



SysML
version 0.9.1
User Guide

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1 User

1.1 Download

The user guide could be downloaded as a pdf [here](#)

1.2 SysML

1.2.1 Context

The Systems Modeling Language (SysML) is a general-purpose modeling language for systems engineering applications. It supports the specification, analysis, design, verification and validation of a broad range of systems and systems-of-systems.

SysML was originally developed by an open source specification project, and includes an open source license for distribution and use.[2] SysML is defined as an extension of a subset of the Unified Modeling Language (UML) using UML's profile mechanism.

1.2.2 Tutorials

- [Creation of a SysML project.](#)

1.2.3 References

<http://www.omg.sysml.org/>

[Embedded norm as pdf](#)

2 Tutorial 1: Project creation

2.1 Explore Papyrus for SysML 1.4

2.1.1 SysML 1.4

The Systems Modeling Language (SysML) is a general-purpose modeling language for systems engineering applications. It supports the specification, analysis, design, verification and validation of a broad range of systems and systems-of-systems. SysML was originally developed by an open source specification project, and includes an open source license for distribution and use. SysML is defined as an extension of a subset of the Unified Modeling Language (UML) using UML's profile mechanism.

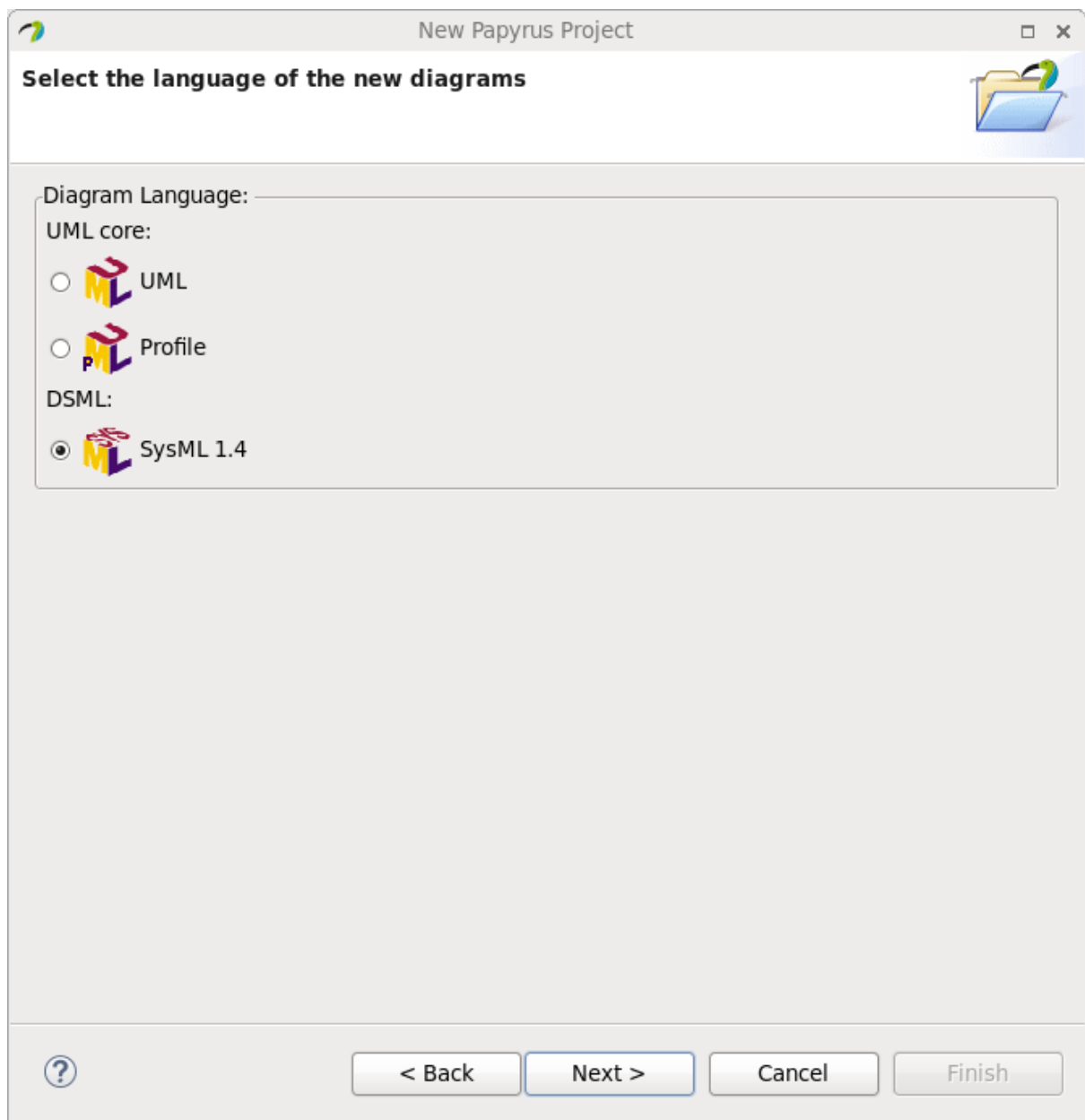
There are a lot of tutorials on SysML. We have selected this one <http://www.omg.sysml.org/INCOSE-OMGSysML-Tutorial-Final-090901.pdf>

This guide explores basic of SysML Model Project creation.

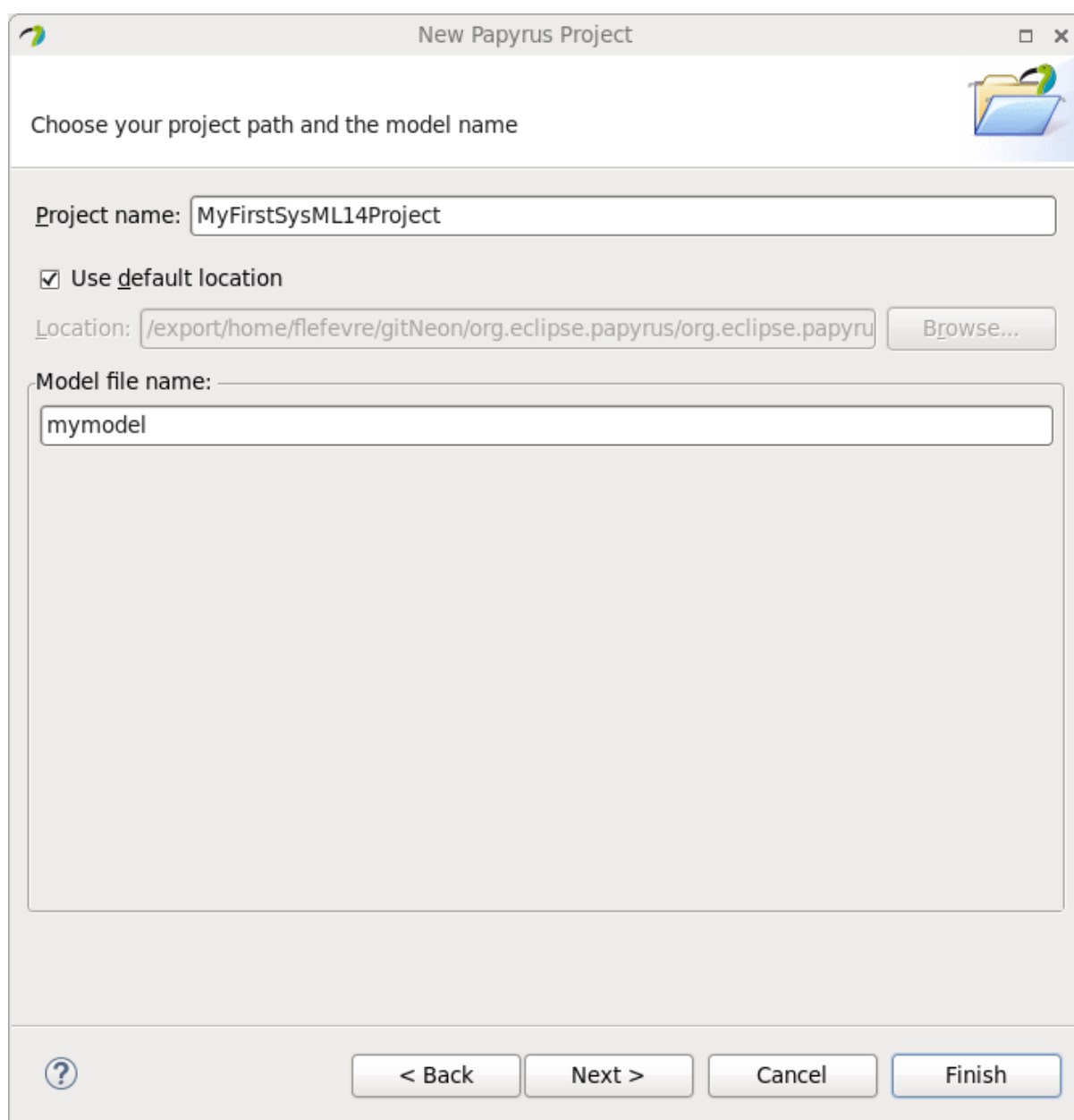
2.1.2 Create a basic project.

At first, select File>New Project>Papyrus project.

Select the SysML 1.4 language for the new diagrams..

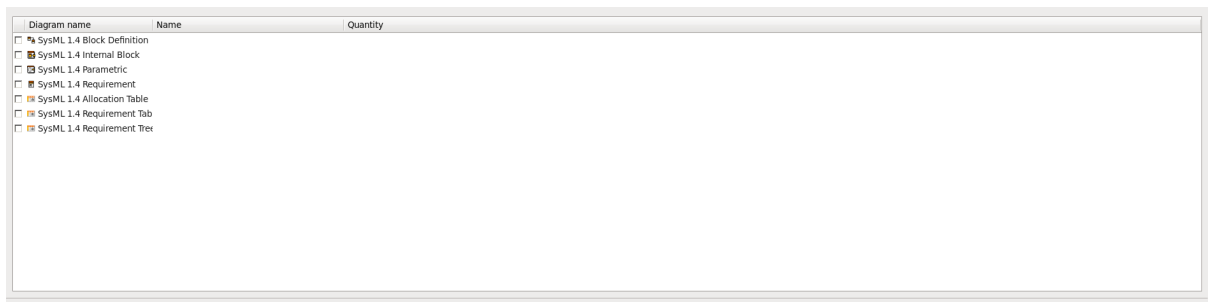


Give a name to your project and eventually add a specific model name.

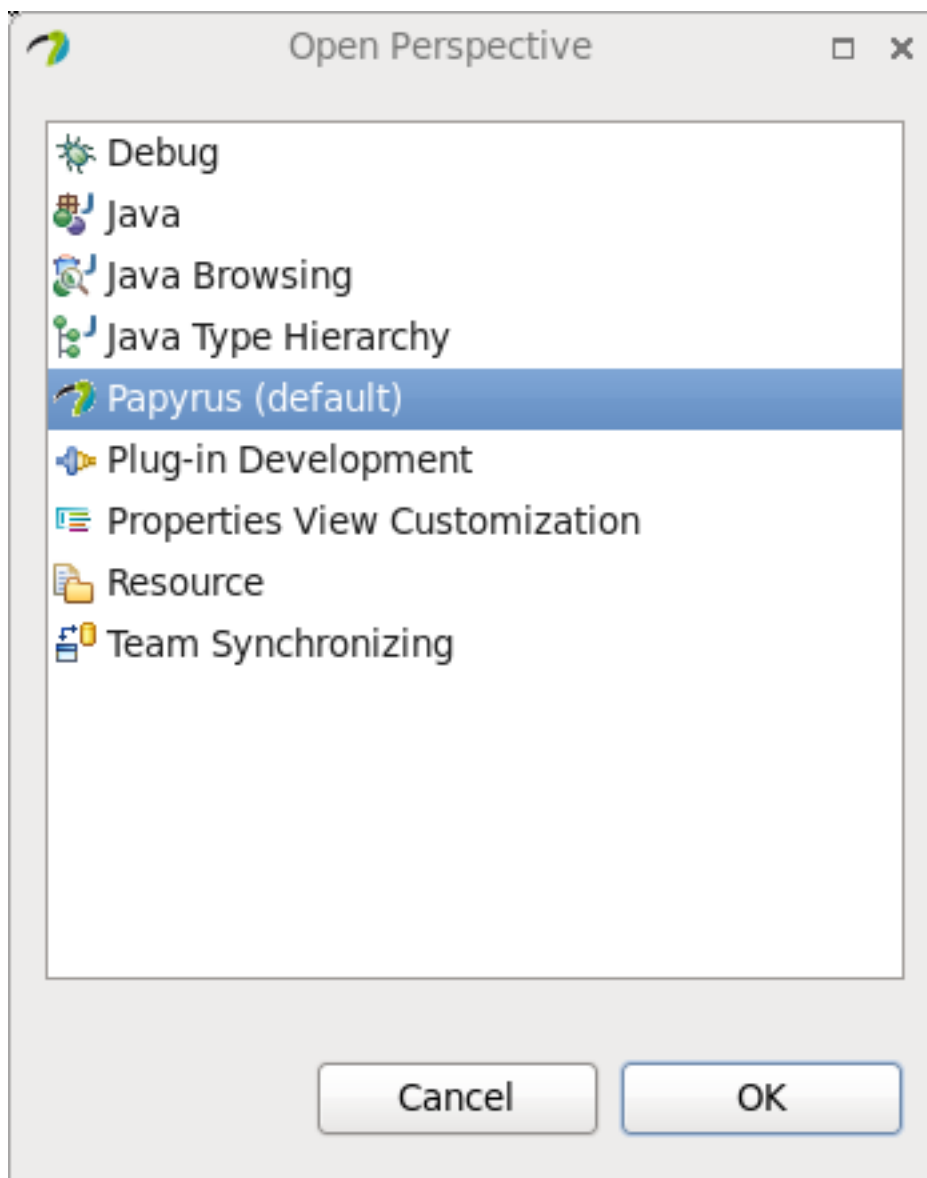


Eventually, you can preselect specific SysML1.4 diagrams and tables to populate quickly your model:

- SysML 1.4 Block Definition
- SysML 1.4 Internal Block
- SysML 1.4 Parametric
- SysML 1.4 Requirement
- SysML 1.4 Allocation Table
- SysML 1.4 Requirement table



Open the Papyrus Perspective to enable the Model Explorer, Diagram, Outline and Palette views.



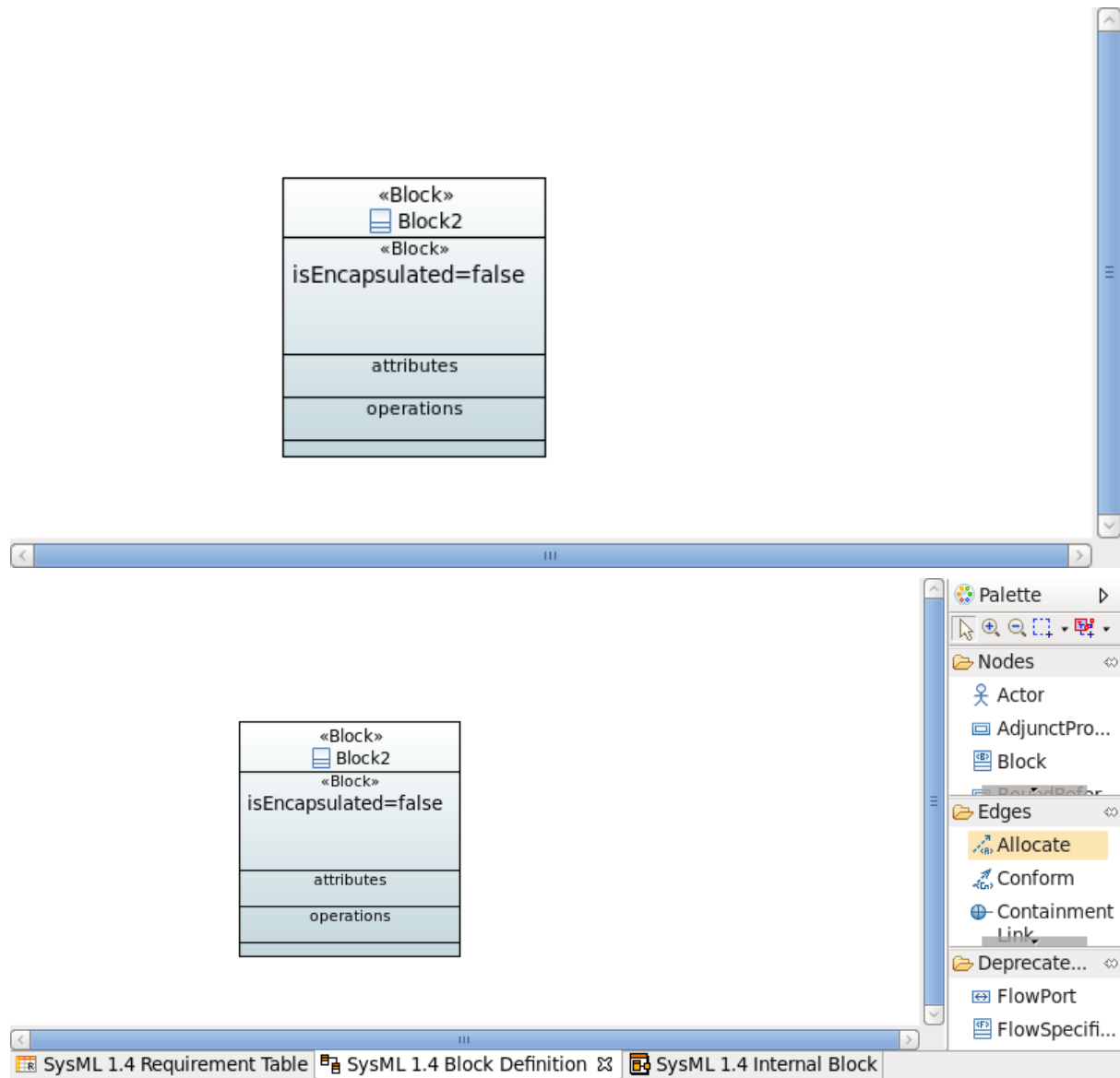
2.1.3 Create a Block Definition Diagram.

Block diagram describes the relationship among blocks (e.g., composition, association, specialization)

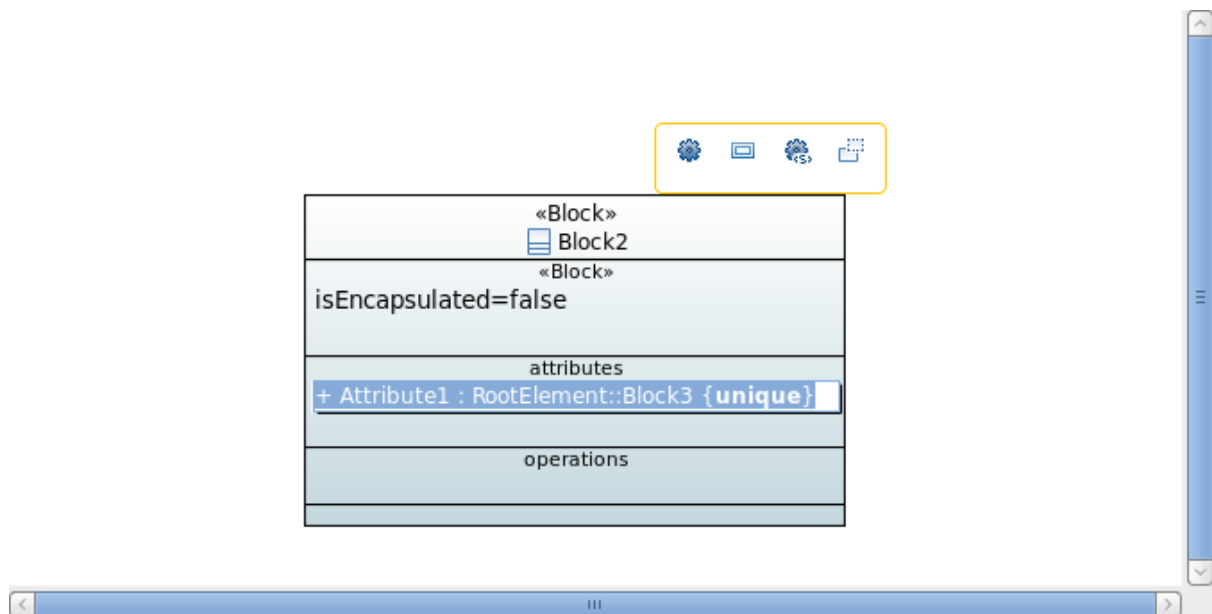
Right click on the Model explorer enable to display to a menu to create elements and diagrams specific to UML and SysML

Select New Diagram/SysML 1.4 Block Definition

It will create a BD diagram where you can create a block from the right palette.

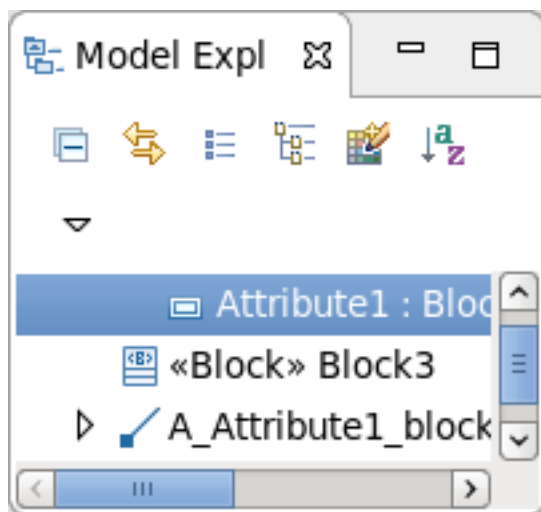


From the palette at right, you can create typed part. By default Papyrus will propose you to create new Block for the property.



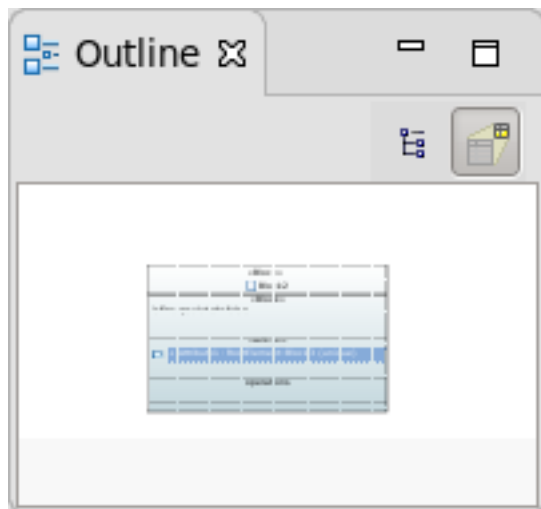
2.1.4 Model Explorer View

Model explorer allows you to browse the tree of your model.



2.1.5 Outline View

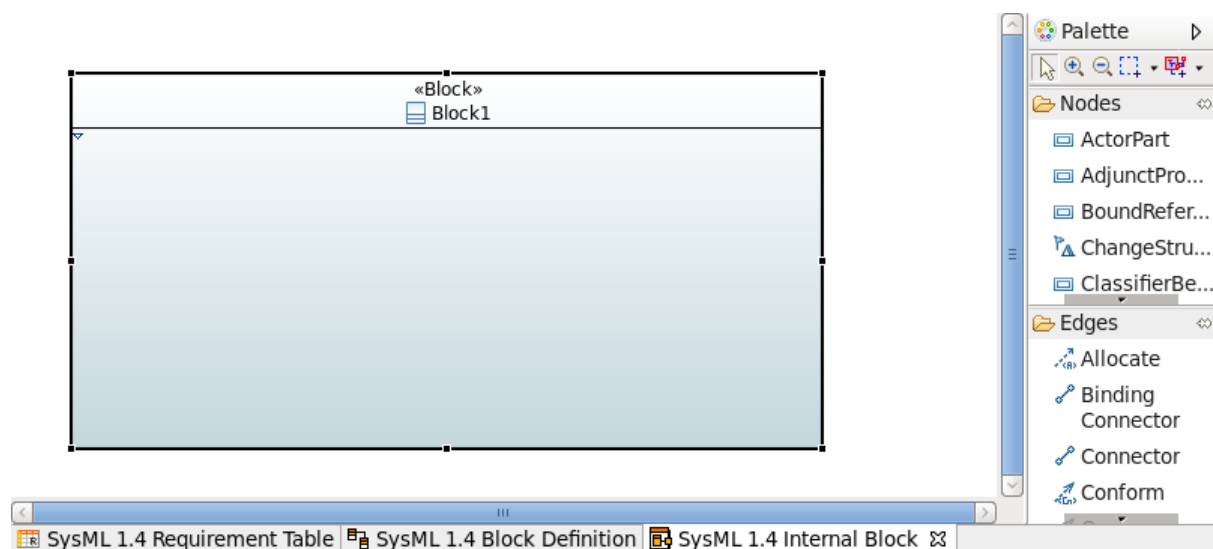
Outline view offers you a quick overview display of the current diagram. It is essential when you want to manage huge models.



2.1.6 Create a Internal Block Diagram.

Internal block diagram describes the internal structure of a block in terms of its properties and connectors

From the Modelexplorer, by right clicking, you can select the IBD creation.



You can create new internal properties referencing previous blocks or new blocks.

From the palette, you can create new node, such as port, and connector as edge between them.

Ports are useful to specify interaction points on blocks and parts

2.1.7 Create Requirements.

With SysML you can use Requirement diagrams to efficiently capture functional, performance, and interface requirements, whereas with UML you are subject to the limitations of Use Case Diagram to define high-level functional requirements.

From the Model Explorer, with the New Child Menu, you can create Requirement table or requirement.

Requirement from a given model depth will populate automatically your requirement table

You can edit Requirement feature (id, name and text) from the properties view

The screenshot displays the Eclipse IDE interface. At the top, a SysML Requirement Table is shown with the following structure:

	id	name	text
Requirement 1		Requirement 1	

Below the table, the Properties view is open for the selected requirement. It shows the following details:

- Model Validation:** ✔
- Requirement Name:** Requirement1
- Id:** Req-01
- Text:** My requirement.

The Properties view also includes tabs for SysML 1.4, UML, and Comments, and a Model Validation status indicator.