FMU import

On this page

- What is FMI?
- What is FMU?
- FMU import
  - Dragging and dropping FMU on diagram
  - Dragging and dropping FMU on existing Block
  - Updating existing FMU Block
- Co-Simulation

What is FMI?

FMI, also known as a Functional Mock-up Interface, is a tool independent open-source standard that supports both model exchange and co-simulation of dynamic models in a standardized format. The modeling tool supports FMI versions 1.0 and 2.0.

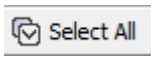
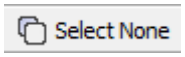
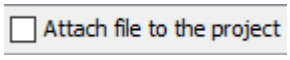
What is FMU?

A component that implements FMI is called FMU (Functional Mock-up Unit). It stores a simulation model that adheres to the FMI standard. To be more specific, the FMU file contains an XML description file and implementation in a binary form.

FMU import

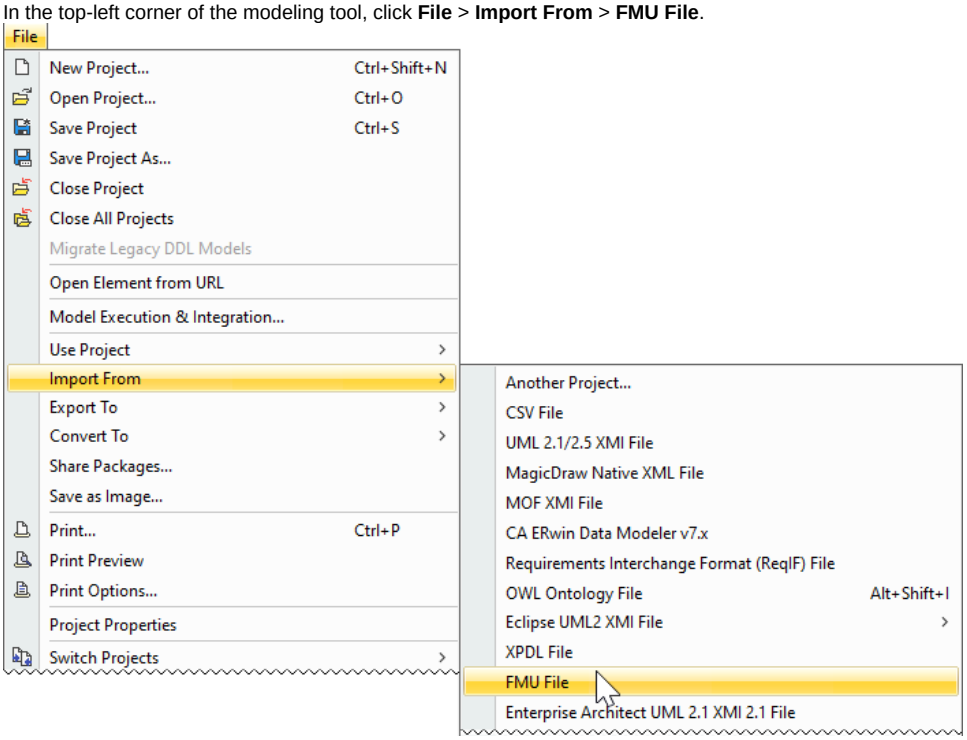
The **FMU Import Options** dialog enables users to customize the FMU file import into the model. For instance, you can specify whether parameters from the FMU file should be imported as ports or value properties. Additionally, you can change the name of the Block (the FMU model name is used by default) and automatically attach the file to the project on import.

The **FMU Import Options** dialog has the following options:

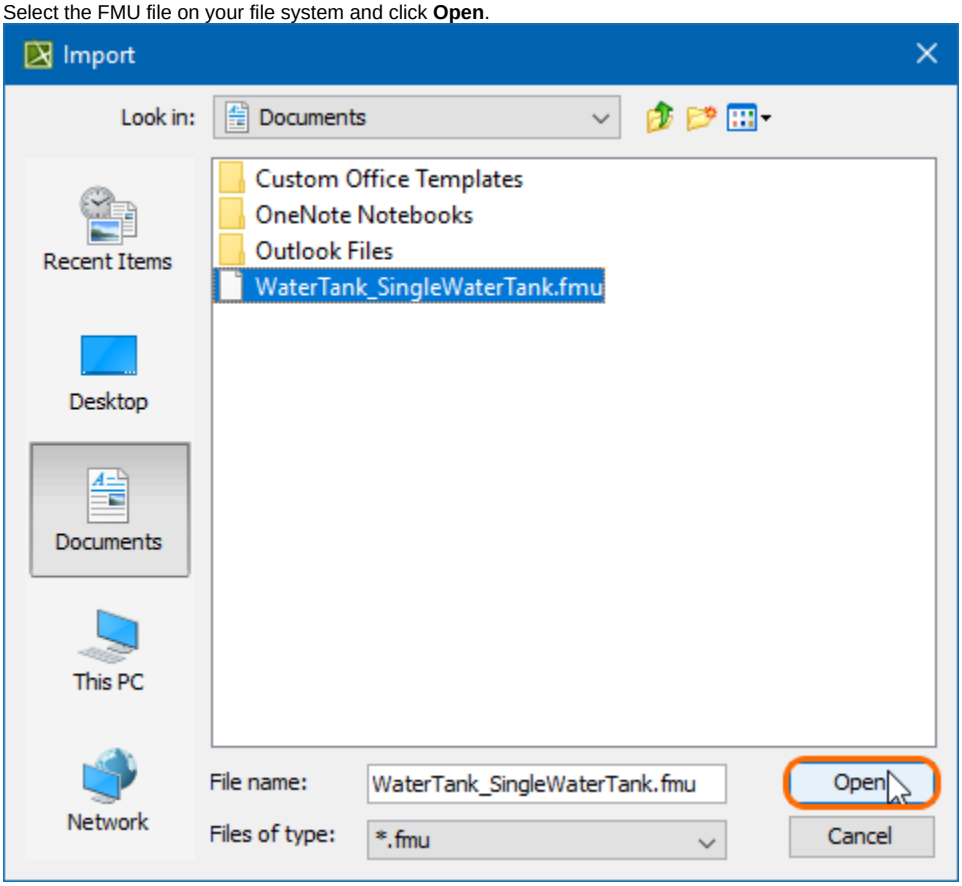
Option name	Description
Direction	The direction of the port: *In* or *Out*. *Inputs* and *Outputs* are selected to be imported as ports by default.
Name	The name of the property/parameter.
Type	The type of the property, for example, value property.
Description	The textual description of the property.
As Port	If the checkbox under **As Port** is selected, the property is imported into the model as a Flow port.
Redefine	The **Redefine** option allows redefining inherited value and part properties.
	Click to select all listed properties at once.
	Click to deselect all listed properties at once.
	If the checkbox next to **Attach file to the project** is selected, the imported FMU file is automatically attached to the model.
	The name of the Block created in the model on import. By default, the name of the FMU model is used, but you can set the one you like.

To import the FMU file into the model

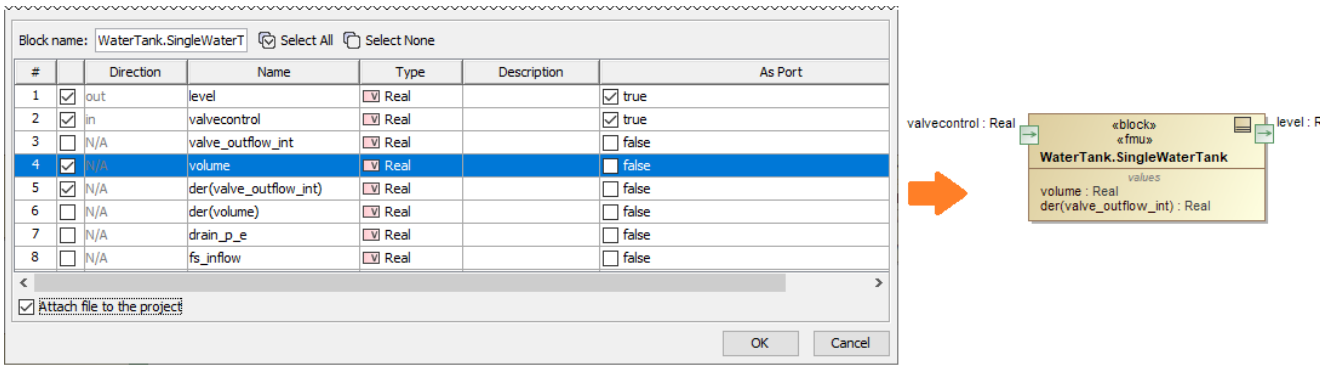
1. In the top-left corner of the modeling tool, click **File** > **Import From** > **FMU File**.



2. Select the FMU file on your file system and click **Open**.



3. In the **FMU Import Options** dialog, specify which properties from the FMU file should be imported into your model as values and ports. Click **OK**.

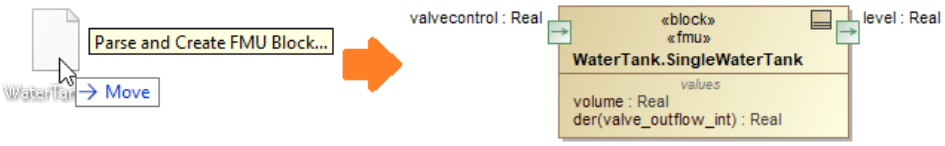


Dragging and dropping FMU on diagram

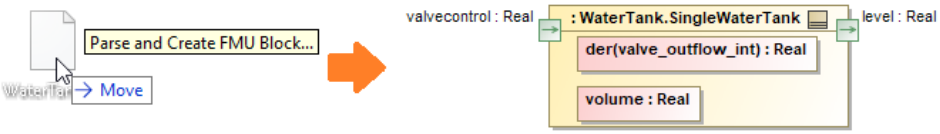
Alternatively, you can import the FMU model by dragging and dropping the selected FMU file directly onto the Block Definition (BDD) and/or Internal Block (IBD) diagrams.

To import the FMU file into the model using BDD/IBD

1. Locate the **FMU file** on your file system.
2. Do either:
   - Drag and drop the file from your file system onto the BDD diagram. A Block with the applied «FMU» stereotype is created in the model after customizing FMU import via the **FMU Import Options** dialog.

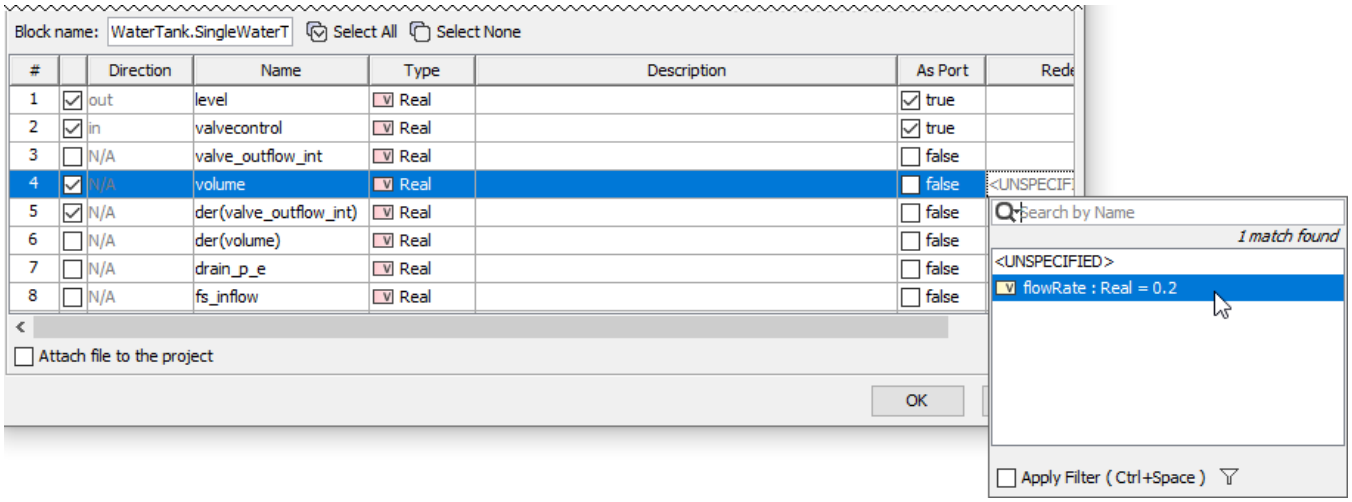


   - Drag and drop the file from your file system onto the IBD diagram. A Part property is created in the model after customizing FMU import via the **FMU Import Options** dialog.



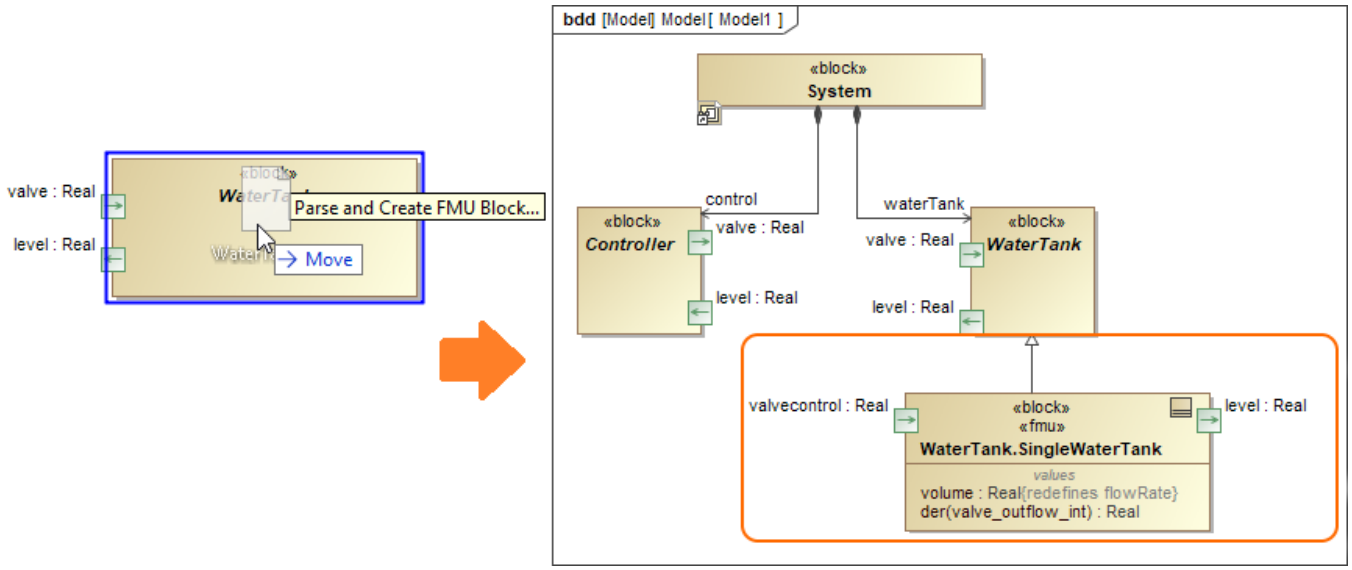
Dragging and dropping FMU on existing Block

You can drag and drop the FMU file directly onto the Block as implementation as well. Once the FMU file is dropped, the **FMU Import Options** dialog that allows redefining value and part properties of the Block opens.



Redefining properties using FMU Import Options dialog

In this case, a new Block is created as a subtype of the existing Block together with the Generalization relationship.



Dropping FMU on an existing Block

In/Out properties in the **FMU Import Options** dialog are selected by default to be imported in the model as ports of a Flow type.

Updating existing FMU Block

An existing FMU Block can be updated by dragging and dropping a FMU file directly on it. This is useful in those cases when there is a need to quickly import properties that were, initially, left out.

To update a FMU Block

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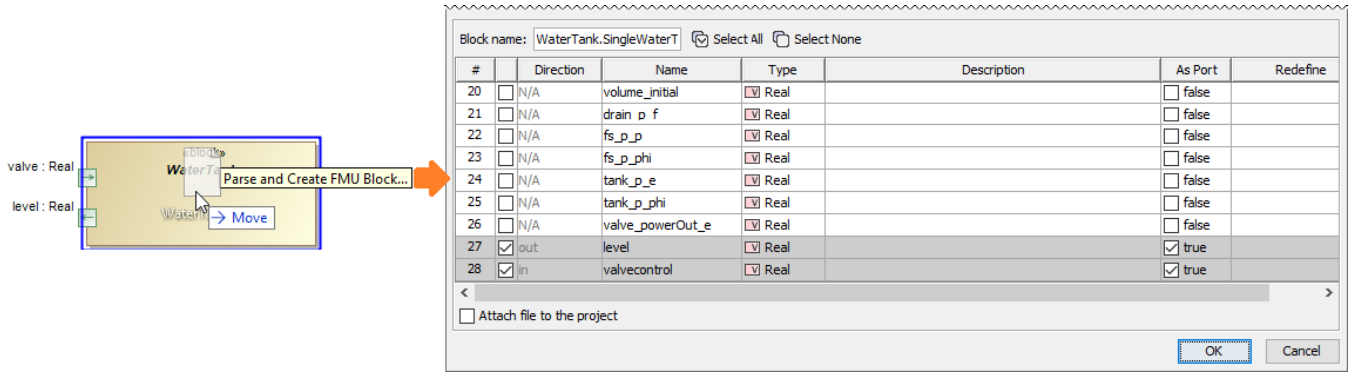
1. Locate the FMU file on your file system.
2. Drag and drop it on the shape of your FMU Block.
3. In the opened **FMU Import Options** dialog, select the properties to update the FMU Block with.
4. Click **OK**.



Dragging and dropping FMU on the existing FMU Block

Already imported properties are grayed out and cannot be edited in the **FMU Import Options** dialog.

If the **Attach file to the project** is checked in the **FMU Import Options dialog**, a previous version of the attached file is replaced with a new one on import.

Co-Simulation

The FMU file can be simulated using Cameo Simulation Toolkit (CST). To learn more, please click here.

Related pages

- Simulation of SysML models