GUIDE

MBSE TOOL INTEROPERABILITY WITH INNOSLATE HYPER-BASED LINKS

SPEC INNOVATIONS
DEVELOPERS OF
INNOSLATE

About SPEC Innovations

Systems and Proposal Engineering Company, dba SPEC Innovations was founded in 1993 by Dr. Steven Dam. The company has worked on significant architecture and systems engineering projects for the DoD, DOE, and other government and commercial organizations. Learn more at www.specinnovations.com.

We began the development of Innoslate in 2010 when we found it challenging to do the work we needed to do with the limited tools available at the time. Innoslate was first released in 2012 on the cloud and is currently in version 4.7 as a full lifecycle tool, with integrated Systems Engineering and Program Management capabilities. It uses the open standard, Lifecycle Modeling Language (LML), as its open ontology.

Innoslate currently supports users around the world and is also available on NIPRNET, SIPRNET, and C2S, as well as behind your own firewalls. You can learn more about Innoslate by going to our website, www.specinnovations.com/innoslate.

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Introduction

The ability to connect CATIA Magic/No Magic Tools with Innoslate® marks a significant step toward more flexible and modern system engineering workflows. While many organizations are locked into legacy modeling tools due to contracts, processes, or internal resistance to change, Innoslate offers a cloud-native, full-lifecycle alternative that requires no full system overhaul.

Instead of complex integrations or third-party sync tools, which are often prone to duplication and configuration management issues, this approach leverages a simple yet powerful solution: hyperlink-based interoperability. By embedding Innoslate entity URLs directly into elements within CATIA No Magic Tools, teams can maintain modeling continuity while tapping into Innoslate's advanced capabilities in requirements management, collaboration, and analysis.

This guide walks you through the process of quickly and easily connecting to most Model-Based Systems Engineering (MBSE) environments that support hyperlinks. This method is:

- No plugins
- No synchronization needed
- No disruption to existing workflows

Key Differences in CATIA Magic/No Magic Tools & Innoslate

Innoslate is an MBSE tool that covers the entire product or system lifecycle, from requirements management to verification and validation. It provides features for project management, requirements analysis, modeling and simulation, and more. As a collaborative cloud-based platform, it fosters seamless teamwork and accessibility. Enterprise and government versions are also available.

Feature	Innoslate	CATIA Magic/No Magic Tools
Requirements Management	Integrated, with traceability, analysis, and baselining	Supported, but may require integration with other tools (e.g., Innoslate, DOORS, or JAMA)
Modeling	SysML and more	SysML and more
Collaboration	Real-time collaboration, roles, teams, chat, workflows, and reviews	Teamwork Cloud can be purchased
Cloud Capability	Browser-based, no install needed: Core Modeling & Simulation with web-based editing	Desktop application, local install

Innoslate and CATIA Magic/No Magic Tools both serve the systems engineering community by providing modeling in SysML and other languages. Innoslate is a comprehensive, all-in-one lifecycle tool offering a variety of capabilities in a modern, cloud-native interface.

In contrast, CATIA No Magic Tools are traditionally on-premises solutions, offering standards-based modeling capabilities with a primary focus on analyzing, designing, and simulating complex systems. However, to unlock additional features such as enhanced collaboration, model merging, and support for specialized frameworks like DoDAF, users often need to rely on a suite of extensions and plugins. This modular approach, while functional, can introduce complexity and dependency on additional tools to achieve comprehensive system modeling and collaboration. It also significantly increases the costs of these tools.

Both offer modeling and simulation solutions, but their use often depends on the organization's needs and biases. Those prioritizing modeling and simulation might gravitate towards CATIA No Magic Tools, while those seeking a broader, more integrated, full, comprehensive approach to Systems Engineering might find Innoslate more useful.

Why Use Both?

Interoperability between CATIA No Magic Tools and Innoslate addresses a critical industry need: ***overcoming the challenges of vendor lock-in while enabling greater flexibility in system engineering workflows.*** Many organizations rely on legacy tools like CATIA No Magic Tools for their standards-based modeling capabilities, even if they prefer or aspire to use a modern tool like Innoslate, which offers advanced lifecycle management features, enhanced collaboration, and a cloud-native architecture. This reliance often stems from organizational inertia, existing investments, or mandates to adhere to specific legacy systems. By bridging these platforms, interoperability enables users to enjoy the benefits of Innoslate without having to abandon their existing tools entirely.

This integration empowers organizations to modernize their workflows without disrupting existing processes. Instead of duplicating efforts or investing significant resources in transitioning entirely to a new platform, users can leverage the strengths of both tools to achieve their goals. Users can maintain their modeling needs on CATIA with No Magic Tools while leveraging Innoslate's versatility and efficiency. This approach not only facilitates collaboration but also positions organizations to meet evolving standards and requirements, making it a practical and strategic choice for system engineers looking to maximize productivity and innovation by using Innoslate.

Overview of Integration Steps

Interoperability between CATIA No Magic Tools and Innoslate can be done through the following steps:

1. Establish your diagrams and models on your assigned CATIA No Magic Tool.
2. Establish the entity (Action, Requirement, Issue, or any) on Innoslate.
3. Fetch the URL property of the Innoslate Entity in the Entity View.
4. Open the Specifications of the entity you want related on CATIA No Magic Tool.
5. Add the URL property to the Cameo Entity using the "Hyperlink/Tags" attribute.

Step 1: Prepare CATIA No Magic Models

Let's prepare the models and diagrams within CATIA No Magic Tools. You will need to ensure that the required model elements are defined and structured based on your task and project needs. **Create a clear and complete representation of your system or workflow.** This will form the foundation of your interoperability process. This step ensures that the models in CATIA No Magic Tools are well-organized and ready to be linked with their corresponding elements in Innoslate, which the user wants to relate to, whether they are satisfying requirements, related Kanban board tasks, or any other element they desire to create traceability to.

Step 2: Entities in Innoslate

Here, you will **establish and target the relevant entities in Innoslate, such as Actions, Requirements, Risks, and/or Issues, to relate to the elements in CATIA No Magic Tools.** Ensure that these entities are correctly defined and aligned with your project's goals. Innoslate's user-friendly interface makes it easy to create and configure entities with the appropriate attributes.

Step 3: Fetch URL Property

Entity by Entity Method: Once the Innoslate entities are prepared, you need to fetch the URL associated with the specific entity you want to link in its entity view. This is done through the Entity View in Innoslate. Each entity in Innoslate is assigned a unique URL identifier, making it easy to reference and integrate with other tools. Copy this URL, as it will be used in the next steps to create the connection between the platforms.

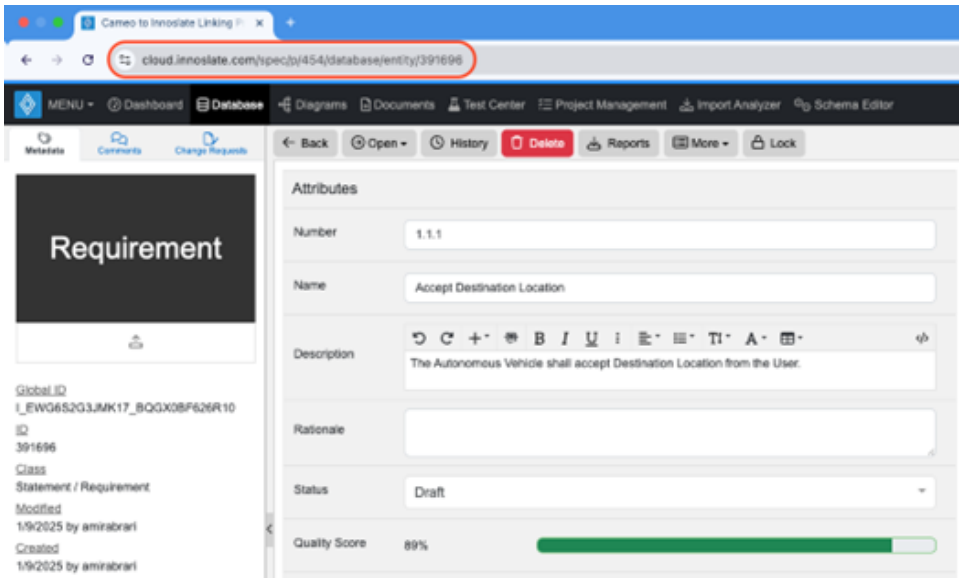

Figure 1. Innoslate Entity View URL Fetch

Bulk URL Fetch Method: If you want to fetch URL links for entities in bulk, you can do so using the Basic Tabular Output in Reports. Either from the artifact itself or through the database view, users have the capability to scope out the URLs they want to fetch and later use in the Cameo Models.

Reports > Basic Tabular Output > Include - Add 'Entity URL', then click 'Create'.

The “Include” section enables users to select specific data columns, such as “Quality Score” and “Entity URL”, for inclusion in the report. These selections ensure that the output includes the desired URL links for entities, which can be used in further analyses or within Cameo Models.

Figure 1 displays an exported CSV file generated from the Basic Tabular Output Report. The table includes columns such as “Name,” “Number,” “Description,” and “Entity URL.” **The “Entity URL” column contains hyperlinks to the entities in Innoslate**, allowing users to access them directly. This data output can be leveraged for seamless navigation and integration with external tools or workflows, making this process more automated and accelerated to enable interoperability.

Step 4: Open Specifications of Cameo Entity

Navigate to the specific entity in CATIA No Magic Tools that you wish to link to the Innoslate entity. Open its specifications to access its attributes. This step is critical as it allows you to configure the entity within CATIA No Magic Tools to accept the URL from Innoslate. Ensure that you have the necessary permissions and access to modify these attributes. These attributes will serve as the bridge for the two platforms.

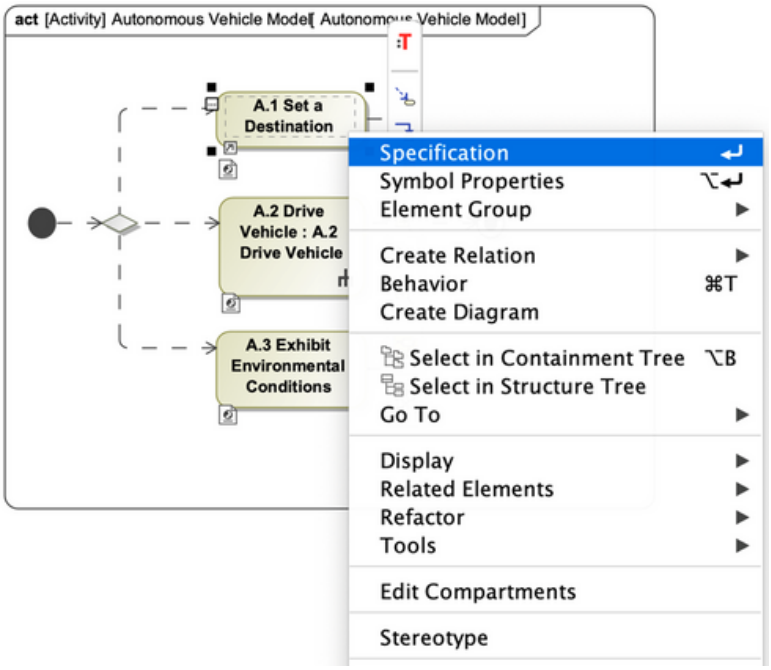

Figure 2. Cameo Element Specifications

Step 5: Add URL Property

Finally, use the **“Navigation/Hyperlinks” attribute** within CATIA No Magic Tools to add the URL property you fetched from Innoslate. This step establishes a direct reference from the CATIA No Magic Tool entity to the corresponding Innoslate entity. By embedding this hyperlink, you enable seamless navigation and interoperability between the two platforms. This method eliminates the need for continuous synchronization while ensuring real-time accessibility.

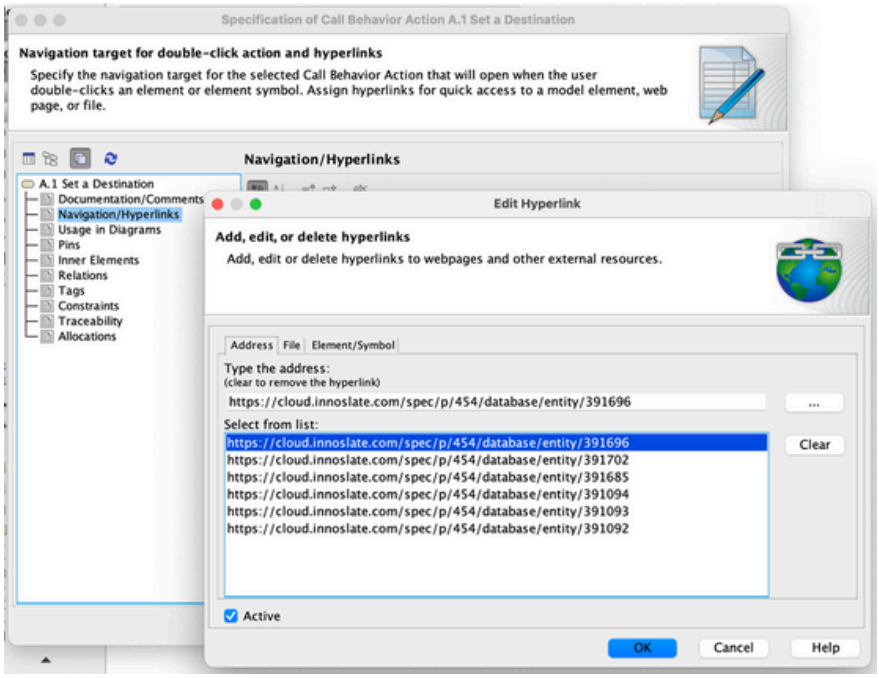

Figure 3. Cameo Element "Navigation/Hyperlinks"

Note: Links previously used to link other entities to one another will be saved in the list, allowing users to reuse links at their convenience.

The hyperlink added to an entity in CATIA No Magic Tools appears as a web-like icon in the bottom-left corner of the entity box. Users can click on this icon to be redirected to the corresponding entity in Innoslate. For instance, in this case, the entity “A.1 Set a Destination” is linked to an Innoslate URL, allowing direct access to its related data with a single click. This simple yet powerful feature enhances usability and minimizes the need for manual navigation between tools.

Figure 4. Cameo Element URL Icon Indicator

You can also view all available links per entity using the generic table on Cameo. This table within CATIA No Magic Tools shows all hyperlinks associated with specific entities. This table provides a consolidated view of all available links, including their respective documentation and URLs. For example, the entity “A.1 Set a Destination” and its associated actions are shown with their hyperlinks to Innoslate. The “Documentation” column provides an alternative method for fully documenting and organizing multiple links and entities within a single box. Both approaches are effective for interacting with links and establishing traceability in a simple manner.

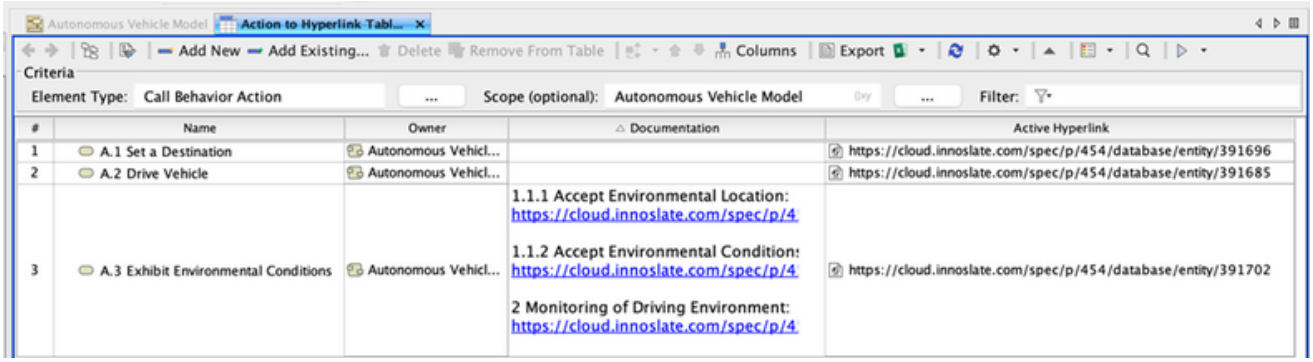

Figure 5. Cameo Generic Table

These visual examples highlight the ease and efficiency of linking CATIA No Magic Tools with Innoslate. By embedding hyperlinks directly into entities and organizing them in a generic table view, users can seamlessly access and navigate between the two platforms. This functionality promotes improved collaboration, faster information retrieval, and streamlined workflows, all without requiring additional synchronization efforts.

Want to transition to a modern cloud-native model-based systems engineering and requirements management solution? Consult an expert today about utilizing Innoslate with tools like CATIA No Magic.

🔗Learn More About Innoslate Interoperability

- Transition Guide From CATIA
- Connect Innoslate With MATLAB and STK
- Connect Innoslate With GitHub Code Repositories
- Computable Attributes With LaTeX