Automatic Instantiation wizard

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Introduction

The Automatic Instantiation wizard analyzes the structure of a selected element and collects all available information about that element from the model (attributes, properties, and so on). It evaluates collected information and suggests all possible instances to be created.

This tool allows you to create instances of various entities with just a few clicks. It is useful for working with complex models, and for assembling large systems from parts. For properties having a multiplicity of more than 1, you can create as many instances of the same type as you need, since parallel parts can be added while creating instances. While creating instances automatically, you can:

- · Select properties for which the instances will be created.
- Change types of instantiated properties.
- Assign default values for the instantiated properties.

The wizard consists of the following areas:

- Steps area: displays all steps of the wizard and shows the current step you are working on.
- · Element tree: displays all owned internal structure of a selected element.
- Instantiated properties area: allows you to change the default values and create several different sets of instances.

Select parts Select parts to be instantiated. Hold down SHIFT and select a check box to select parts recursively. Change default values of primitive properties or select a subtype of the property in the editor below the tree. Right-dick a tree node to create multiple values if the property multiplicity is more than one. Steps area Image: Select parts 2. Select a package Image: Wehide [Structure] 3. Create a diagram Image: Stops of the group of the group of the property multiplicity is more than one.	
area O 2. Select a package Image: magine : Structure::Engine [Structure::Vehide] O 3. Create a diagram Image: magine : Structure::Engine [Structure::Vehide]	
○ 2. Select a package □ 1 = 0.9 ○ 3. Create a diagram □ ☑ grossMass : ISO80000-4 Mechanics::Quantities::mass::mass[kilogram] = 1450.0	Element tree
3. Create a diagram	
⊕ I transmission : Structure::Transmission [Structure::Vehicle]	
😥 🔽 🕐 wheel : Structure::Wheel [Structure::Vehide]	
Instantiated properties Type	
Value	
< Back Next > Finish Cancel Help	

Instantiated properties area

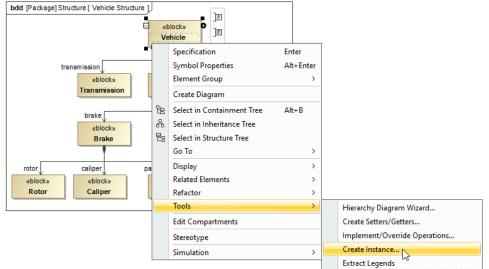
The Automatic Instantiation wizard of the Vehicle Block with highlighted three main areas: Steps area, Element tree, and Instantiated properties area.

Using the Automatic Instantiation wizard

To create and display instance specifications of Blocks in the diagram by using the Automatic Instantiation wizard

1. Select the Block for which you want to create instances.

2. From the shortcut menu, select **Tools > Create Instance** (see the following figure).



3. Follow the steps of the Automatic Instantiation wizard. How to work in each step of the Automatic Instantiation wizard >>

Wou are satisfied with the default values provided in the Automatic Instantiation wizard, you can finish the wizard in the first step without making any changes. The instances will be created with the default values and in your working package. To change default values or create

4. Click Finish, when you are done, read Steps of the Automatic Instantiation wizard. Instance Specifications and new SysML Block Definition Diagram are created for the selected Block (see the figure below). All part instances are grouped under their owners which allows you to visually identify the structure of nested instances in the Containment tree.

🔁 Containment 🗄 Structure 🏄 Diagrams	Instance of the vehicle X
Containment La 🕫 🛪 🗙	◆※ 〒 ◎ ◇・ 査・転・ノニス C ス 分 創 白 ★ 巻 査・ ▲ ・Δ・Anal
🖻 🏠 Q 🌼 🗘 🗘	
⊡ 🔁 Model	i @, @, €, Q, 100% ∨ i 🔚 + 🔚 + i ▶→ i Q
🖶 - 🄁 Requirements [Requirements.mdzip]	bdd [Package] Structure [Instance of the vehicle] Shapes of instances
SysML Block Definition	
Relations System Diock Demittering Diagram	«block»
Brake Assembly	vehicle : Vehicle
一品 Instance of the vehicle	engine = vehicle.engine
	transmission = vehicle.transmission wheel = vehicle.wheel
Wheel Assembly	
⊞ Brake	«block»
	vehicle.wheel: Wheel whe
	brake = vehicle.wheel.brake
⊞ E Rotor	diameter = 16.0 numAxleGearTeeth = 100.0
🗄 🔚 Tire	numEngineGearTeeth = 50.0
i∰	
É	vehicle.wheel.brake : Brake vehicle.wheel.tire : Tire vehicle.engine : Engine
in (a) engine = vehicle.engine	caliper = vehicle.wheel.brake.caliper diameter = "22.0" engineRPM = 0.0
E. E vehicle.engine : Structure::Engine	pad = vehicle.wheel.brake.pad tireMU = "0.9"
⊡ ③ engineRPM = 0.0	rotor = vehicle.wheel.brake.rotor
🖶 🛞 transmission = vehicle. transmission	
	eblock»
L. 20.0	vehicle.wheel.brake.caliper
⊡ ③ numAxleGearTeeth = 100.0	caliperFrictionForce = "140"{unit = newton} diameter = "0.038"{unit = metre}
20. 100.0	partNumber = "
🗄 🛞 numEngineGearTeeth = 50.0	pressure = "7.8"{unit = megapascal}
	springForce = "250" {unit = newton}
	eblocka
	vehicle.wheel.brake.pad : Pad
⊕	brakeMU = 0.6
🗄 🕀 🔁 tire = vehicle.wheel.tire	centerLength = 0.08{unit = metre}
	thickness = 0.01{unit = metre}
Grouped instances	width = 0.038(unit = metre)
	«block»
	vehicle.wheel.brake.rotor : Rotor
	outerDiameter = "0.25"{unit = metre}

The Block Definition Diagram with instances of the vehicle Block is created by using the Automatic Instantiation wizard. **Sample model**

Related pages

• Steps of the Automatic Instantiation wizard

The model used in the figures of this page is the **VehicleStructure** sample model. To open this sample, download *VehicleStructure.mdzip*.