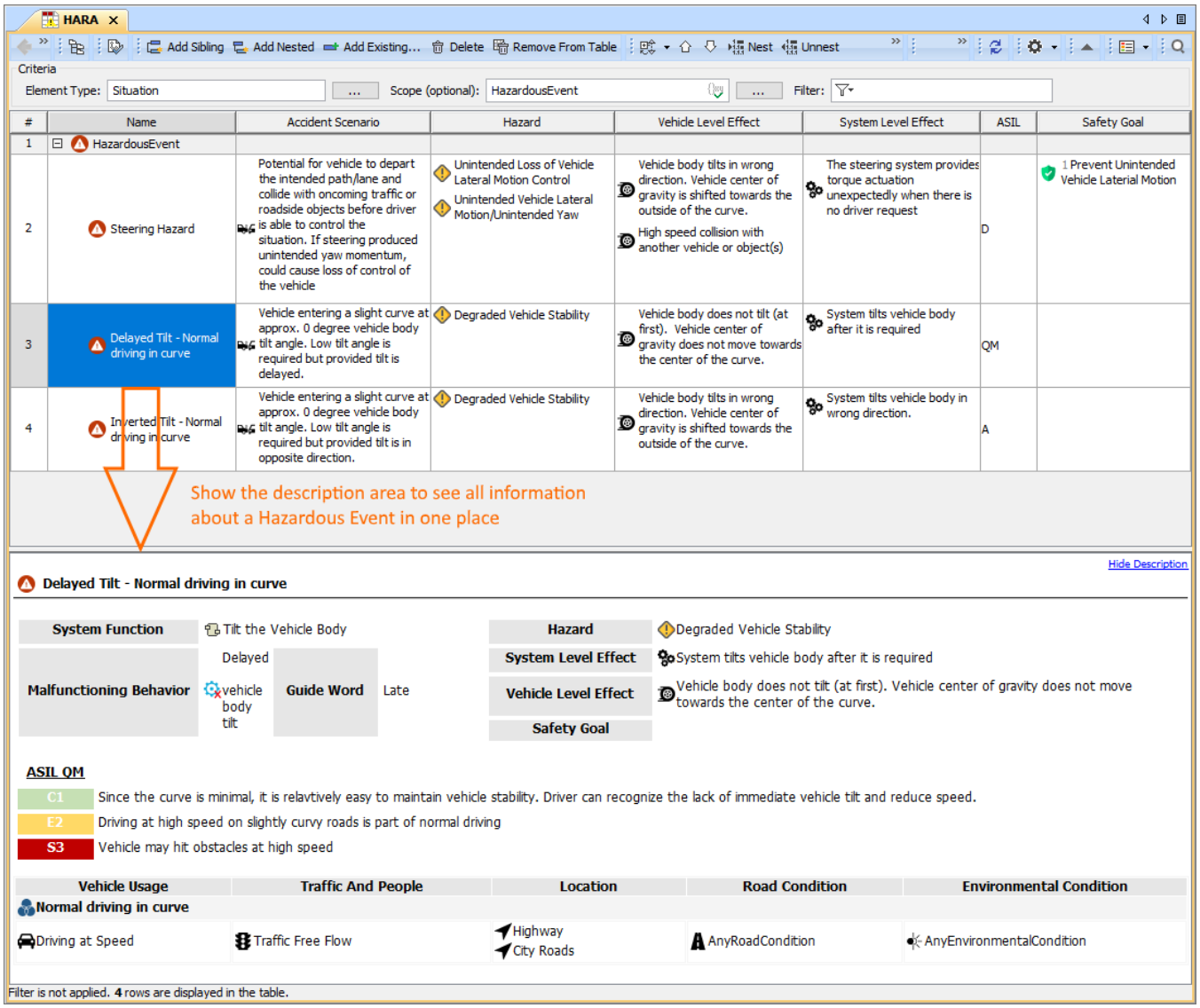
HARA Table

On this page:

- Creating HARA Table
- Creating Hazardous Events
- Defining Hazardous Events

A HARA Table allows you to define Hazardous Events as a combination of Hazards, Effects and an Accident Scenario. By default, the table shows seven columns. The rest of the columns are hidden, but you can show them if needed.



An example of a HARA Table.

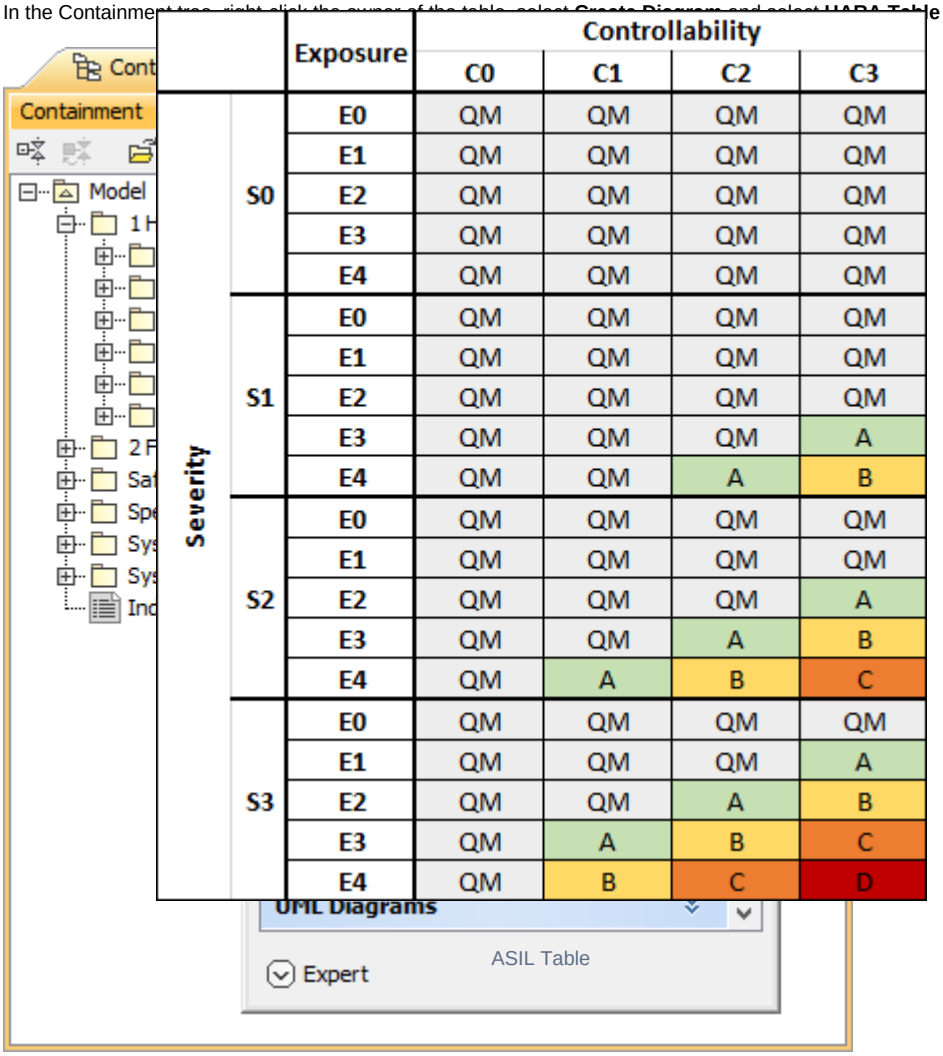
Creating HARA Table

You can create a HARA Table as described below.

To create a HARA Table

ASIL returns a calculated value according to the specified values of **Exposure**, **Controllability** and **Severity**. If there are more than one values of **Severity** or **Exposure** then take the higher value (single value).

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 **HARA Table** in the open dialog.
   - In the Containment tree, right-click the owner of the table, select **Create Diagram** and select **HARA Table** in an open dialog.



Severity	Exposure	Controllability C0	C1	C2	C3
S0	E0	QM	QM	QM	QM
	E1	QM	QM	QM	QM
	E2	QM	QM	QM	QM
	E3	QM	QM	QM	QM
	E4	QM	QM	QM	QM
S1	E0	QM	QM	QM	QM
	E1	QM	QM	QM	QM
	E2	QM	QM	QM	QM
	E3	QM	QM	QM	A
	E4	QM	QM	A	B
S2	E0	QM	QM	QM	QM
	E1	QM	QM	QM	QM
	E2	QM	QM	QM	A
	E3	QM	QM	A	B
	E4	QM	A	B	C
S3	E0	QM	QM	QM	QM
	E1	QM	QM	QM	A
	E2	QM	QM	A	B
	E3	QM	A	B	C
	E4	QM	B	C	D

3. When the table is created, type the name of the table and press Enter.

After completing the above steps, a HARA Table is created. The scope and element type of the table are already specified for you.

Creating Hazardous Events

There are two ways to create a Hazardous Event: you can do it right in a HARA Table or in the Containment tree.

To create a Hazardous Event in the Containment tree

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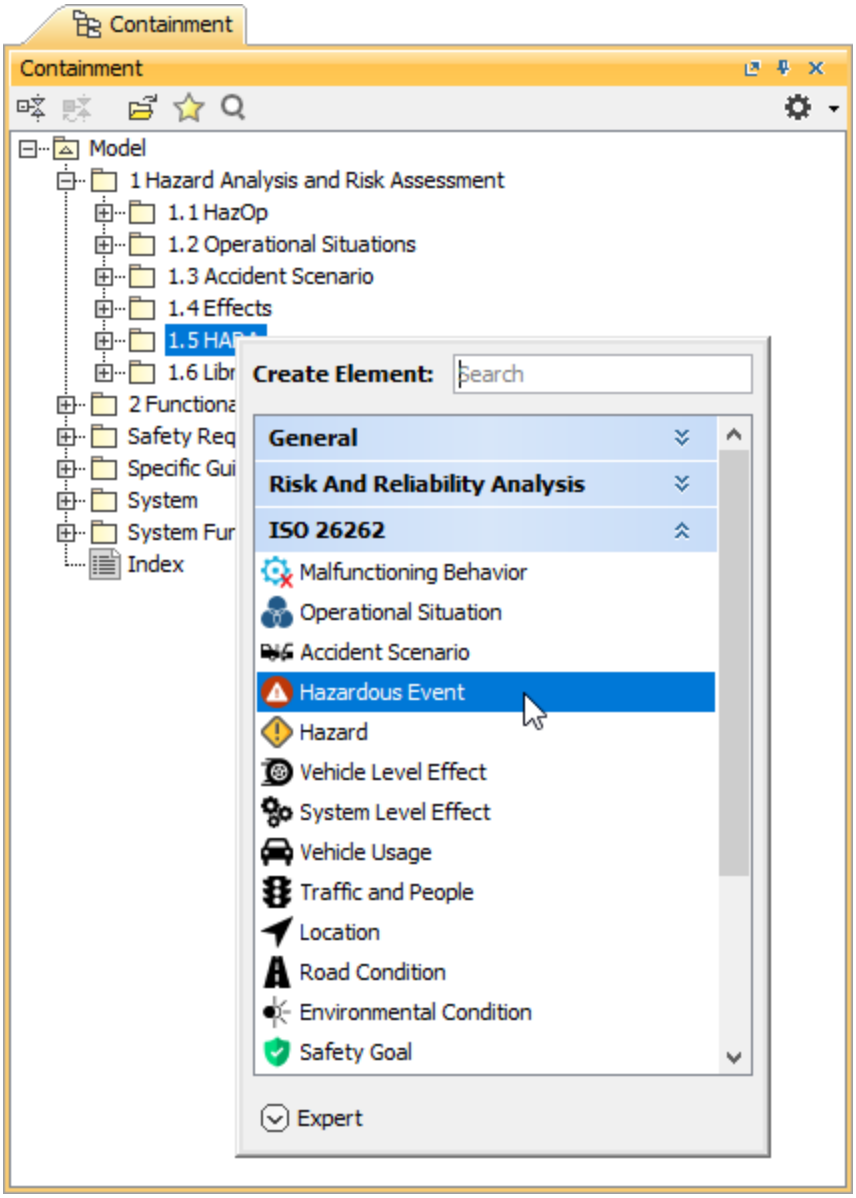
1. In the Containment tree, right-click the owner of a new element and select **Create Element**.
2. In the open window, select **Hazardous Event**.



3. When a Hazardous Event is created, type the name of the element and press Enter.

When you create a Hazardous Event in the model browser, it is automatically added to a HARA Table if it exists.

To create a Hazardous Event in a HARA Table

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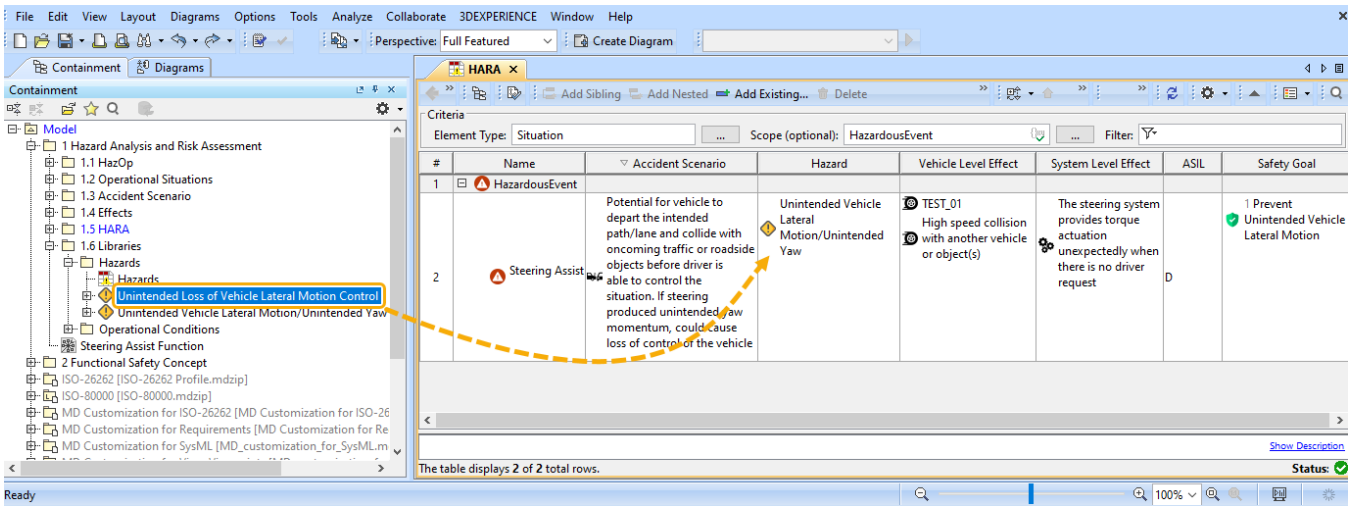
1. In a HARA Table, select a table row.
2. Do one of the following:
   - In the table toolbar, click **Add Sibling** to create an element of the same level as the one you have selected.
   - In the table toolbar, click **Add Nested** to create an element nested under the selected element.
3. Type the name of the new element and press Enter.

When you create a Hazardous Event and add it to a HARA Table, you need to define the element as described in the section below.

Defining Hazardous Events

After creating a Hazardous Event, you need to define it by assigning an Accident Scenario, Hazards, and Effects to the element. You also need to create and assign a Safety Goal. The Accident Scenario, Hazards, Effects and Safety Goal also can be dragged from the Containment tree.



Dragging and dropping the **Hazard** in the HARA Table

To assign an Accident Scenario

1. In a HARA Table, double-click the cell the **Accident Scenario** column and click ...
2. On the left side of the **Select Element** dialog, open the **List** tab.
3. Select the Accident Scenario you want to assign.
4. Click **OK**.

> **Use filters to find elements quicker**

After assigning an Accident Scenario to a Hazardous Event, the Automotive Safety Integrity Level (ASIL) is calculated automatically.

Assigning Hazards

1. In a HARA Table, double-click the cell of the **Hazard** column and click ...
2. On the left side of the **Select Element** dialog, open the **List** tab.
3. Double-click the Hazards you want to assign. The elements should be added to the selected elements area.
4. Click **OK**.

To assign an Effect

1. In a HARA Table, double-click the cell of the column representing the group of Effects (**Vehicle Level Effects** or **System Level Effects**) you want to assign an click ...
2. On the left side of the **Select Element** dialog, open the **List** tab.
3. Double-click the Effects you want to assign. The elements should be added to the selected elements area.
4. Click **OK**.

To create and assign Safety Goal

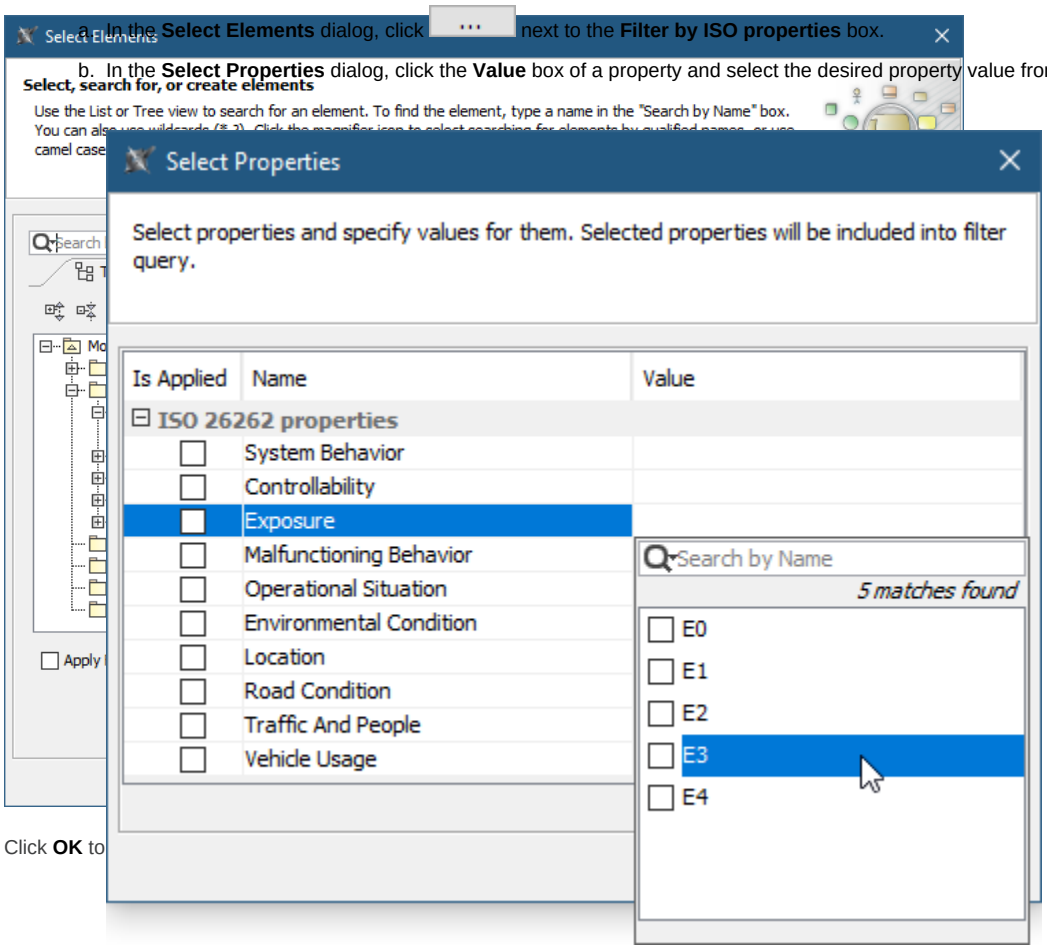
1. In a HARA Table, double-click the cell of the **Safety Goal** column and click ...
2. In the **Select Elements** dialog, enable the **Creation Mode** if it is not enabled yet.
3. In the element tree on the left side of the dialog, select the owner of a Safety Goal and click the **Create** button.

When you assign a Accident Scenario, use a filter after step 2 to find elements quicker.

4. 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.

   a. In the **Select Elements** dialog, click ... next to the **Filter by ISO properties** box.

   b. In the **Select Properties** dialog, click the **Value** box of a property and select the desired property value from the list.



5. Click **OK** to

   c. Click **OK**.

Now the **List** tab displays the elements with the selected property value.