

# Using Alf for Transition guard Expressions

An Alf expression can be used as the guard for a Transition in a State Machine. However, in this case, it is generally easier to enter the Expression directly into the Specification window for the Transition, rather than to use the Alf editor window. It can then subsequently be edited using the Alf editor.

## Related pages

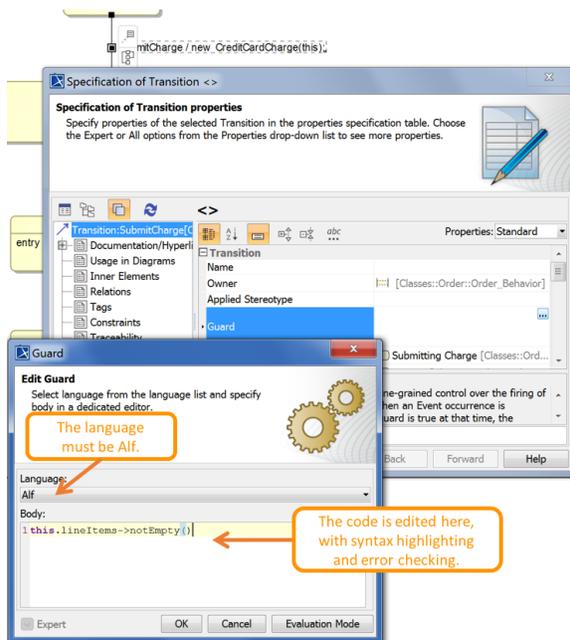
- [The Alf editor](#)
- [The Alf compiler](#)
- [Using Alf for Transition effect Behaviors](#)

To create an Alf guard Expression

1. Open the Specification window for the Transition (from the Model Browser or as represented on a State Machine diagram).
2. In the **Transition** section, click on the **Guard** property and then click on the  button at the right of the field.
3. In the Edit Guard window, select *Alf* for **Language** (you may need to scroll up in the menu) and enter the Alf code for the expression into the **Body** field.



Note that the text entered must be for an *expression*, not a statement. Therefore, it must *not* have a semicolon at the end. The expression can access attribute values of the context Classifier of the State Machine containing its Transition (using *Alf this* expressions). It can also [access the data](#) in the event occurrence that triggered its execution (e.g., the attribute data of a received Signal).



To make Alf the default language for guard Expressions

- a. Select **Options > Environment**.
- b. From the **General** options, select **Editing**.
- c. For the **Opaque Expression Default Language** option, type *Alf* (with exactly that spelling and capitalization).
- d. Click **OK**.

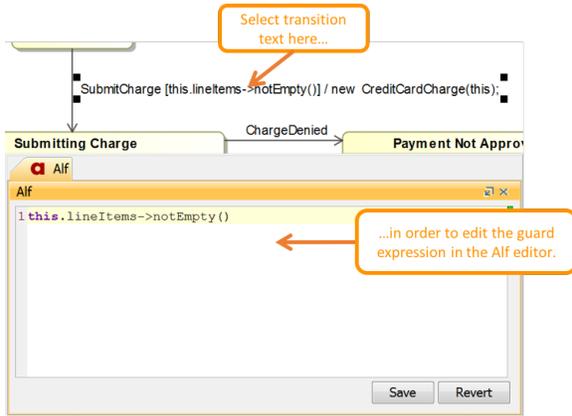
4. Click **OK** to close the Edit Guard window.
5. Close the Specification window.

To edit an Alf guard Expression in the Alf editor

1. Open the Alf editor window (select **Window > Alf**), if it is not already open.
2. On the State Machine diagram, click on the *text* of the Transition trigger with the guard to be edited.

**i** If a Transition has a guard Expression in Alf, but no effect Behavior, than selecting the Transition on a diagram results in the Alf code for the guard being displayed in the Alf editor window. However, if the Transition also has an effect Behavior in Alf, then selecting the Transition *line* on a diagram results in the Alf code for the *Behavior* being displayed in the Alf Editor. In order to edit the *guard*, select the *text* for the trigger of Transition.

3. Enter the Alf code for the guard Expression and press **Save** to compile and save it.



You can also edit the Alf code in the Edit Guard window just as in the Alf editor window. However, instead of **Save** and **Revert** buttons, this window has **OK** and **Cancel** buttons, either of which will close it. If you press **OK**, then the Alf text is saved, and, if it has no errors, compiled. If you press **Cancel**, the Alf text is *not* saved.

To edit an Alf guard Expression in the Edit Guard window

1. Open the Specification window for the Transition (from the Model Browser or as represented on a State Machine diagram).
2. In the **Transition** section, click on the **Guard** property and then click on the **...** button at the right of the field.
3. Edit the Alf expression as above.