



Omnibus - CATIA No Magic Adapter Datasheet

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Requirements



Block, Use Case, Actor



Business Need & Tool Overview

In the era of digitally connected and intelligent products, it is becoming increasingly important to modernize engineering processes, tool chains, and product design. To cope up with this dynamic demand, **Model Based Systems Engineering (MBSE)** is progressively being used in the creation of these products. A formal understanding of product architectures is made possible by MBSE, for hybrid electrical, mechanical & electronic systems.

It should be noted that data must move freely and sequentially between MBSE tools, product design tools, and related development tools for system modeling activities to be successful. This holds true for a variety of tasks, such as addressing system requirements and methodically developing logical and functional models and linking them to the designing and testing processes. Therefore, you can only fully benefit from MBSE, when MBSE models are integrated with **Application Lifecycle Management (ALM)** techniques.

- The **CATIA No Magic** tool as a solution encompasses all the best diagramming, collaboration, persistence, and documentation capabilities while offering more customized capabilities tailored to systems engineering needs.
- Kovair provides a vendor-neutral integration platform called **Kovair Omnibus** Integration Platform to which the best-of-breed ALMs (**Application Lifecycle Management**), PLMs, and other enterprise tools can be integrated using its dedicated adapters.
- **Codebeamer** is an ALM platform for advanced product and software development. The open platform extends ALM functionalities with product line configuration capabilities and provides unique configurability for complex processes.

Kovair Adapter for CATIA No Magic

Kovair Omnibus Adapter for **CATIA No Magic** connects this tool with the **Codebeamer** tool (or other similar ALM tools) in the SysML ecosystem, by enabling synchronization of supported data items such as SysML requirements. The Kovair Omnibus Adapter for CATIA No Magic is dedicated for systems engineers, who work in model-based requirements engineering.

Features & Benefits of CATIA No Magic Adapter

The Kovair Omnibus adapter for CATIA No Magic provides the following features and benefits:

- **Requirements & Parameter integration** - It is easy to create corresponding, synchronized value properties in SysML models by using the drag and drop feature of parameter definitions.
- **Impeccable traceability** - The traceability between generated system models and related downstream design artifacts can be enabled.
- **SysML model management** - With just a few mouse clicks, visualize, edit, and review the information about your system model. Utilizing system models, obtain early validation of the architecture and design of the system.

Why Integrate CATIA No Magic with Kovair?

CATIA No Magic tool is a graphical interface powered by the Systems Modeling Language - 'SysML'. It displays system components, how components are connected, and how physical substances and information flow between components.

The coordination of various engineering disciplines by systems engineers necessitates the exchange of information between them and other disciplines' participants. Engineering processes that are redundant, inconsistent, and inefficient are often the result of using discipline-specific tools apart from system modeling tools.

This is where Kovair steps in. When SysML tools and physical interaction and signal flow simulators are used separately, simulation engineers must re-specify their systems in each tool they are using, including information that is also available in SysML models. The Kovair Omnibus CATIA No Magic adapter seamlessly removes this non-value-added activity of a redundant system re-specification, whenever a different tool is being integrated into the system. Your teams will be able to handle the difficulties involved in creating a product that combines several engineering specialties with this adapter.

Why Use CATIA No Magic Adapter by Kovair?

This adapter enables you to handle the import, export, and management of SysML requirements.

- **Traceability** - The key advantage of Kovair Omnibus CATIA No Magic adapter is end-to-end traceability synchronized together with their inter-relationships. Attachments and links are two examples of work item properties that can be synchronized. This enables the corresponding teams to carry on working in their respective environments and permits total traceability of the artifacts.
- **Collaboration** - Improving organizational efficiency throughout departments and the R&D Team to shorten lead times for the concurrent development of hardware and software products is the key to better collaboration. This is done by integrating process, data, and various stakeholders in the product / model creation process.

- **Unified traceability across tools** - Kovair integration adapter for CATIA No Magic enables engineers to access traceability information from their native working environments and perform gap analysis. System engineers across all specializations can track their work from requirements to delivery with this Kovair adapter. These features allow different teams to work together more efficiently, save time, and prevent mistakes by precisely synchronizing software with hardware.
- **Effective model management** - You can trace requirements (as per your model-based requirements engineering) to other model elements of business, hardware, or systems architecture and align requirements with your established model. You can monitor related metrics and assess the effects of changes. Documenting requirements can be done by capturing them in specific diagrams, matrices, and tables.

Entities Exposed in Kovair CATIA No Magic Adapter & Entities Mapped with Codebeamer

A. Entities Exposed by CATIA No Magic to the Kovair Omnibus adapter

Serial No.	Entity Name in CATIA No Magic
1	Requirement
2	UseCase
3	Actor
4	ProxyPort
5	State
6	Business Requirement
7	System Requirement
8	Functional Safety Requirement
9	Technical Safety Requirement
10	Block
11	Call Behavior Action
12	Decision Node
13	Domain

Serial No.	Entity Name in CATIA No Magic
14	Part Property
15	Instance Specification
16	Slot
17	Property
18	Package
19	Extended Requirement
20	Value Property
21	Flow Property
22	Connector Property
23	Constraint Property
24	Reference Property

B. Entities mapping done in CATIA No Magic with respect to Codebeamer

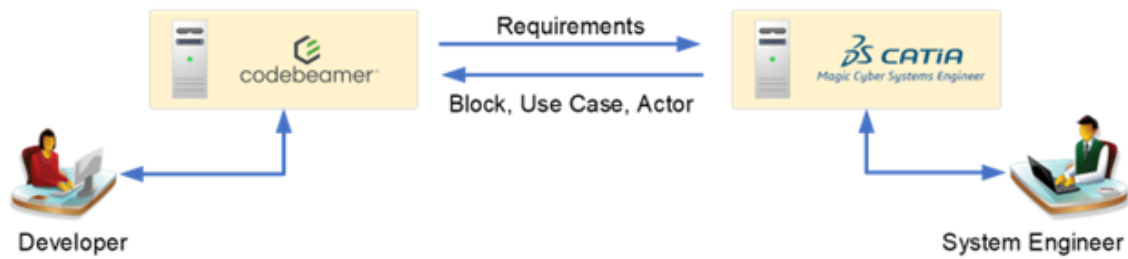
Serial No.	Entity Name in CATIA No Magic	Corresponding Entity Name in Codebeamer
1	Requirement	System Requirement Specification [SYS2]
2	UseCase	System Architectural Element
3	Actor	
4	ProxyPort	
5	State	
6	Block	
7	Call Behavior Action	
8	Decision Node	
9	Domain	
10	Part Property	

Use Cases of Kovair Integration with CATIA No Magic

To address various stakeholder concerns, system models can be published to documents, images, and web views, managed in remote repositories, or stored as standard XMI (XML Metadata Interchange) files. By creating and applying a single, consistent model that aligns with multiple product domain-specific models and endures over the course of the system life cycle, MBSE formalizes the application of systems engineering.

You can define, track, and visualize all aspects of systems in the most standard-compliant SysML models and diagrams. The environment enables systems engineers to:

- Run engineering analysis for design decision evaluation & requirements verification
- Continuously check model consistency
- Track design progress with metrics



A. MBSE-ALM / MBSE-PLM Tools Integration Use Cases

Linking system diagrams in CATIA No Magic is possible with System Requirement Specification(s) and System Architectural Element(s) in Codebeamer ALM. The linking of system model blocks & sub-blocks is also possible.

This (*CATIA No Magic integration*) can be achieved with respect to other supported ALM/PLM tools also.

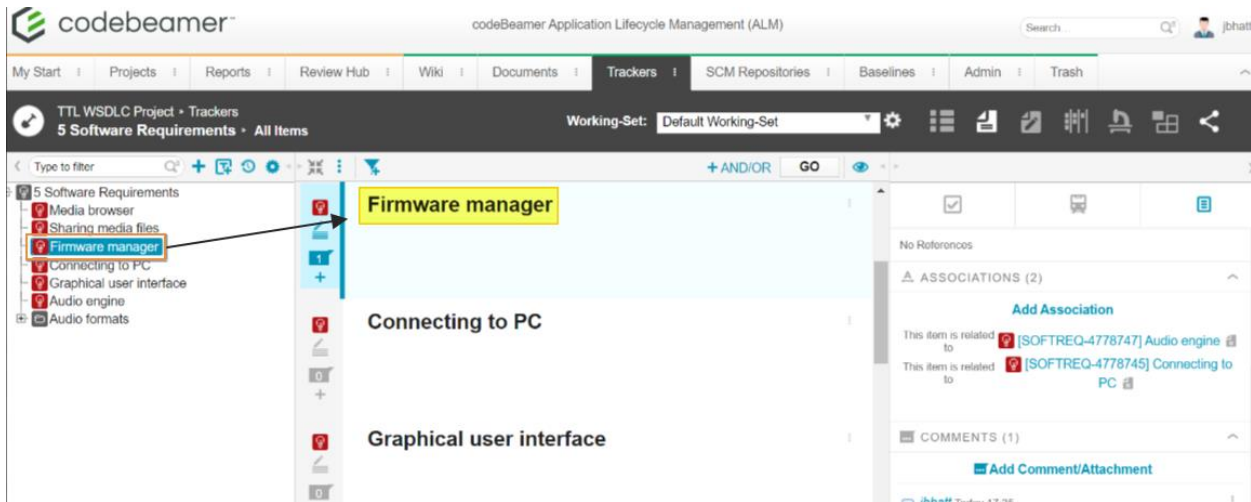
Use Case	Description	Scenario
Unidirectional Requirements Synchronization	Import of Requirements from source tool to CATIA No Magic and subsequent export from CATIA No Magic to target tool, to keep the requirements synced across the tools.	Requirements can be imported from the source to target tool, for example import requirements in CATIA No Magic from Codebeamer. The reverse uni-directional flow is also possible.

Use Case	Description	Scenario
Bidirectional Requirements Synchronization	Requirements populated in source tool can be synced into CATIA No Magic. The requirements and relations once populated in CATIA, are synchronized back to the source tool.	Requirements data (along with related system models) will be synced bi-directionally across CATIA No Magic and connected tool.

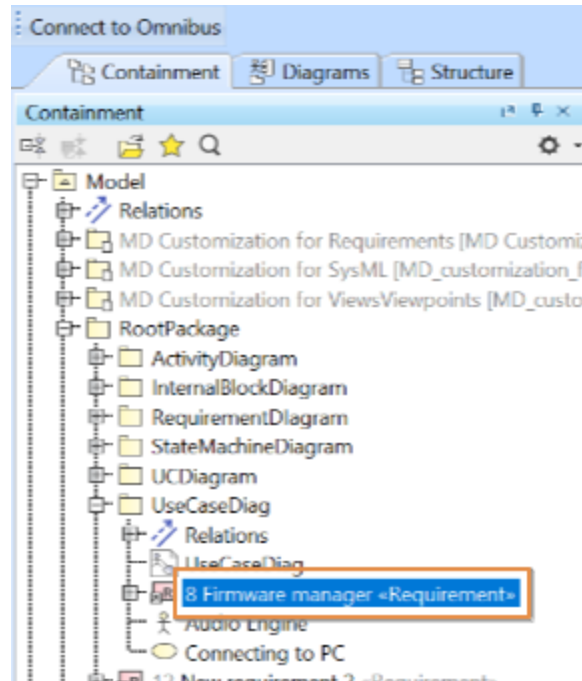
B. How is the CATIA No Magic Integration with Codebeamer carried out?

To view the entire dataset flow from Codebeamer to CATIA No Magic, and then from CATIA No Magic back to Codebeamer, consider the following steps that are described briefly:

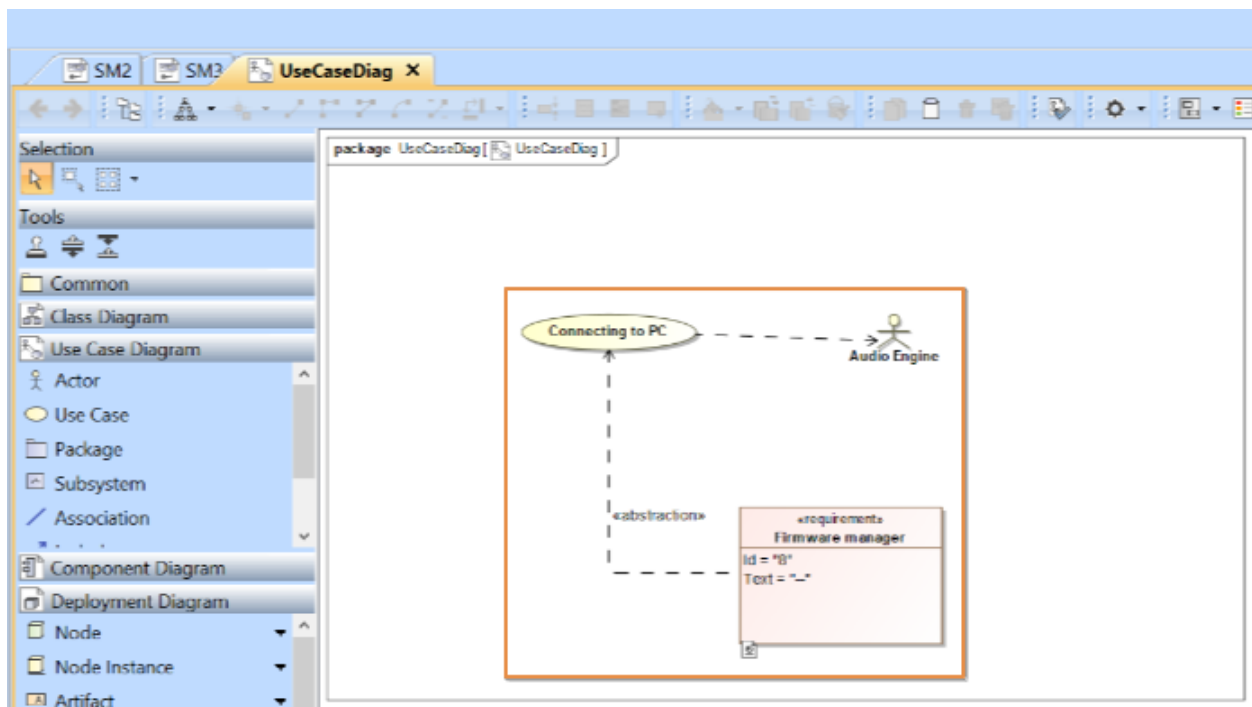
- 1. Requirement exists in Codebeamer** – Let us begin by considering that the following requirement exists in the Codebeamer tool. This assumption is the first step.



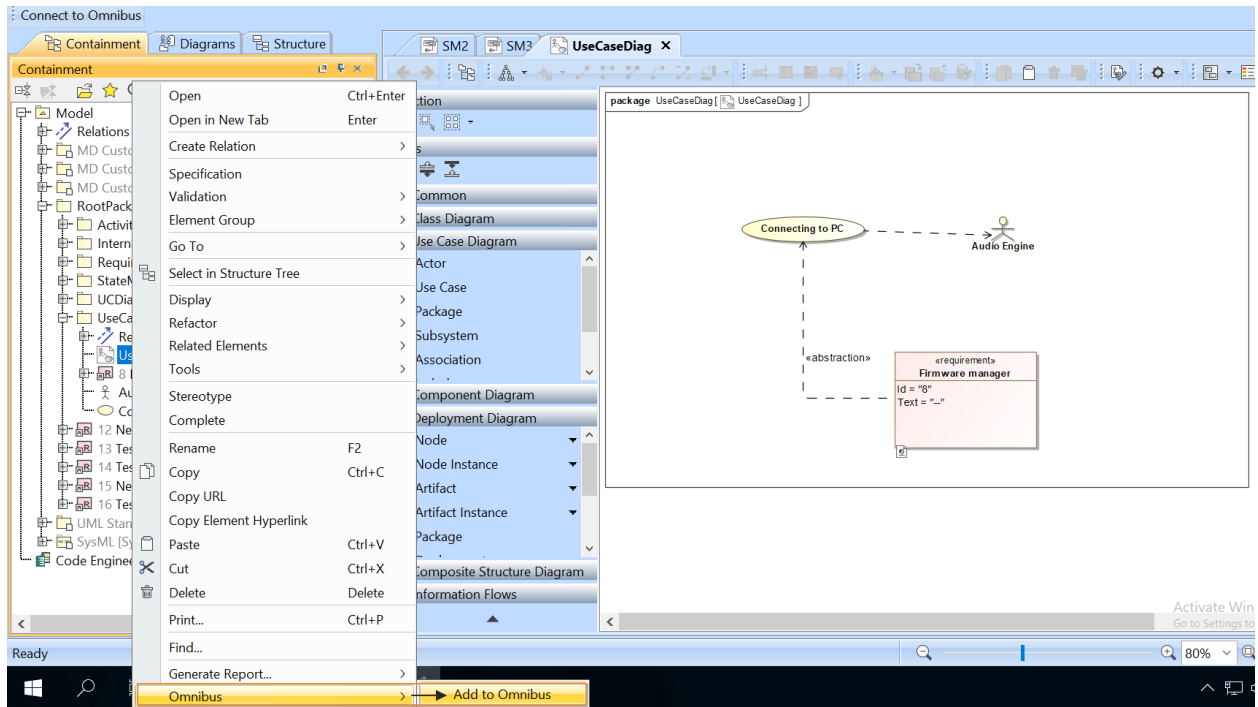
- 2. Codebeamer to CATIA No Magic flow** – Requirements dataset gets imported into the CATIA No Magic tool using the Codebeamer Kovair plugin. Right click on the CATIA No Magic package under which the Codebeamer requirements should flow to or under which the requirements should be present within the CATIA No Magic application.
- 3. Mapping the Model in CATIA No Magic** – In the third step, let us view the same 'Firmware manager' requirement entry, as present (synced) in the CATIA No Magic tool.



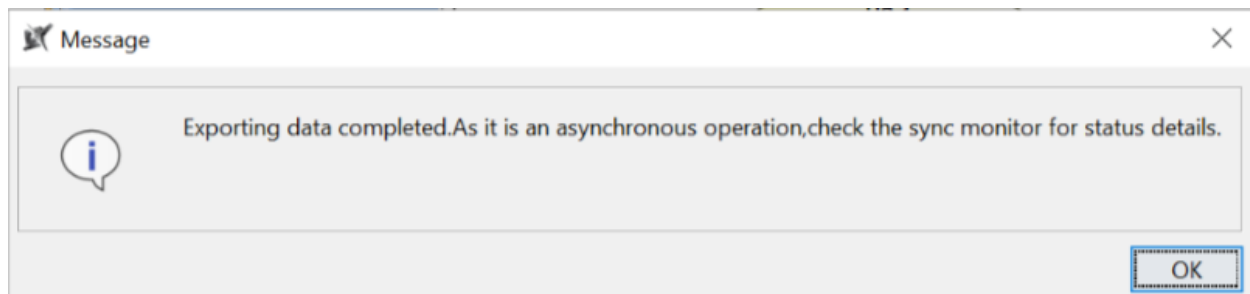
Now, let us consider that the system engineer using the CATIA No Magic tool has created the blocks, actors and relation mappings or connections as required.



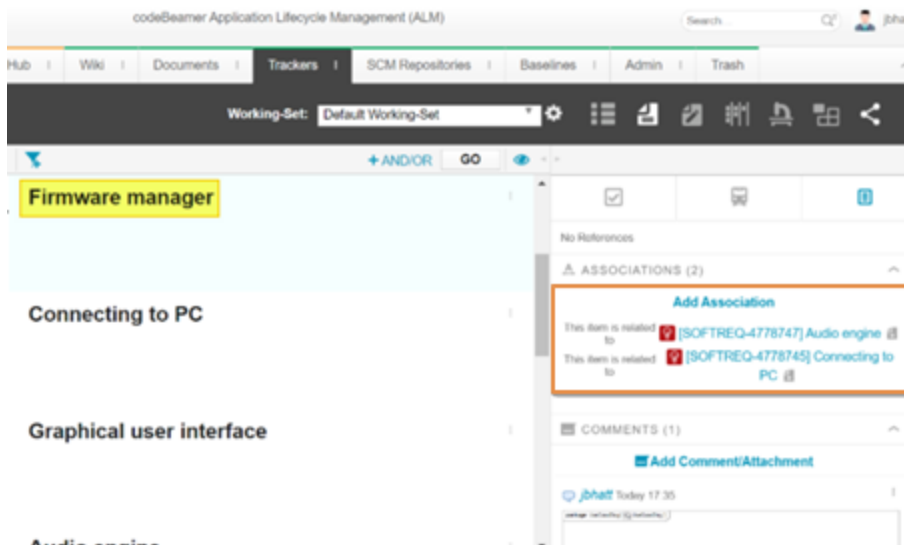
4. Exporting using Kovair Omnibus adapter – Now in this fourth step, let us consider that the user has designed the model and wants to export the model back to the Codebeamer tool.



- 5. Successful data export to Codebeamer from CATIA No Magic** – The data exporting related success notification gets prompted in the form of a message box.



- 6. Viewing the associations & model diagrams** – Now if you investigate the requirement within the Codebeamer tool, you can find the associations displayed as per the model already prepared in CATIA No Magic.



During the flow from CATIA No Magic to Codebeamer - where the traceability is established, the diagram screenshot is also synced with the Codebeamer 'Firmware manager' requirement as an attachment. This can be loaded and to view the exact model diagram as done in the CATIA No Magic tool. Refer to the following screenshot.

