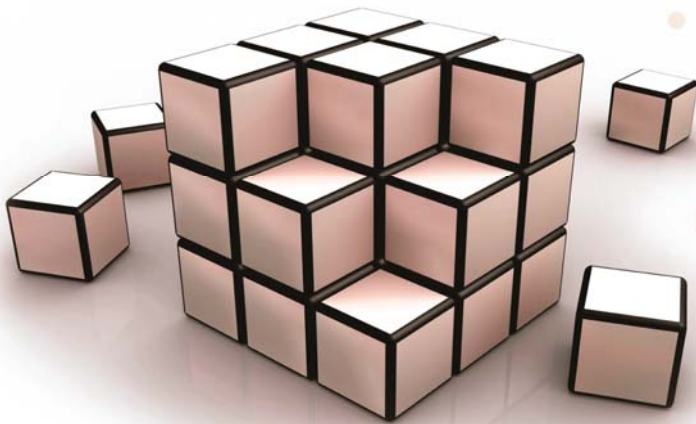




IRQA  **Integration with
IBM Rational Software Modeler**



**Requirements Management
and Engineering**

Visure Solution, S.L.

Copyright Notice

Copyright© 2008 Visure Solutions, S.L.
All rights reserved.

This document may not be reproduced or transmitted in any way or by any electronic or mechanical means, including photocopying, recording, or any other means, without the express permission of VISURE SOLUTIONS, S.L.

All of the material contained in this document has been developed by VISURE SOLUTIONS, S.L. and is the property of VISURE SOLUTIONS, S.L.

IRQA® is a registered trademark of VISURE SOLUTIONS, S.L.
The other products mentioned are the property of their respective companies.

Visure Solutions, S.L.
C.I.F.: B-85080554
Headquarters:
Av. de los labradores, 1
28760 – Tres Cantos (MADRID)
Tel.: +34 91.806.17.13
Fax: +34 91 804 39 50
www.visuresolutions.com

Table of contents

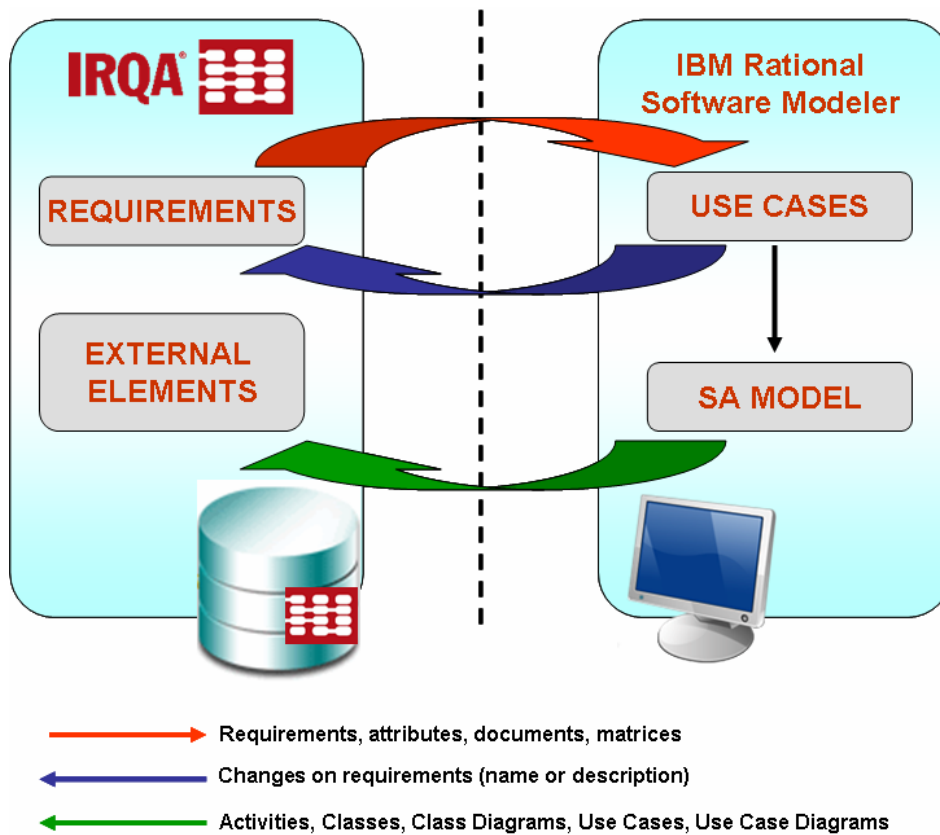
Elements in the Plug-in	8
The requirements explorer view.....	8
The requirements information view.....	9
The Traceability Matrices view.....	9
The Related Requirements view.....	9
The Related Use Cases view.....	10
Opening a project	10
Checking requirements information	12
Modifying requirements	13
Working with associated files in Software Modeler	13
Relating Requirements to Use Cases	14
Updating and synchronizing requirements	15
Exporting RSM elements to IRQA	15

Introduction

This document describes how to use the IRQA plug-in for IBM Rational Software Modeler. The IRQA Plug-in allows the user to associate his requirements from his IRQA projects to the use cases of IBM Rational Software Modeler. The user will also be able to see the Traceability Matrices saved in the IRQA project, check the information associated to the requirements or modify requirements directly from the Software Modeler Framework.

All the changes made with the Plug-in are stored in the Software Modeler project, with the exception of the changes made in the requirements which are stored within the IRQA project.

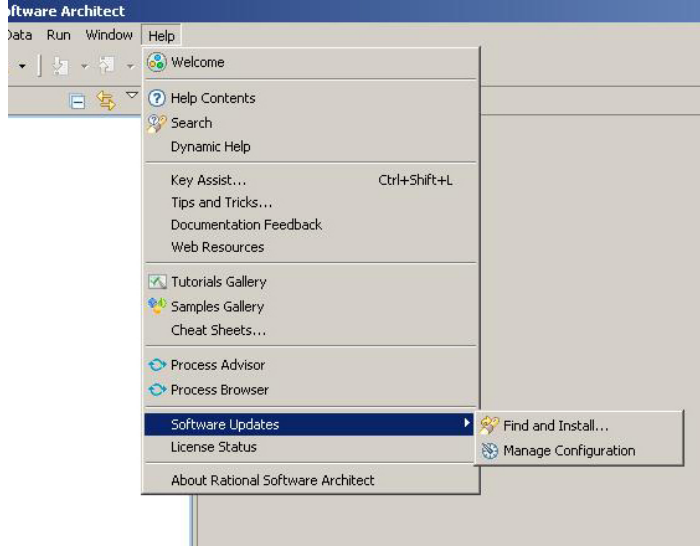
Additionally, users can send their RSM elements (Use Cases, Use Case Diagrams, Activities, Classes, Class Diagrams) to IRQA in the form of External elements. This will be done in a controlled way through a change management interface.



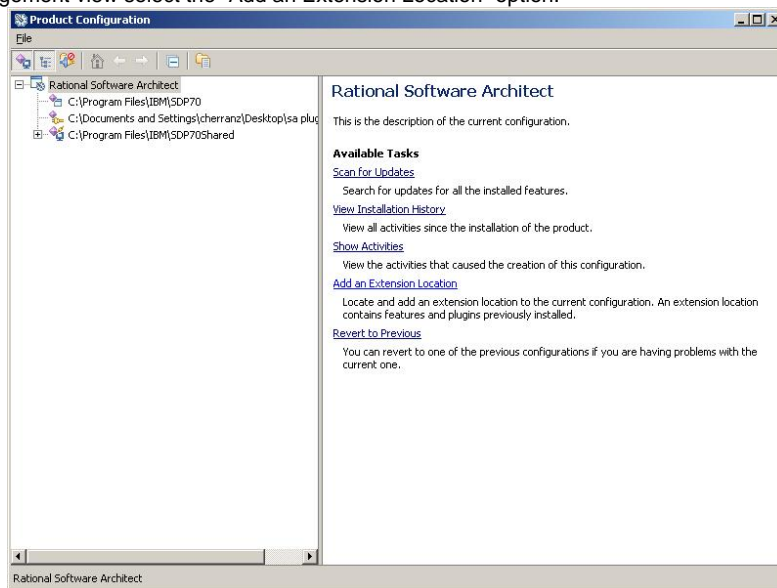
How to install the IRQA Plug-in

To install the IRQA plug-in, decompress the “IRQA Plugin.rar” file and copy it into the desired folder.

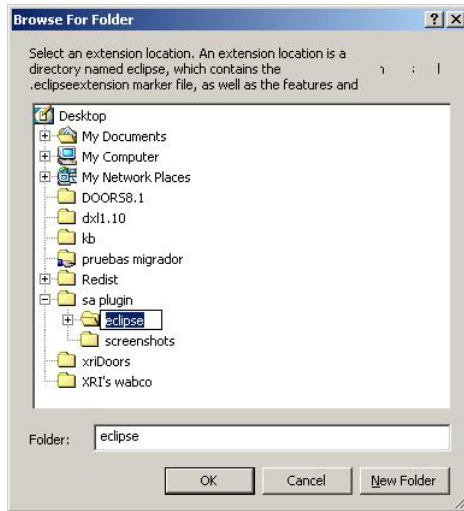
Open RSM and select Help->Software Update-> Configuration Management




From the management view select the “Add an Extension Location” option:

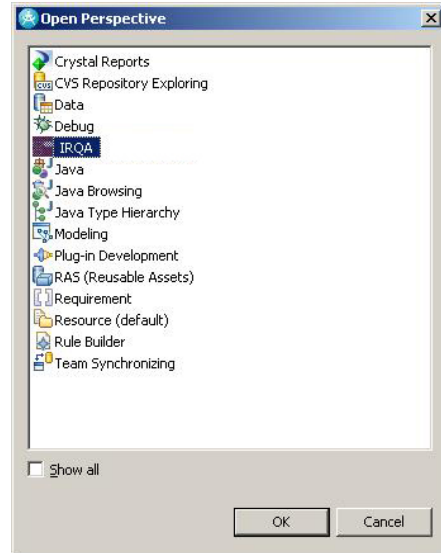


From the “select folder” dialog select the folder where the IRQA Plug-in is contained and then click Accept and restart the application.



How to run the IRQA Plug-in

To run the IRQA Plug-in, click on the “Open a perspective” icon  in the top right corner of your IBM Rational Software Modeler main window, choose others and then “IRQA”.



Additionally, the plug-in can also be opened in the *Open perspective* option, in the *Window* menu.

How to use the IRQA Plug-in

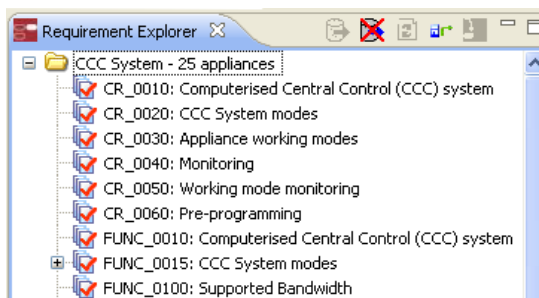
Elements in the Plug-in

There are 5 different views in the IRQA plug-in:











The requirements explorer view

This Tree view contains all the elements (projects, requirements in a hierarchical view and traceability matrices) associated with the open repository. From this view the user can:

- Open or close a repository,
- Add or remove a relationship between a requirement and a use case
- Setup the requirement view
- Modify a requirement



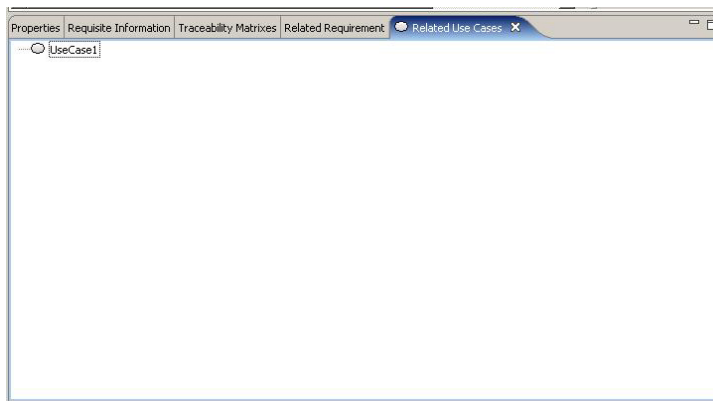
Buttons in the explorer view:

- Toolbar:
 -  : Open a repository
 -  : Close a repository
 -  : Update
 -  : Relate
 -  : Export elements to IRQA
- Contextual Menu:
 - Over a project:
 -  Update
 -  Setup requirement information view
 -  Synchronization
 -  Open relationship window
 - Over a requirement:
 -  Modify requirement



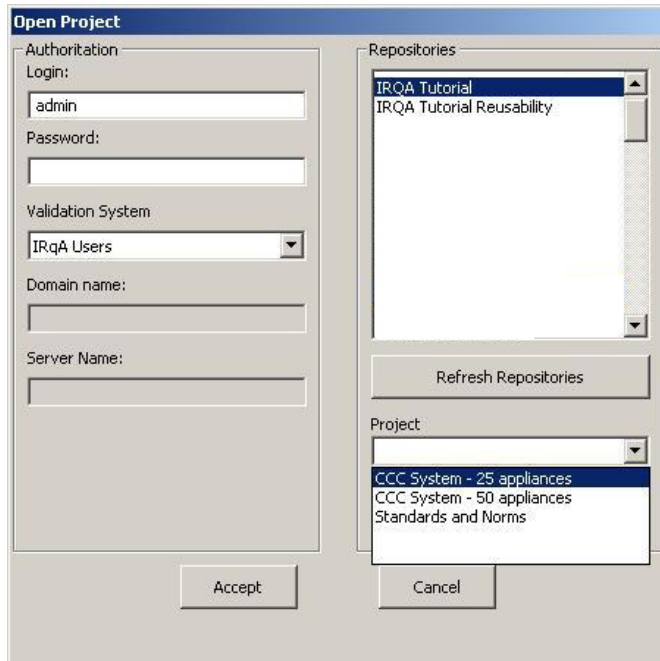
The Related Use Cases view

Similar to the associated requirements view, this view allows the user to see to what use cases the selected requirement is associated to.



Opening a project

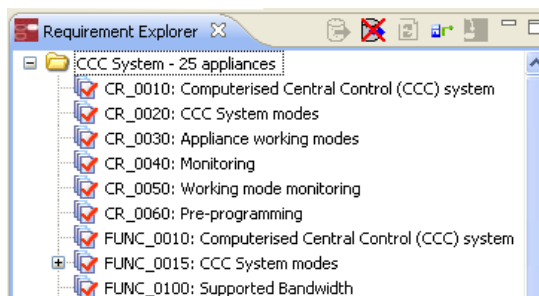
To open a project click on the "Open repository" icon on the requirement view toolbar. This will open the following dialog:




In this dialog the user must enter the login, password and user group and the desired repository and project.

This dialog works like the open project dialog in IRQA.

Once the project is opened, the *Requirements explorer* view will look like this



From this tree the user is able to view the requirements of the selected project and the traceability matrices saved in your project.

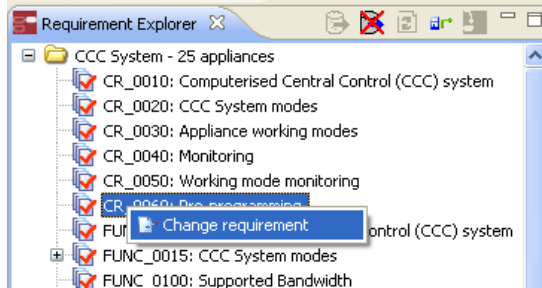
In the same way, the user can update the project with the information from the database so the changes that have been made since the user has the project opened can be applied. To do this, the user must click on the "update" icon  in the toolbar. This can also be done by right clicking on the project and choosing update project from the contextual menu.



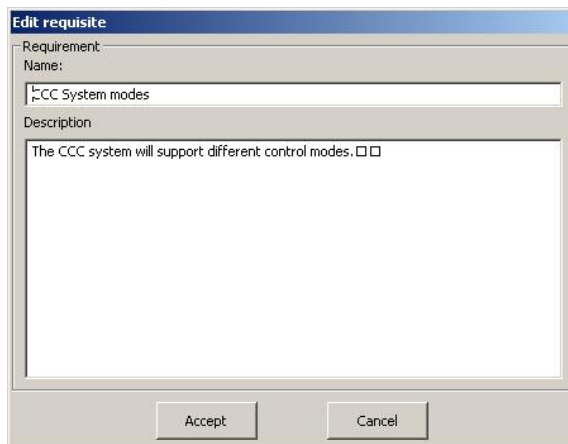
will add the attributes within the saved configuration to the user view.

Modifying requirements

The user may modify the requirements from the "requirement explorer view" by right clicking on the desired requirement and choosing the "modify requirement" option from the contextual menu.



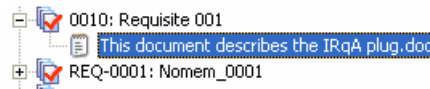
This will lead to the following dialog window



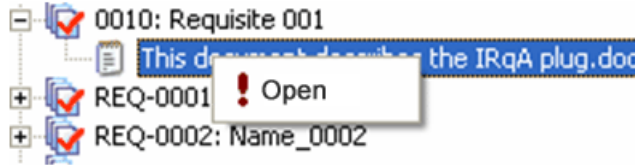
From here the user can modify the name or the description of the selected requirement. The changes will be also exported to your IRQA project.

Working with associated files in Software Modeler


The IRQA Plug-In allows the user to see the documents associated with a requirement from the "Requirement explorer view" as shown in the image:



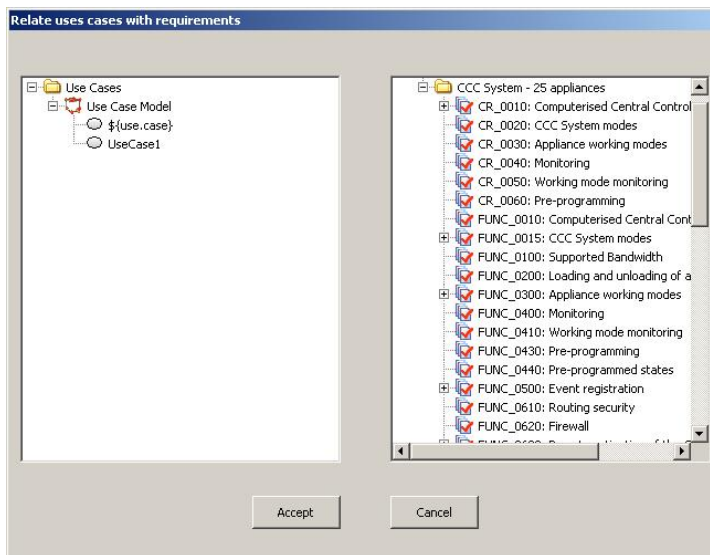
Additionally, the user may open these documents by double clicking over the document or by left clicking on the desired document and selecting "Open" from the contextual menu



Relating Requirements to Use Cases

To relate an IRQA requirement with a Software Modeler use case, the user must select the relate option from the IRQA Requirement Explorer toolbar  or right click on any project and choose "open the relationship window" from there after opening the project.

This will lead to the following window



The right panel will display all the requirements from the IRQA project in a tree view, and the left one will be filled with the use cases from the opened models in Software Modeler.

In order to start relating requirements with use cases, simply drag and drop the chosen requirements from the right tree to the use cases on the left tree. If the selected requirements are already related with the chosen use case, the

drag and drop won't be allowed. Also, if some of the requirements are already related a warning window will pop up and advise the user of this situation.

If the user clicks on the Accept button, the non related requirements will be related.


The user may also unrelated requirements from use cases. In order to do this, the user must select the chosen requirements from the left panel and press the delete key.

Finally, once the changes are made, click on the Accept button to save them or cancel to ignore them.

Note that changing the selected project from this window without clicking on the Accept button will cause the loss of all the changes made to the relationships. To avoid this, the IRQA Plug-In will ask the user if he wants to save the modifications before changing the project.

This dialog, however, will appear only if changes have been made on the relationships, this is, if a relationship has been added or deleted.

Updating and synchronizing requirements

The user is able to update his requirements in the IRQA project clicking on the Update button in the *Requirements explorer* toolbar  or by right clicking on the chosen project folder and choosing update from the contextual menu.

This will cause the project to be closed and reopened, retrieving the information from your IRQA repository. However, this won't update the names of the requirements associated with the use cases. To do this, synchronization will be needed.

The Synchronization option from the contextual menu allows the user to update the requirements in his Software Modeler project with the information in the IRQA repository in four different ways:

1. Synchronization notifies the user when a requirement has been deleted, deleting it also from the Software Modeler project.
2. It also notifies when the version of a requirement has changed.
3. Synchronization lets the user know when a requirement has become "read only".
4. Finally, if the name of a requirement or the code has changed, the synchronization will notify the user and will update the names and codes of the requirements associated with the use cases.

To Synchronize the project, right click on the project and chose Synchronization from the contextual menu.

This will lead to a dialog window where the user may see the requirements affected by the synchronization and the action that has been fulfilled.

Exporting RSM elements to IRQA

RSM elements can be transferred to IRQA in the form of External Elements. The following RSM elements can be exported:

- Activities
- Classes
- Class Diagrams

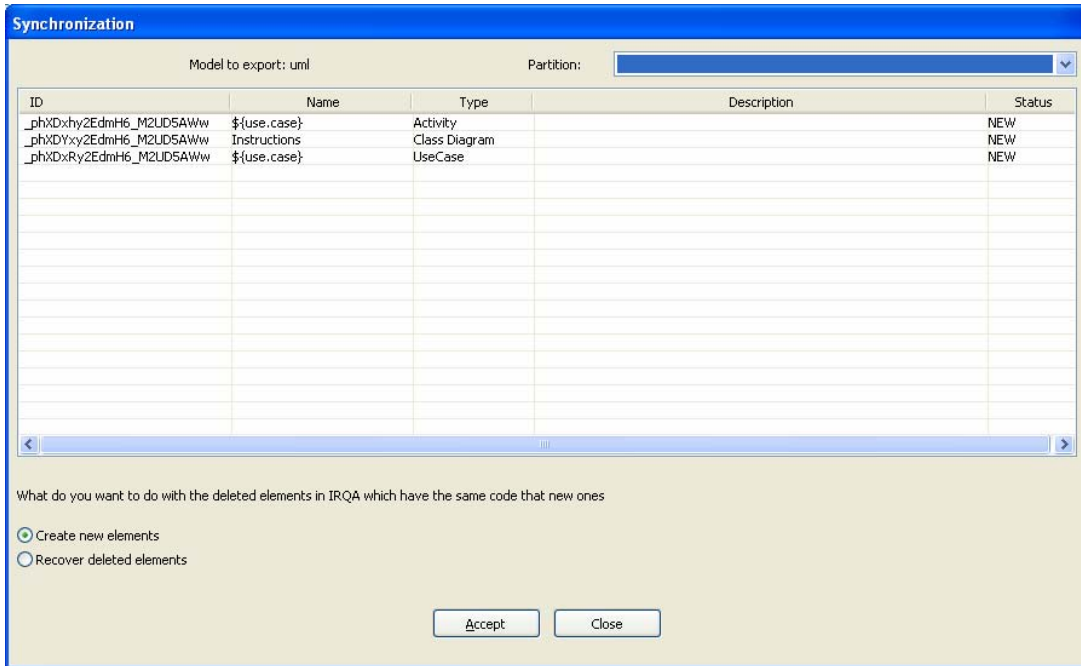
- Use Cases
- Use Case Diagrams

This export process consists of a synchronization between the currently selected RSM model, and the corresponding External Elements block in IRQA. For every exported model, a new block will be created containing all the elements, and another child block is created for each one of the different types of elements.

To synchronize these elements click on the export model button: .

Note that this button will not be available as long as no model is selected in the project explorer view. Additionally this project should be opened

Click on this button to start the synchronization process:



From this window users can see which elements will be transferred to IRQA. Every element has the following fields:

- ID: A unique ID that identifies the element in RSM. If exported to IRQA, this field will become the IRQA Code
- Name: The element given name. It will become the IRQA Name
- Type: The element type: Activities, Classes, Class Diagrams, Use Cases, Use Case Diagrams
- Description: The element description. This description *will not* be exported to IRQA
- Status: Indicates if the element is:
 - New: The element exists in the RSM model, but does not exist in IRQA.
 - Modified: An existing element in IRQA, but with a different name
 - Unmodified: An existing element without changes
 - Moved: If the element already exists in IRQA, but belongs to another model.

- Deleted: If the element exists in the IRQA model, but no longer exists in the RSM model.

Note:

Elements deleted and moved will be detected as deleted.

Moved and changed elements will be detected as moved.

Users must select the access partition in this dialog window that will contain the new elements. Only the access partitions that can contain Eternal Elements can be selected.

Additionally users can select from this window whether to undelete the new elements which were deleted in a previous synchronization, or to create them new.

After selecting all this options, clicking on the accept button will lead to the exportation to IRQA.

Inside IRQA a block called RSM_ "model name" will be created (if it does not exist already). Additionally a block for each type of element will be created as child of the block RSM_ "model name". These child blocks will be called RSM_ "model name"_Activity , RSM_ "model name"_UseCase, RSM_ "model name"_UseCase Diagram, RSM_ "model name"_Class, RSM_ "model name"_Class Diagram. These blocks will contain the external element coming from RSM.