Behavior to structure synchronization

On this page
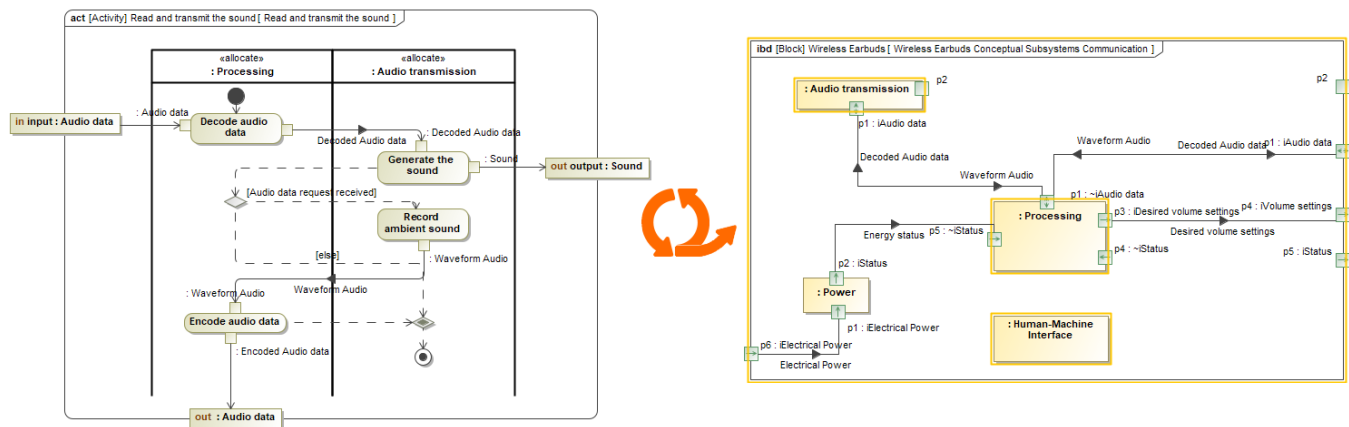
The behavior to structure synchronization checks the consistency of the Internal Block diagram (IBD) with Activities, automatically detects inconsistencies, and enables users to handle each inconsistency individually by providing solvers. As a result, the coherence of IBDs with Activities is ensured at any stage of the model development process.

The behavior to structure synchronization validates the Part Properties displayed in the Internal Block Diagram (IBD) to check for compatible:

- Proxy Ports
- Flow Properties
- Interface Blocks

To verify whether or not the structural elements (e.g., a Proxy Port and an Interface Block) and behavioral elements (e.g., a flow) are compatible, validation rules are used. If any inconsistencies are found, they are displayed in the **Validation Results** panel and then can be individually handled using solvers.

Synchronizing behavior to structure.

Checking behavior to structure synchronization

You need to set the **Allocation Mode** (**Options** > **Project** > **SysML** > **Allocation Mode**) project option to **Usage** first to be able to synchronize behavior to structure.

To check the structure model consistency with the behavior model

- In the toolbar of the Internal Block Diagram, click .

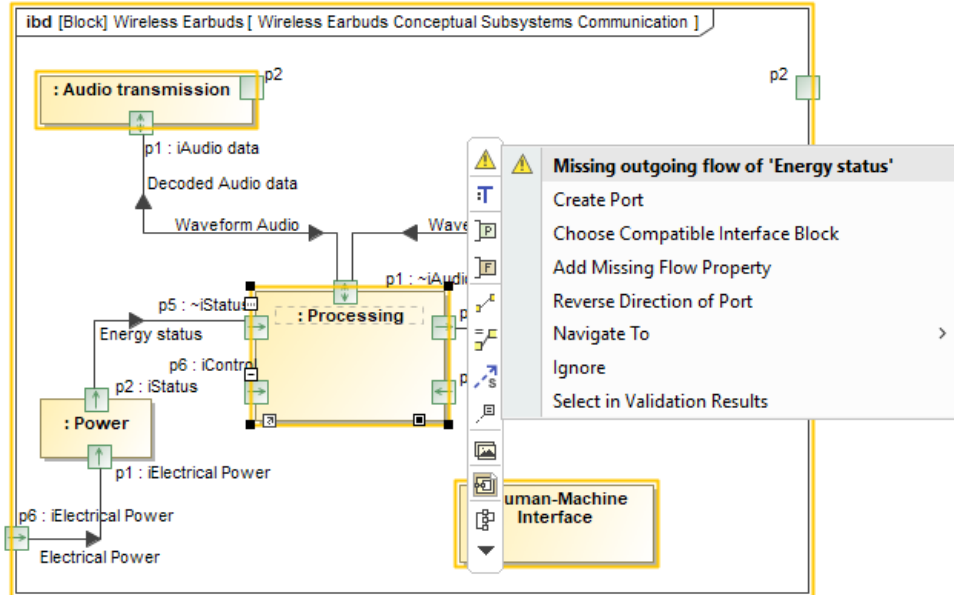The behavior to structure synchronization check is initiated.

Handling inconsistencies between structure and behavior models

The structure model can be automatically synchronized with the behavior model using solvers. Detected inconsistencies can be handled directly in the Internal Block Diagram or the **Validation Results** panel.
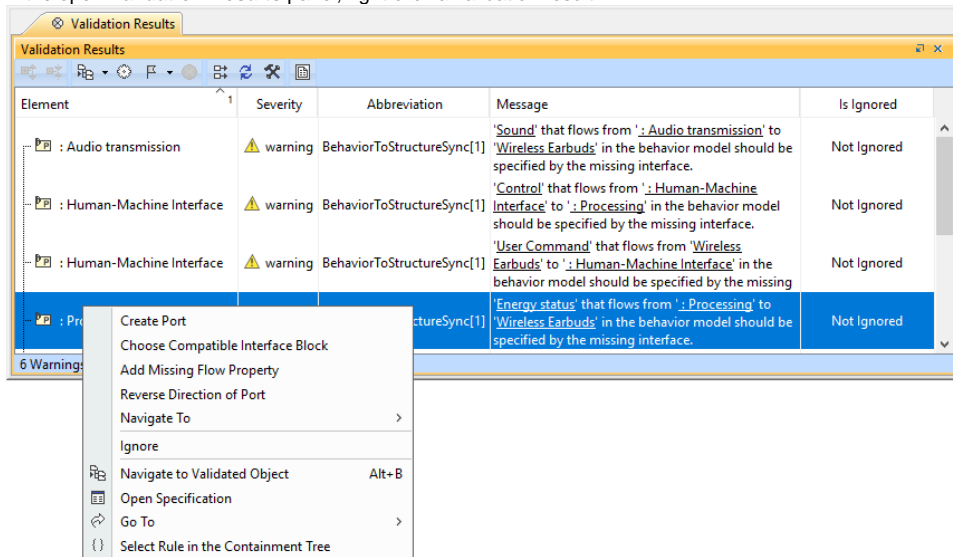
To handle inconsistencies automatically

1. Do one of the following:

- In the Internal Block Diagram, select a Part Property highlighted in yellow, and then in the smart manipulator toolbar, click ⚠.

- In the open **Validation Results** panel, right-click a validation result.

2. Select one of the following:

- **Create Port** - creates a new Proxy Port typed by a compatible Interface Block.
- **Choose Compatible Interface Block** - changes an already existing Proxy Port type to a compatible Interface Block.
- **Add Missing Flow Property** - adds a new Flow Property to an Interface Block that types a Proxy Port.
- **Reverse Direction of Port** - changes the Proxy Port direction, thus changing the Flow Property direction of an Interface Block that types a Proxy Port.

The structure model is synchronized with the behavior model.

Choosing a compatible Interface Block

If you select the **Choose Compatible Interface Block** solver, the **Choose Proxy Port with Compatible Interface Block** dialog opens.

You can now choose a Proxy Port and type it with an Interface Block that has Flow Properties compatible with the type and direction of the missing flow.

Alternatively, you can create a new Proxy Port and an Interface Block to type the Proxy Port. For this, select **<NEW>**.
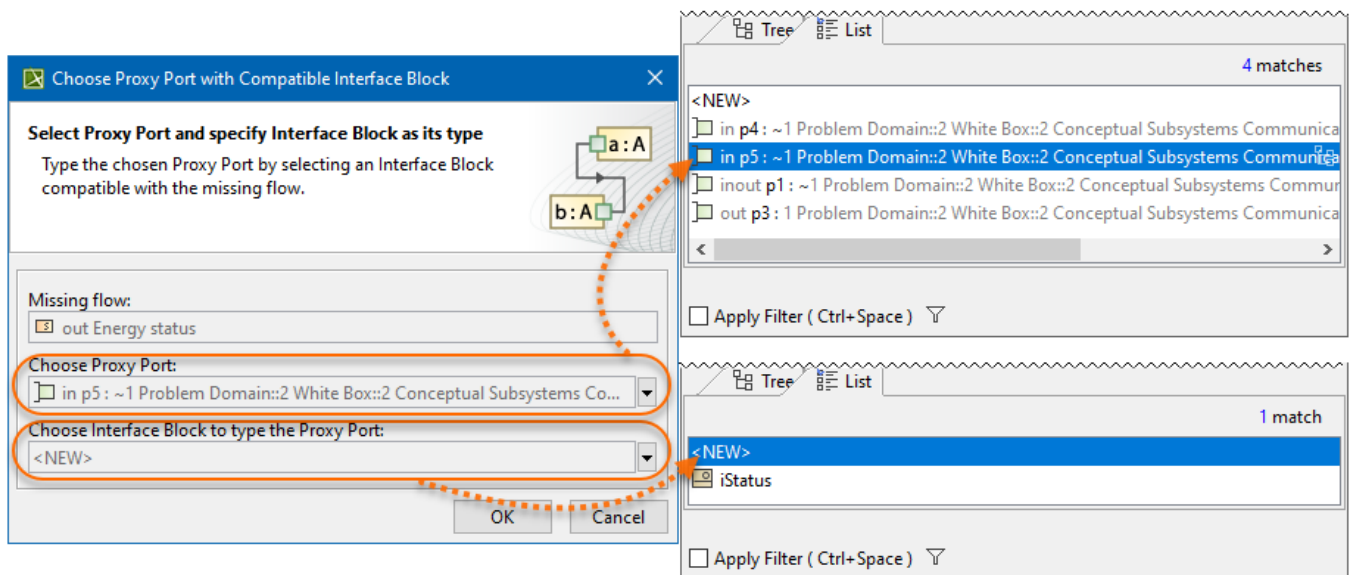
Choosing a Proxy Port and specifying a compatible Interface Block as its type.

Navigating to an element

If you need to learn more about the validated elements, in the smart manipulator toolbar of the Internal Block Diagram or Validation Results panel, select the **Navigate To** command to navigate to:

- Activity Edges in the Activity diagram from which the missing flow has been identified.
- Part Properties in the Internal Block Diagram between which items are flowing.

Elements are automatically selected on the diagram pane and the Containment tree.
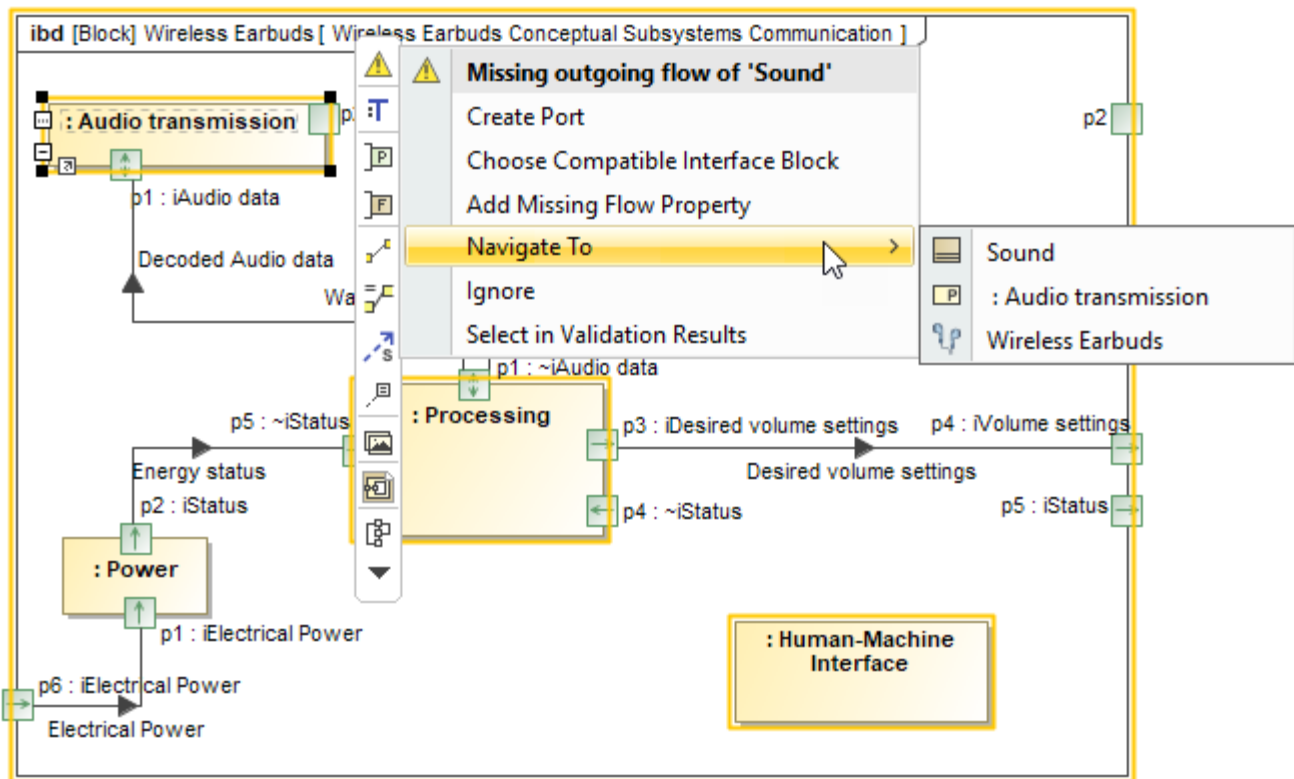
Navigating to an element from the smart manipulator toolbar.