MODULE

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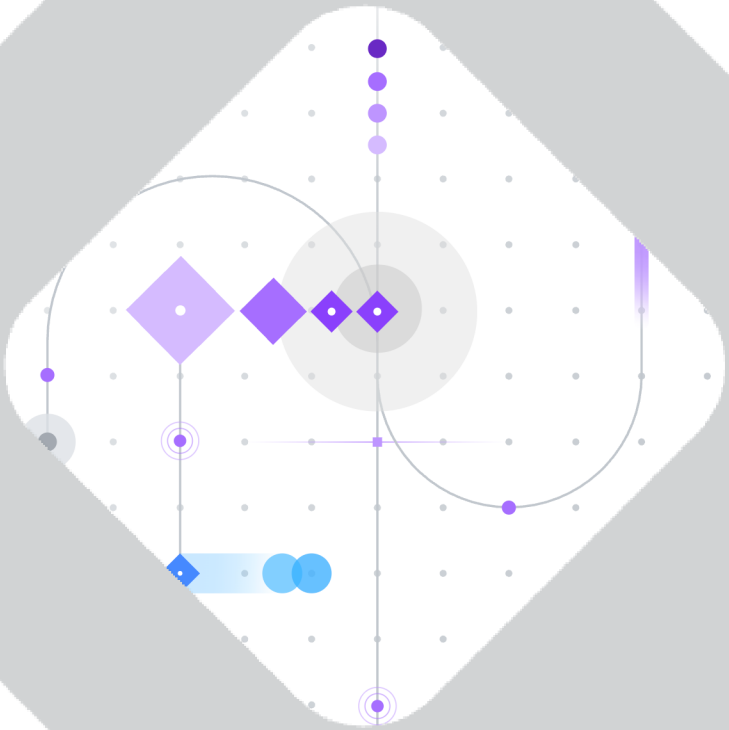


IBM Rhapsody Systems Engineering Quick Start Guide

IBM Rhapsody Systems Engineering is a powerful tool for creating and editing SysML v2 models.

This document will help you get started with IBM Rhapsody Systems Engineering.

IBM Rhapsody Systems Engineering Quick Start Guide V1.0

TABLE OF CONTENT

1 INTRODUCTION

SysML v2 is a modeling language that was officially released in version 2 by OMG[1] in July 2025. Important core aspects of SysML v2 are the strict separation of definition and usage, the end-to-end specified textual and graphical notation, the standardized API for external access to the model, and the concept of specialization.

To achieve this and avoid typical problems in system modeling, SysML v2 was completely redesigned; it is not based on existing notation such as UML or SysML v1.

An overview of the most important features of SysMLv2 can be found in our concise SysML v2 Cheat Sheet at the following link: http://www.sodiuswillert.biz/sysmlv2 .

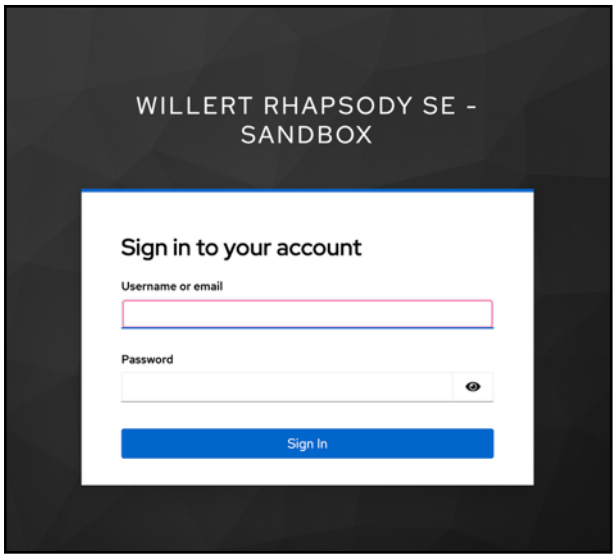
SodiusWillert invites you to try IBM Rhapsody Systems Engineering free of charge. Register at https://www.sodiuswillert.com/en/contact-us to receive your log-in credentials for our WILLERT IBM RHAPSODY SE – SANDBOX. Further information can also be found at https://www.sodiuswillert.com/en/ibm-elm/ibm-rhapsody-systems-engineering.

2 BASIC NAVIGATION

When launching the IBM Rhapsody SE website, you will be directed to the login page. Enter your user name or email address and password. Click on Login.

If you do not yet have an IBM Rhapsody SE account, please contact the administrator in charge of your IBM Rhapsody SE instance.

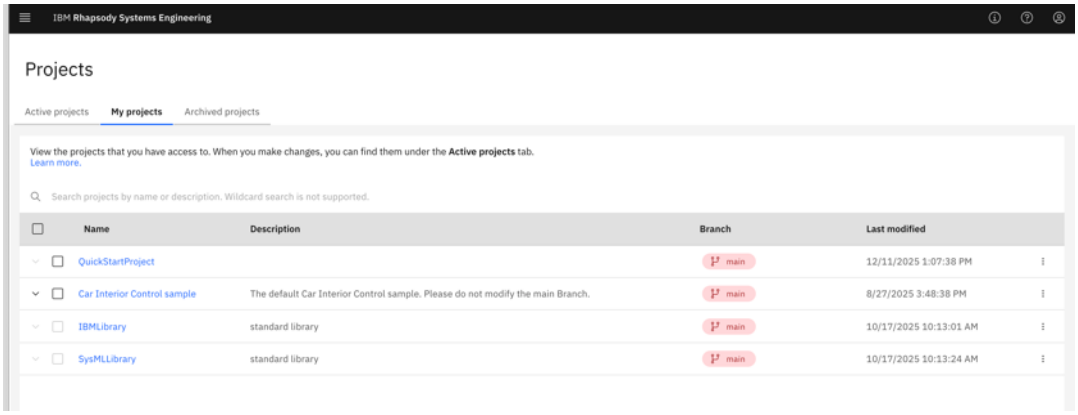
For **access to WILLERT IBM RHAPSODY SE - SANDBOX, please register using the following contact form: https://www.sodiuswillert.com/en/contact-us**



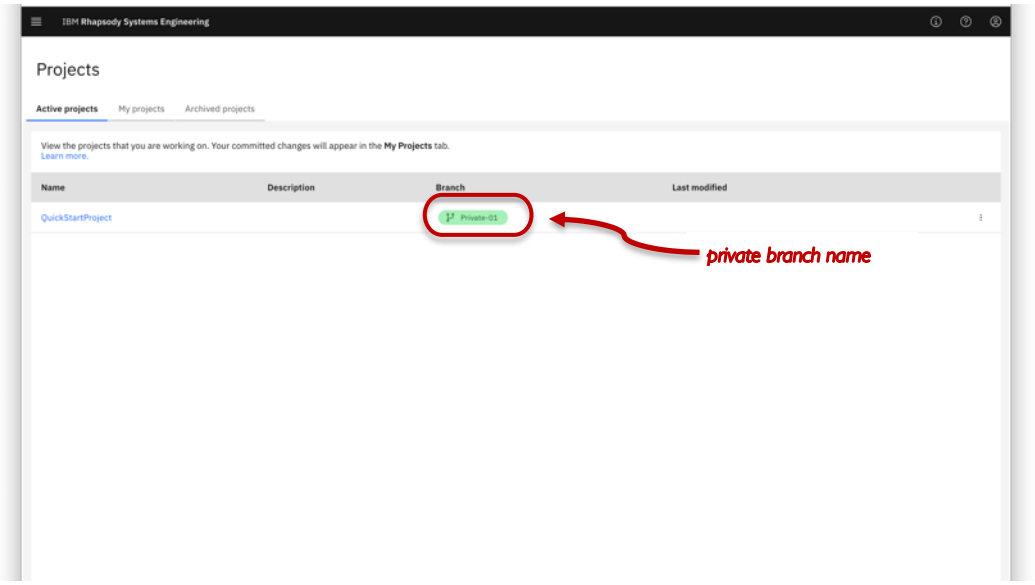
[1] OMG – Object Management Group

2.1 PROJECT OVERVIEW

The “My projects” panel opens when you log in for the first time. Here you can see all the projects that you are assigned to as a user and that you can access..



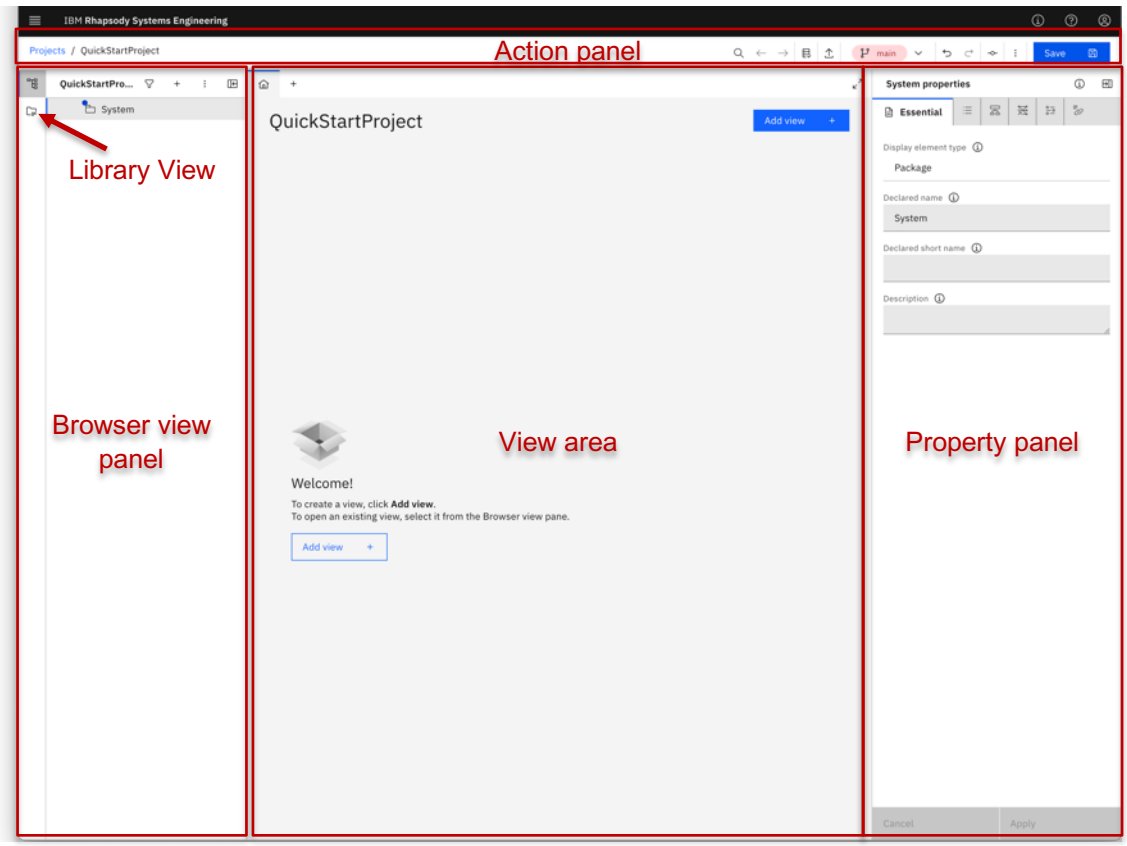
If you have already worked on this platform, you will see all projects in which you currently have private branches under “Active projects.”



“Archived projects” shows all archived projects that you have access to and that are no longer actively used.

2.2 INSIDE A PROJECT

When a project is open, the IBM Rhapsody SE window is organized in four areas: the Browser View Panel, the View Area, the Property Panel, and an Action Bar.



Browser View: Here you will see the model structure as a model tree in the default view. If the Library View is activated, the Browser View Panel displays the libraries imported into the project..

View Area: Open SysML v2 views are displayed here. These can be diagrams, tables, or matrices. Existing views can be selected and opened under the Home tab. If no views are available yet, you can create them via the Home tab (see section 3.1 below).

Property Panel: Here you'll see the properties of a selected SysML v2 element, organized into tabs. The first tab has the basic properties of an element, the “Essentials.” The second tab has more properties listed under “Other.” The third and fourth tabs each have relationships of the element, the “Owned relationships” in the third tab and the “References” in the fourth tab. The “Owned Relationships” reflect the element's relationships to other elements that originate from the selected element. The references contain relationships that point to the selected element. The fifth tab contains the ‘Metadata’ of the selected element and “Links.” “Links” contain links from the selected element to external applications, such as a requirements management tool.

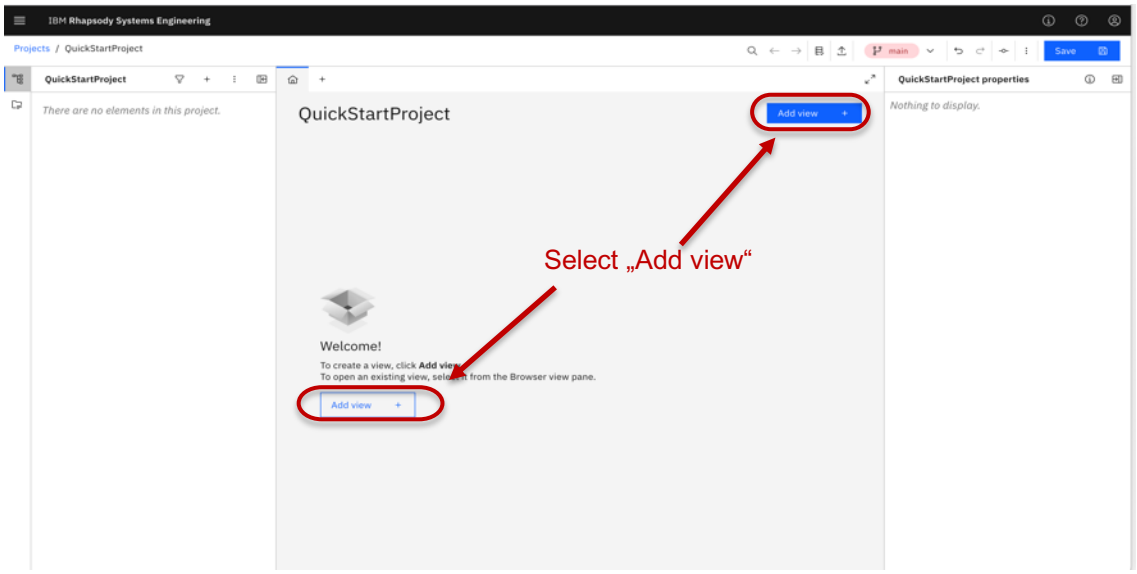
Action Bar: This contains navigation and control elements for browsing the project, navigating forwards and backwards through the most recently selected elements, saving, validating, and exporting the project, as well as undoing the last actions or repeating undone actions. In addition to saving the project, the action icons for changing the project context and for committing or discarding changes saved in a private branch can also be found here. These are discussed in more detail in Chapter 4.

3 WORKING WITH BASIC ELEMENTS

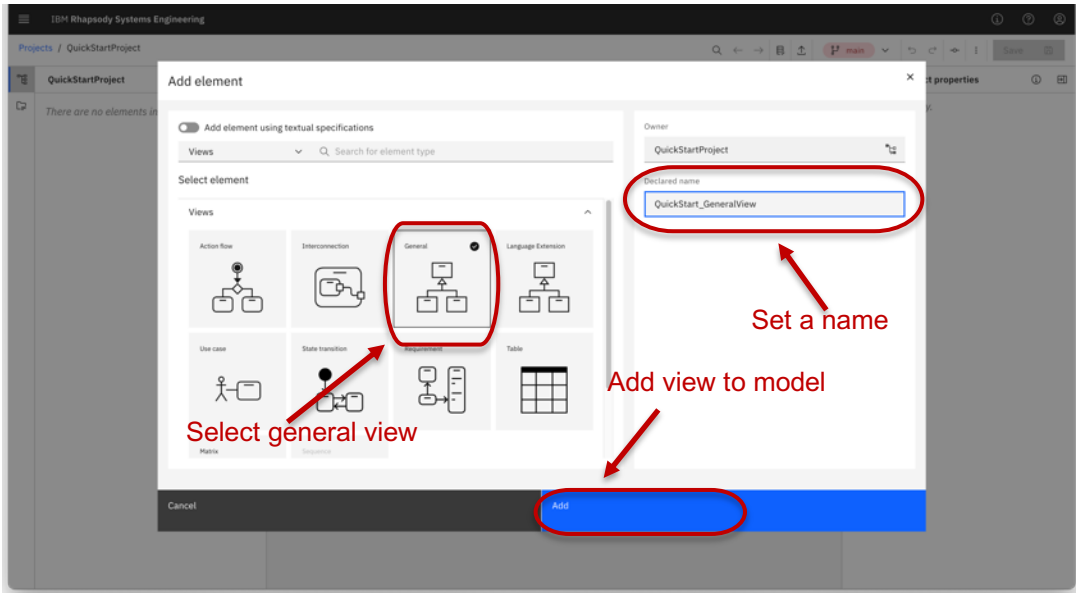
To open the project, click on the name of the project in the “My projects” project overview. The project will open.

3.1 ADD VIEWS

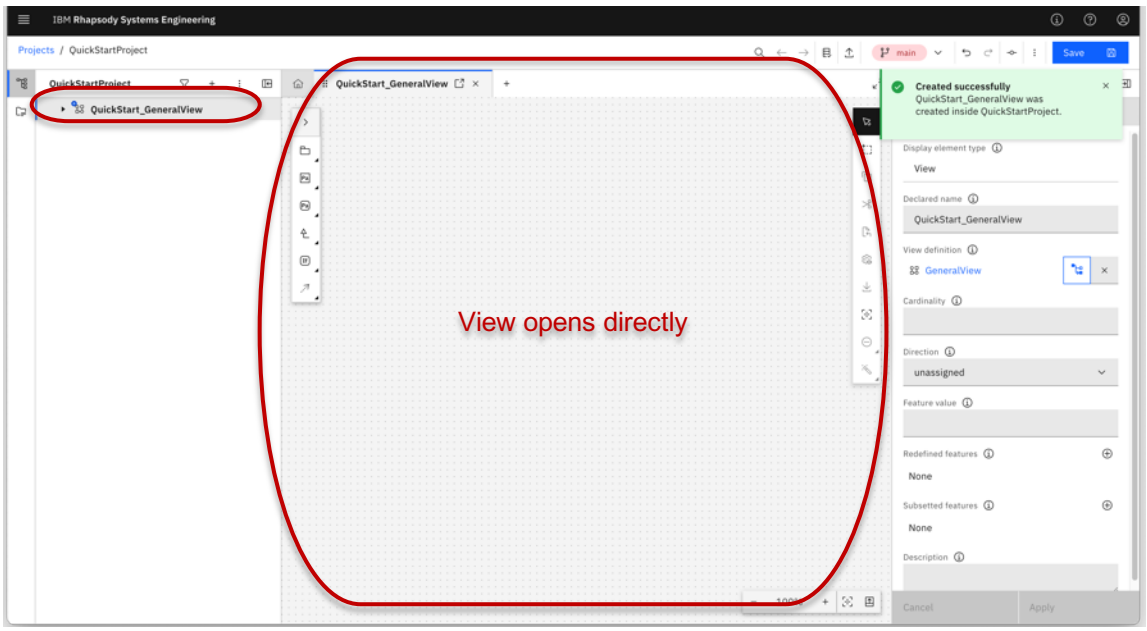
A view can be created via the View Area Home tab. Clicking on “Add View” opens the “Add element” wizard, with the filter already set to “view”. As a starting point create a general view. This view displays all SysML v2 elements.



Clicking on General brings up the “Declared name” text field. Enter the desired name of the element, in this case the General View, here.



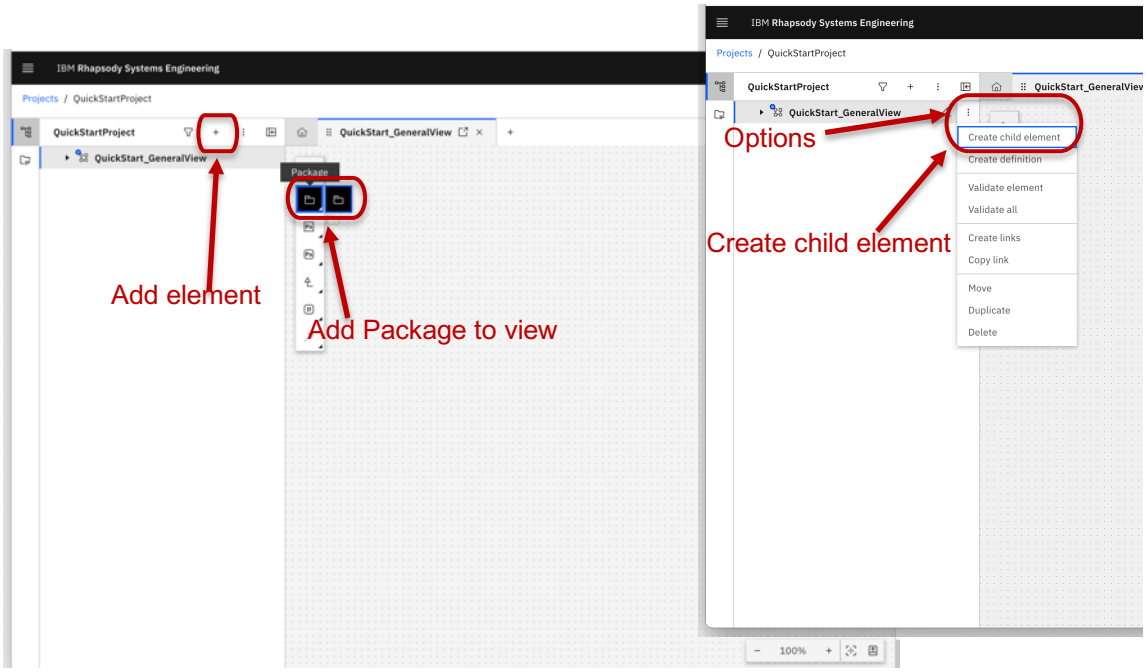
After a click on the „Add“ button, the new view will be added to the model tree.



3.2 ADDING ELEMENTS – PACKAGE SAMPLE

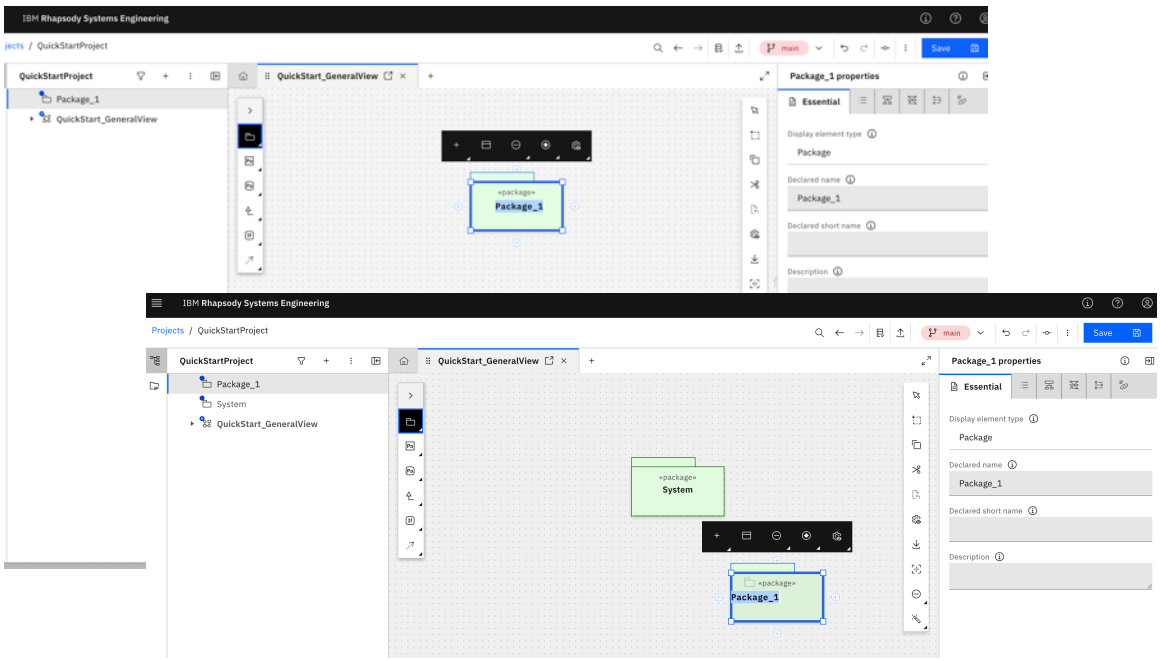
Packages add structure to the model. They define a namespace within the model and provide a way to navigate the model in a structured and targeted manner. There are three different ways to add a package:

- Via the „Add Element“ wizard selection button
- Via the „Add Element“ wizard during textual import
- In an existing view from the tool bar



If the package is created in the view, the name can be entered directly. The package is created at the same level in the model tree as the view itself. The element is selected and the properties of the newly

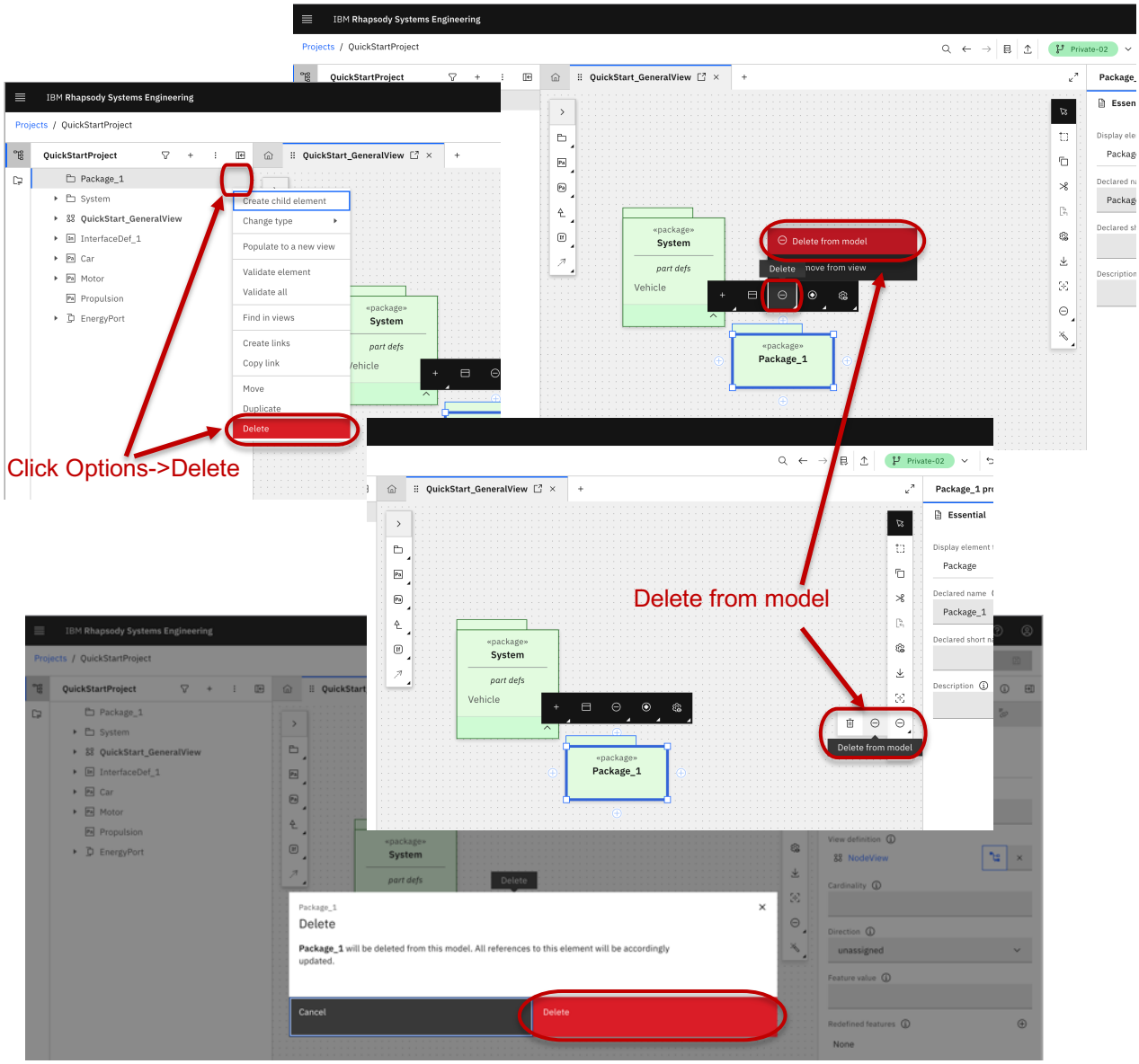
created package are displayed in the Property Panel. Right-clicking elsewhere in the view creates another package.



3.3 DELETING ELEMENTS

Elements can be deleted in the model tree or within a view that contains the desired element:

- In the model tree, click on the three dots to open the element's “Options” menu and select “Delete”.
- In a view, delete the element using the element's context menu. Click on the ⊖ icon and select “Delete from model“.
- You can also select the element in the view and click the ⊖ icon in the toolbar on the right
- If you want to remove an element from the current view without deleting it, select “Remove from view.” The element remains in the model and is only removed from the current view..



3.4 BASIC STRUCTURE AND RELATIONS

You design the contents of the model with the help of part definitions and item definitions. This allows you to define reusable structures that describe how the model elements can be used.

The creation and editing of items and parts works in the same way. Therefore, only parts and part definitions will be covered here.

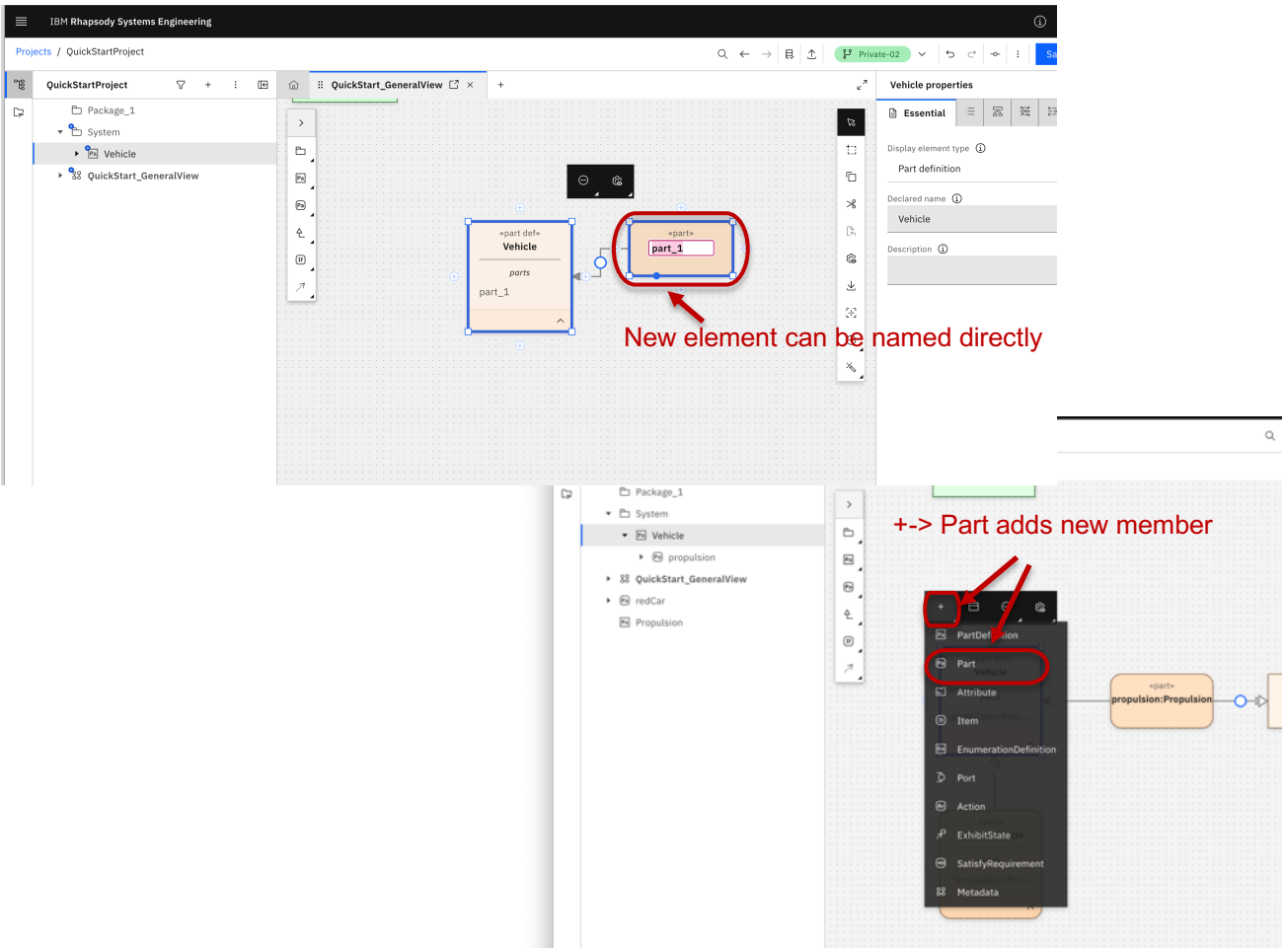
An item is a structure. A part is a specialization of an item and describes an item that can have a behavior. If structures with behavior are to be modeled, parts should be used. Structures without behavior can be modeled using items.

Just like a package, a part definition is created using the „Add element" menu or via the tool bar in the view. To add a feature to the part definition, click on ⊕ next to the part definition in the general view. im General View. A menu will be displayed where you add the new feature using „Add a new member part". The new element is immediately displayed in the view below the selected element in the model tree. It is highlighted so that you can enter the new name right away.

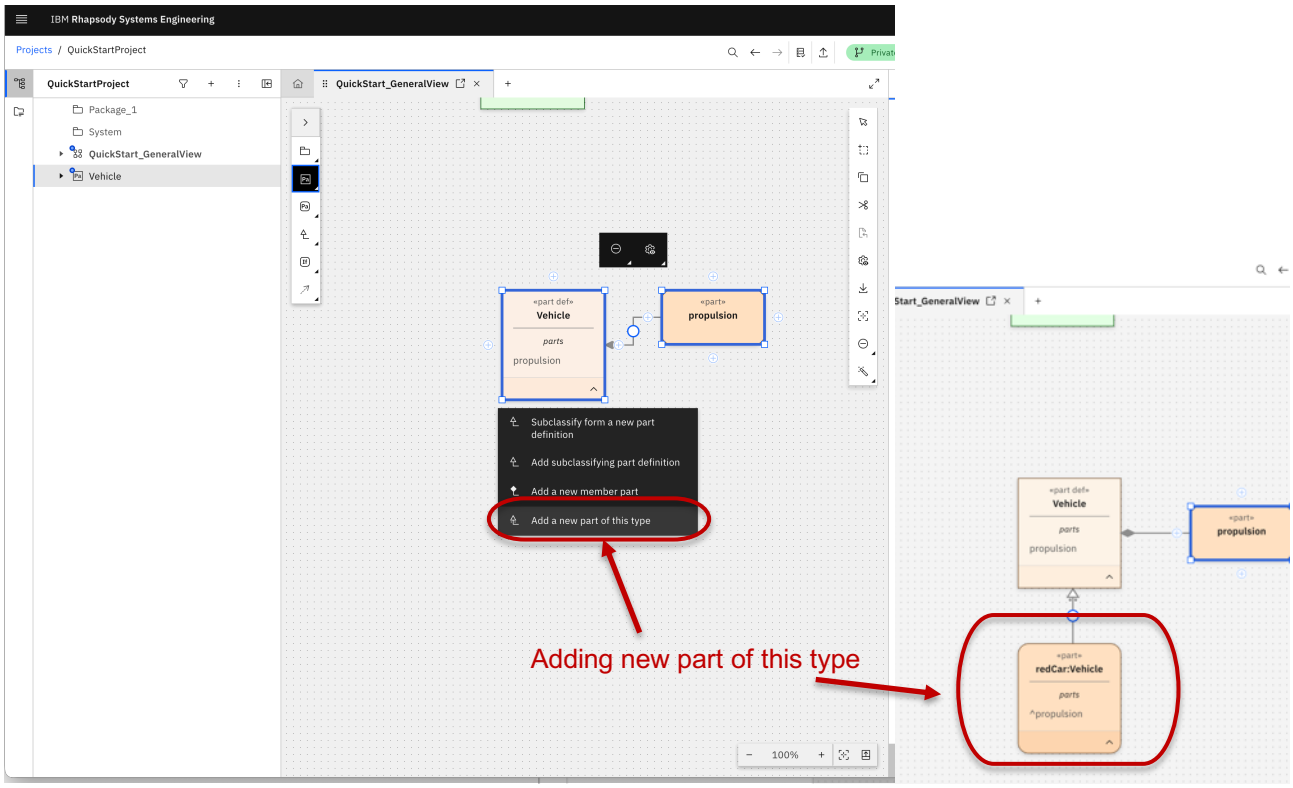
Instead of adding the feature via ⊕, you can also use the „Create child element“ menu from the options, as described in chapter 3.2. In this case the new feature element will not immediately be included in the current view.

If a new element is not yet included in a view you can easily add it via drag&drop from the model tree into the current view.

The third option is to use the context menu above the selected part definition. Clicking on ⊕ opens a selection of elements to add. Selecting “Part” will create a new feature. This is displayed in the model tree and in the compartments of the selected element, not directly in the view.

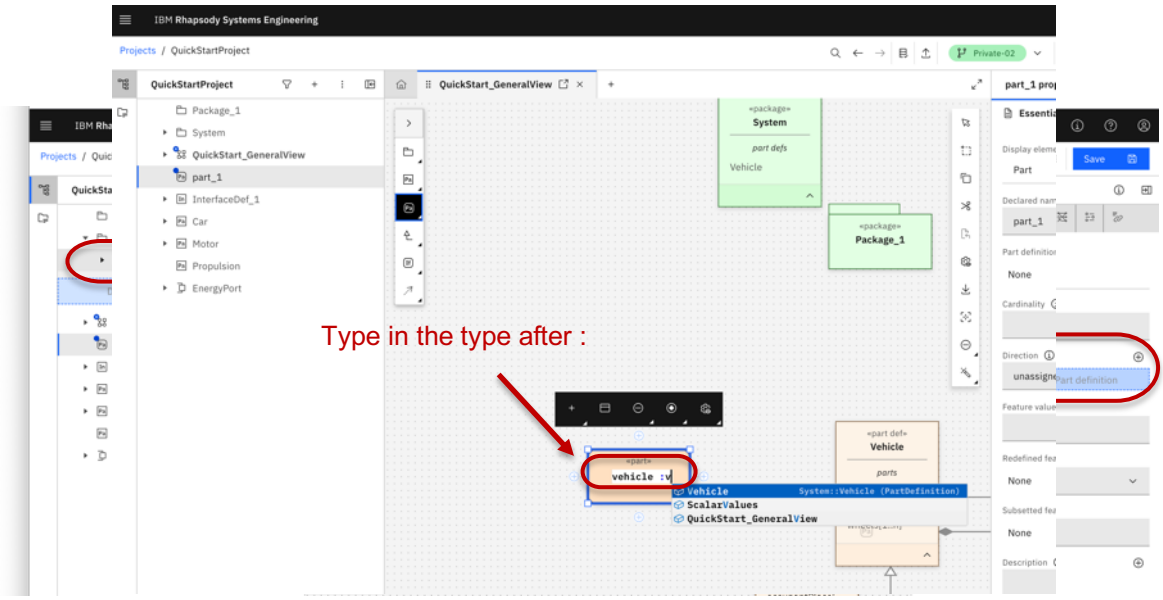


To create a part that is derived from the existing part definition, ⊕ can be used on the part definition in the view. Selecting “Add a new part of this type” creates a new part of the existing type.



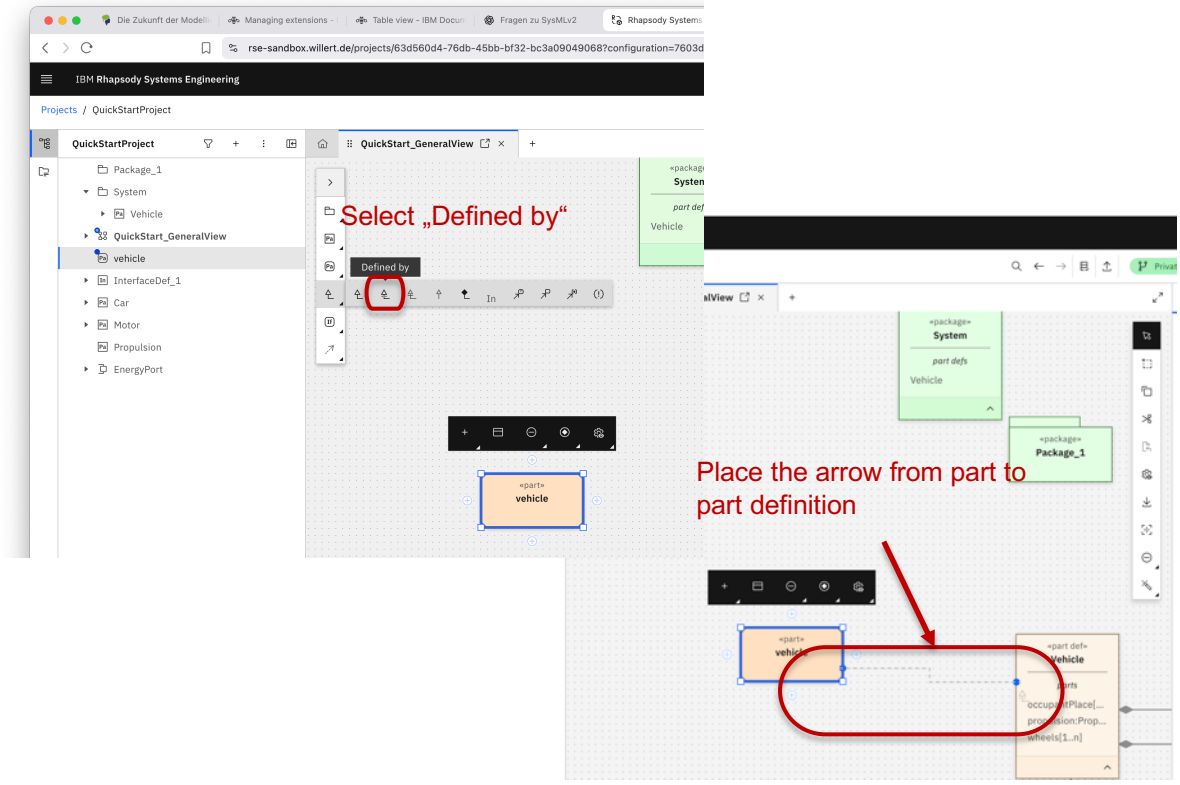
Another way to assign a type is to create the part using the “Add” menu or the toolbar in the view. The part that is then created can be assigned a type in several ways:

- Renaming the part with specification of the type: Within the view, append the type of the part to the name of the element, preceded by a colon (:).



- Drag&Drop: Drag the part definition for type assignment from the model tree into the “Part Definition” field of the property panel..

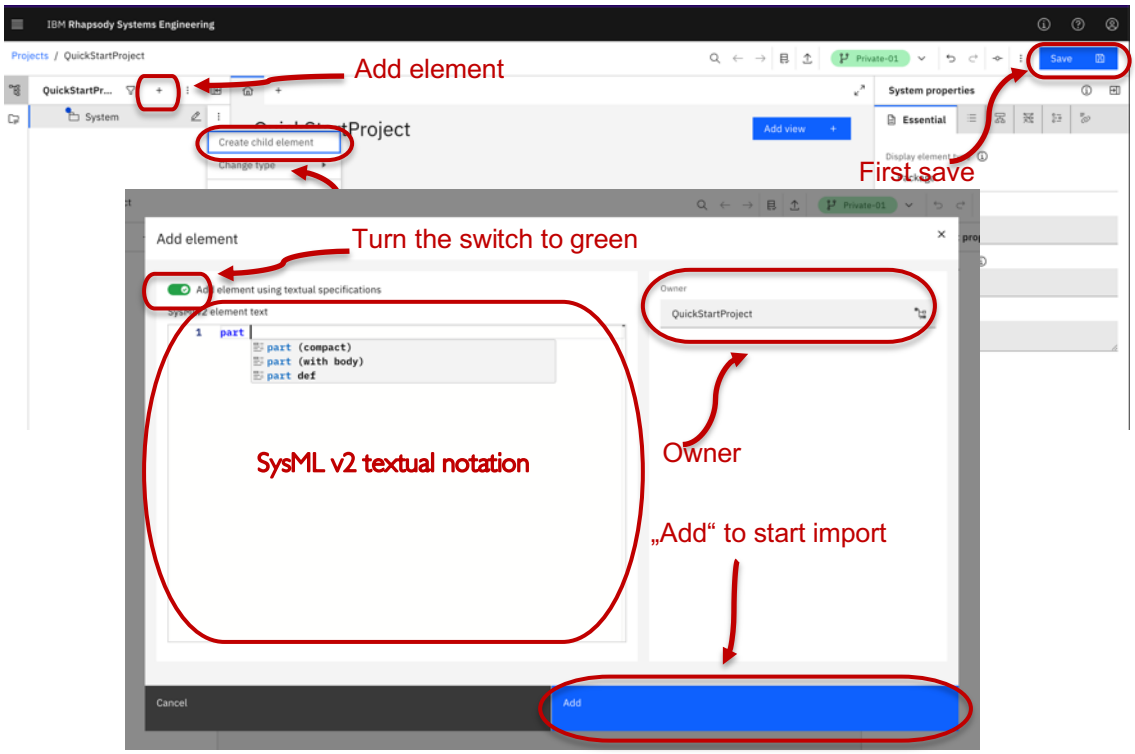
- Connect in the view: Select “Defined by” and connect the part to the part definition.



3.5 TEXTUAL IMPORT

Model elements can also be added using the textual notation of SysML v2. To do so, the project must be saved first.

As long as the “Save” button is blue, text import cannot be used. First, save the project.



Open the “Add element” wizard by clicking on “Add element” or “Create child element.” The “Add element using textual specifications” slider will turn green, and you can enter new elements in textual notation.

On the right-hand side, select the project in which the new elements are to be created.

Start the textual import by clicking the „Add“ button.

4 BRANCHES AND TAGS

4.1 GENERAL

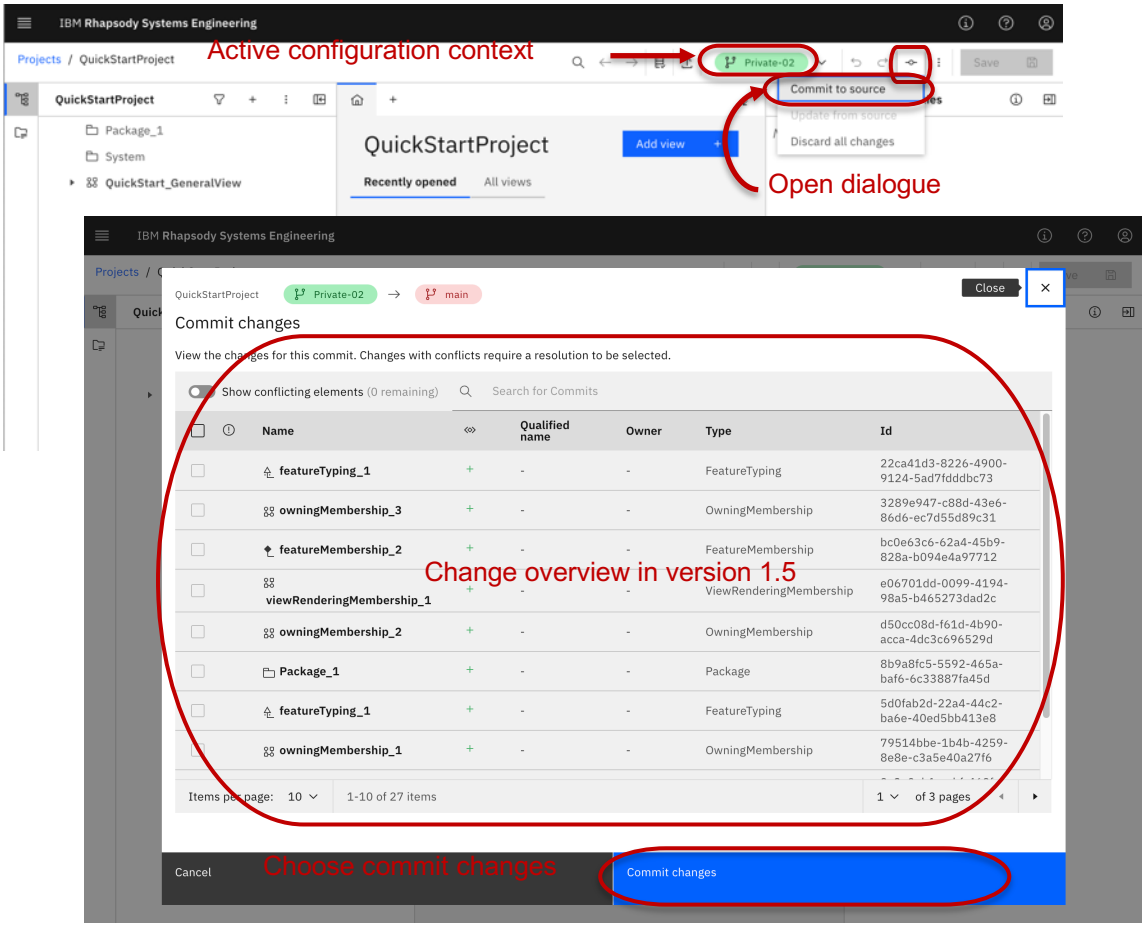
IBM Rhapsody SE projects are stored using branches and tags.

Branches represent a line of development. A branch can be selected as a starting point for development. Tags are unchangeable markers on a line of development. They represent a reference point, e.g., a release or an important milestone.

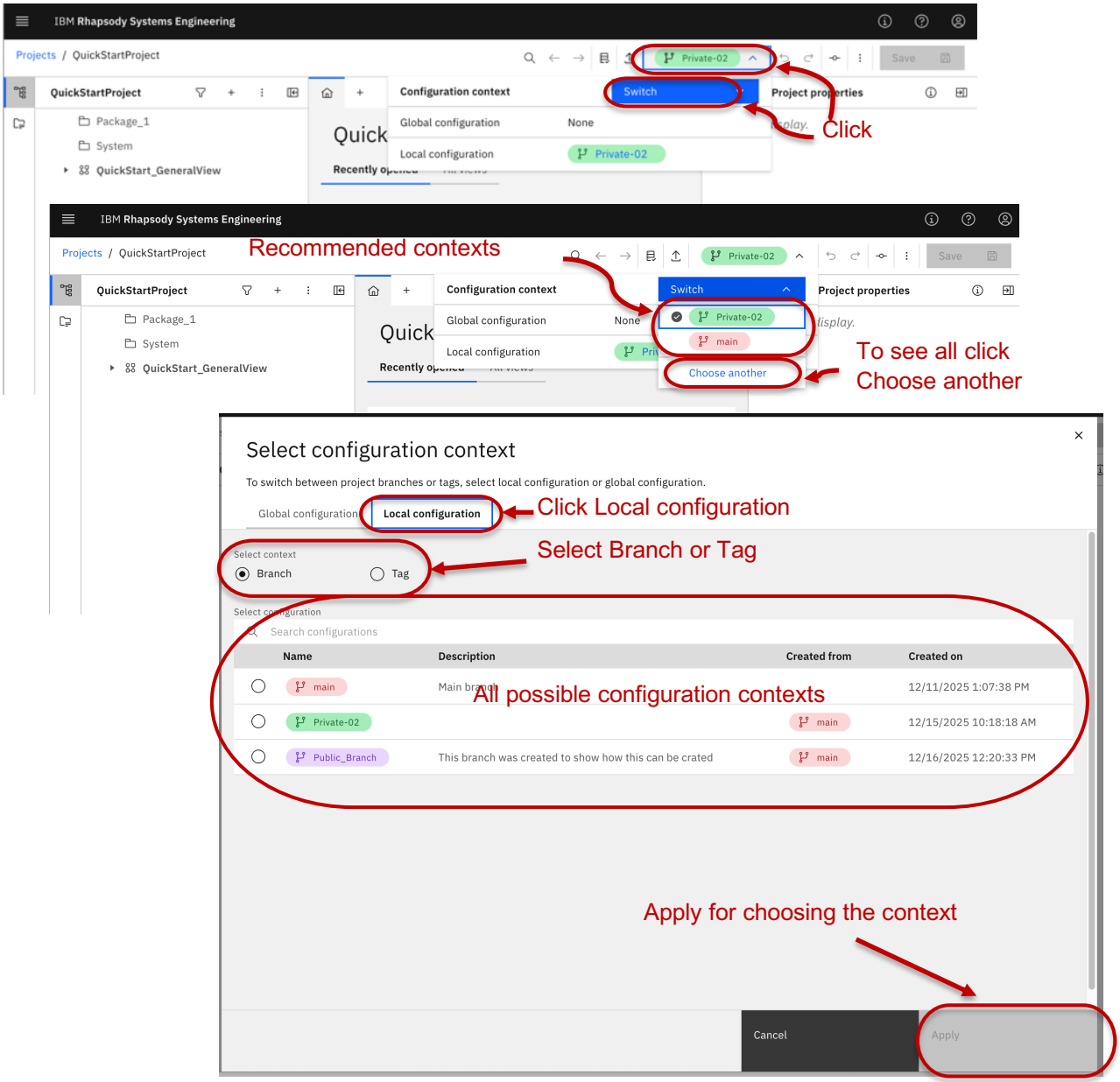
Typically, you open a project in the main branch.

Saving a project with the „Save“ button will create a new private branch that only you can see and edit.

To transfer your privately saved changes to the main branch, they must be committed.



If there are multiple branches or tags in the project, select the basis for your own work via “Switch.” All possible configuration contexts are displayed here.

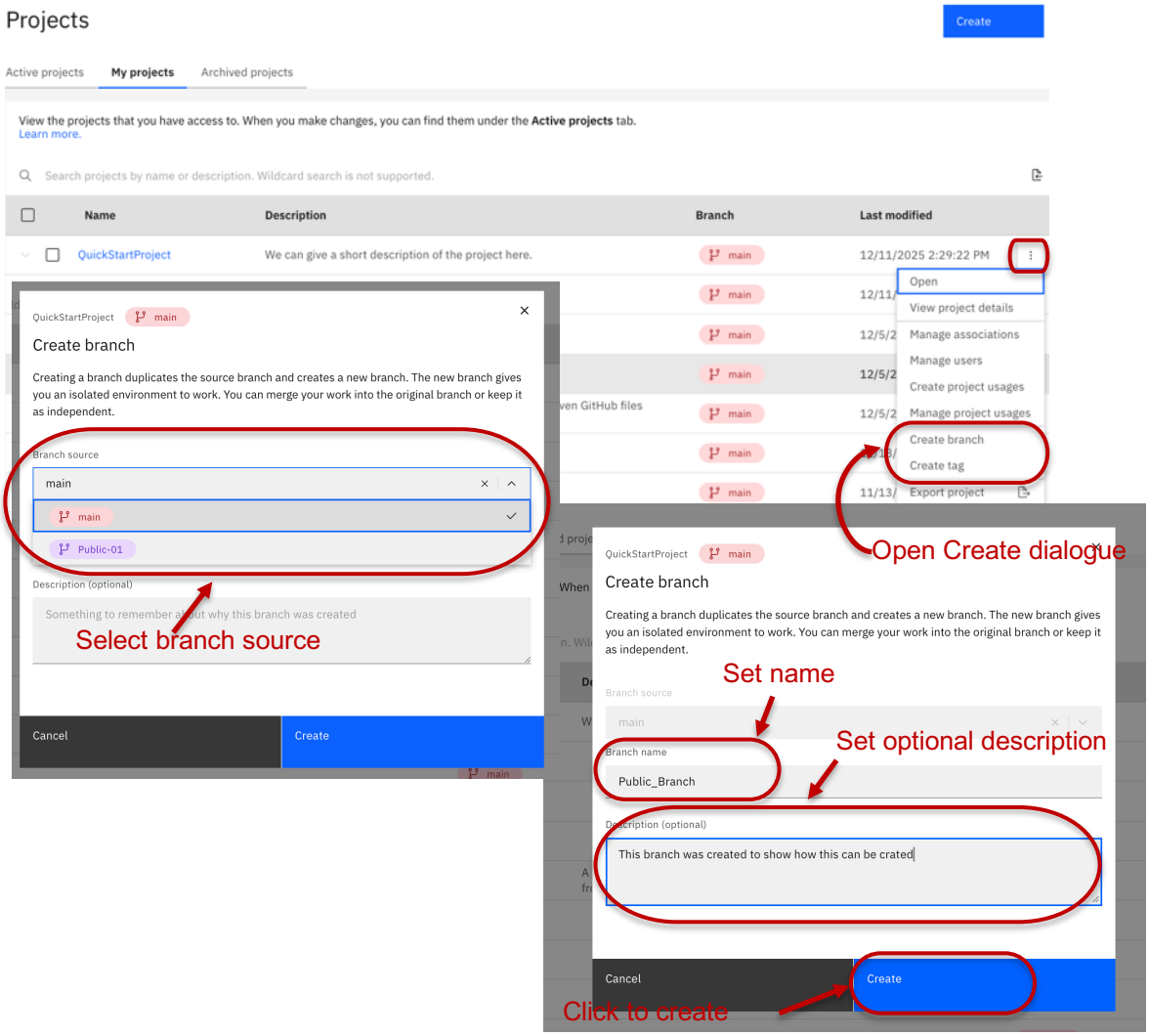


4.2 CREATING BRANCHES AND TAGS

If you do not have administrator privileges, you cannot create branches or tags. Please contact a user with administrator privileges or your IBM Rhapsody SE administrator. You can go tot he next chapter.

Creating branches and tags works in the same way. For this reason, only branches will be used here..

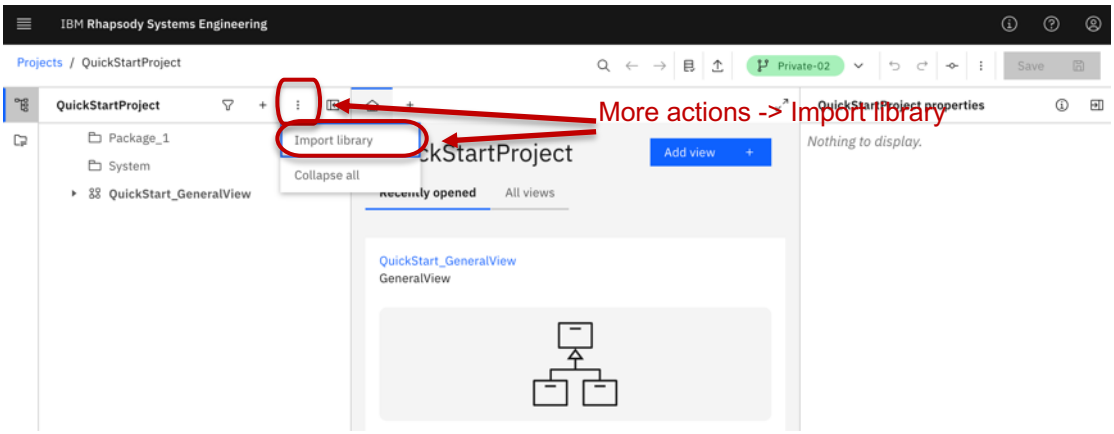
Branches are created in the project overview. To do so, open the project's “Options” menu and select “Create branch.” In the dialog box that opens, select the name and base source of the branch. An optional description can be added. Click the ‘Create’ button to create the corresponding branch. “Cancel” cancels the selected operation. A message confirms that the operation has been canceled.



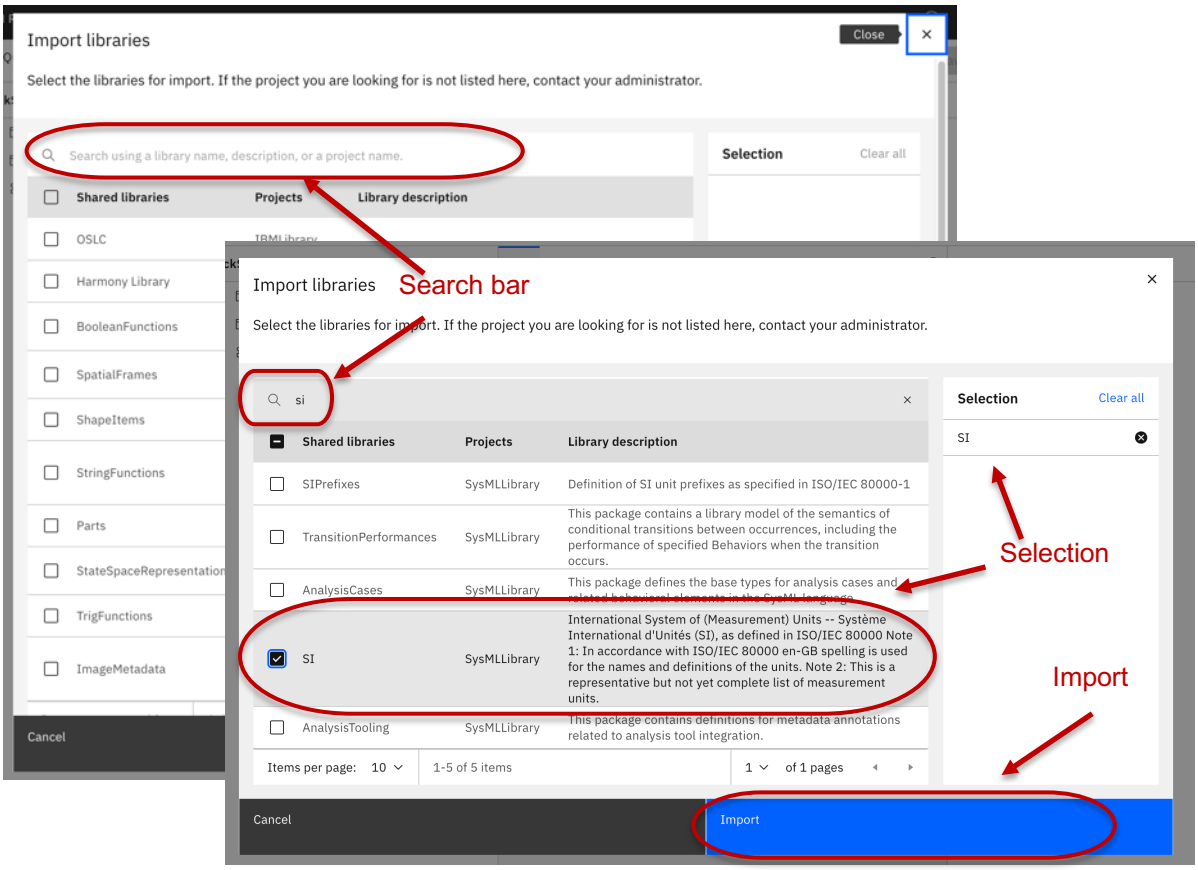
5 USING LIBRARIES

Libraries provide you with the option of using predefined model elements. In addition to using SysML v2's own libraries, IBM Rhapsody SE also supports the import of libraries from other projects. The latter is explained in the IBM Rhapsody documentation; here we will focus to the use of SysML v2's own libraries.

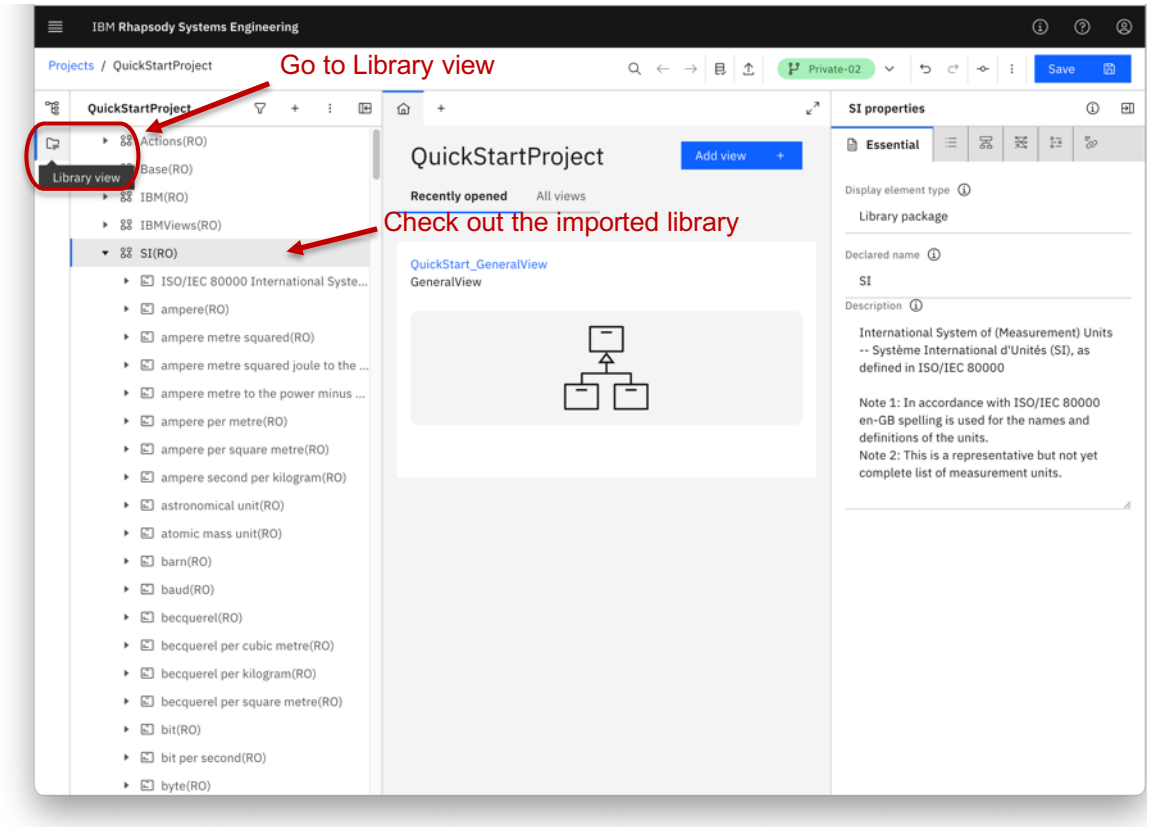
To import a standard library open the project and click on „Import library”.



An „Import libraries“ wizard opens where you select the library for import. The search window will display libraries available for import. A click on „Import” will add the selected library to the project.



The imported library will now be displayed in the „Library view“. You can access library contents via the library’s namespace (e.g. *SI::baud*). Alternatively, select the elements directly (e.g. *baud*).



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