tabs

2. Double-click to navigate to the deeper structure - the diagram will open in the same tab

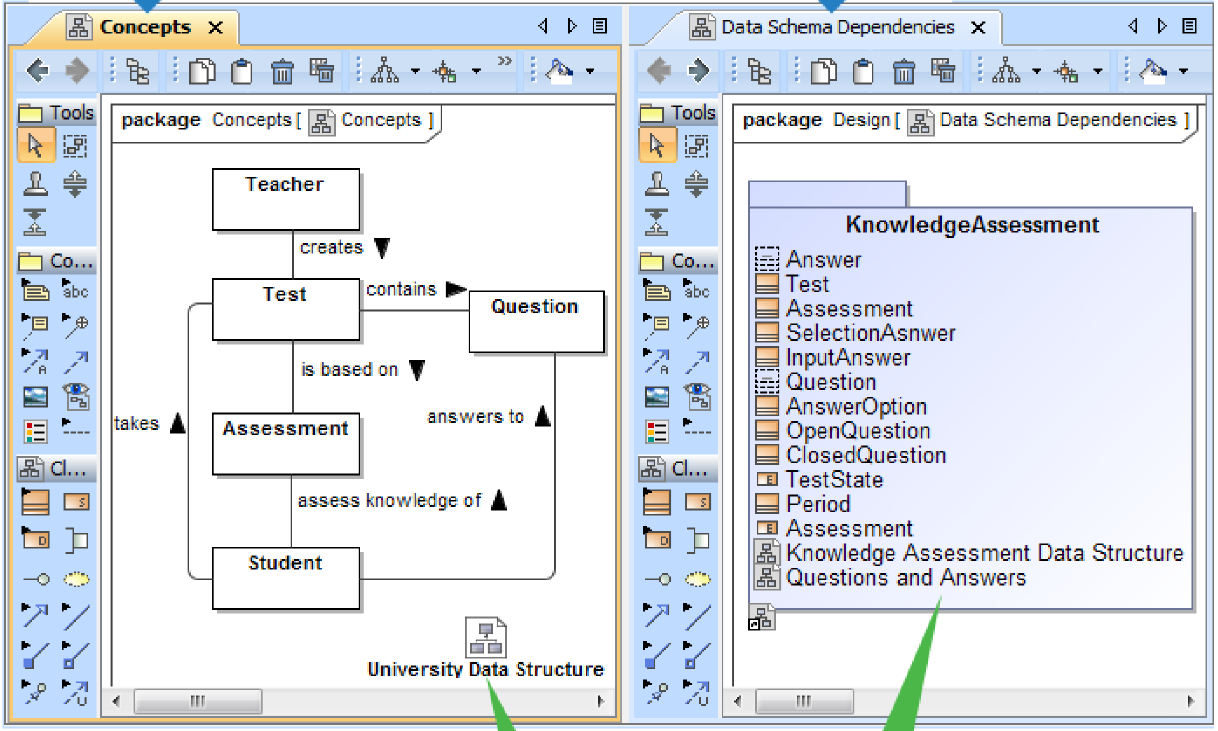
3. Navigate back or forward in each tab separately

Tabbed browsing: compare separate views of the system side-by-side

1. Compare separate views of the system side by side

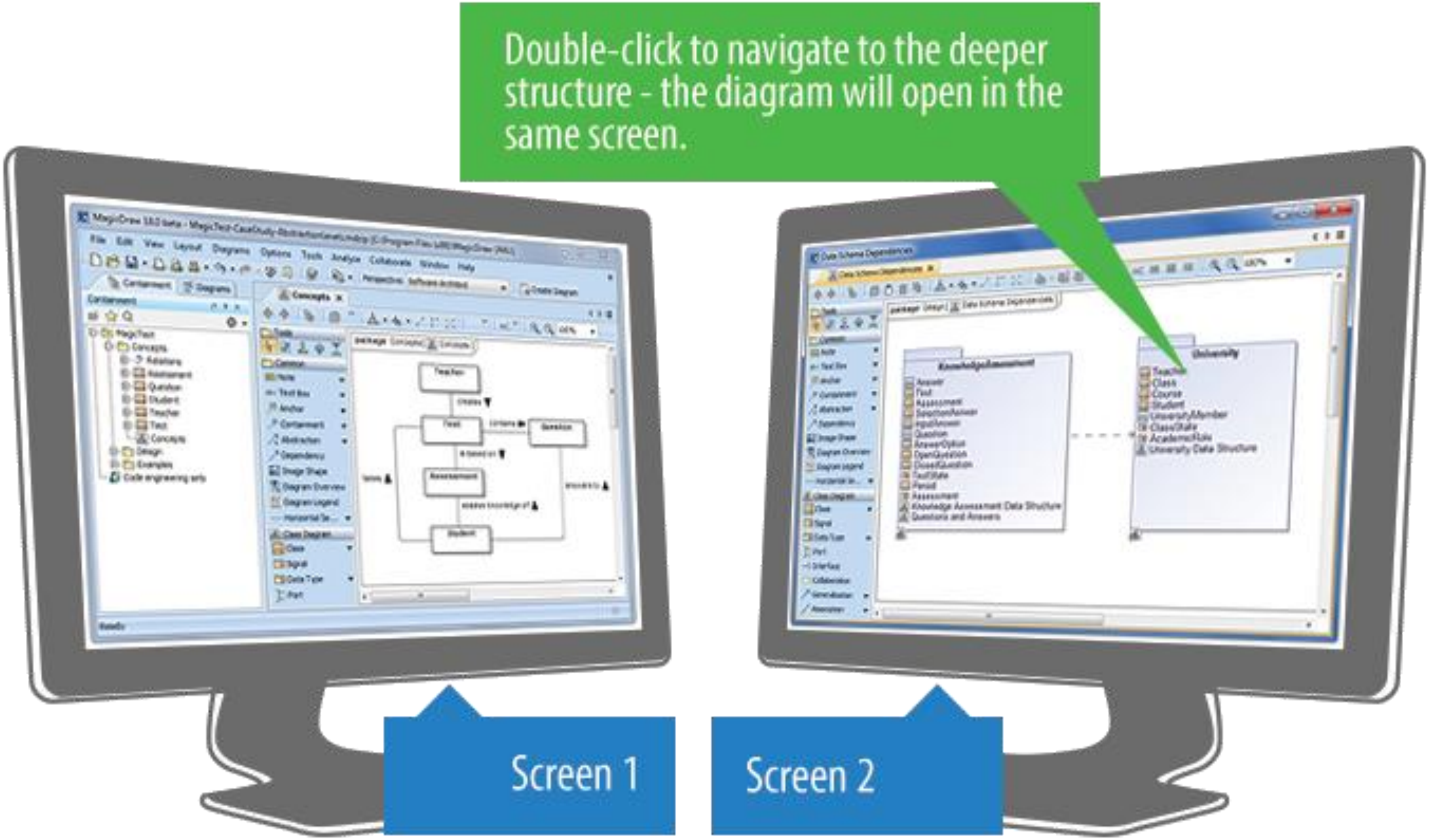
Domain Model

Architecture



2. Double-click to navigate to the deeper structure - the diagram will open in the same tab

Tabbed browsing: smooth work with multiple screens

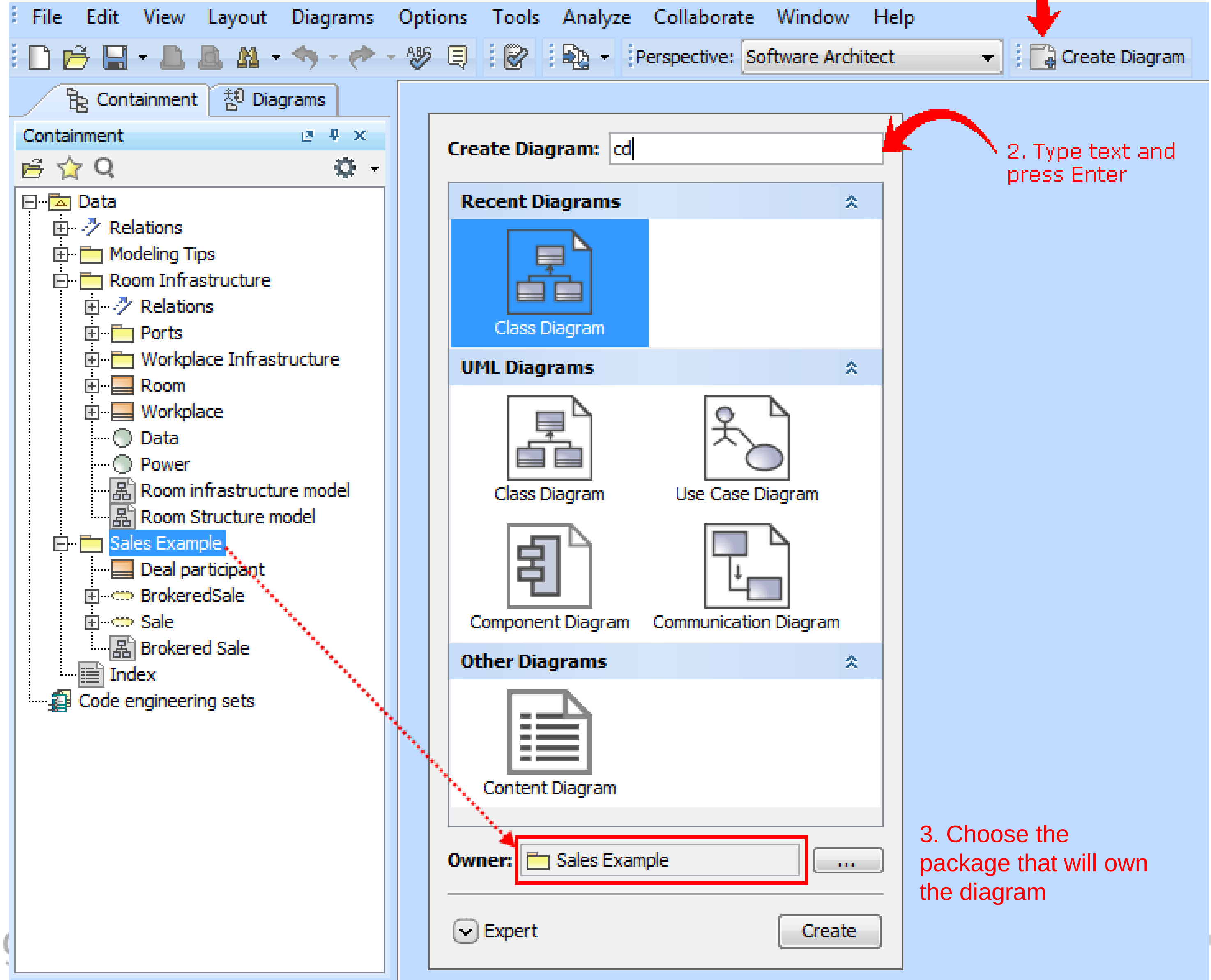


Double-click to navigate to the deeper structure - the diagram will open in the same screen.

Screen 1

Screen 2

Quick diagram creation



Create Diagram: cd

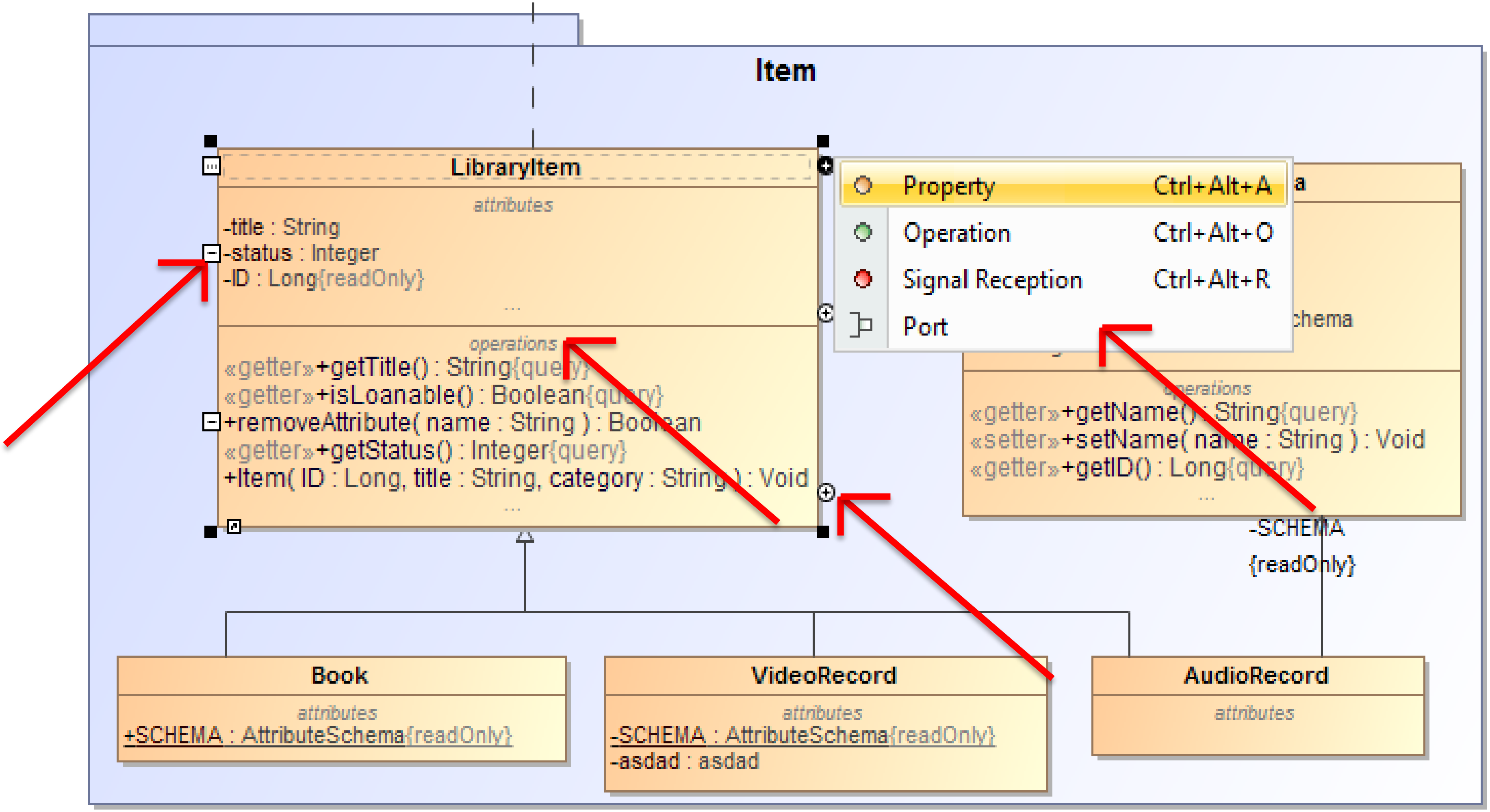
Owner: Sales Example

1. Click Create Diagram

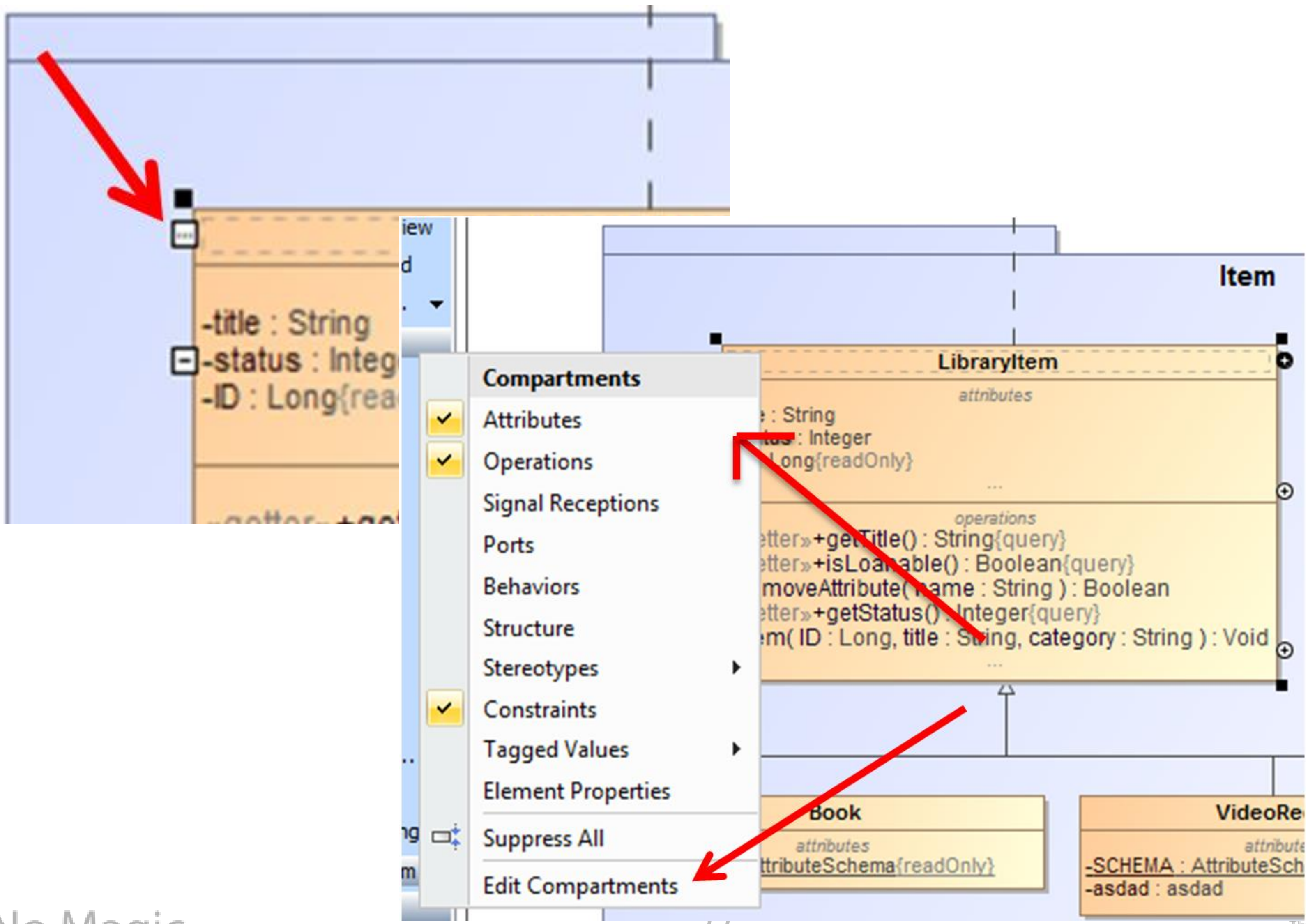
2. Type text and press Enter

3. Choose the package that will own the diagram

Redesigned shape compartment management (1)

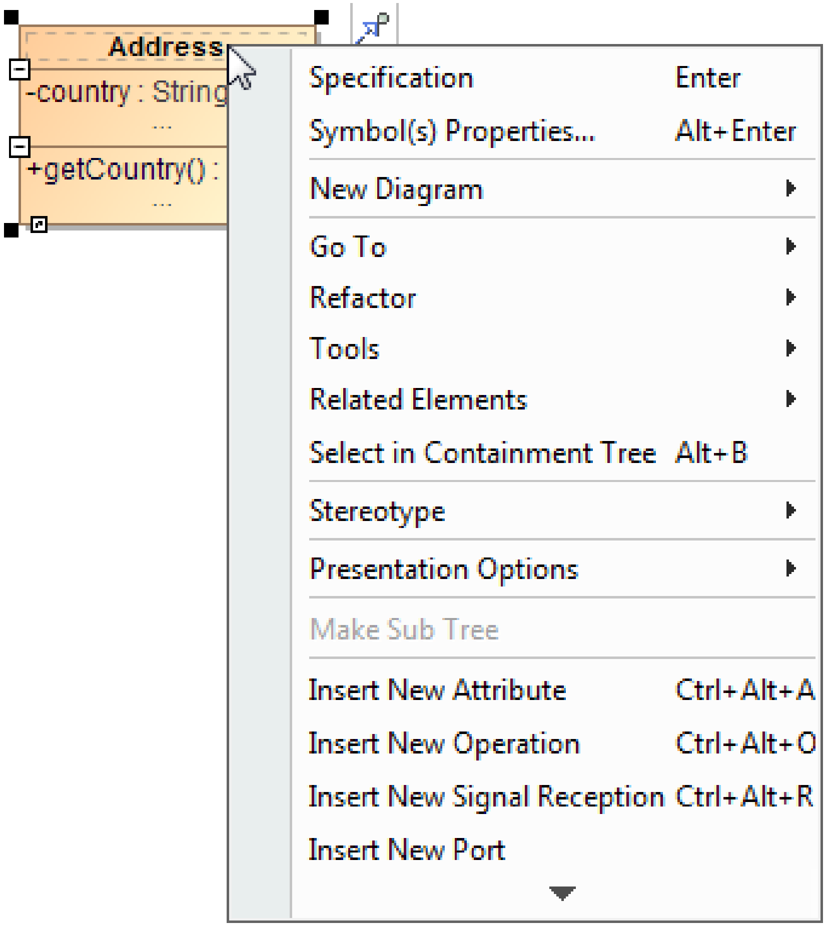

Item
LibraryItem
attributes
-title : String
-status : Integer
-ID : Long{readOnly}
...
operations
«getter»+getTitle() : String{query}
«getter»+isLoanable() : Boolean{query}
+removeAttribute(name : String) : Boolean
«getter»+getStatus() : Integer{query}
+Item(ID : Long, title : String, category : String) : Void
...
Property Ctrl+Alt+A
Operation Ctrl+Alt+O
Signal Reception Ctrl+Alt+R
Port
operations
«getter»+getName() : String{query}
«setter»+setName(name : String) : Void
«getter»+getID() : Long{query}
...
-SCHEMA
{readOnly}
Book
attributes
+SCHEMA : AttributeSchema{readOnly}
VideoRecord
attributes
-SCHEMA : AttributeSchema{readOnly}
-asdad : asdad
AudioRecord
attributes

Redesigned shape compartment management (2)

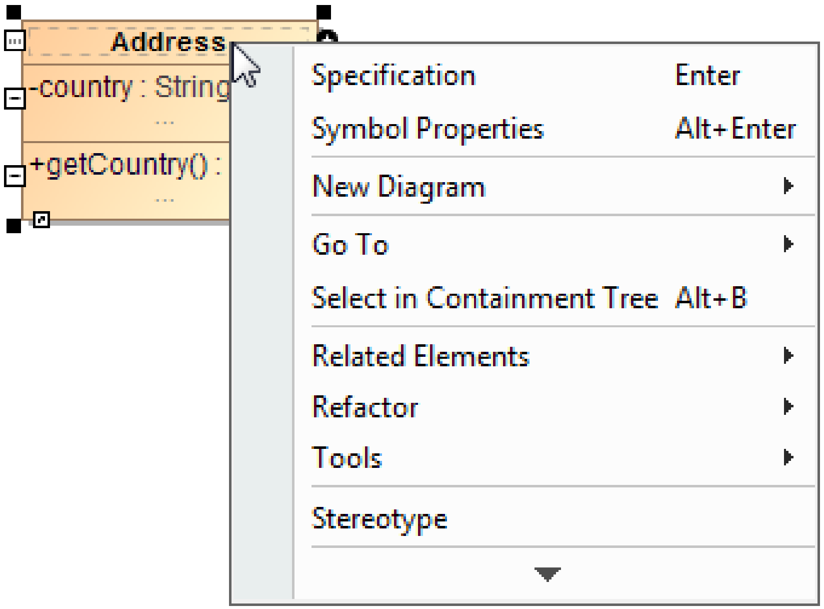


Simplified shortcut menus

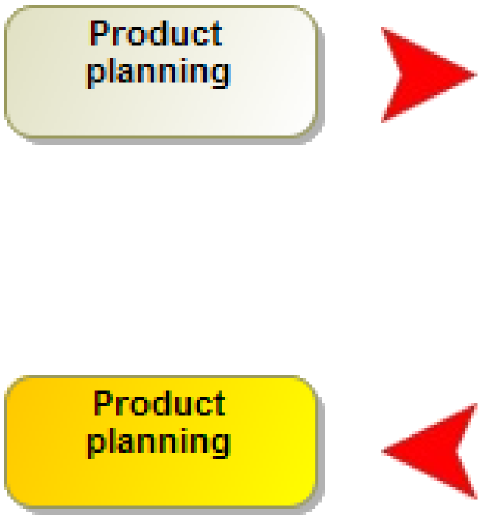
In earlier versions

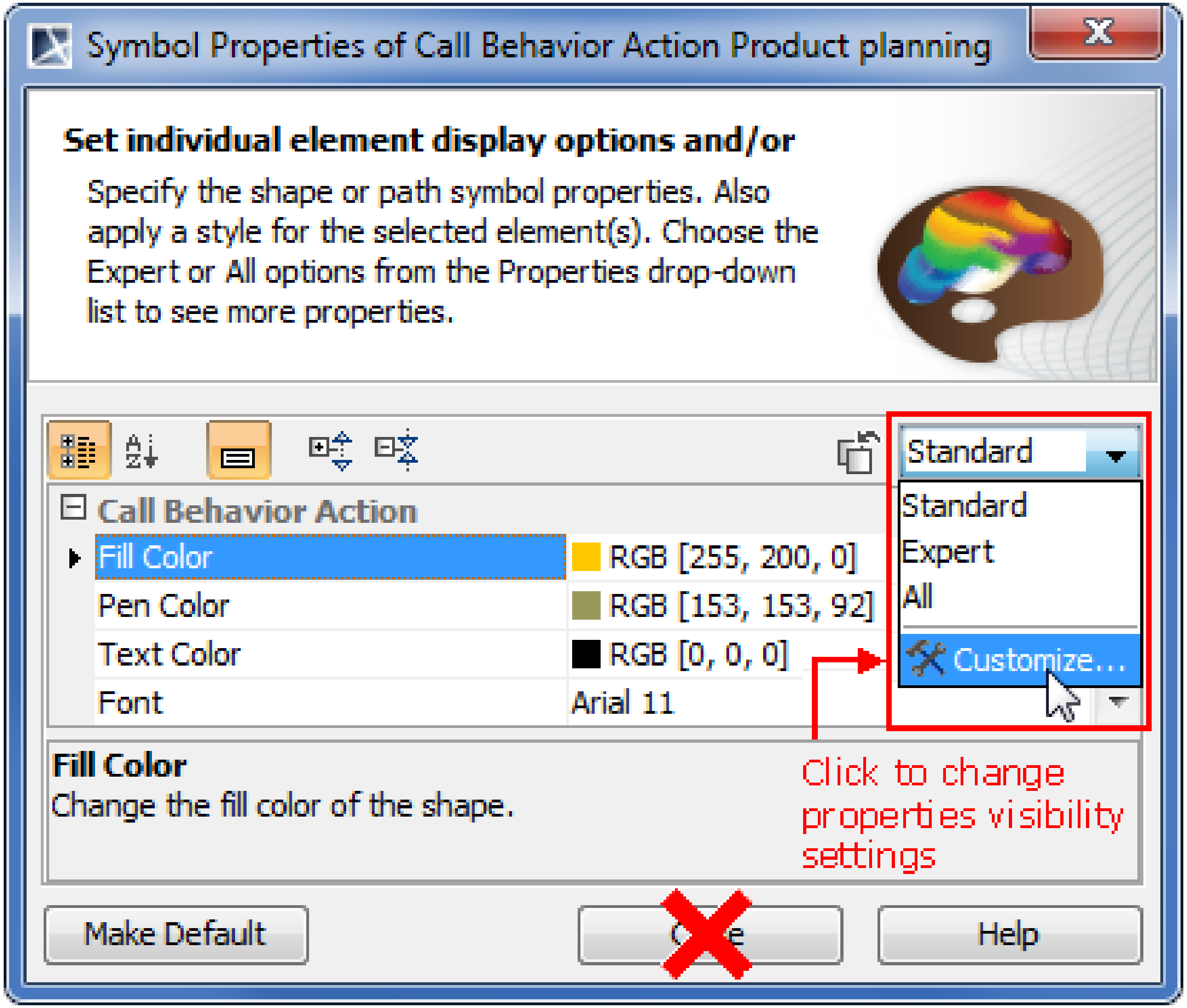

Address
-country : String
+getCountry() :
Specification Enter
Symbol(s) Properties... Alt+Enter
New Diagram
Go To
Refactor
Tools
Related Elements
Select in Containment Tree Alt+B
Stereotype
Presentation Options
Make Sub Tree
Insert New Attribute Ctrl+Alt+A
Insert New Operation Ctrl+Alt+O
Insert New Signal Reception Ctrl+Alt+R
Insert New Port

In 18.0



Redesigned Symbol Properties (1)





Set individual element display options and/or

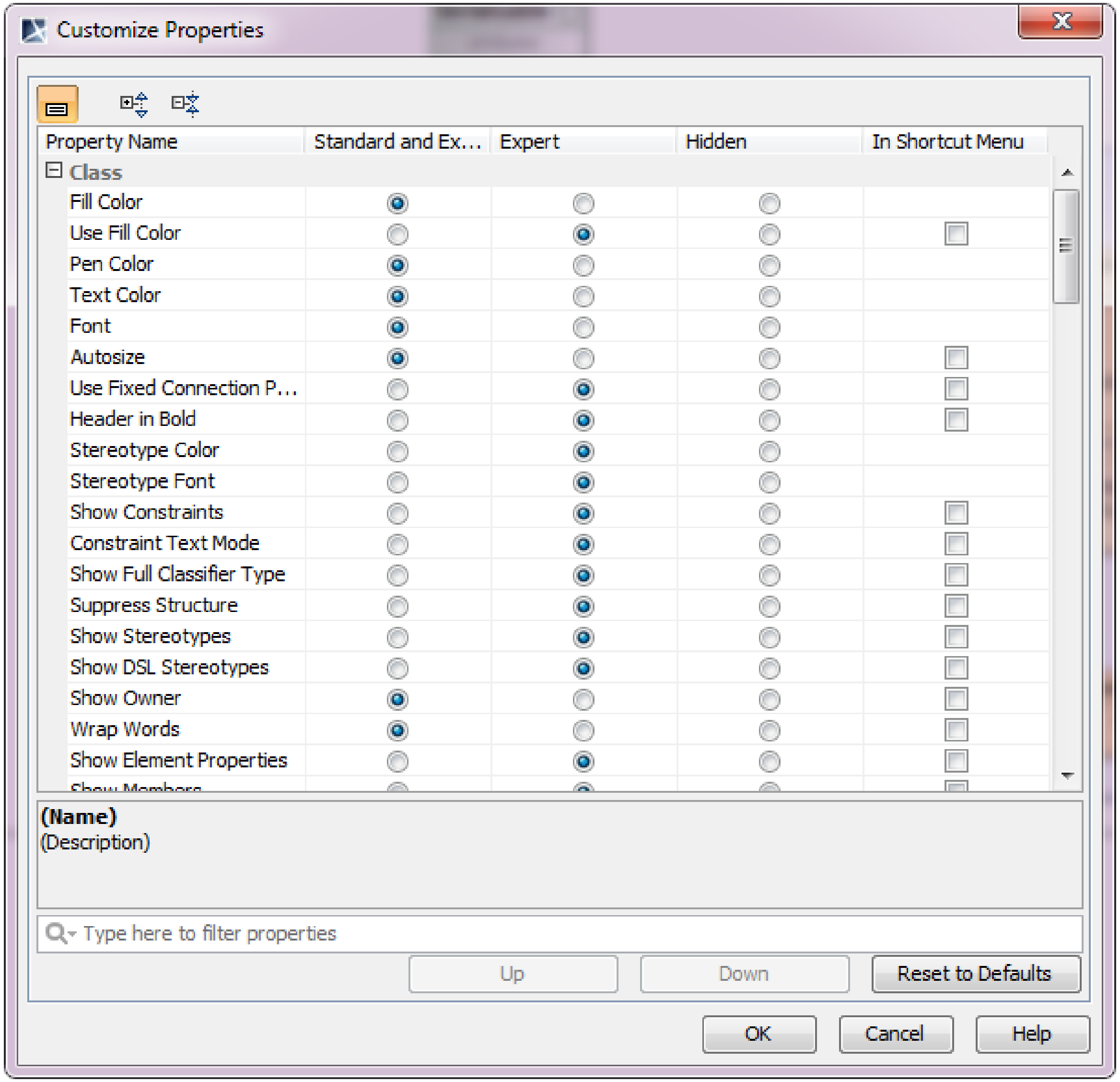
Specify the shape or path symbol properties. Also apply a style for the selected element(s). Choose the Expert or All options from the Properties drop-down list to see more properties.

Call Behavior Action	
Fill Color	🟨 RGB [255, 200, 0]
Pen Color	■ RGB [153, 153, 92]
Text Color	■ RGB [0, 0, 0]
Font	Arial 11

Fill Color
Change the fill color of the shape.

Click to change properties visibility settings

Redesigned Symbol Properties (2)



Customize Properties

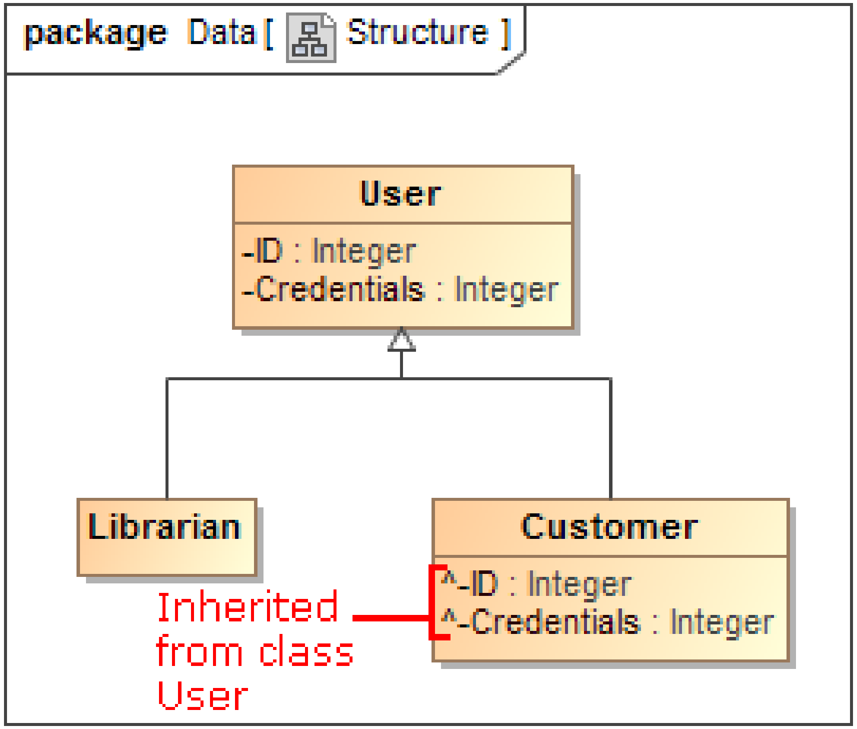
Property Name	Standard and Ex...	Expert	Hidden	In Shortcut Menu
⊟ **Class**				
Fill Color	●	○	○	
Use Fill Color	○	●	○	☐
Pen Color	●	○	○	
Text Color	●	○	○	
Font	●	○	○	
Autosize	●	○	○	☐
Use Fixed Connection P...	○	●	○	☐
Header in Bold	○	●	○	☐
Stereotype Color	○	●	○	
Stereotype Font	○	●	○	
Show Constraints	○	●	○	☐
Constraint Text Mode	○	●	○	☐
Show Full Classifier Type	○	●	○	☐
Suppress Structure	○	●	○	☐
Show Stereotypes	○	●	○	☐
Show DSL Stereotypes	○	●	○	☐
Show Owner	●	○	○	☐
Wrap Words	●	○	○	☐
Show Element Properties	○	●	○	☐
Show Members	○	●	○	☐

(Name)
(Description)

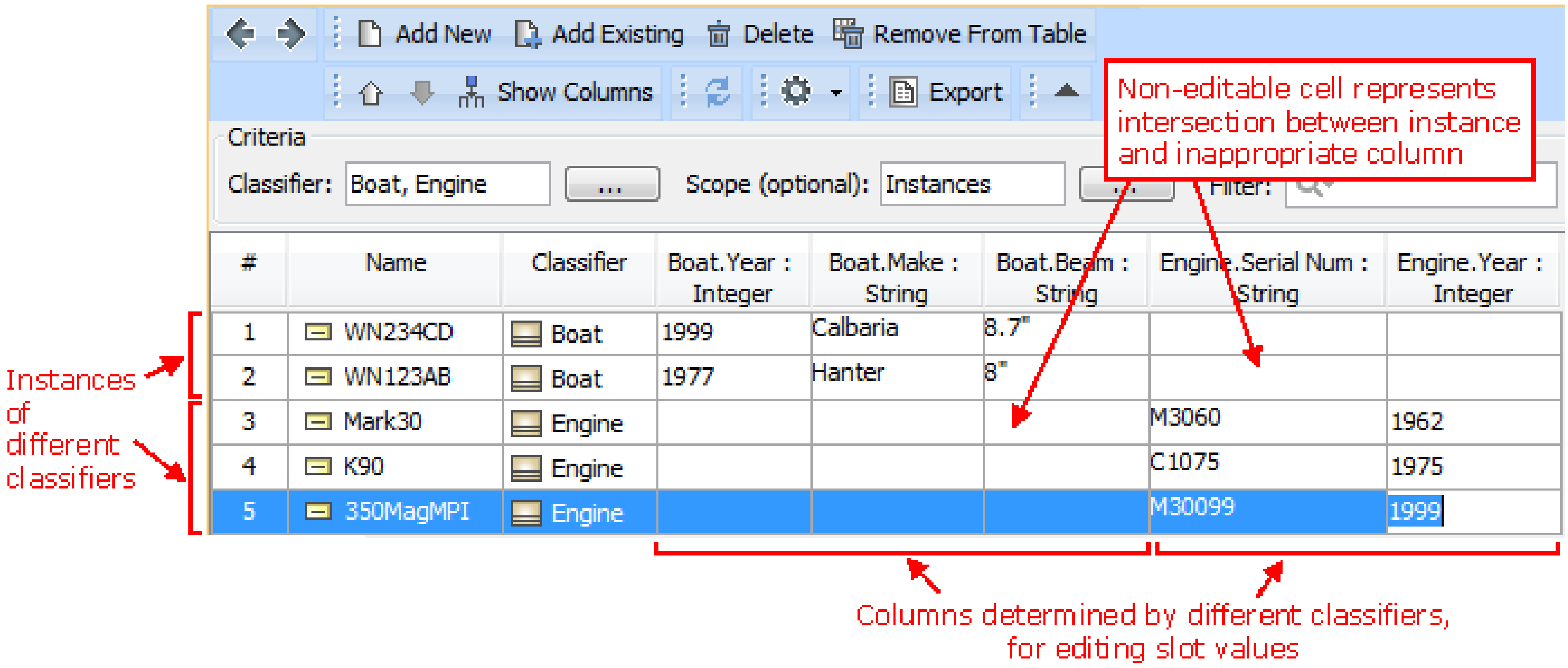
Type here to filter properties

Display of inherited members

- All inherited members, such as attributes and operations can be easily identified on an element's shape using the caret "^" notation.



Instance tables



Classifier: Boat, Engine

Scope (optional): Instances

#	Name	Classifier	Boat.Year : Integer	Boat.Make : String	Boat.Beam : String	Engine.Serial Num : String	Engine.Year : Integer
1	WN234CD	Boat	1999	Calbaria	8.7"		
2	WN123AB	Boat	1977	Hanter	8"		
3	Mark30	Engine				M3060	1962
4	K90	Engine				C1075	1975
5	350MagMPI	Engine				M30099	1999

Non-editable cell represents intersection between instance and inappropriate column

Instances of different classifiers

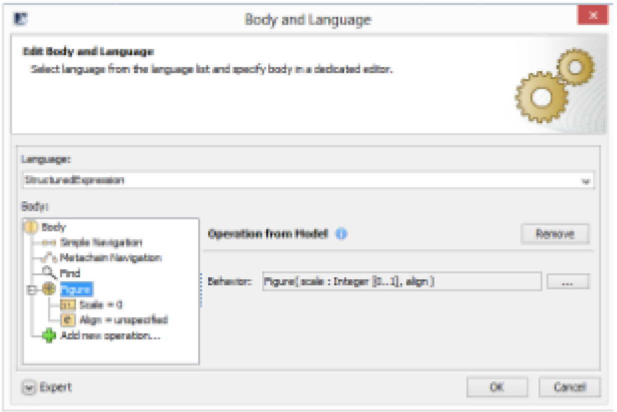
Columns determined by different classifiers, for editing slot values

Improved support for scripting languages

- Customizations can be defined in any of these scripting languages
  - JavaScript
  - Jython
  - JRuby
  - Groovy
  - BeanShell
- Use the languages for validation rules, derived properties, queries for smart packages, metric definitions, criteria for dependency matrices, and more.

Document Modeling plugin

- The Document Modeling plugin is a technology preview.
- We are soliciting feedback on the plugin.
- Please contact us to share your insights.



Body and Language

Edit Body and Language

Select language from the language list and specify body in a dedicated editor.

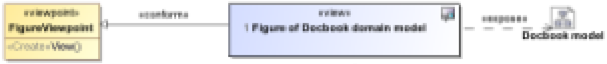
Language: StructuredExpression

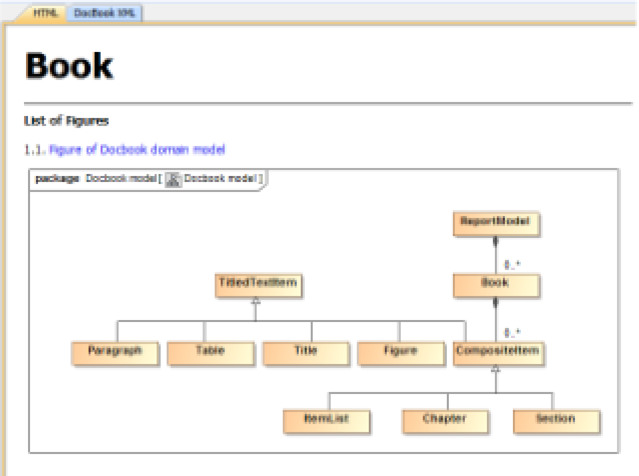
Body:

- Body
  - Simple Navigation
  - Metachain Navigation
  - Find
  - Figure
    - Scale = 0
    - Align = unspecified
  - Add new operation...

Operation from Model

Behavior: Figure(scale : Integer [0..1], align)





Book

List of Figures

1.1. Figure of Docbook domain model

Figure 1.1. Figure of Docbook domain model

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The Truth is In The Models!