

# Reusing and referencing Simulink models

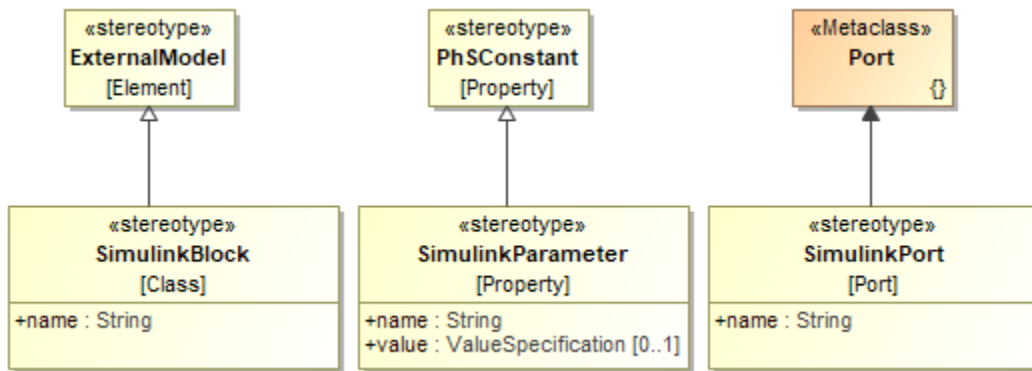
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## Introduction

The «SimulinkBlock», «SimulinkParameter» and «SimulinkPort» stereotypes are created to specify which SysML properties (including ports) of its blocks correspond to Simulink library reusable component. The semantics of these elements are given by the corresponding elements in the Simulink libraries. For more details, read the [OMG SysPhS specification](#).

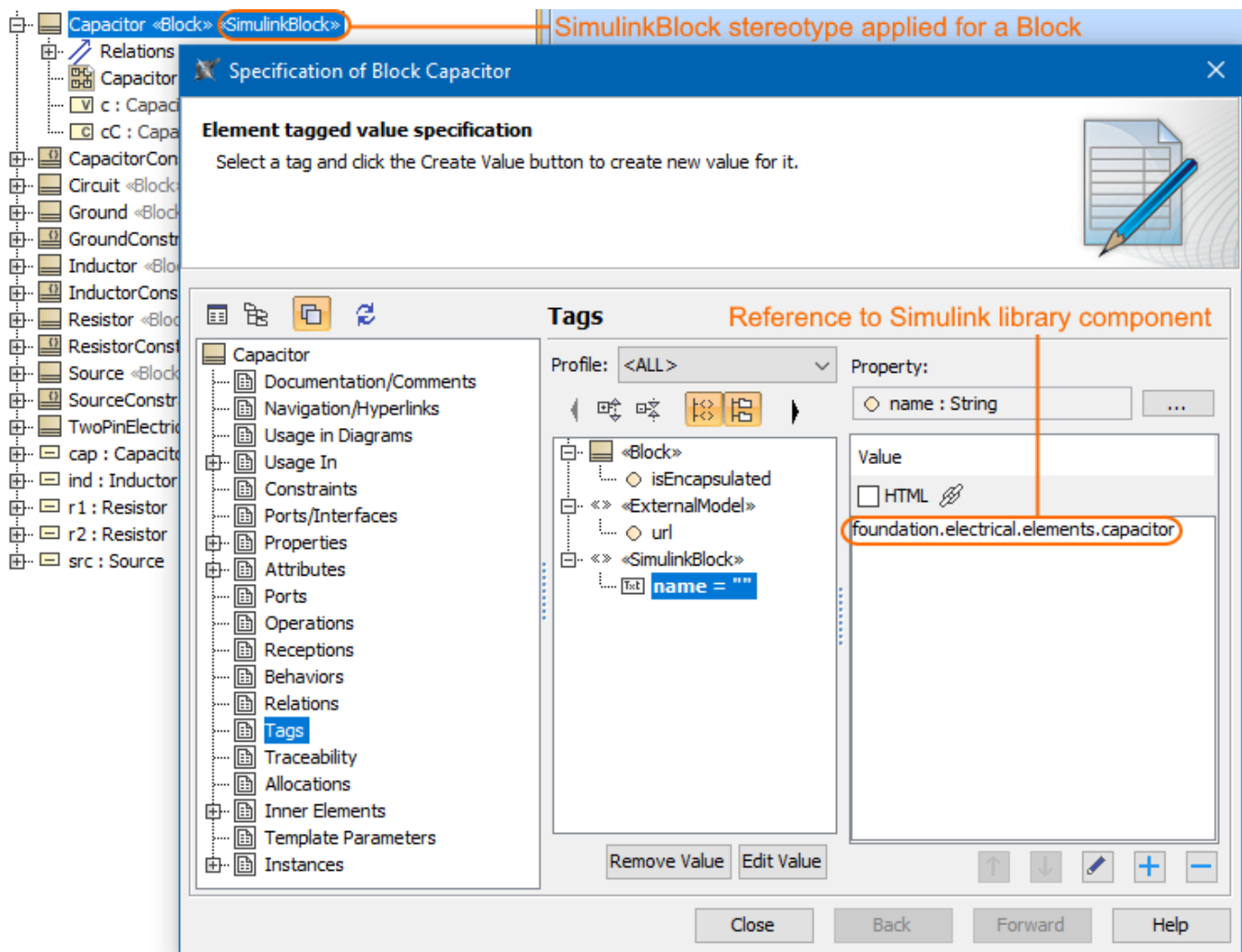
The figure below shows how the «SimulinkBlock», «SimulinkParameter» and «SimulinkPort» stereotypes are defined in the SysML profile.



Simulink stereotypes.

## Using «SimulinkBlock» stereotype

Apply «SimulinkBlock» stereotype for a [Block](#) to reference its [Part Properties](#) with an equivalent component in the Simulink library. The value of the name tag must be a fully qualified name (e.g. foundation.electrical.elements.capacitor) of the corresponding component in the Simulink library.

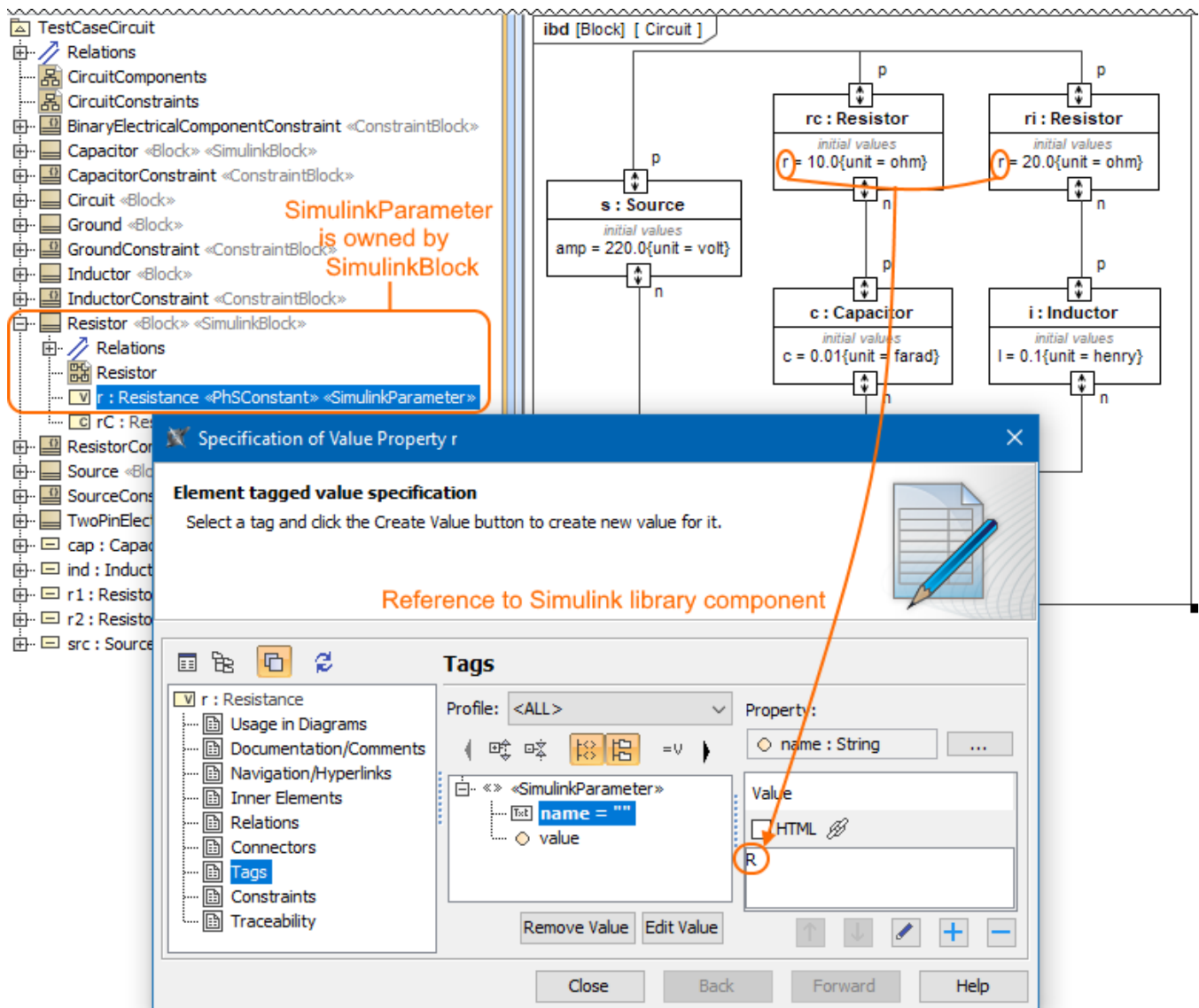


The «SimulinkBlock» stereotype applied for a *Capacitor* Block and created reference to corresponding component in the Simulink library.

## Using «SimulinkParameter» stereotype

Apply «SimulinkParameter» stereotype for a [Value Property](#) to reference it with an equivalent parameter of a Simulink library. The stereotyped Value Property must be owned by a Block stereotyped by «SimulinkBlock». The value of the name tag is the name of the corresponding parameter, and the value attribute gives the value of this parameter. If the value is empty, the value of the parameter must be given using initial values of the stereotyped property.

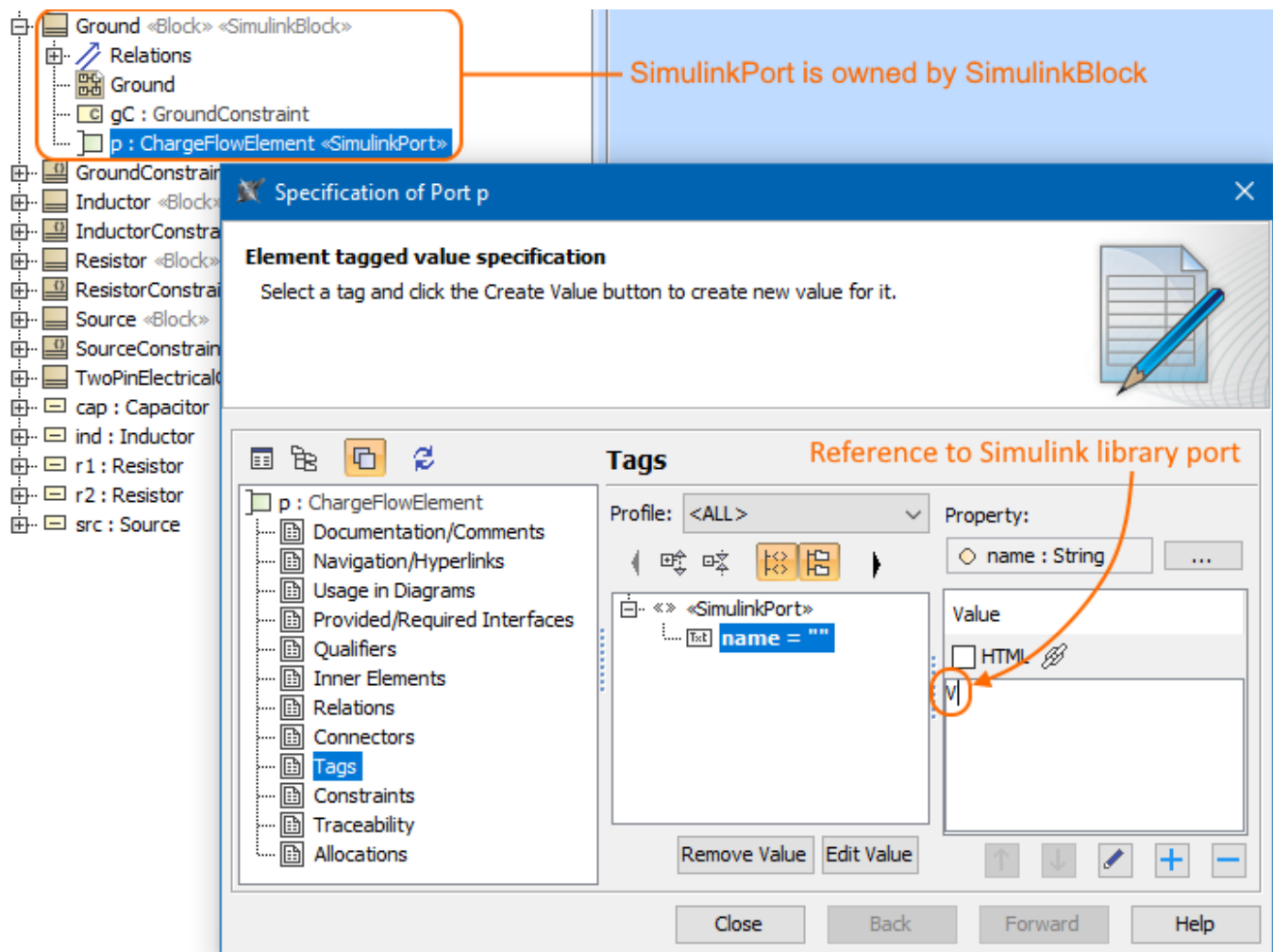
In the following image, after the «SimulinkParameter» stereotype is applied for the *r* Value Property, its name tag value is referenced with the parameter *Ri* in the Simulink library.



The «SimulinkBlock» Resistor owns r Value Property stereotyped by «SimulinkParameter» and created reference to the Simulink library component.

## Using «SimulinkPort» stereotype

Apply «SimulinkPort» stereotype for a port to reference it with an equivalent port in the Simulink library. The stereotyped port must be owned by a Block with «SimulinkBlock» stereotype applied. The value of the name tag gives the name of the corresponding port in the Simulink library.



The «SimulinkBlock» *Ground* owns *p* Proxy Port stereotyped by «SimulinkPort» and created reference to the Simulink library component.

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