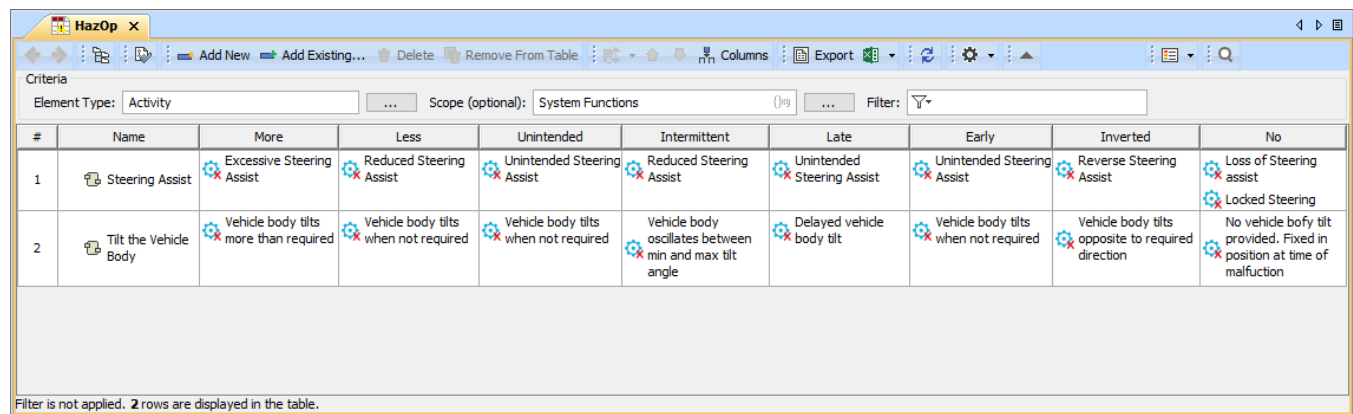


# HazOp Table

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A HazOp Table allows you to perform hazards and operability analysis which is a common hazard analysis method for complex systems. In the HazOp Table, you can identify the Malfunctioning Behaviors for each function of your system.



The screenshot shows the HazOp software interface. At the top, there's a toolbar with various icons for adding, deleting, and managing the table. Below the toolbar, there's a 'Criteria' section with 'Element Type' set to 'Activity', 'Scope (optional)' set to 'System Functions', and a 'Filter' dropdown. The main area contains a table with 2 rows and 10 columns. The columns are labeled: #, Name, More, Less, Unintended, Intermittent, Late, Early, Inverted, and No. The first row is for 'Steering Assist' and the second row is for 'Tilt the Vehicle Body'. Each cell in the table contains a list of malfunctioning behaviors, some with a gear icon and a red 'X' indicating a hazard.

#	Name	More	Less	Unintended	Intermittent	Late	Early	Inverted	No
1	Steering Assist	Excessive Steering Assist	Reduced Steering Assist	Unintended Steering Assist	Reduced Steering Assist	Unintended Steering Assist	Unintended Steering Assist	Reverse Steering Assist	Loss of Steering assist Locked Steering
2	Tilt the Vehicle Body	Vehicle body tilts more than required	Vehicle body tilts when not required	Vehicle body tilts when not required	Vehicle body oscillates between min and max tilt angle	Delayed vehicle body tilt	Vehicle body tilts when not required	Vehicle body tilts opposite to required direction	No vehicle body tilt provided. Fixed in position at time of malfunction

Filter is not applied. 2 rows are displayed in the table.

An example of a HazOp Table.

## Creating a HazOp Table

You can create a HazOp table as described below.

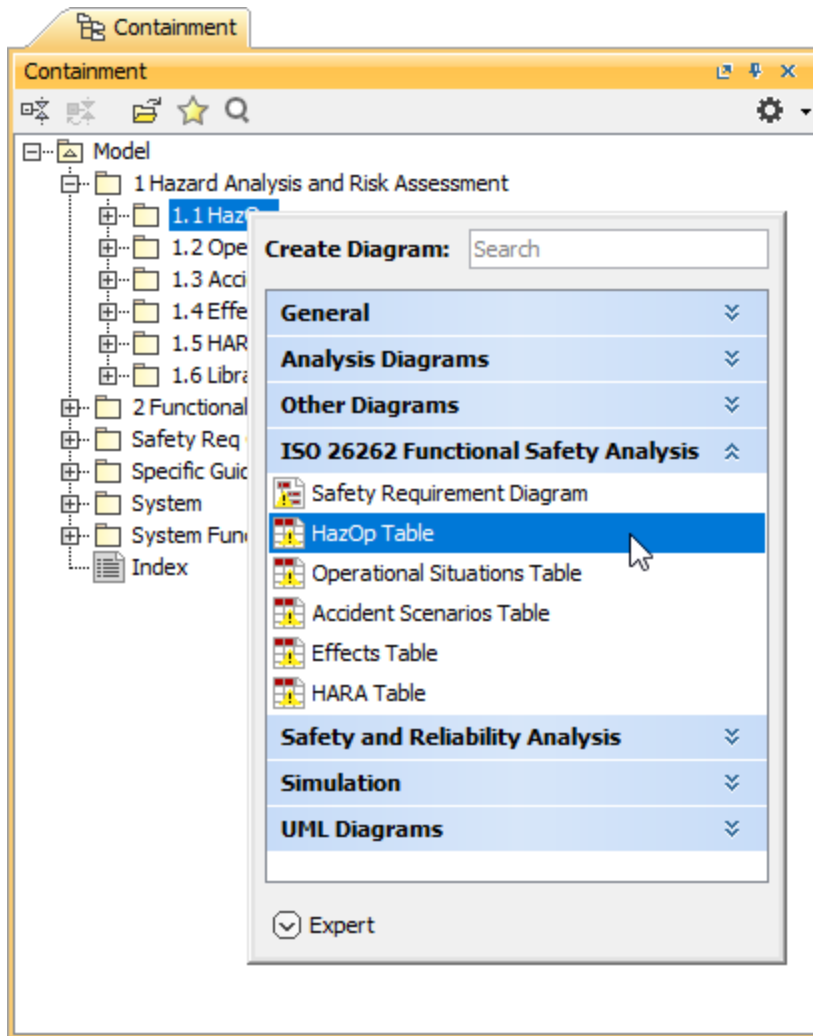


### Supported element types

A HazOp table supports three element types: Activity, Use Case, and Class. If you want to use a different system function type, you can extend the default type list by using [customization](#).

To create a HazOp Table

1. In the Containment tree, select the element that you want to be the owner of the table.
2. Do one of the following:
  - In the main menu, go to **Diagrams > Create Diagram**, then select **HazOp Table** in the open dialog.
  - In the Containment tree, right-click the owner of the table, select **Create Diagram** and select **HazOp Table** in the open dialog.



3. Type the name of the table and press Enter.
4. To specify the scope of the table, drag the Package containing system functions from the Containment tree to the **Scope** box.
5. To specify the type of your system functions, drag any system function from the Containment tree to the **Element Type** box.

After you create a HazOp Table with the system functions displayed in it, you can start creating Malfunctioning Behaviors, as described in the section below.

## Creating Malfunctioning Behaviors

There are two ways to create Malfunctioning Behaviors:

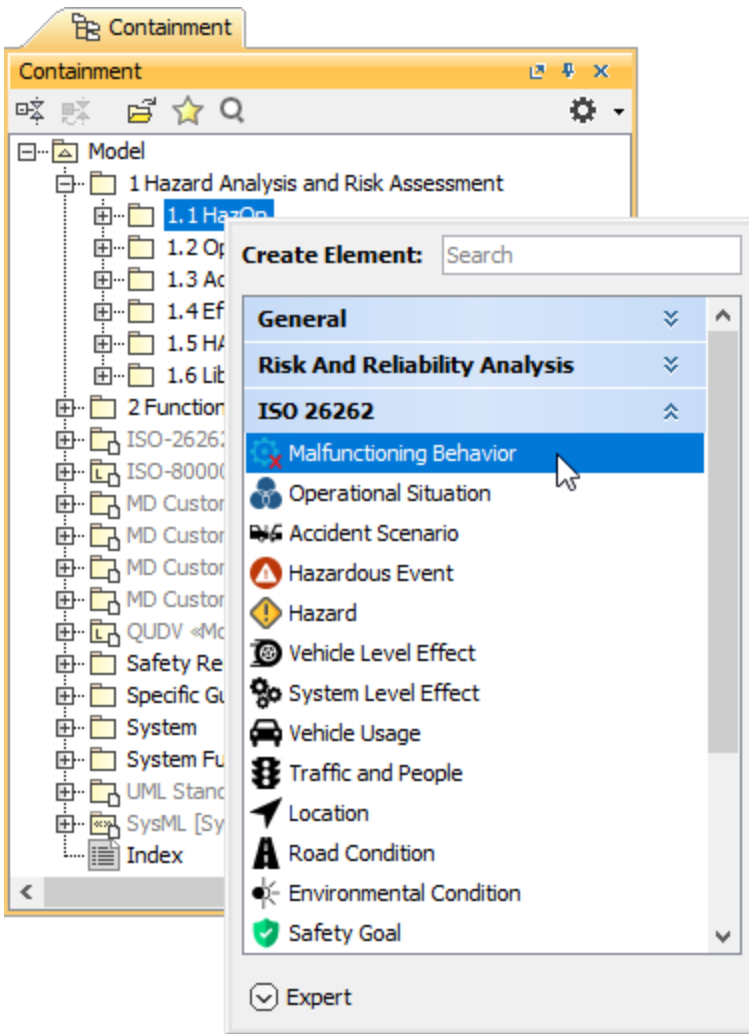
- Create Malfunctioning Behaviors in the Containment tree and add them to a HazOp Table.
- Create Malfunctioning Behaviors right in a HazOp Table.

### Identifying Malfunctioning Behaviors

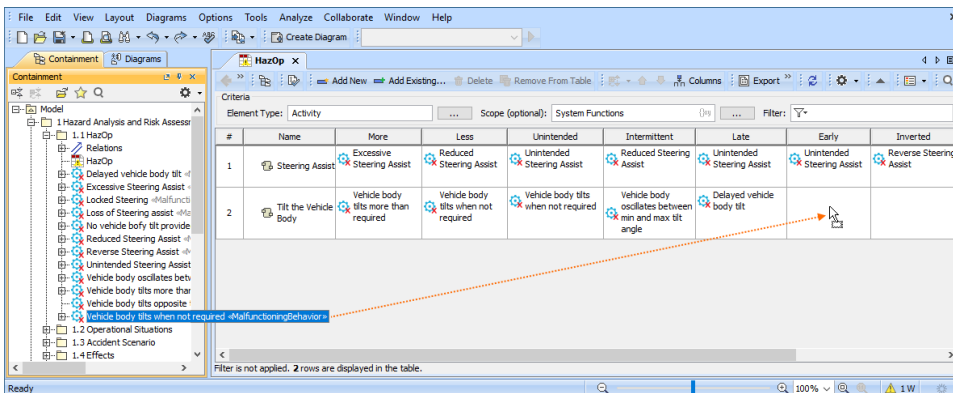
To help identify Malfunctioning Behaviors in a HazOp Table, you can use eight predefined table columns (guide words): More, Less, Unintended, Late, Early, Inverted, Late, and No.

To create a Malfunctioning Behavior in the Containment tree


1. In the Containment tree, right-click the owner of a new element and select **Create Element**.
2. In the open window, select **Malfunctioning Behavior**.



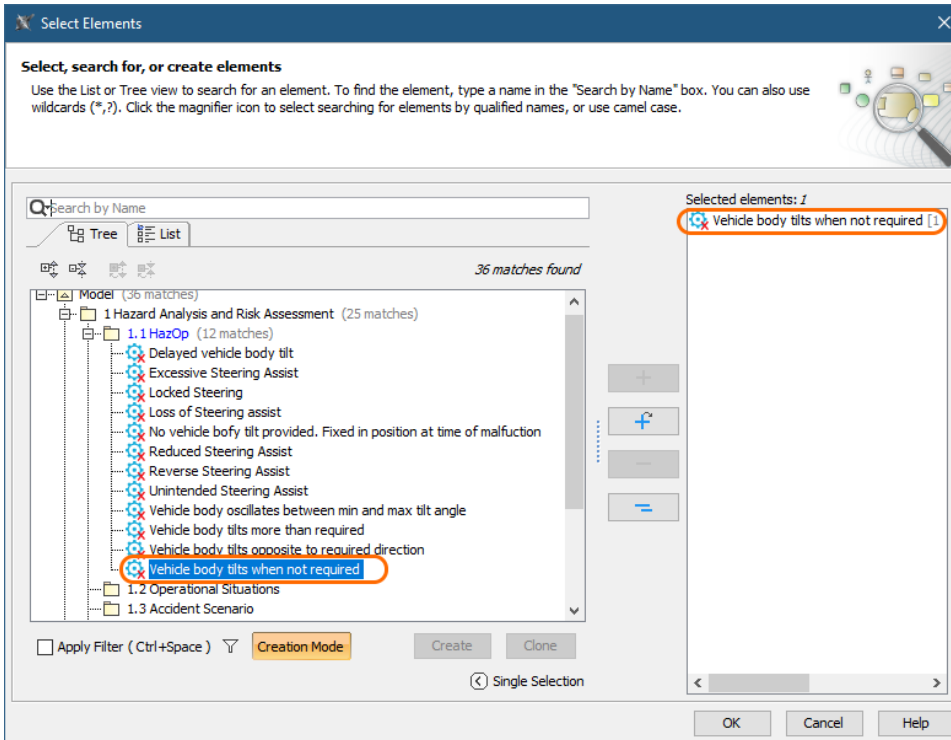
3. Type the name of the element and press Enter.
4. To assign the Malfunctioning Behavior to a system function, drag it from the Containment tree to the desired cell of the HazOp Table.



To create a Malfunctioning Behavior in a HazOp Table

1. In a HazOp Table, double-click the cell for which you want to create a Malfunctioning Behavior and click .
2. In the **Select Elements** dialog, enable the **Creation Mode** if it is not enabled yet.
3. In the element tree on the left side of the dialog, select the owner of a new element and click the **Create** button.

- When the Specification window of the created element opens, enter the element name and close the Specification window. The element is created and automatically added to the selected elements area on the right side of the **Select Elements** dialog.



#### Adding additional Malfunctioning Behavior

To add an additional Malfunctioning Behavior to the related table cell, double-click that element in the element tree on the left side of the **Select Elements** dialog. To find the element quicker, go to the **List** tab displaying the list of all the Malfunctioning Behaviors of your model.

- Click **OK** to close the **Select Elements** dialog.