Watch pane

On this page

In the **Watch** pane, you can easily monitor selected properties and their expressions with runtime values while debugging. The **Watch** pane displays a flat list of selected runtime values during model simulation.
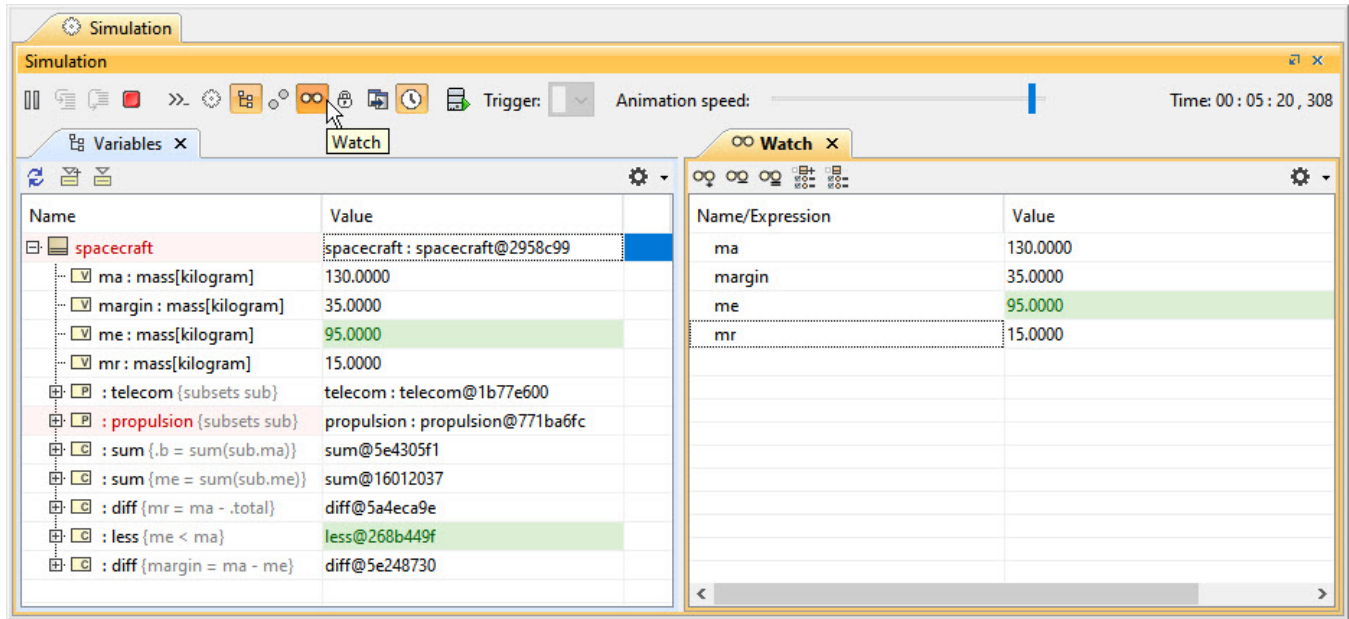
The **Watch** pane with expressions and their selected runtime values during model simulation.

For any projects with the default Simulation window settings, the **Watch** pane will be opened by default in the same group as the **Variables** and **Breakpoints** as the last pane. If you save the project, the **Watch** pane properties will be kept according to the most recent settings, the same as the **Variables** and **Breakpoints** panes. Also, you can manually open it by clicking ⚭ in the **Simulation** toolbar. This pane contains two columns:

- **Name/Expression**: When you add a Watch item, it will be shown in this column. Names and expressions can be edited in this column.
- **Value**: When you add a Watch item, its value will be displayed in this column. The Value can be edited if it represents a value property. It cannot be edited if it represents the result of an expression. The **Value** column will be highlighted in red or green the same as in the **Variables.**

You can also display the **Show Requirement** and **Show Margin** columns and configure filtering by clicking ⚙ at the top-right corner.

The Watch pane with Requirement and Margin columns.

> ⚠️ **Note**
> - If the **Simulation** toolbar is locked (i.e., in the Monte-Carlo and Trade Study simulation), the **Watch** pane will be disabled to maximize performance.

You can add Watch items to the **Watch** pane using the following:
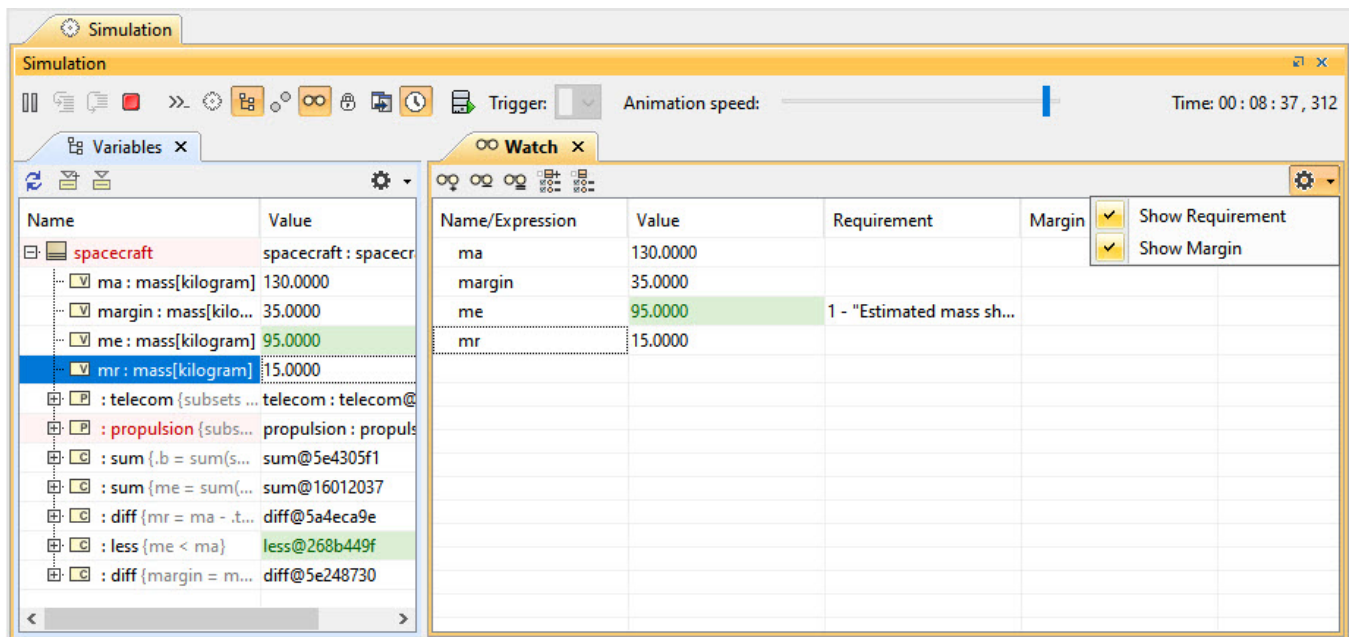
- Variables pane
- Console pane
- Adding Watch items using the Watch pane.
- Select Properties Config stereotype
- Internal Block or Parametric Diagram

- When adding items at runtime, the value is evaluated and updated for all property changes and state changes on each clock tick. However, if you add properties before runtime, the value is not be evaluated until the simulation runs.
  - If the added item is not found, the value is displayed as "Not found!" in red unless you correct or remove the selected property.
  - If the added item has no value, the value is displayed as <blank>.
  - If the added item has multiplicity with <blank>/0 value, the value is displayed as []/[0].

Adding Watch items using the Variables pane

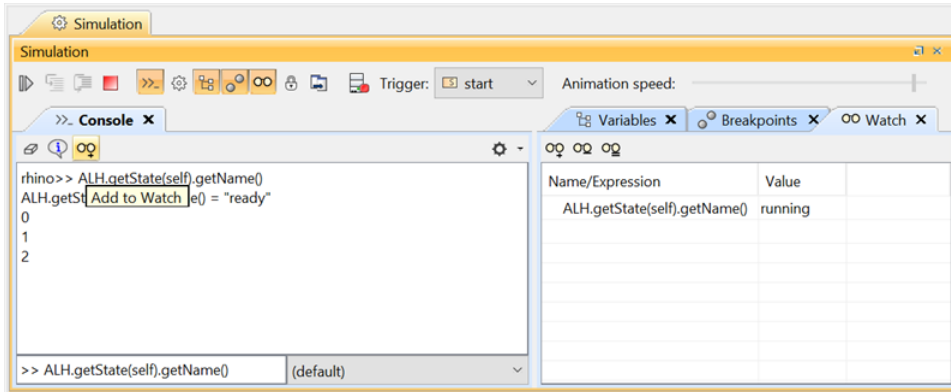To add Watch items using the **Variables** pane

- In the **Variables** pane, right-click the property you want to add and select **Add Watch**.
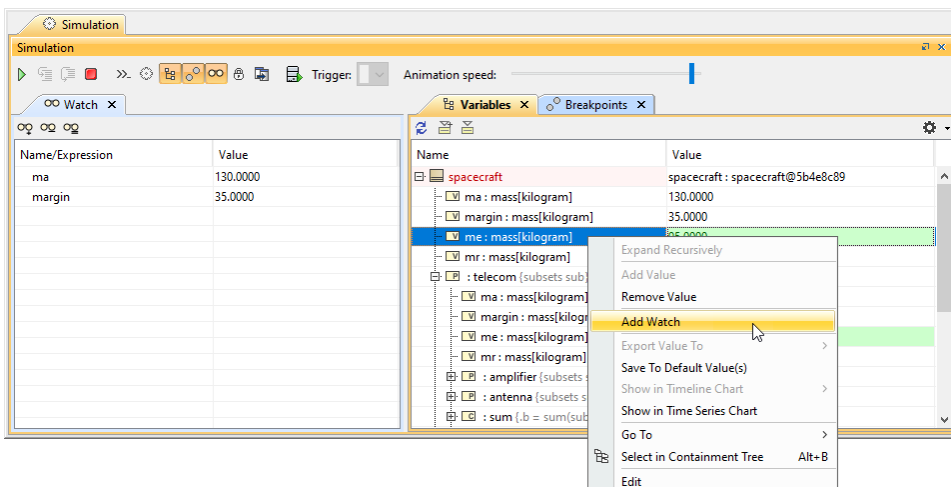
Adding Watch items using the Console pane

To add Watch items using the **Console** pane

1. In the input box (>>) of the **Console** pane, type the properties and expressions you want to add to the **Watch** pane.

2. In the **Console** pane toolbar click [icon]. The properties and expressions in the input box (>>) are added to the **Watch** pane. Also, the simulation automatically saves the selected language in the list box.

Adding Watch items using the Watch pane

To add Watch items using the **Watch** pane

1. Do one of the following:
   - In the **Watch** pane toolbar, click [icon].
   - In the **Watch** pane, click the first blank row.
2. Type the property or expression you want to add.
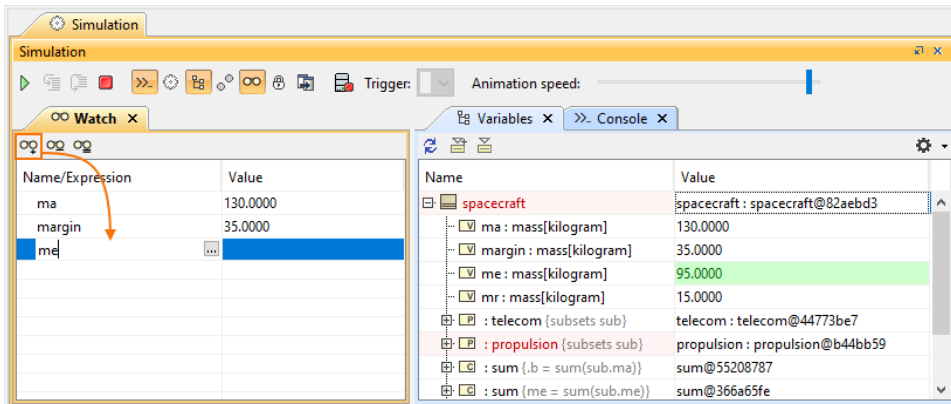
> ⚠️ **Note**
>
> - You can add the name of a property without using the root object because the context of the **Watch** pane is the main root context.
>
> - You can also use *Type* if the name of a property does not exist (e.g., *spacecraft.telecom.ma* = 35).
>
> - *Multiplicity* will be shown as a flat list of an array of strings (e.g., *Trade-Study.MaxEfficiency.x = [0.4761, 0.4761,…, 0.4237]*).

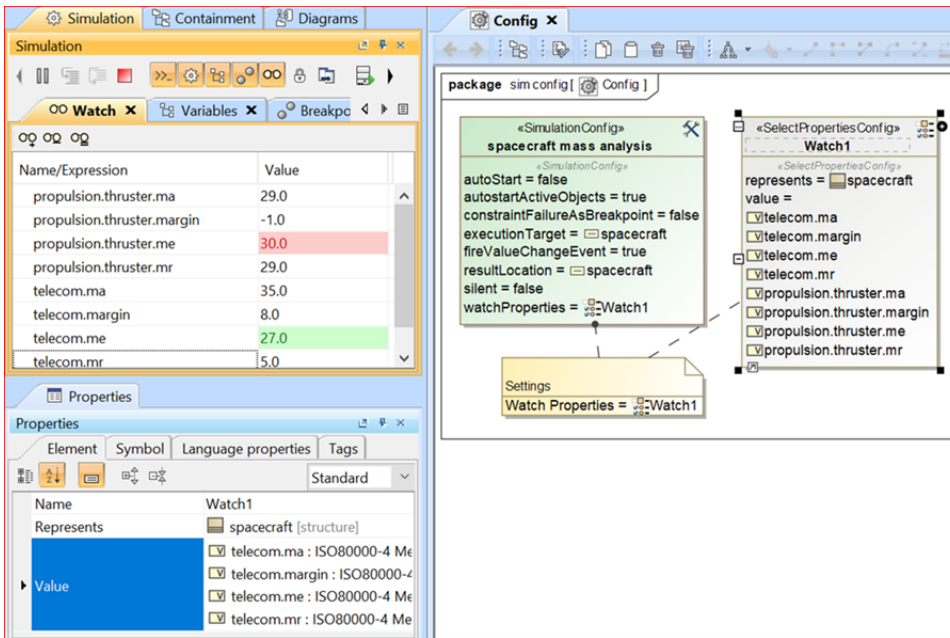## Adding Watch items using the Select Properties Config
   > - You can specify an index of *Multiplicity* starting at 1 (e.g., *Trade-Study.MaxEfficiency.x[1] = 0.4761*).

To use the Select Properties Config as a predefined list of properties and add it to a Simulation Configuration

1. Create a Simulation Configuration diagram.
2. Add a Select Properties Config and Simulation Config to the diagram.
3. Set Name, Represents, and Value of the Select Properties Config.
4. Set Watch Properties of the Select Properties Config.

> ⚠️ **Note**
> The Watch Properties will be shown in the **Expert & All** view mode.

5. When running the Simulation Config, the **Watch** pane will append the properties populated from Select Properties Config. If there are existing properties, they will not be added to the **Watch** pane.

## Adding Watch items using an Internal Block or Parametric Diagram

You can add many properties (value, part, constraint), constraint parameters, and ports to the **Watch** pane directly from an Internal Block or Parametric Diagram.

> ⚠️ You can only use this method if the Internal Block or Parametric Diagram context is the same as the simulation context, or if the diagram context is the first level of the simulation context structure.

To add Watch items using an Internal Block or Parametric Diagram

1. Run the simulation.

2. In an Internal Block or Parametric Diagram, right-click a property, constraint parameter, or port, and select **Simulation** > **Add to Watch**.
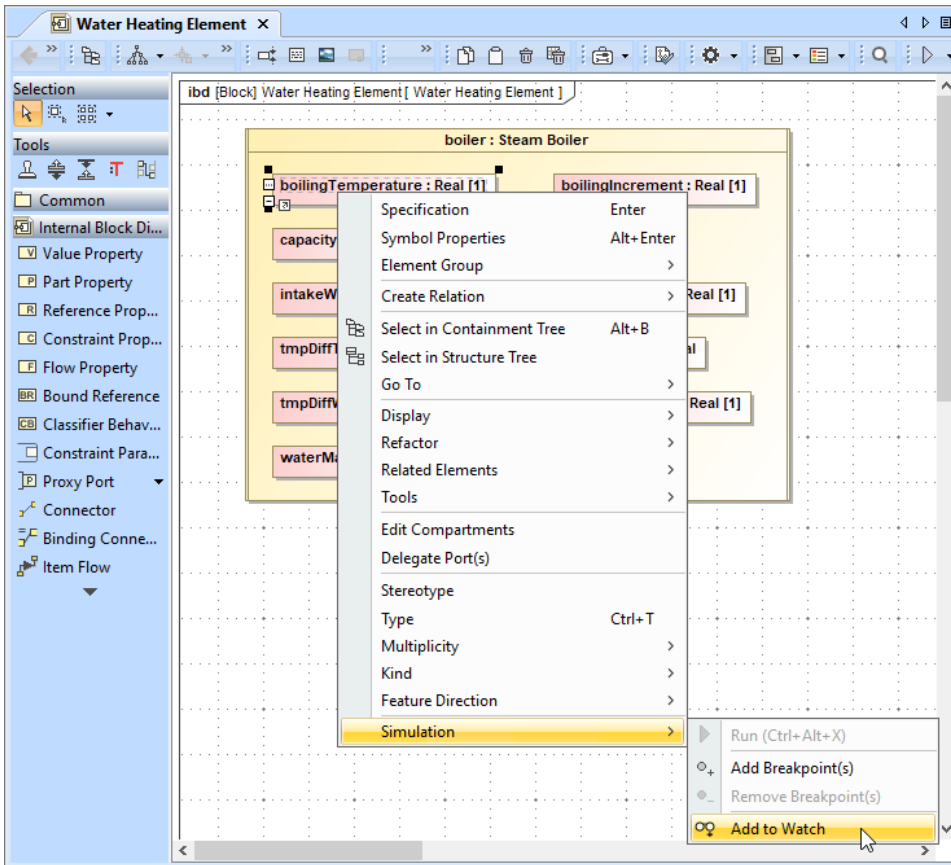
Editing and removing Watch items

You can edit and remove any items by selecting the **Name/Expression** column on the **Watch** pane.

To edit a Watch item

- Click an item to edit and press ENTER.

To remove Watch items from the **Watch** pane

- Do one of the following:

    - To remove a single Watch item, select the item you want to remove and click .
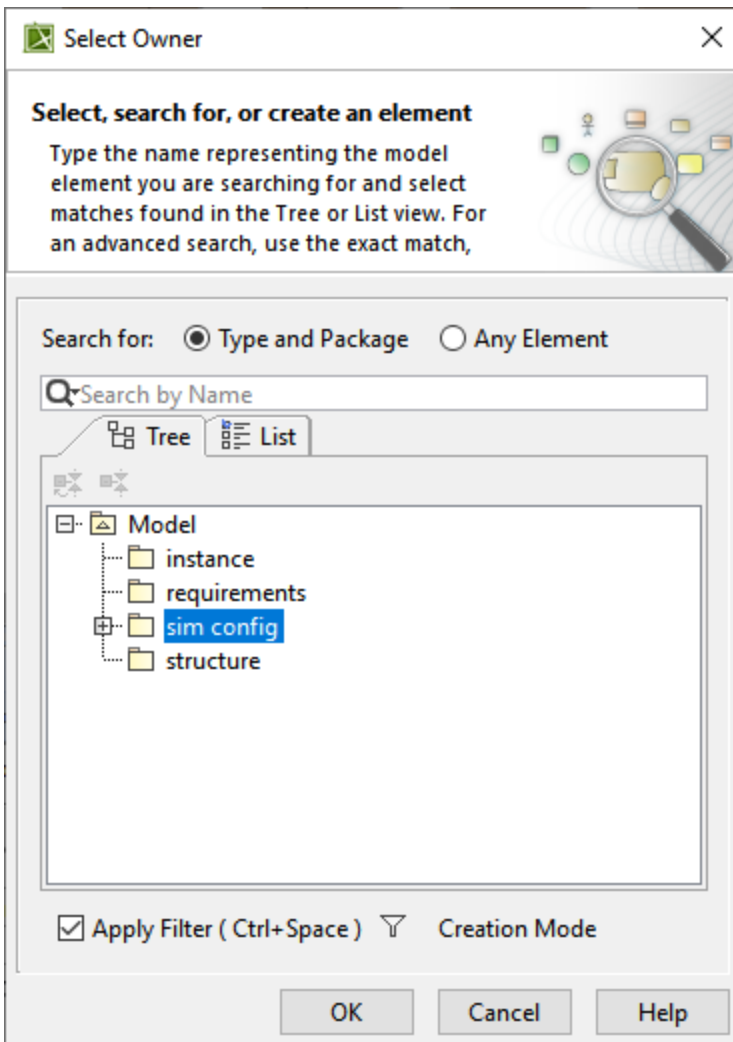   - To remove all Watch items, click .

Adding watch items to a new Select Properties Config using the Watch Pane

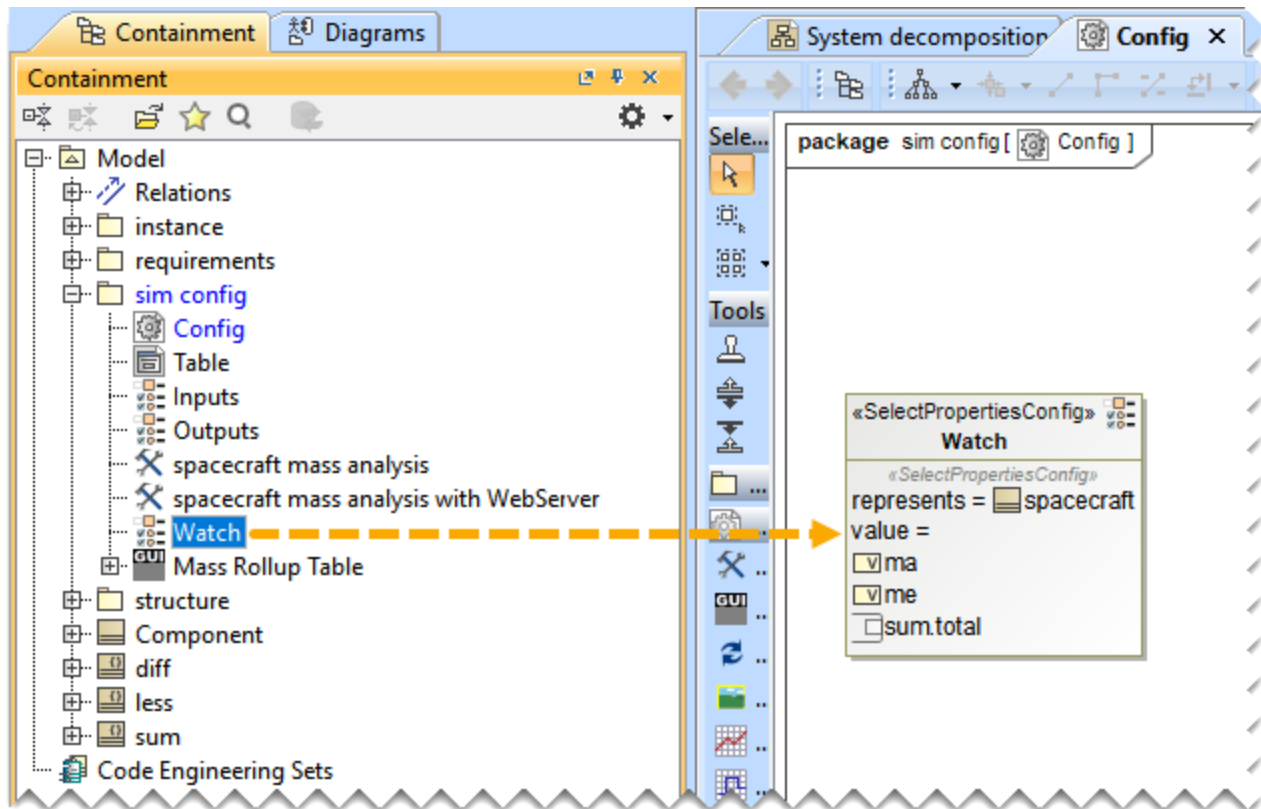To add the watch items to a new Select Properties Config using the Watch Pane

1. In the watch pane toolbar, click
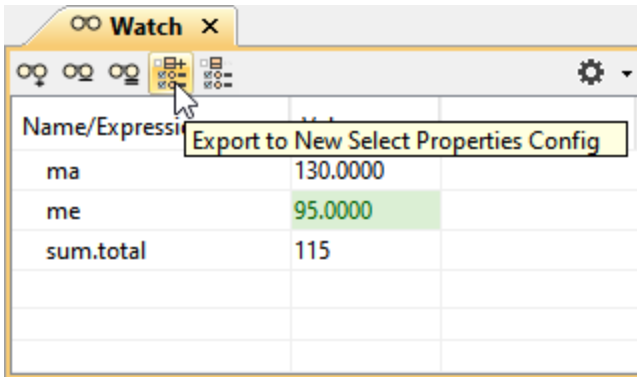
2. From the Select Owner dialog, choose the package where you want to save the new Select Properties Config with exported properties from a watch pane and click **OK.**

You can find the exported watch list in the Containment Tree under the selected package.

Adding new watch items to the existing Select Properties Config using the Watch Pane

To add the new watch items to the existing Select Properties Config using the Watch Pane

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- Run the simulation using the Simulation Config with specified Watch Properties and then click ⊞ to update the Select Properties Config specified in the Simulation Config.

> ⚠ If there is no specified Select Properties Config as Watch Properties, a dialog is displayed prompting you to select an existing Select Properties Config. This selection will then overwrite the chosen Select Properties Config.
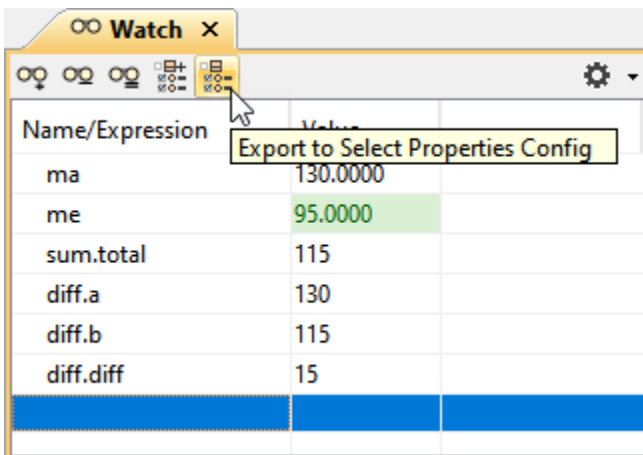
The Select Properties Config displays the added properties from the watch list.

«SelectPropertiesConfig»

Watch

«SelectPropertiesConfig»

represents = spacecraft

value =

v ma

v me

sum.total

diff.a

diff.b

diff.diff