Requirements Interchange Format (ReqIF) Importer

Make requirements first class citizens in the modeling world

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Requirements are gathered and managed in dedicated requirements tools. When it comes to requirements refinement and integration with business, software, and system architecture, different requirements interchange formats are used. It can be comma separated value, MS Excel, Word, or XML. These are nonstandard ways, which bring drawbacks. It is clear that need for dedicated common format exists. This is why the German automotive industry started the open, non-proprietary format for requirements exchange development.

Starting with the upcoming v18.0, all MagicDraw-based Cameo Suite products will support ReqIF import as part of the new Cameo Requirements Modeler plugin.

What is ReqIF?

ReqIF is the XML based international standard for requirement data exchange, standardized by the Object Management Group (OMG). It has solid recognition in the industry and adoption by many requirements management tool vendors. It is used to exchange requirement information between different tools and tool chains.

"For requirement analysis, ReqIF is the same as Unified Modeling Language (UML) for modeling – it is the most popular and dedicated requirements interchange format."

ReqIF Support in MagicDraw

ReqIF Importer imports and updates (previously imported) requirements in models with the following capabilities:

- **Import process** includes the ability for custom mapping with the option to import all data and dynamically create properties.
- **Update process** includes change management support with requirements status identification. After import, new, changed, updated or obsolete requirements are identified with the ability to check the impact of changes.
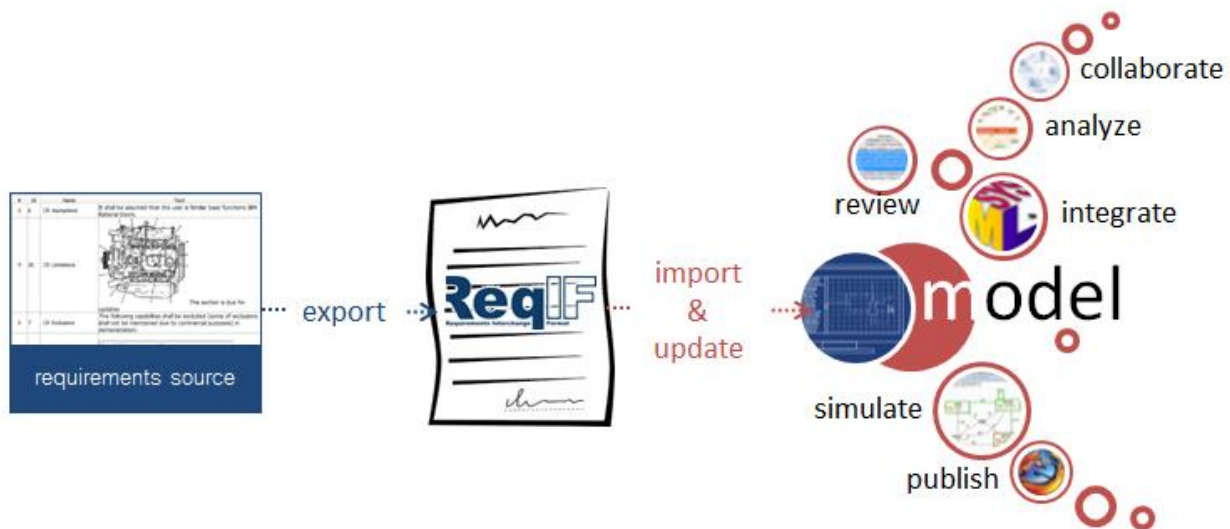
Once imported, requirements become first class citizens in the modeling world. That means they can be:

- **Integrated** with other models: business, software and systems architecture, test cases, and tool chains: PLM tools (e.g. Teamcenter), CAD tools (e.g. Catia), and others. This enables requirements driven design and communication of changes with all stakeholders.
- **Reviewed** with visualization in diagrams, tables, matrices and structure maps.
- **Analyzed** with built-in and custom validation suites, coverage metrics, traceability.
- **Collaborated** with a global modeling project's repository, supporting collaboration inside a project, change and configuration management, multisite support.
- **Simulated** with OMG standard-based model execution, debugging, animation, and user interface prototyping supporting framework.
- **Published** with MS office and Open Office docs, Web-based reports, with the ability to have custom reports incorporating required data.

ReqIF Importer Features

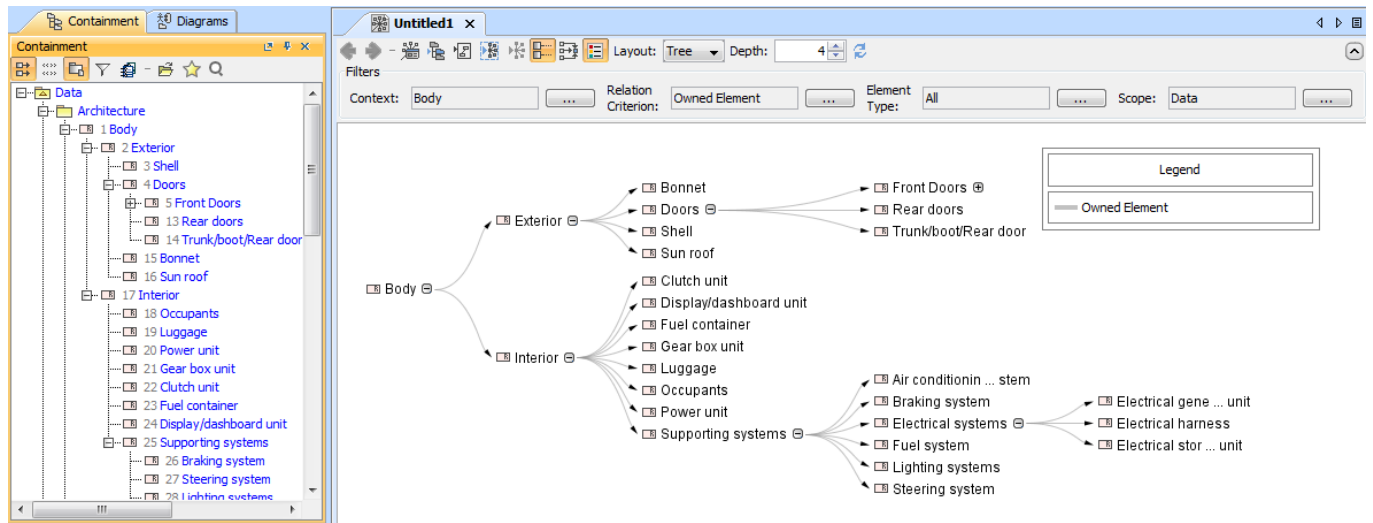1. **Import** data that originated in a wide variety of tools*
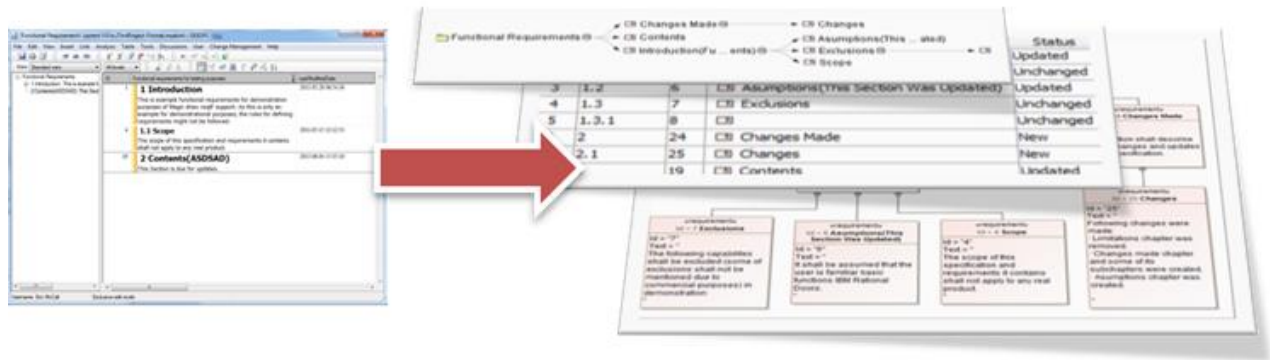
* Import tested with: IBM Rational DOORS 9.4, 9.5, Next Generation, Polarion, PTC Integrity, Siemens TC, and other ReqIF 1.0 compatible data sources.

2. **Update** existing data. It is possible to create relations to any other model element, e.g. test cases, or architectural components, to realize total traceability as required by the processes. On update, all custom relations are left untouched.

3. **Change status** identification (updated, new, unchanged, or obsolete)

Id	Name	Status
1	Introduction(Functional Requirements)	Updated
4	Scope	Unchanged
6	Assumptions(This Section Was Updated)	Updated
7	Exclusions	Unchanged
8		Unchanged
19	Contents	Updated
24	Changes Made	New
25	Changes	New

4. **Requirements structure** and structure changes support

5. **Physical requirements remove** action

6. **Status and summary** notification message

7. **Custom mapping**
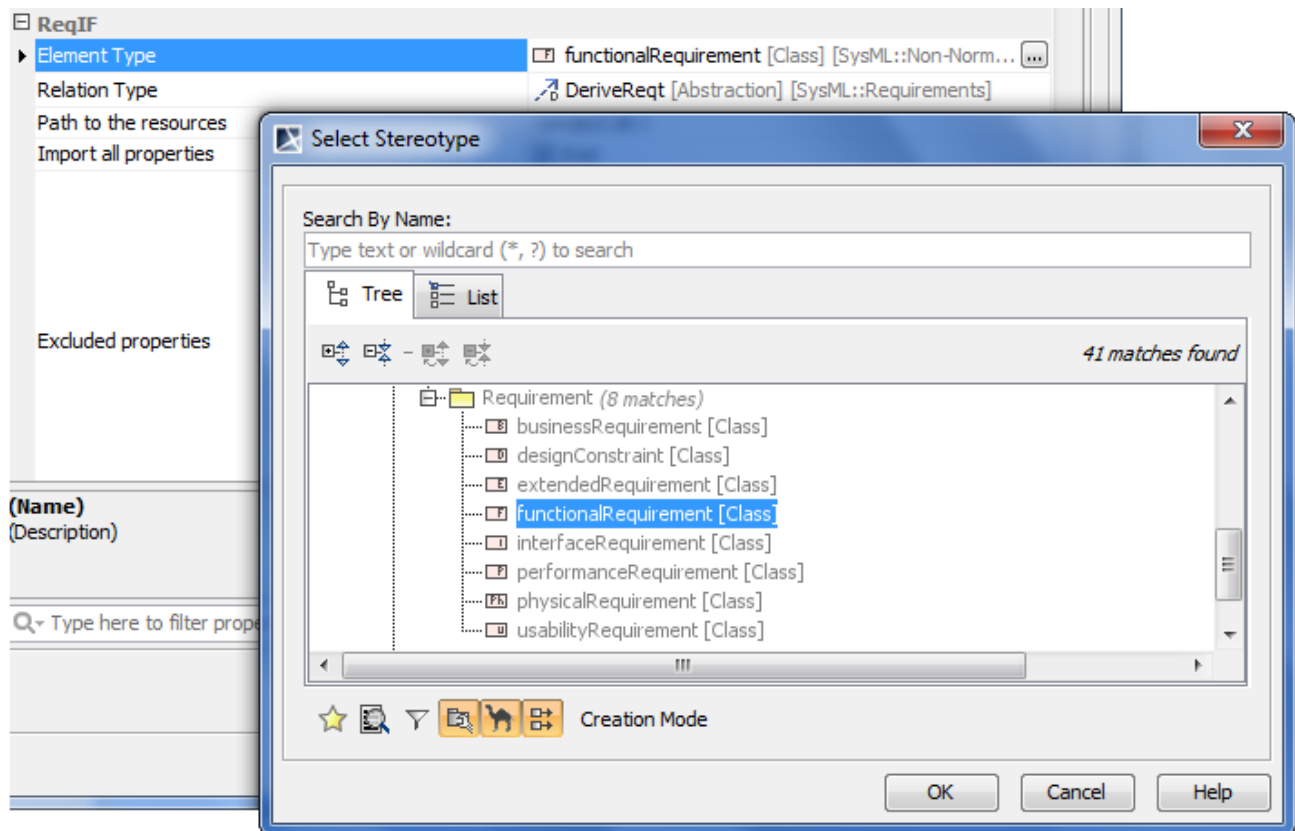
8. **Dynamic properties discovery**, no need to determine what data is in ReqIF file, all the properties can be imported

9. **Omit the data** you don't need to import

10. **Rich text** support

More About ReqIF

ReqIF Recognition
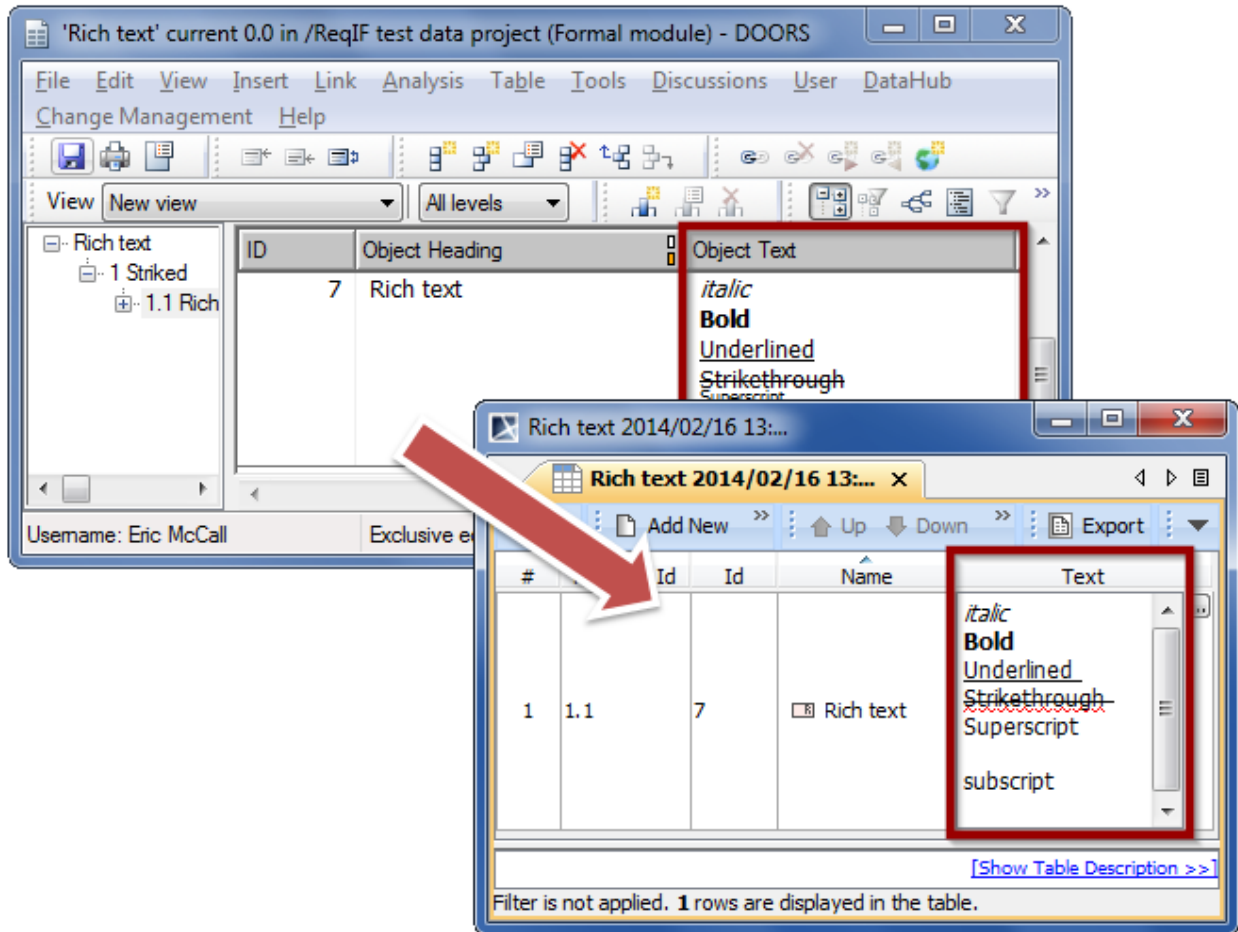
The group working on the initial release of ReqIF consists of the ProSTEP iViP Association, Atego Systems GmbH, Audi AG, BMW AG, Continental AG, Daimler AG, HOOD GmbH, IBM, MKS GmbH, PROSTEP AG, Robert Bosch GmbH, and Volkswagen AG.

ReqIF Sources

- Rational DOORS, DOORS Next generation, IBM Rational Requirements composer (http://www-01.ibm.com/software/rational/)
- Polarion (http://www.polarion.com/2014/reqif-solution.php)
- PTC Integrity (http://www.mks.com/platform/our-product)
- Siemens Teamcenter (http://m.plm.automation.siemens.com/en_us/Images/Siemens-PLM-Teamcenter-Requirements-Integrator-for-RIF-ReqIF-fs_tcm1224-213684.pdf)
- LieberLieber for EA (http://www.lieberlieber.com/en/model-engineering/reqif/)
- Agosense (http://www.agosense.com/english/products/platform-und-adapter/agosensesymphony)
- ReqIF Server (http://enso-managers.de/)
- MS Excel to ReqIF exporter (http://www.pyrrho.com/en/ReqIF/ReqIF-Intro.htm)
- GitHub EnterpriseArchitect_ReqIF_AddIn (https://github.com/redsteve/EnterpriseArchitect_ReqIF_AddIn)

- Requisis Rex (https://requisis.com/de/produkte/rex-doors-reqif-rif-export.html)
- VISURE (http://www.visuresolutions.com/)
- Formalmind (www.formalmind.com/)

About Cameo Requirements Modeler plugin

The Cameo Requirements Modeler Plugin is the central part for simple model based requirements support. It implements the OMG SysML standard requirements part, which has proved itself in system engineering. With this plugin requirements are now available for all domains: business, software, and enterprise architecture. The Plugin provides the means to import, create, and store requirements with the rest of the model; as well as trace, analyze, and keep consistent with other models. The Requirements Interchange Format (ReqIF) makes it open for interchange. It is also easily extendable and customizable.

About the Author

I'm Global User Support Manager and Analyst in MagicDraw R&D team for over 10 years with increasing responsibilities. My major expertise area is model-based requirements engineering. I'm the owner of a new Cameo Requirements Modeler product, which has been recently introduced in MagicDraw product line. I'm a Ph.D. candidate at Kaunas University of Technology (KTU). I'm also hold multiple professional certificates: OMG-Certified UML Professional, OMG-Certified Expert in BPM, ITIL V3, OMG-Certified Systems Modeling Professional. I have written multiple research and practical articles in model-based software design. I'm the founder and chief editor of modelling community blog (blog.nomagic.com) dedicated for sharing practical model-based engineering experience.

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