



TEMPPPO Requirement Manager User Manual

Edition October 2019

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1 Introduction

In the specification phase the definition of requirements is fundamental for every project defining the purpose exactly, e.g. how the implemented software should work or which features should be implemented. The organization of this information mostly occurs with documents. In large projects, there is mostly more than one document which specifies requirements, because subprojects are built.

Now, the requirement environment of TEMPPO allows managing the requirements in structure(s). So a requirement structure contains requirements which can contain further requirements.

Sometime requirements changes in the life cycle of the project. Requirements can be changed easily and can be saved versioned in the database.

TEMPPO Requirement Manager also provides the collaboration of TEMPPO with IBM Telelogic DOORS, IBM Rational Requisite Pro, Sparx Systems Enterprise Architect and JIRA. For using the importing and updating feature the client for DOORS or RequisitePro must be installed where TEMPPO is used.

TEMPPO Requirement Manager (RM) has integrated following features:

- Editing and administrating requirements together with attributes
- Version control including baseline and view concept
- Importing and updating requirement structures from DOORS, RequisitePro, Enterprise Architect or JIRA to TEMPPO (see 2.5.1 ff.)
- Importing and updating requirement structures from an XML file
- Importing and updating requirement lists (CSV file)

The requirement managers have access to test management data to make statements about the actual situation of the project (progress and quality). Therefore, it's important to assign the requirements to the test packages or test cases in order to fulfill requirement tracing.

In the TEMPPO Administrator you can assign the requirement structures to the projects and then the requirements to test packages or test cases in the TEMPPO Test Manager with a read only access.

2 Description of Use

2.1 Create a new Requirement Structure

A requirement structure is the first created element in TEMPPPO Requirement Manager. You can either start by creating, importing a new requirement structure from DOORS, Requisite Pro, Enterprise Architect, JIRA, CSV or a XML file or opening an existing one.

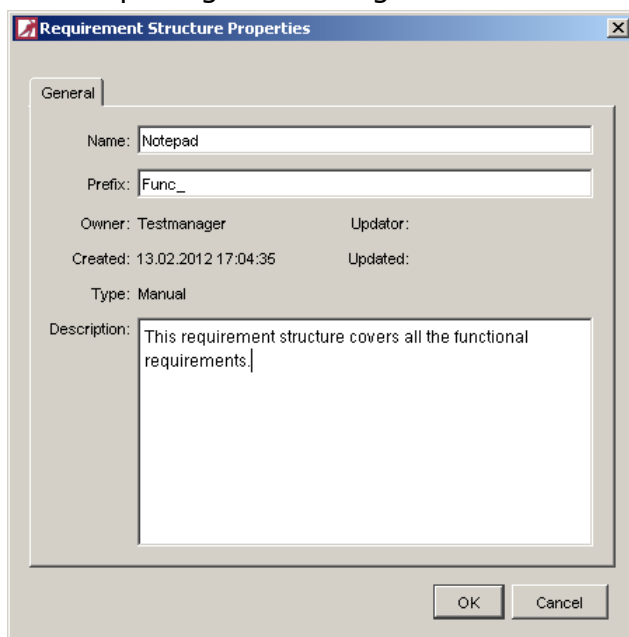
The image shows a screenshot of a software dialog box titled "Requirement Structure Properties". It has a "General" tab selected. Inside the dialog, there are several input fields and labels: "Name:" with the value "Notepad", "Prefix:" with the value "Func_", "Owner:" with the value "Testmanager", "Updater:" (empty), "Created:" with the value "13.02.2012 17:04:35", "Updated:" (empty), and "Type:" with the value "Manual". There is also a "Description:" label followed by a text area containing the text "This requirement structure covers all the functional requirements.". At the bottom right of the dialog are "OK" and "Cancel" buttons.

Figure 1 – Requirement Structure Properties

When activating the menu **Requirement Structure > New**, the window **Requirement Structure Properties** opens (see Figure 1). A **name**, **description**, and an optional **prefix** can be filled in and by clicking the **OK** button a new structure is displayed (see Figure 2).

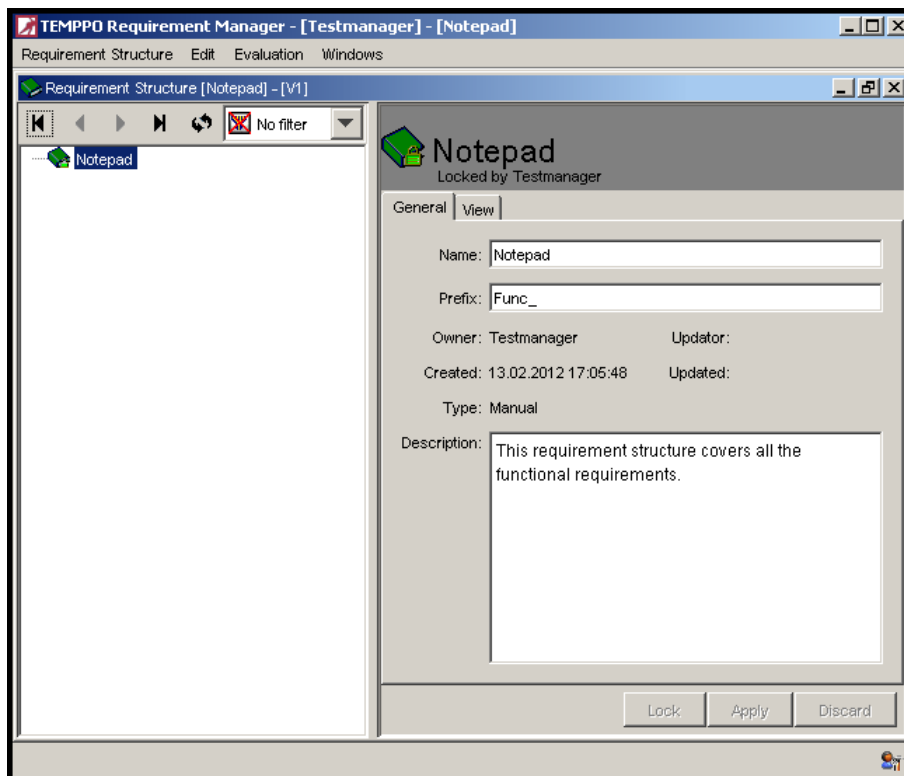


Figure 2 - Requirement Structure

After pressing **OK** the new requirement structure is created and you are asked if you want to assign it to a project in TEMPPO Test Manager. Of course, a requirement structure can be assigned to more projects.

Please remark further, that you can only link test cases to requirements of a checked in requirement structure (= baseline).

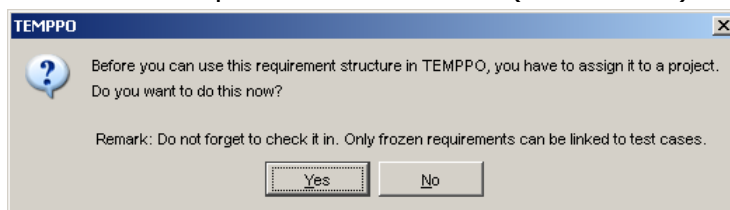


Figure 3 - Project assign request

2.2 Open an existing Requirement Structure

When activating the menu **Requirement Structure > Open**, the window **Open Requirement Structure** with **name, owner, prefix, creation date** and **version** is displayed.

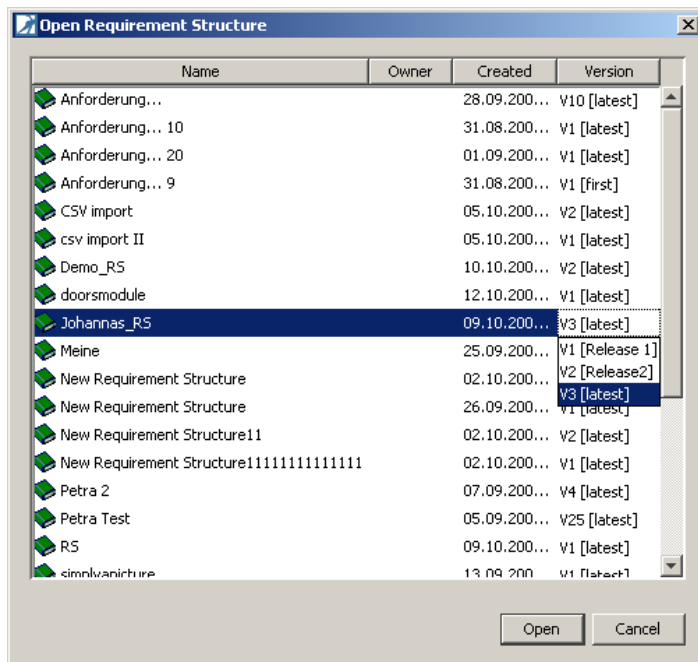


Figure 4 - Open Requirement Structure

Exactly one requirement structure can be selected and is opened by clicking the **Open** button. The name of the requirement structure is shown in the title bar of the main window.

Cancel closes the window and no requirement structure is opened.

Additionally a requirement structure version (see Figure 4) can be selected, if a non-latest version should be loaded.

2.3 Create the Requirements

After creating or opening the requirement structure can be filled in the following ways:

- Build manually
- Importing from CSV

2.3.1 Create manually

The user has to create requirements manually. Each requirement can have more requirements. So you can build a clear arrangement of your requirements. There are 4 **Object types**:

- **Package**: is similar to a folder or place holder
- **Heading**: reflects a requirement without any content
- **Additional Text**: reflects a requirement with additional information to a requirement
- **Requirement**: real requirement

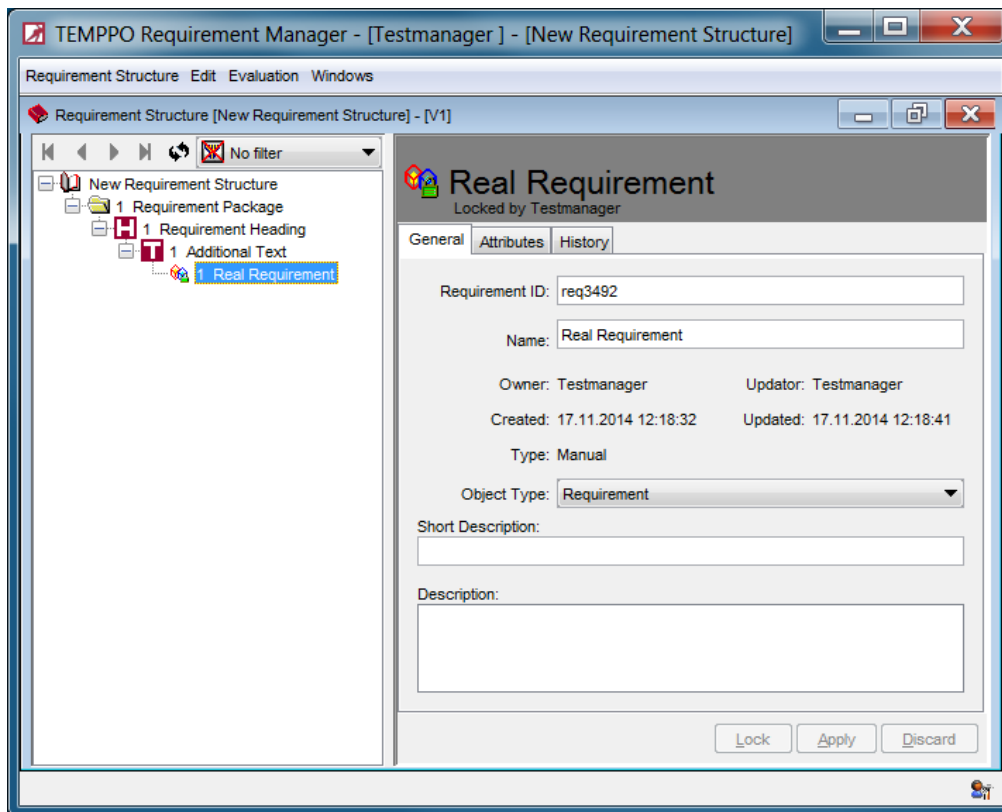


Figure 5 – Requirement (General)

With the menu item **Edit > New > Requirement**, a new requirement is created below the selected requirement structure or requirement. This menu item is enabled if a requirement structure is opened and the requirement structure or a requirement is selected.

A new child node is created below the selected one and a new name has to be entered. The default name is "New Requirement".

With the menu item **Edit > New > Requirement Before**, a new requirement is created before the selected requirement. This menu item is enabled if a requirement structure is opened and a requirement is selected.

A new requirement is created before the selected one and a new name has to be entered. The default name is "New Requirement".

A requirement contains the following tabs:

- **General:**
In the tab "**General**" you can change the requirement's id and its name. Furthermore, you can fill in a short and a long description.
- **Attributes:**
In this tab "**Attributes**" specified in the **Meta Data Editor** can be set for requirements. Before linking attributes to requirements you have to create them: See Figure 6 ff.
- **History:**
In the tab "**History**" all changes are tracked.

2.3.1.1 Attributes

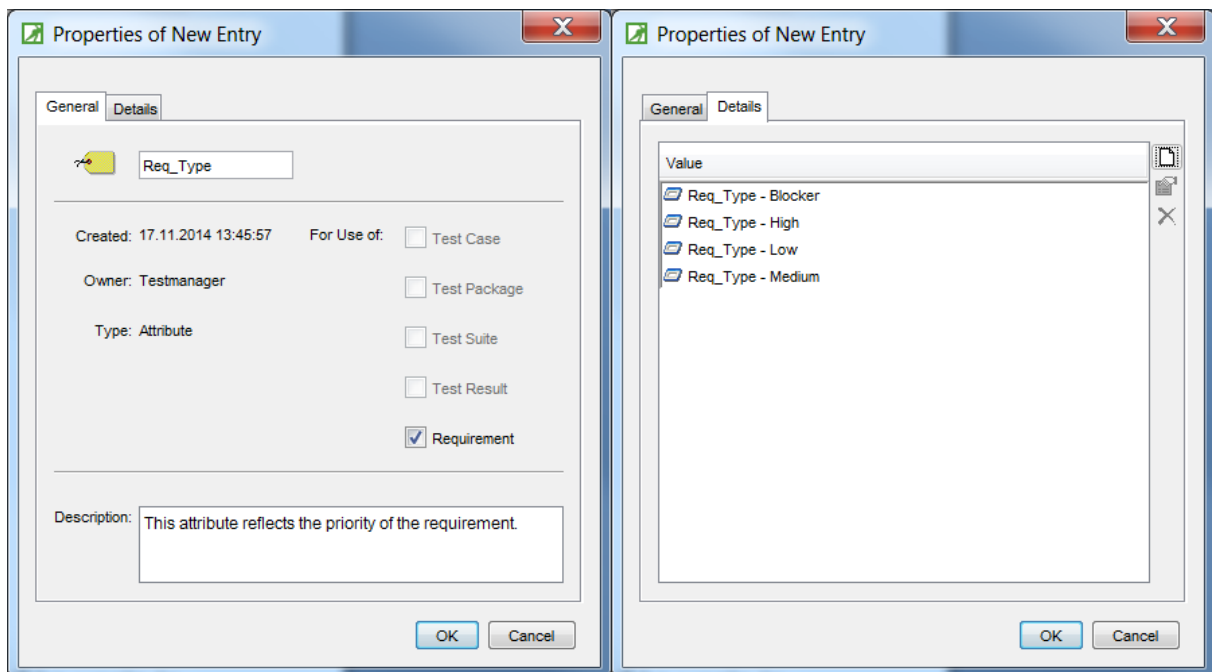


Figure 6 - Creating a requirement attribute

After clicking **OK**, the attribute is created and the user is asked, if he wants to assign it to requirement structures.

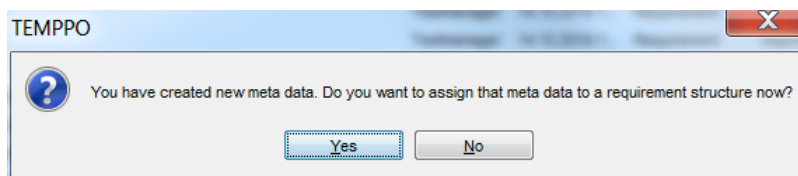


Figure 7 - Assign requirement attribute to requirement structure

After pressing **Yes**, user has to select the requirement structures where he wants to add the attribute to a requirement.

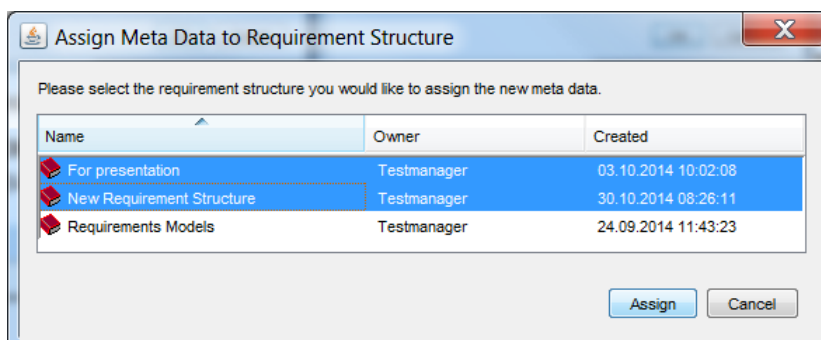


Figure 8 - Select requirement structure(s)

If a requirement is selected and tab **Attributes** is activated, you can enter **Planned coverage** for the number of test cases which have to be created in order to get a "positive" coverage. This means, that in the following example "New Requirement" has been linked to at least 3 test cases and the requirement is displayed "covered" in TEMPPO's requirement analysis. The default value is 1.

Additionally any requirement attribute can be assigned to the requirement.

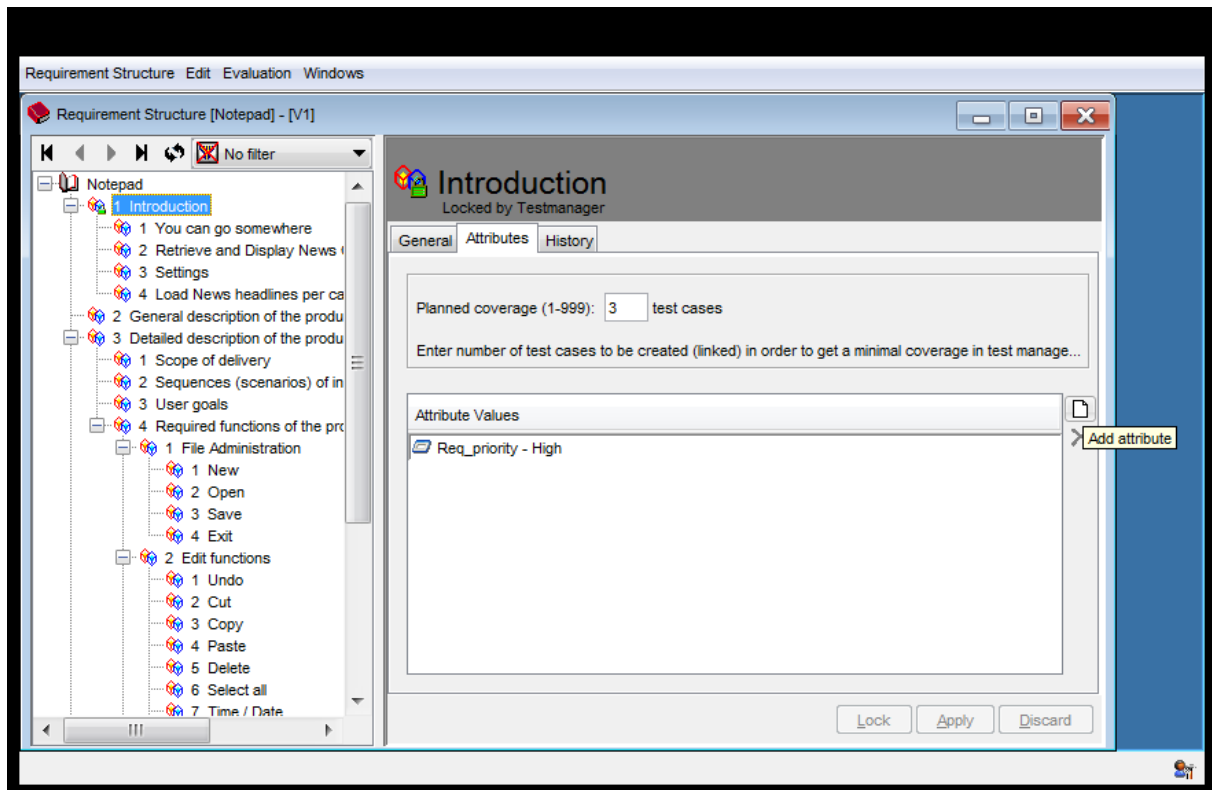


Figure 9 – Requirement (Attribute)

By specifying a sub-string in the **Find** field you can easily navigate to the attribute(s) to be related to the requirements. Multi select allows “moving” several values to the right part of the window (see Figure 10).

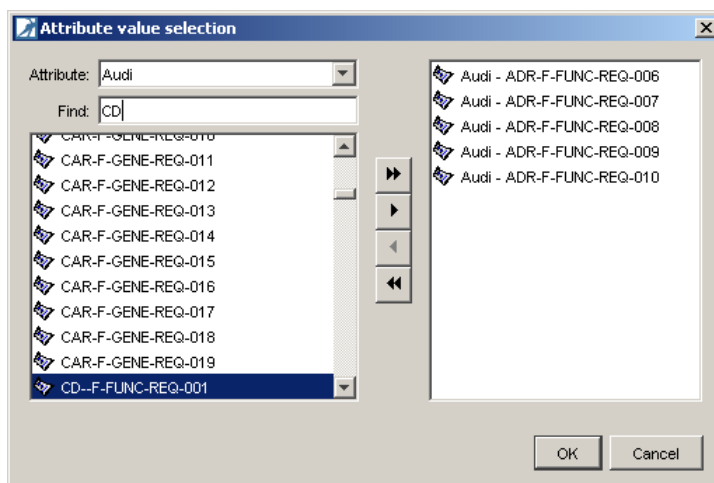


Figure 10 – Attribute value selection

When the requirement structure is imported (DOORS, Requisite Pro), attributes can't be assigned or deleted. The default plan value for **Planned Coverage** is 1 and not editable.

2.3.1.2 History

In the tab “History” entries until the last check-in are shown.

If a requirement is selected and tab **History** is activated requirement history is shown. Only the entries until the last check-in are shown.

The tab has the following columns:

- **Date:** changed on
- **User:** changed by
- **Property:** possible values: General, UDA
- **Comment:** Comment of user. If the mandatory flag for comment is set on and requirement is saved, a history comment is popped up on apply, see Figure 12.
- **Action:** possible values: add, change, delete, merge
- **Info:** additional information for changing reason, e.g., which attribute was set.
- **Version:** of history entry. With button **Display all entries** all history entries of all requirement structure versions can be loaded

Action is depending on **Property** (possible values):

- UDA: add, delete, change
- General: change

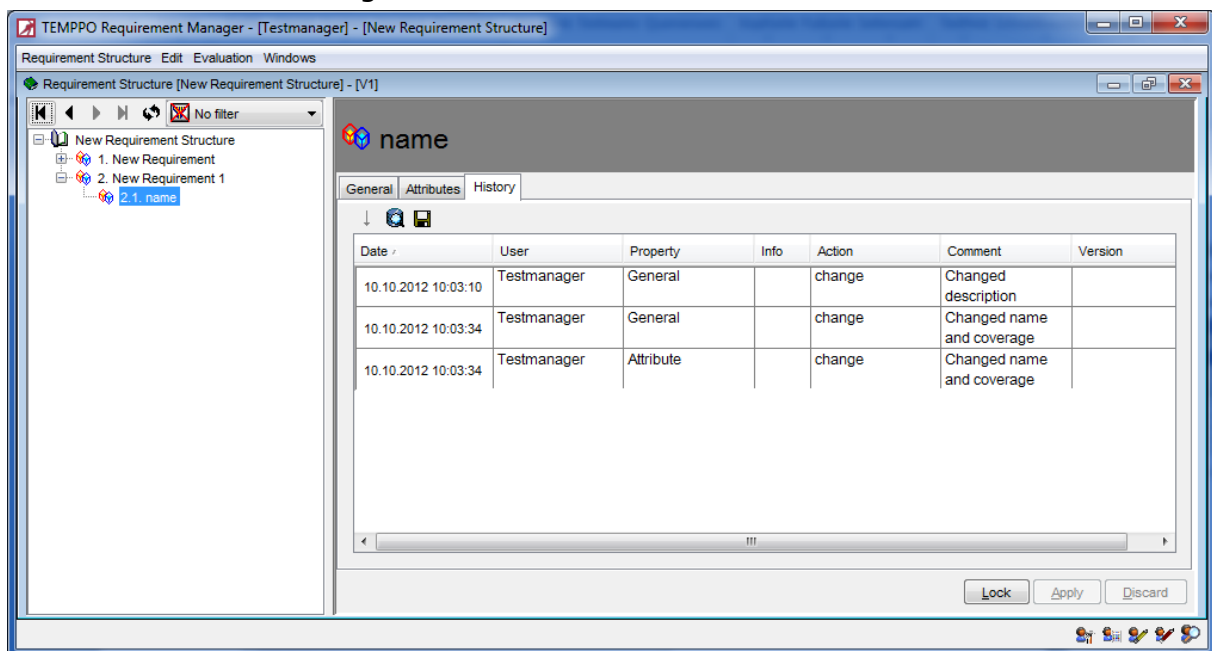


Figure 11 – History tab

Within current requirement structure version, the number of history entries loaded (x) can be configured in settings. If there are more history entries, the button **Search next** is still enabled and the next x lines can be loaded.

It also possible to view all history entries of all requirement structure versions by pressing the button **Display all entries** and save them to CSV file.

The comment can be configured to be mandatory in tab **History when requirement structure is selected**, see Figure 12. For each requirement structure this mandatory flag can be set.

If the mandatory flag is set on and requirement is saved, a history comment is popped up on apply (Figure 13).

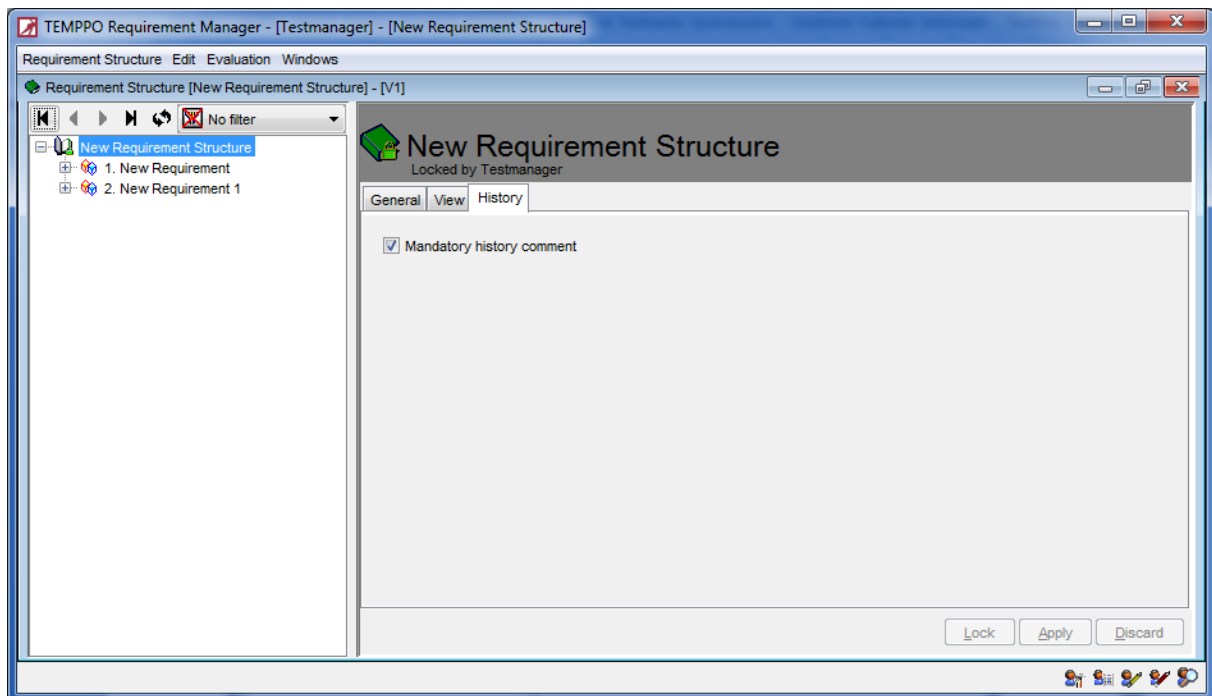


Figure 12 – Mandatory history comment

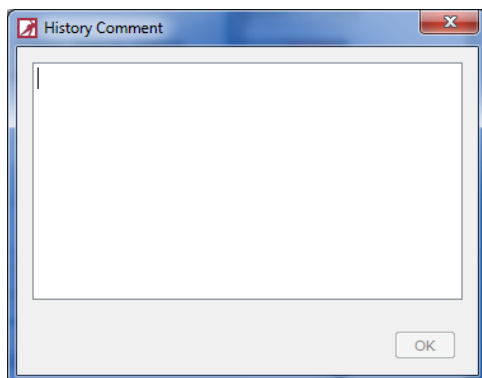


Figure 13 – History comment

2.3.2 Importing from CSV

With CSV files several requirements can be imported to a requirement structure or requirement. Depending on the selected node (requirement structure, requirement) the requirements are imported as a list of children.

First you have to save your Excel file as csv and select a requirement or requirement structure root node.

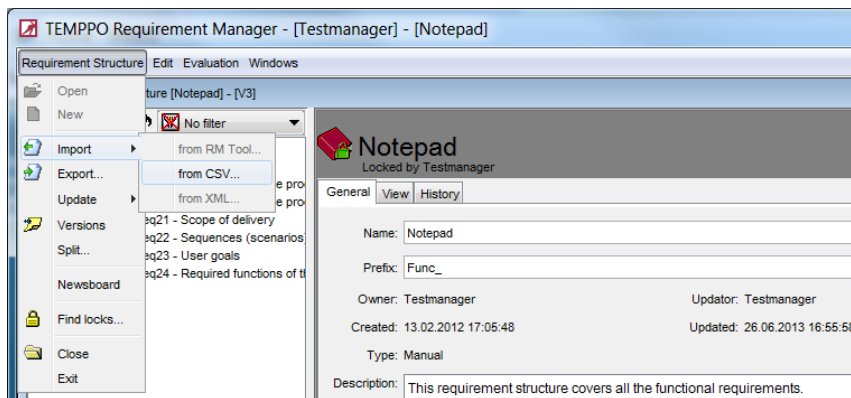


Figure 14 - Menu "Import -> from CSV..."

When activating the menu **Test Structure -> Import Structure -> From CSV** Figure 15 is displayed. In that dialog you can assign Excel columns to TEMPPO attributes. They are automatically selected, if their names match. In the following example "Name", "Description", "Owner", and the requirement attributes "Req_State" and Req_priority are equal.

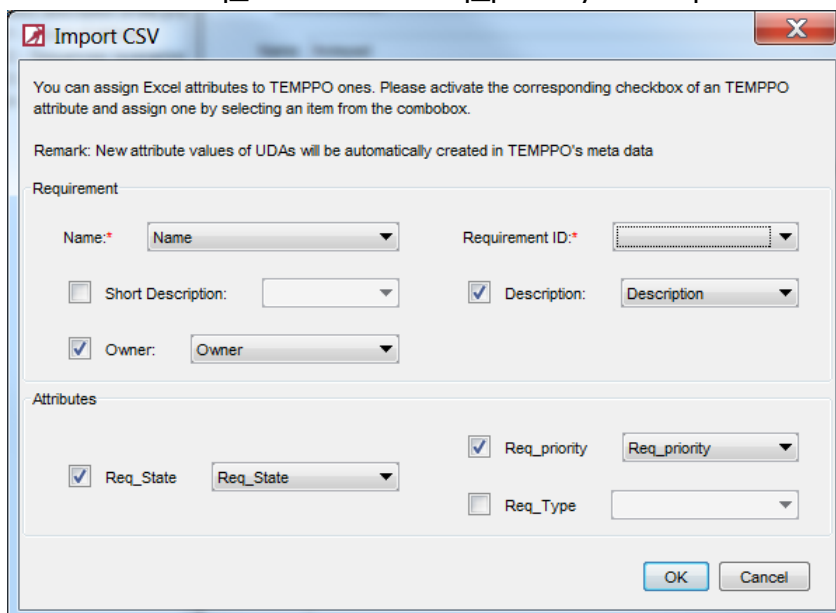


Figure 15 - CSV import dialog

Mandatory attributes: Name and ID have to be assigned; otherwise an import cannot be performed.

Fixed attributes like Description, Short Description, and Owner can be assigned to any Excel attributes.

If the **owner** is selected and the user is not available in TEMPPO, the current importer is used as owner.

Attributes: Any requirement attributes can be assigned with Excel attributes. If a value to be assigned doesn't exist, it will be created automatically. Attribute names have to exist in TEMPPO.

If 2 or more values have to be assigned to an attribute, separate it in Excel with ";"

Req_priority
High;#Medium
High
Medium;#High

2.4 Edit Requirements

Maybe the requirements changes after creation, so you can edit them, too. After automatic or manually locking the requirement (see 2.16.1, 2.16.5), you can edit the requirement ID, name, short and long description.

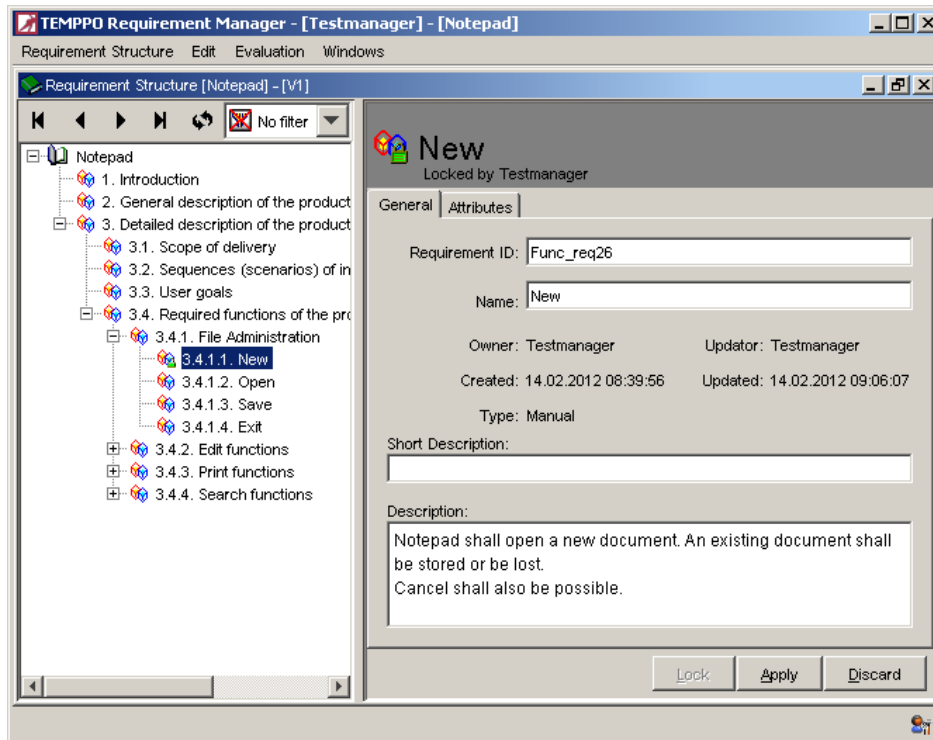


Figure 16 – Editing requirements

After editing, click the button **Apply** for saving your changes.

2.5 Import a whole Requirement Structure

TEMPPO is able to generate a whole requirement structure with requirements and its information etc. by importing.

2.5.1 Import from RM Tool

With this functionality you can import a requirement structure from a requirement management system.

2.5.1.1 DOORS

TEMPPO maintains IBM Telelogic DOORS and thus the client for DOORS must be installed.

ID	Level	Updater	ReqID
35			
36			
68			
69			
70			
71			
72			
73			
74			
75			
76			
77			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			

Figure 17 – DOORS: Requirement structure to be imported

There is an existing module in DOORS which is wanted to be used in TEMPPO.

The import from DOORS can be started by pressing the menu item **Requirement Structure > Import > From RM Tool**. This menu item is only enabled when no requirement structure is open.

This will cause the wizard shown in Figure 18 to be displayed. The wizard assists you to import requirement data from an external Requirement Management Tool.

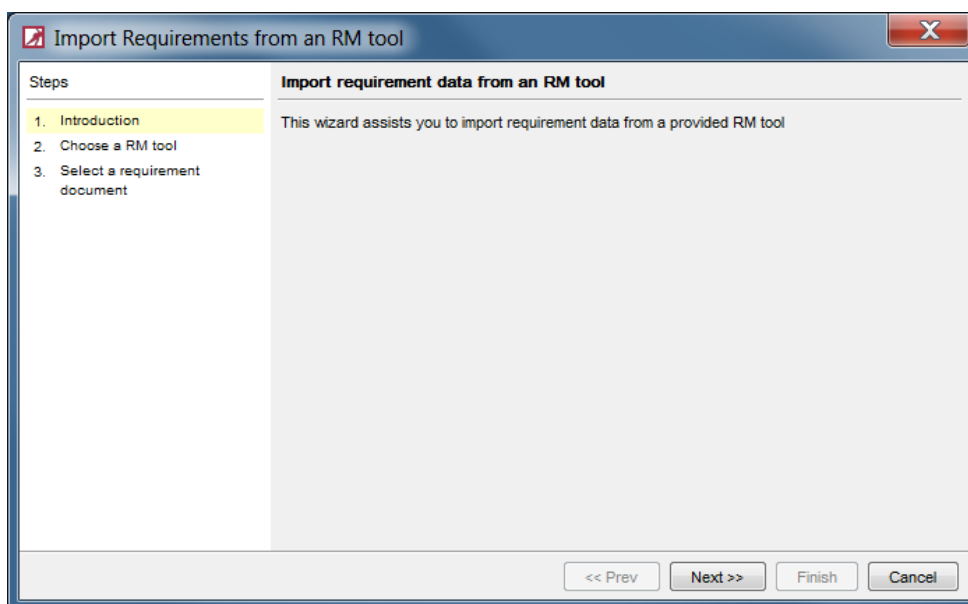


Figure 18 – Requirement import wizard: Introduction

When pressing **Next** Figure 19 is shown, in which you choose "IBM Telelogic DOORS".

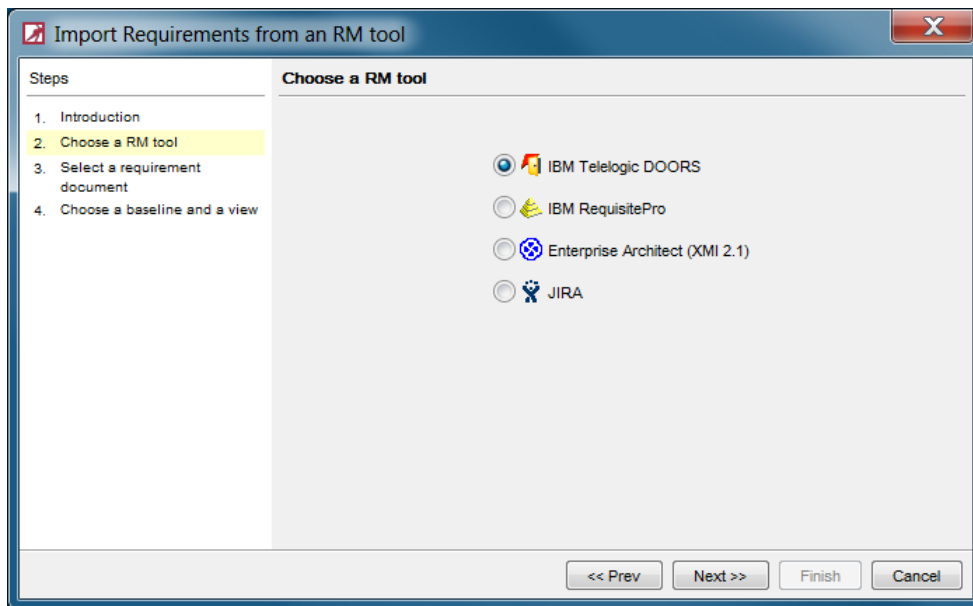


Figure 19 – Requirement import wizard: Choose a RM Tool

Then the server for DOORS starts and the following progress bar is shown (Figure 20):

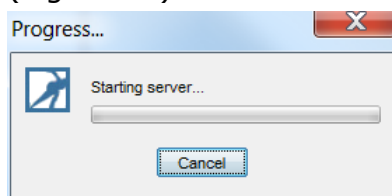


Figure 20 – Starting server...

In the next window you select a module from the tree. In the tree the projects and modules from DOORS are shown (see Figure 21).

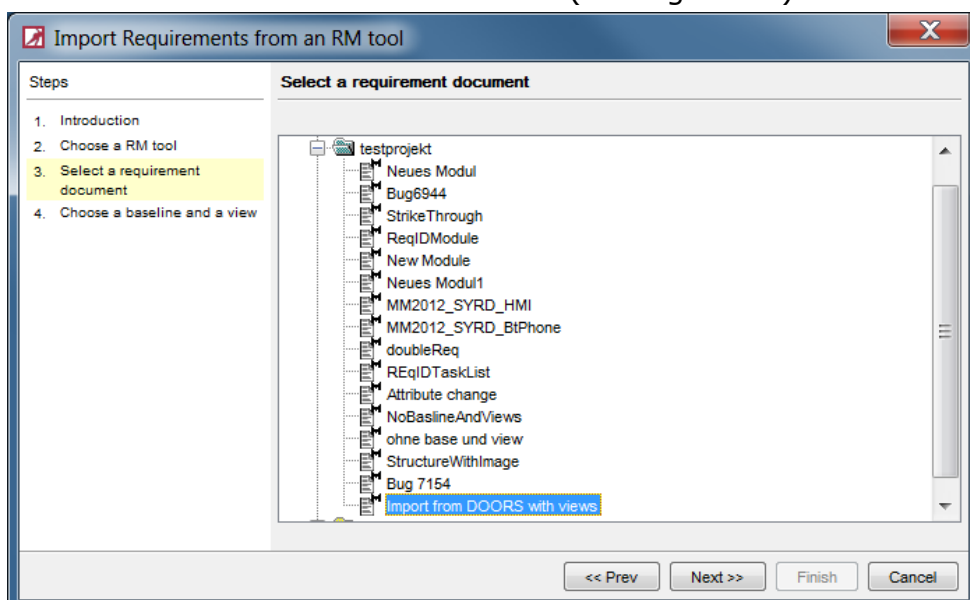


Figure 21 – Requirement import wizard: selection

After selecting a module and pressing **Next** Figure 22 is shown where the user can select a baseline or the latest version of the module. Additionally the user has to select a view.

With the view it's possible to use only a restricted number of requirements in TEMPPO, and not the whole tree from DOORS. Views also contain attributes which are imported, too (see Figure 26). With pressing **Finish** the module is imported to TEMPPO.

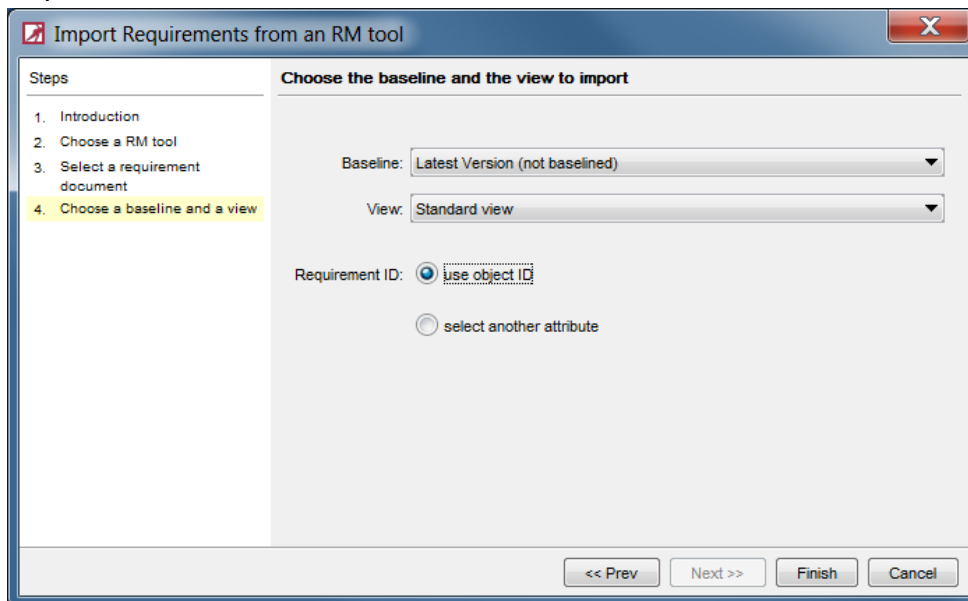


Figure 22 – Baseline and view selection – Finish

With the checkbox **Use another attribute as requirement ID** it's possible to use an attribute of the DOORS View as requirement ID. When activating this checkbox, the button **Next** is available (see Figure 23). In the next step you can select an attribute which is use as requirement ID in TEMPPO, see Figure 24.

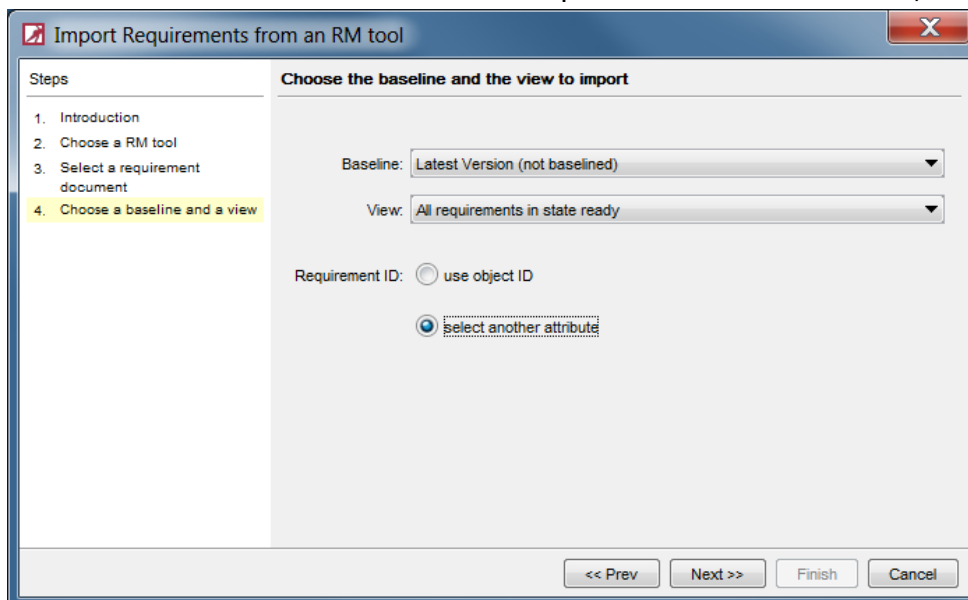


Figure 23 – Baseline and view selection - Next

In the next step you can select an attribute which is used as requirement ID in TEMPPO, see Figure 24. The attribute's name has to be unique in this DOORS module.

The value of the specified attribute is shown in TEMPPO instead of the object number (ID) in DOORS. But this object number is used as attribute. So it means that the object number and the selected attribute have exchanged their functions.

See Table 1, for effect of selecting an attribute for requirement ID.

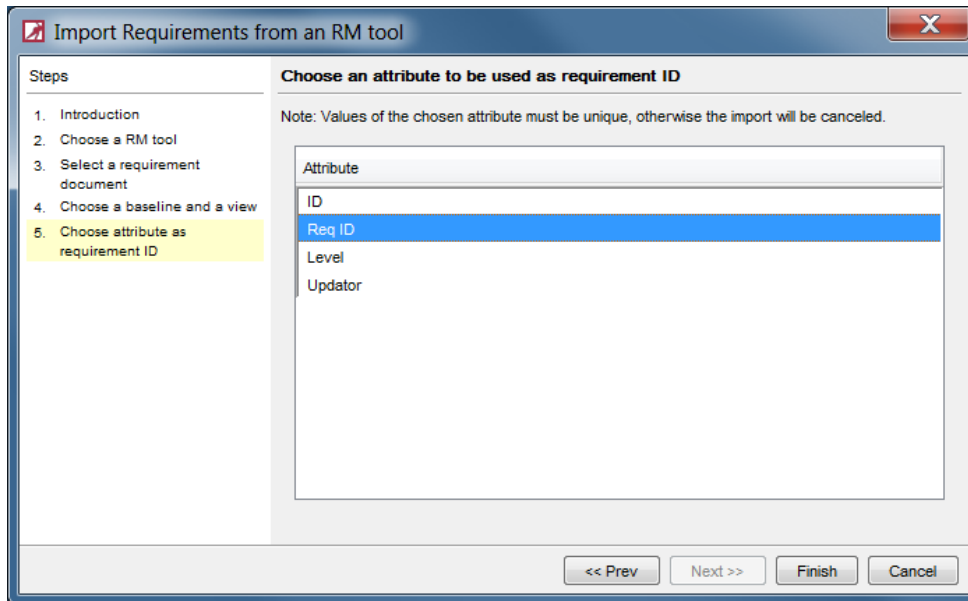


Figure 24 – Attribute selection

Columns in DOORS view	Import setting	Attributes in TEMPPO
ID (object identifier) Level ReqID Updater	→ define no requirement ID: ID (object identifier) is requirement ID	Level Updater ReqID
ID (object identifier) Level ReqID Updater	→ define "ReqID" as requirement ID	Level ID Updater
Level ReqID Updater	→ define no requirement ID: ID (object identifier) is requirement ID	Level ReqID Updater
Level ReqID Updater	→ define "ReqID" as requirement ID	Level Updater

Table 1 – Attributes from DOORS to TEMPPO

After selecting the attribute which has to be shown as requirement id in TEMPPO and then pressing **Finish** the requirement structure is imported.

The values of attribute which is specified as requirement id are checked if there are equal values or if there are no values. If there are such requirements, then the import is canceled and a log file is written where these cases are described (see 2.5.1.1.1).

When the import was successful, then the imported requirement structure and its requirements are shown in the tree:

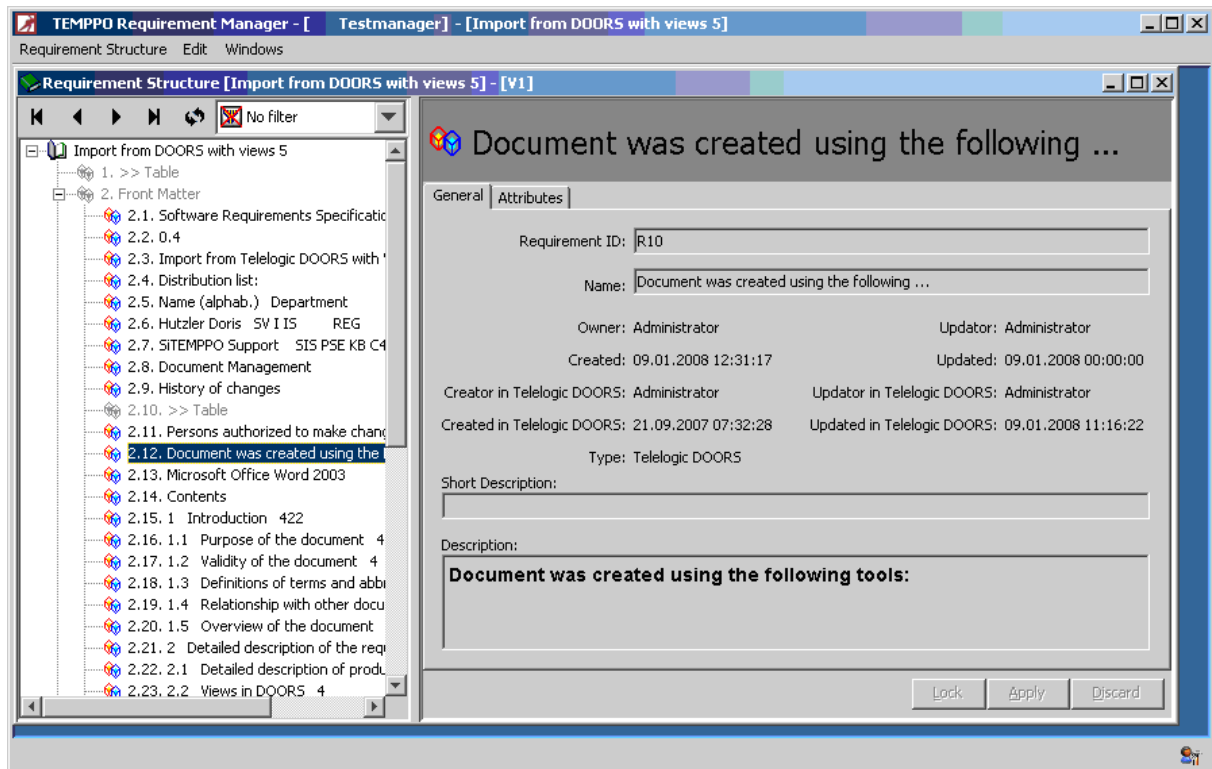


Figure 25 – Imported requirement structure with Views

When there is an attribute specified as requirement id then the value of this attribute is shown for the ID (see also in Figure 25). This specified id is also displayed in the TEMPPO test environment.

All imported attributes are shown in tab **Attributes**, see Figure 26:

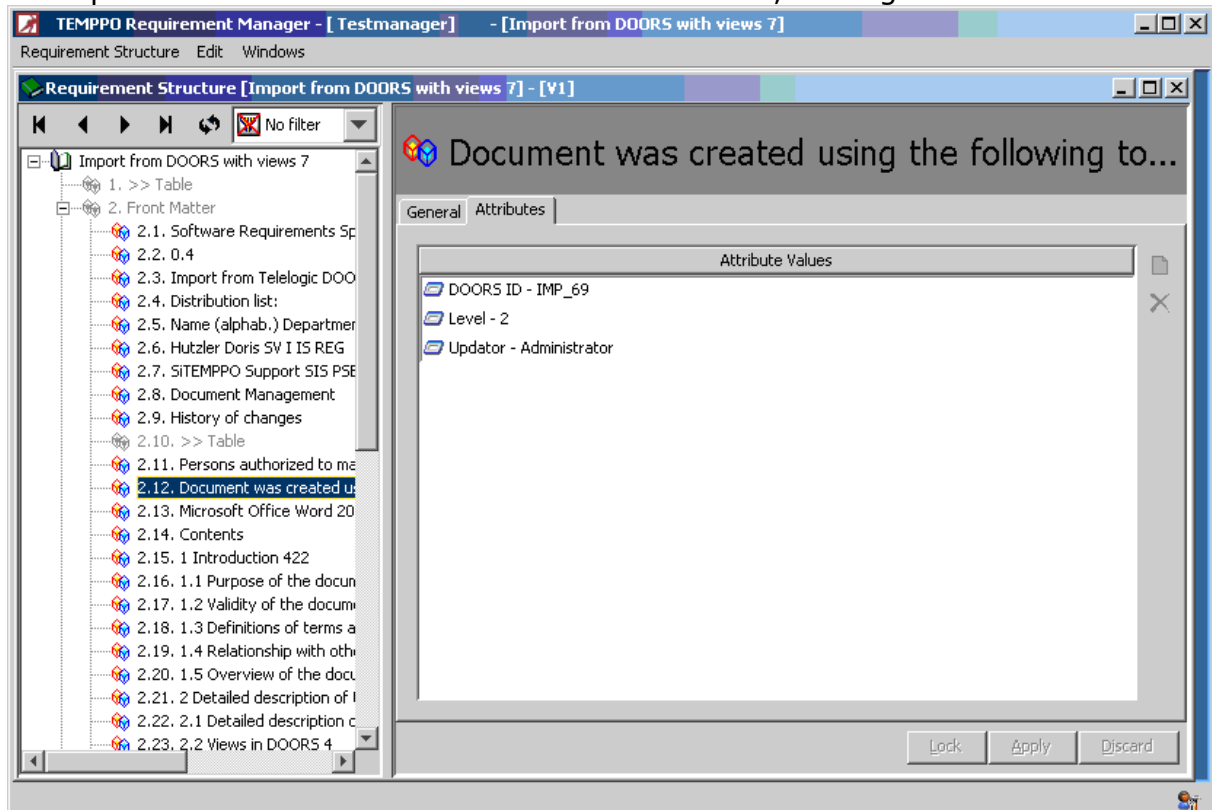


Figure 26 – Requirement attributes

The requirements, which are not available in DOORS, are not selectable and they are displayed grayed in TEMPPO Requirement Manager.

In the TEMPPO test management environment, only selectable requirements are available for assignment to test packages or test cases. The not selectable requirements are not visible in the test management environment.



In TEMPPO only the selectable requirements can be linked to test packages or test cases.

2.5.1.1.1 Possible errors during the import

Errors	Reaction
The server for DOORS can't be started	A message is shown (see Figure 27). Check, if IBM Telelogic DOORS client is installed and correct the DOORS settings in the TEMPPO Requirement Manager settings (Windows > Settings).
An attribute is defined as requirement id and there are equal values or no for requirement id.	A message is shown (see Figure 28). Open the file and do the changes for the requirements in DOORS which are described in the file (example see Figure 29) and then import again.

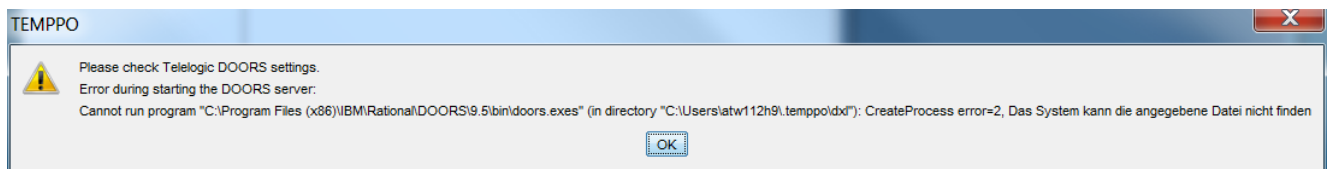


Figure 27 – Error: Host not found

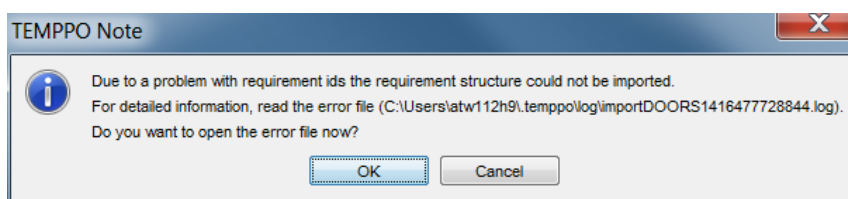


Figure 28 – Error with requirement ids

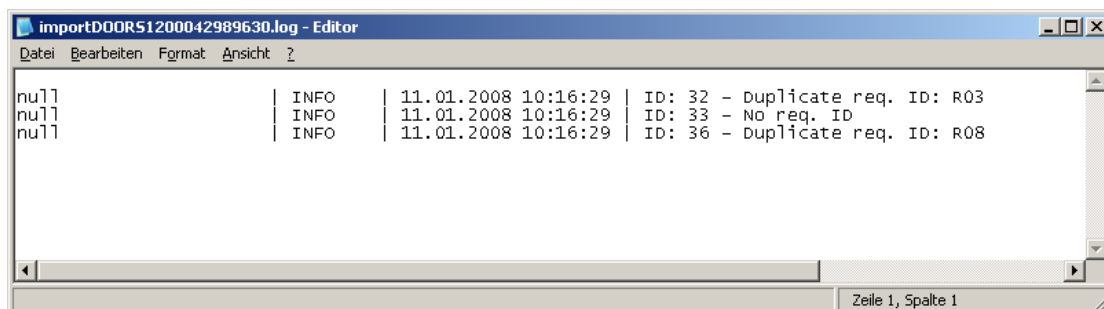


Figure 29 – Error text file

2.5.1.1.2 Import via command line interface (CLI)

Since DOORS import is a time consuming process, TEMPPO offers the possibility to automate that.

There is the command **import_doors** which processes an XML file and imports an unlimited import of DOORS modules.

For details see User Manual, chapter 8 ff.

2.5.1.2 Requisite Pro

The RequisitePro client must be installed.

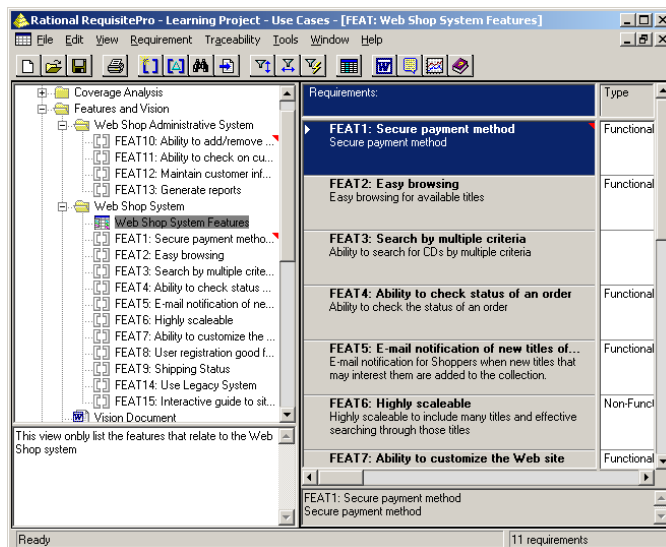


Figure 30 – RequisitePro project

There is an existing project in RequisitePro which is wanted to use in TEMPPO.

The import from RequisitePro can be started by pressing the menu item **Requirement Structure > Import > From RM Tool**. This menu item is only enabled when no requirement structure is open.

This will cause the wizard shown in Figure 31 to be displayed. The wizard assists you to import requirement data from an external Requirement Management Tool.

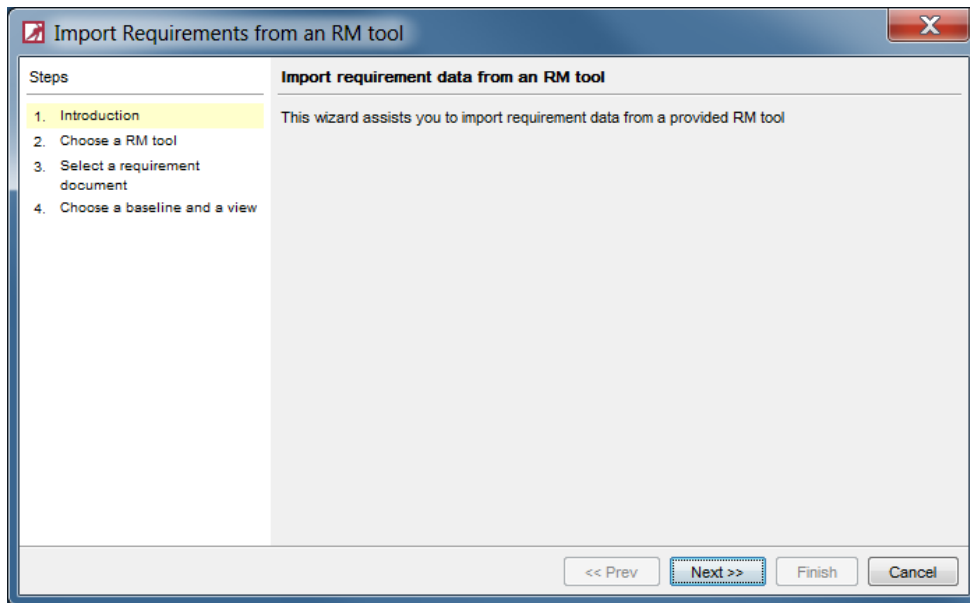


Figure 31 – Requirement import wizard: Introduction

When pressing **Next** Figure 32 is shown, in which you choose "IBM RequisitePro" is possible.

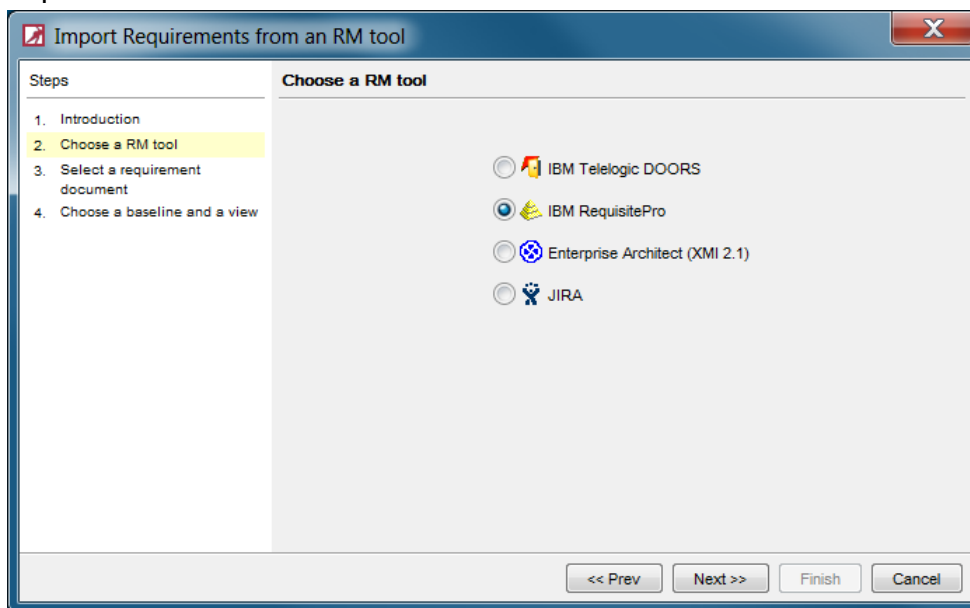


Figure 32 – Requirement import wizard: Choose a RM Tool

If you press **Next** the projects are read from the local registry (Figure 33).

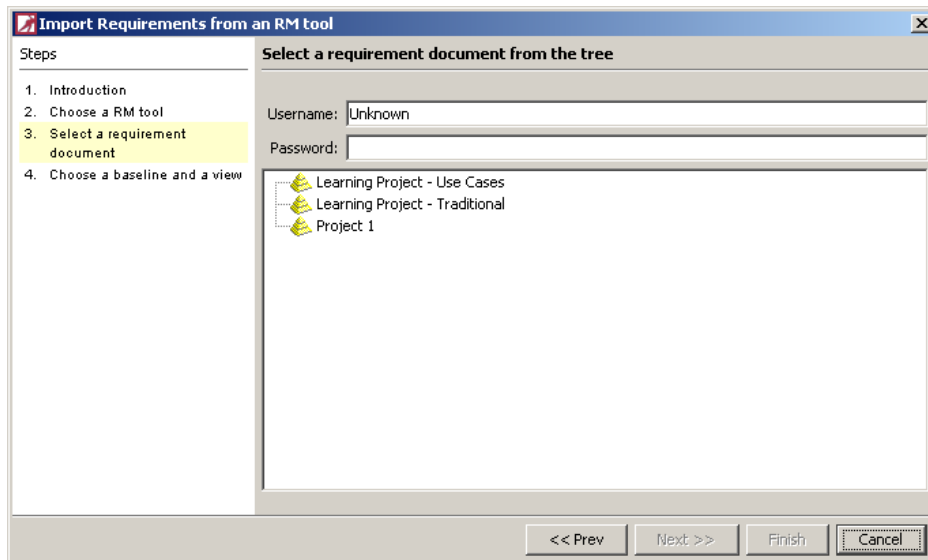


Figure 33 – Requirement import wizard: project selection

If you select a project, enter a valid account and password and press **Next**, Figure 34 is shown where the available views are displayed.

With the view it's possible to use only a restricted number of requirements in TEMPPO, and not the whole tree from RequisitePro. Views also contain attributes which are imported, too (see Figure 34).

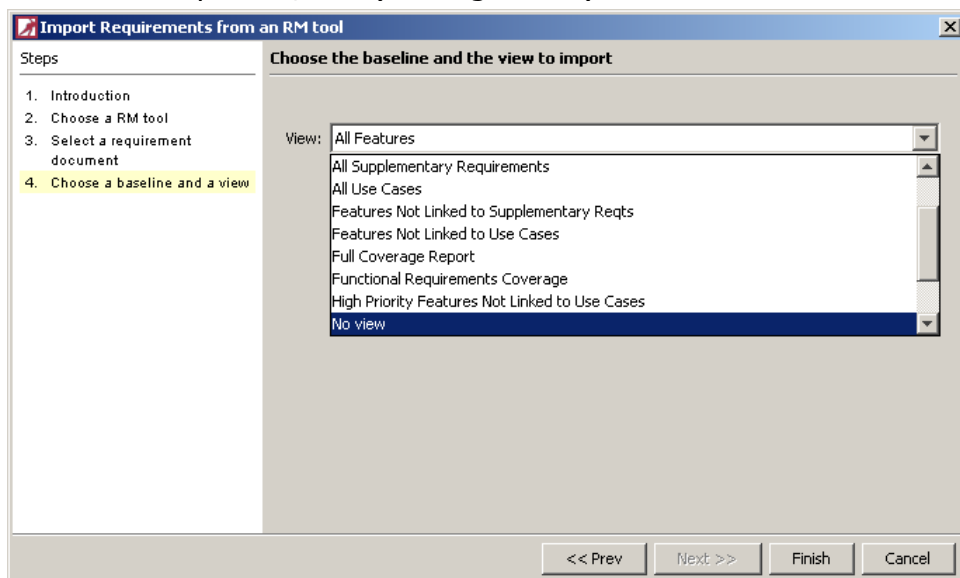


Figure 34 – View selection – Finish

With pressing **Finish** the project is imported to TEMPPO.

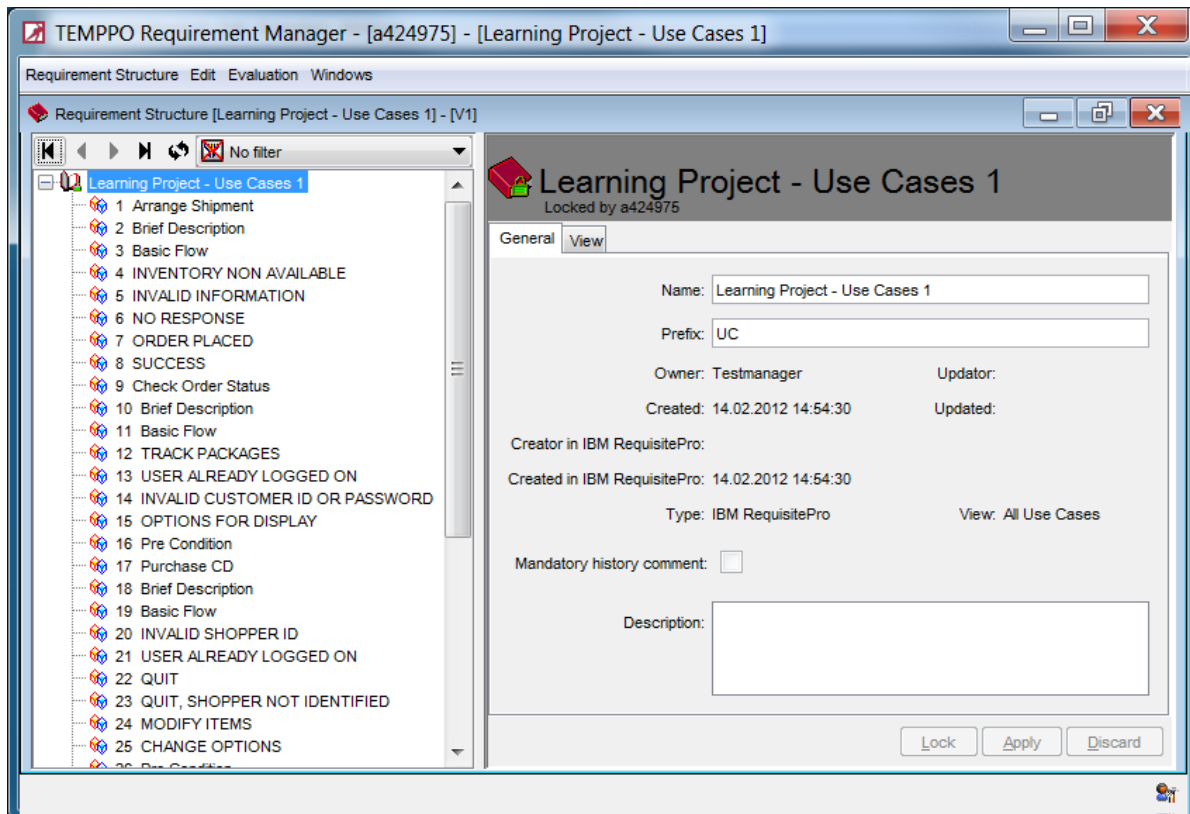


Figure 35 - Imported Requirement Structure

2.5.1.3 Enterprise Architect

2.5.1.3.1 Enterprise Architect: Export to XMI

There is an existing project in Enterprise Architect which has to be used in TEMPPO. The basis for integrating requirements in TEMPPO Requirement Manager is the so called **EA Project Browser**, which contains the model of requirements. The relevant object types are **Packages** (yellow color) and **Requirements** (red color). Other object types like **Use case** are not considered for an import to TEMPPO.

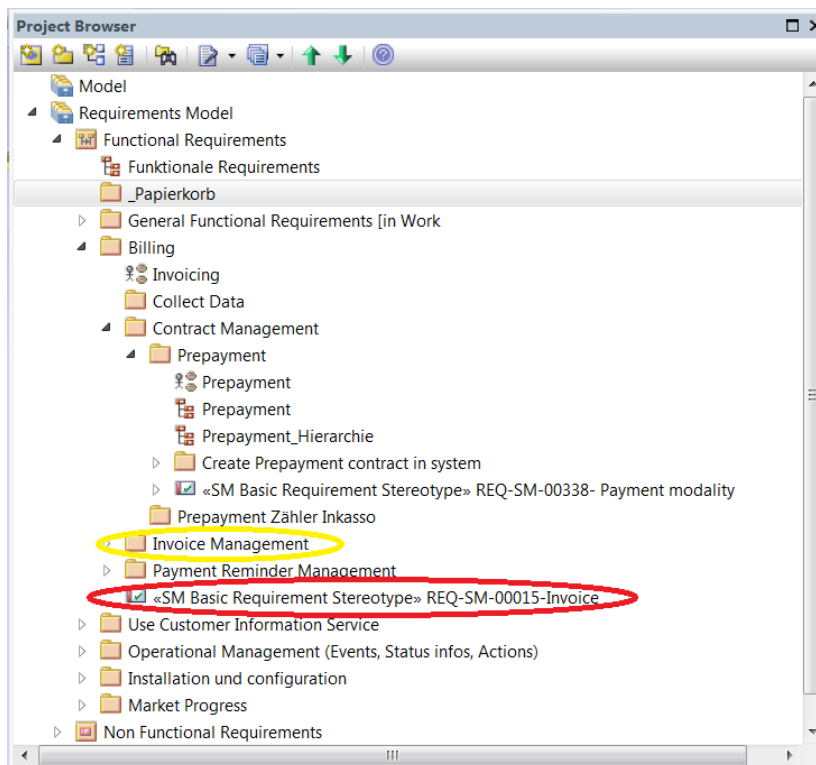


Figure 36 - Enterprise Architect - Project Browser

If the requirement engineer considers freezing a certain state of requirements to a baseline, it has to be exported to XMI as well.

First of all you have to select the node **Requirements Model** and activate the menu item **Export Model to XMI**, and the following figure is displayed, where you can enter a path and XML file for saving the requirements model.



TEMPPO supports XMI 2.1 standard

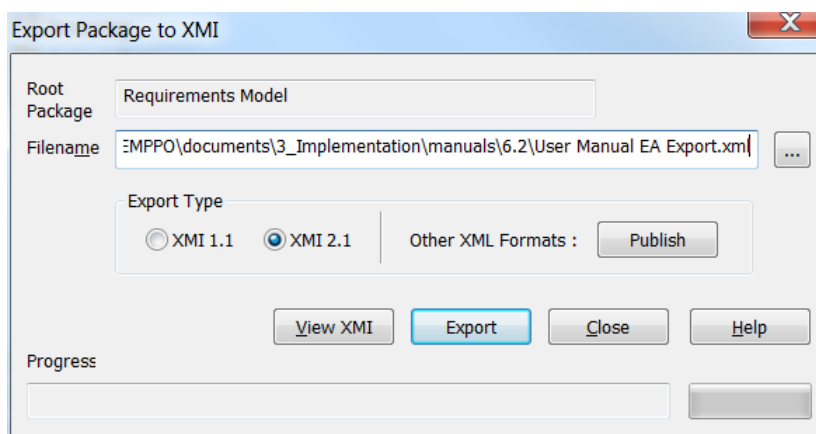


Figure 37 - Enterprise Architect –Export to XMI

After pressing the button **Export** the whole information is written to the XML file in the format of XMI 2.1.

2.5.1.3.2 TEMPPPO Requirement Manager: Import XMI

First of all start TEMPPPO Requirement Manager and activate menu item **Requirement Structure -> Import -> From RM Tool...** and the following figure is displayed.

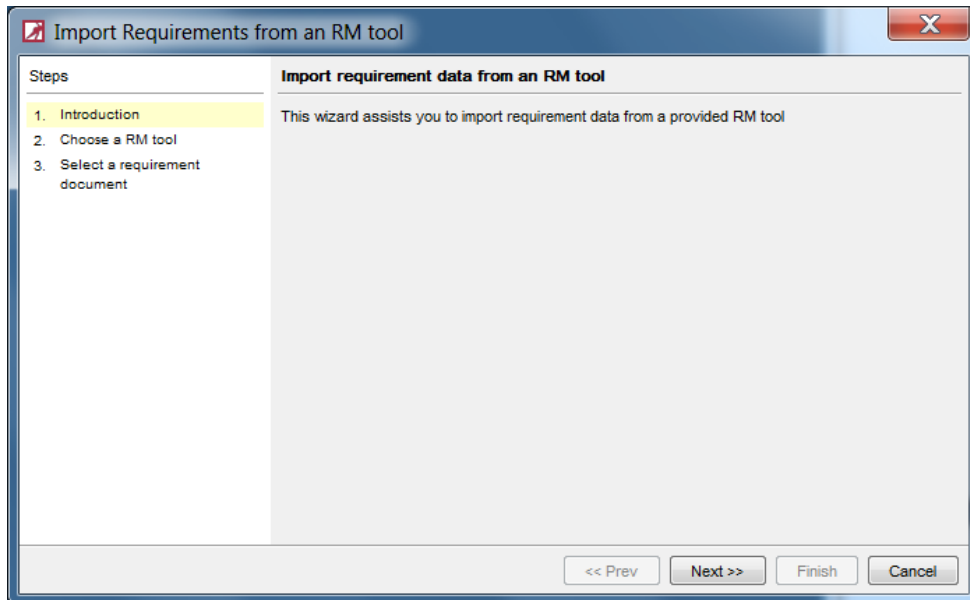


Figure 38 - Import wizard

After pressing **Next**, you can select your Requirement Management Tool.

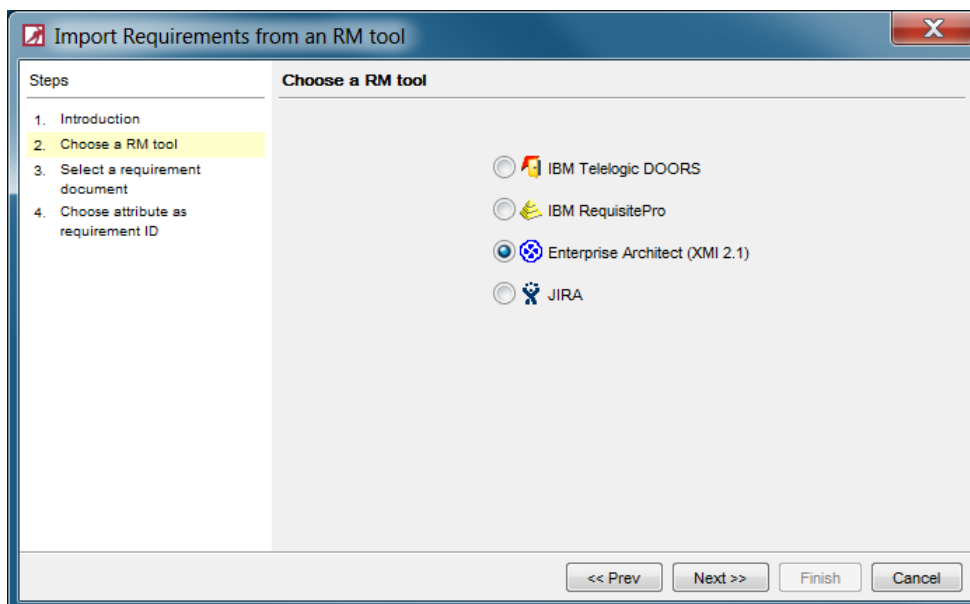


Figure 39 - Requirement Management tool selection

After selecting **Enterprise Architect (XMI 2.1)** you have to press **Next**.

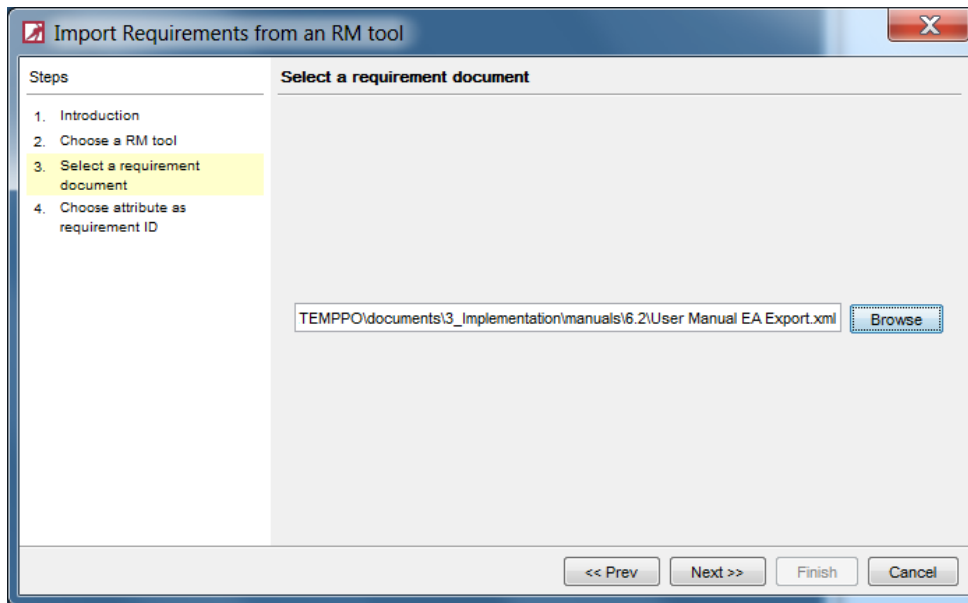


Figure 40 - XMI file selection

In the next step you have to press the button **Browse** in order to select the exported XML file.

After pressing **Next**, you have to select an attribute (EA property or tagged value) which is used as TEMPPPO requirement ID. In our example the EA property **Alias** is used.

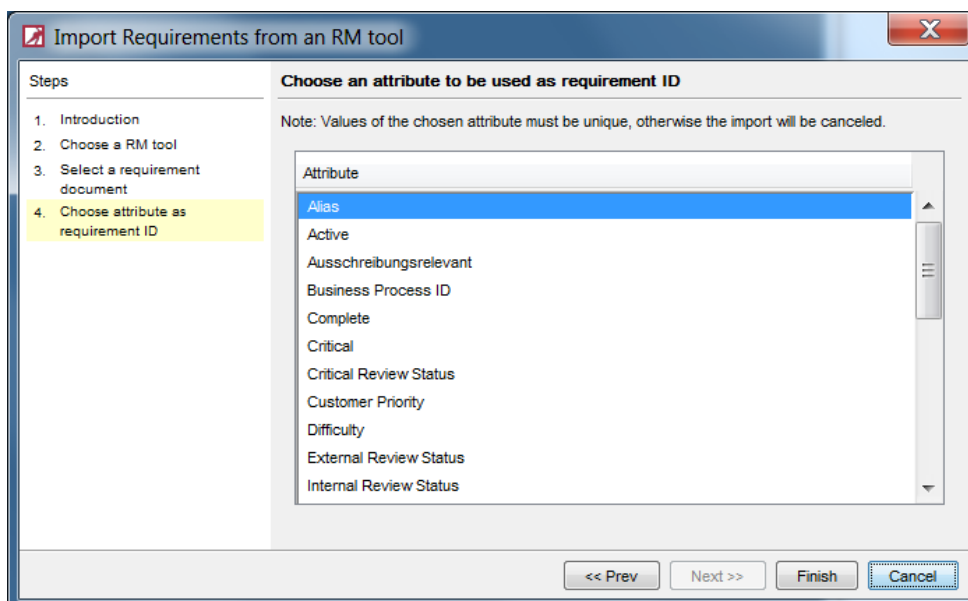


Figure 41 - Select requirement ID

After pressing **Finish** you are asked, if you want to assign this requirement structure to a project. It is recommended to press **Yes** with the exception, that you did not create any project.

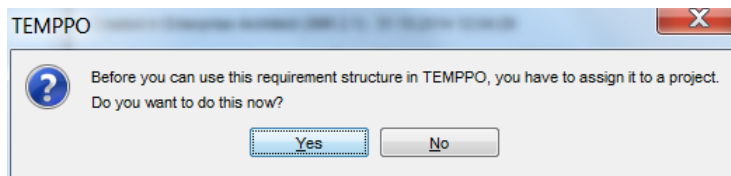


Figure 42 - Assign requirement structure to project

After pressing **Yes**, the requirement structure is assigned to the project and a baseline V1 is created and the requirements cannot be changed in TEMPPO Requirement Manager. The only way to change requirements is to do it in Enterprise Architect and update the requirements in TEMPPO Requirement Manager.

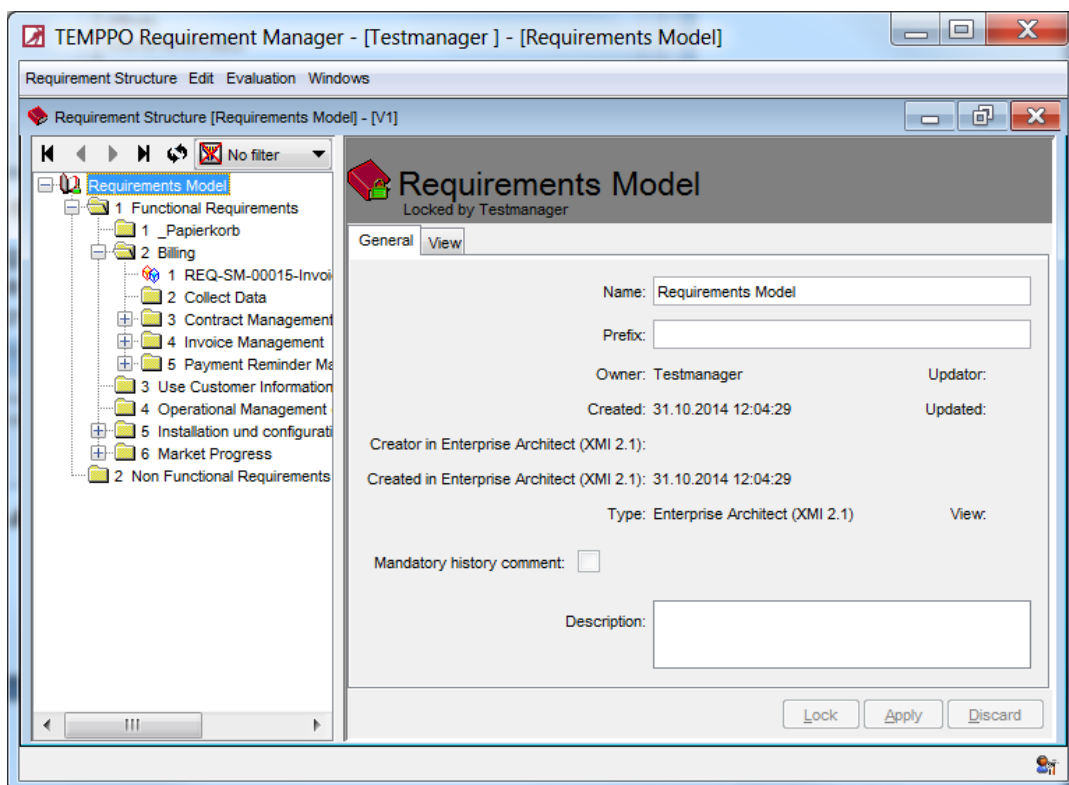


Figure 43 - Imported Requirement Structure

2.5.1.3.2.1 Enterprise Architect – TEMPPO - Data matching

The following table gives a review about data matching from EA to TEMPPO. Since EA has no individual field for **Requirement ID**, user selects it during import. In our example "**Alias**" is used.

All **EA Properties** and **Tagged Values** are matched to TEMPPO requirement attributes.

Enterprise Architect	TEMPPO Requirement Manager	Description
Alias	Requirement ID	„Alias“ was selected as ID
Short Description	Requirement Name	
Notes	Description	
	Owner	TEMPPO user, who did the import
	Updator	TEMPPO user, who did the update
Author	Creator in EA	
Created	Created in EA	
	Updator in EA	It is not tracked by EA Remains empty
Last Update	Updated in EA	
Properties	Attribute + value	Each property is match to an requirement attribute
Tagged Values	Attribute + value	Each property is match to an requirement attribute
Tagged Value: „Planned Coverage“ / „Geplanter Überdeckungsgrad“	Planned Coverage	If there is a tagged valued called „Planned Coverage“, it is automatically mapped to the TEMPPO attribute „Planned Coverage“. Invalid characters are ignored and mapped to the default value „1“.

Table 2 - Data match

2.5.1.3.2.2 View concept

TEMPPO Requirement Manager provides a view concept which enables you excluding requirements from a baseline. This means that you do not want link all the requirements of this baseline to test cases. For example, you want to exclude all the requirements which are in state „in work“.

Such a view is created by applying a filter or specifying a logical expression to the requirement structure.

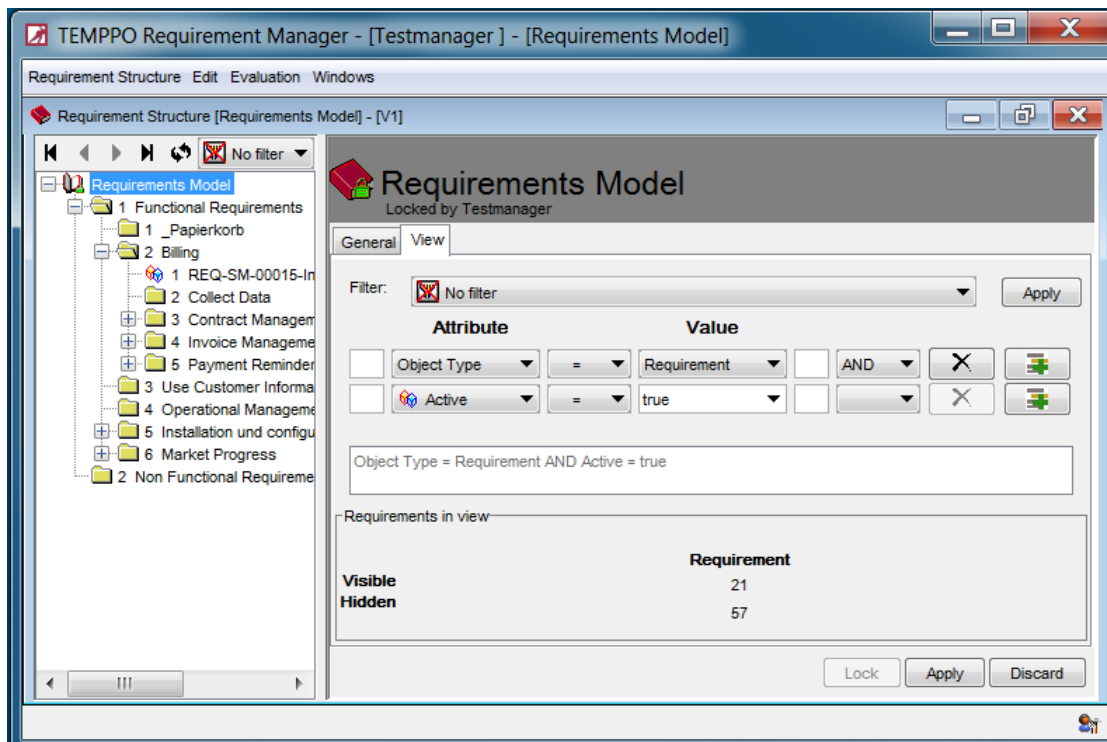


Figure 44 - Requirement Structure – View

If you select root node and tab **View**, Figure 44 is displayed. You can either select one of the existing filters and pressing **Apply** or an attribute and its value(s) that can be combined with logical operators (AND, OR).

In the lower area the result is displayed.

After pressing **Apply**, the view is applied to the requirement structure. All non matching requirements are disabled. Here the question arises why they are visible at all. Consider the following example: A “grandfather” node is visible, “father” not, and child is visible. Without any “father”, the requirement could not be displayed in a tree.

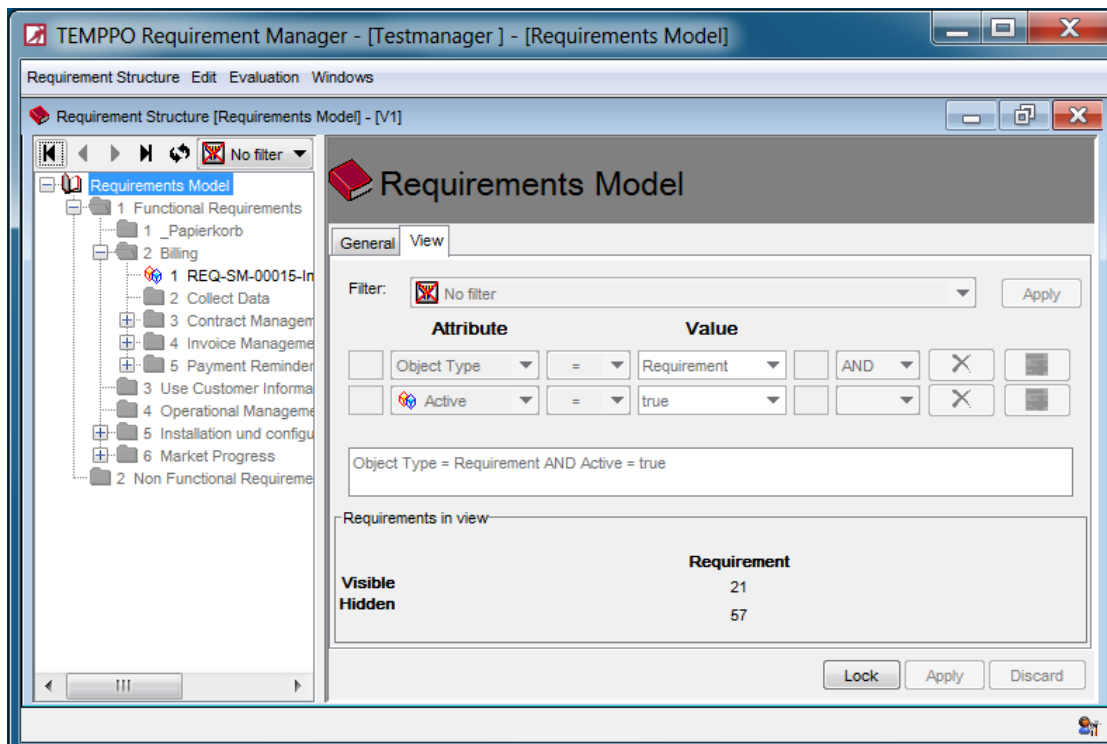


Figure 45 - Requirement Structure - Applied View

As long as no TC is linked to any requirement in that baseline, the view can be changed. After linking one TC to any requirement, the view is checked in to the baseline and cannot be changed anymore.

2.5.1.4 JIRA

If you are using JIRA as requirement management tool, you need to integrate JIRA data to TEMPPO database for the purpose of baselining, applying a view and requirement tracing.

Since JIRA has no view or baselining concept TEMPPO supports you in that way. Each time you update (see chapter 2.5.3.4) your requirement structure from JIRA, a new baseline is created. A view can also be applied until you do not activate the TEMPPO function **Apply requirement updates**.

Independent from your JIRA requirement management process you have to consider the following steps when you import for the first time:

- Collect the released requirements by setting a JIRA filter
- Export the requirement list to csv
- Enter the JIRA base URL
- Determine the TEMPPO requirement ID
- Assign JIRA attributes to TEMPPO ones
- Import requirements to TEMPPO



If 2 or more values have to be assigned to an attribute, separate it in Excel with ";" manually.

Req_priority
High;#Medium
High
Medium;#High

The whole import process contains the following steps:

2.5.1.4.1 Step 1 – Create a JIRA filter

Let us consider the following example in JIRA: The requirement engineer sets the requirement state (e.g. **Working state**) for all requirements which are ready for implementation to **released**. If you create a JIRA filter like displayed in Figure 46, 40 requirements are selected.

T	Key	Summary	Working state	P	Created	Updated	Priority
TEMPPODSGN-53	Import Project Data: Test Data append - new Effects are not appended	released		18/Dec/12	12/Jan/16	Major	...
TEMPPODSGN-48	Export of Group to QTP	released		17/Aug/12	12/Jan/16	Minor	
TEMPPODSGN-47	Click event method SAPGuiButton does not support options	released		29/Jun/12	12/Jan/16	Major	
TEMPPODSGN-45	display of window tree differs between QTP and IDATG.	released		28/Jun/12	12/Jan/16	Major	
TEMPPODSGN-44	SAP import - window not properly displayed.	released		28/Jun/12	12/Jan/16	Major	
TEMPPODSGN-43	QTP License server drops down	released		28/Jun/12	12/Jan/16	Major	
TEMPPODSGN-41	IDATG - falsche info am bildschirm	released		28/Jun/12	12/Jan/16	Major	
TEMPPODSGN-40	QTP Object Repository Import - ü/a falsch importiert	released		26/Jun/12	12/Jan/16	Major	
TEMPPODSGN-38	Can not save log file created by Import QTP Object Repository	released		25/Jun/12	12/Jan/16	Major	
TEMPPODSGN-37	SAP Guicomponenttype	released		25/Jun/12	12/Jan/16	Major	
TEMPPODSGN-35	Create Sub Project in IDATG: Connection to SiTEMPPO will be closed	released		21/Dec/10	12/Jan/16	Major	

Figure 46 - 40 JIRA "released" requirements

2.5.1.4.2 Step 2 - Export requirements to Excel

In the next step you activate the JIRA menu **Export -> Excel (All fields)** and all requirements are loaded in Excel (see Figure 47).

Share	Export
Printable	
Full Content	
XML	
RSS (Issues)	
RSS (Comments)	
Word	
Excel (All fields)	
Excel (Current fields)	
Charts	
On Dashboard	

	A	B	C	D	E	F	G
1	JIRA						
2	JIRA						
3	Displaying 40 issues at 12/Jan/16 5:01 PM.						
4	Project	Key	Summary	Issue Type	Status	Priority	Resolution
	TEMPPO Designer	TEMPPODSGN-53	Import Project Data: Test Data append - new Effects are not appended	Bug	Resolved		Won't Fix
5							

Figure 47 - Requirements in Excel

2.5.1.4.3 Step 3 - Remove obsolete rows in Excel

For importing the requirements in TEMPPO Requirement Manager you have to remove the first 3 lines and the last one which are generated by JIRA and your Excel should look like in Figure 48.

	A	B	C	D	E	F	G
1	Project	Key	Summary	Issue Type	Status	Priority	Resolution
	TEMPPO Designer	TEMPPODSGN-53	Import Project Data: Test Data append - new Effects are not appended	Bug	Resolved		Won't Fix
2	TEMPPO Designer	TEMPPODSGN-48	Export of Group to QTP	Bug	Resolved		Fixed

Figure 48 - Requirements in Excel prepared for import

2.5.1.4.4 Step 4 - Save requirements as CSV (comma separated values)

In the last step you have to save the requirements as CSV file. Please consider that you are using the correct delimiter. In **TEMPPO Requirement Manager -> Settings** you can change the delimiter according to your country and language settings.

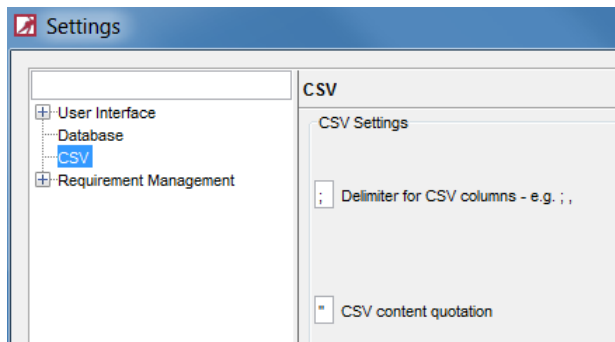


Figure 49 - Settings – CSV

2.5.1.4.5 Step 5 – TEMPPO Requirement Manager – Select JIRA

Start TEMPPO Requirement Manager and activate the menu **Requirement Structure – Import -> from RM tool...** and Figure 50 is displayed.

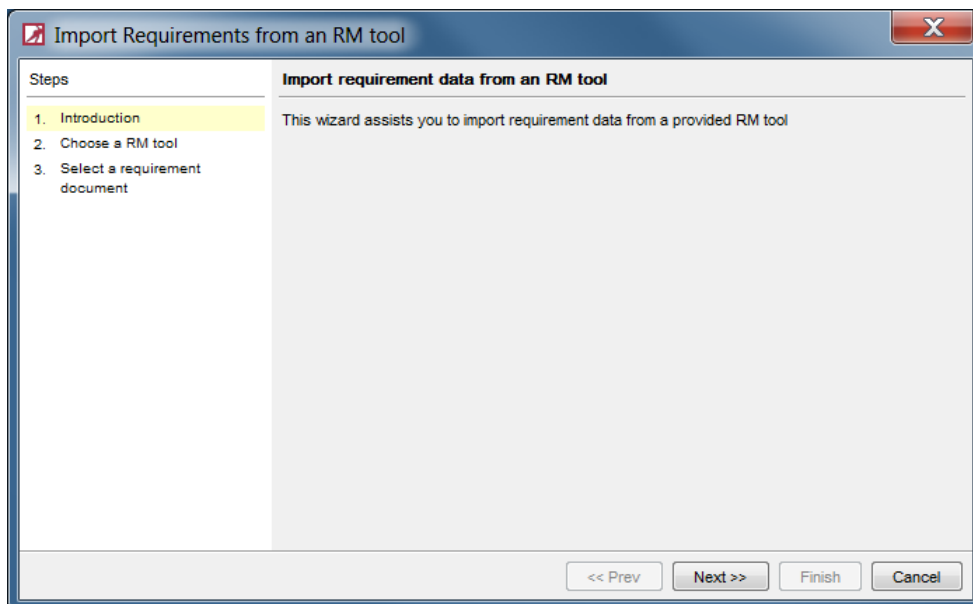


Figure 50 - Import from RM tool - Introduction

Press **Next** and select in Figure 51 **JIRA**.

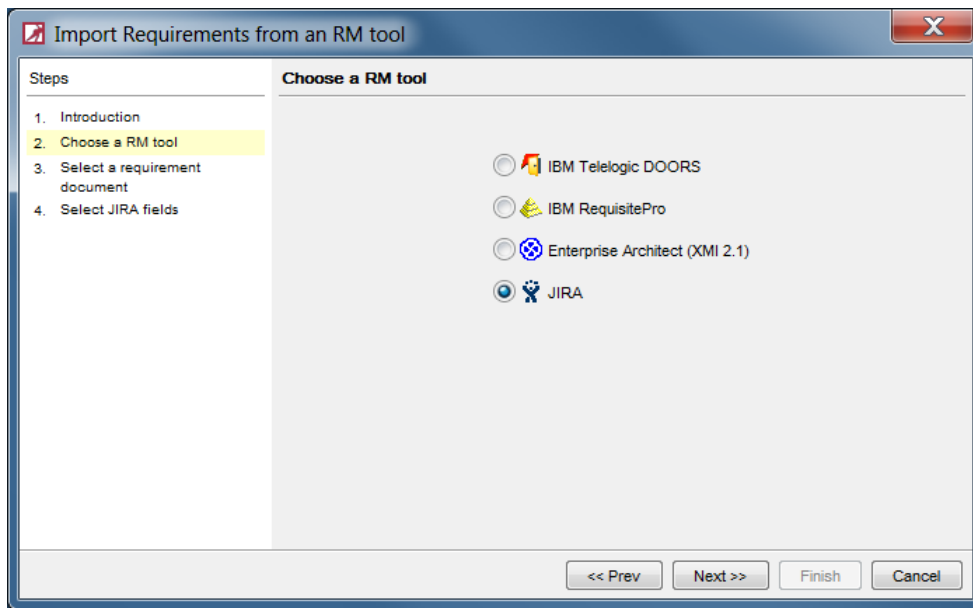


Figure 51 - Import from RM tool – Choose RM tool

Press Next and Figure 52 is displayed

2.5.1.4.6 Step 6 – Select CSV file and JIRA base URL

In this step you have to choose the **CSV file** and enter the **JIRA base URL**, which is the URL where the JIRA server is installed. That URL is later used to construct the real (hyper)-link for each requirement in JIRA and display it in TEMPPO. This has the advantage that you can open directly the requirement in JIRA with one mouse click.

i The **JIRA base URL** is limited to **90 characters**.

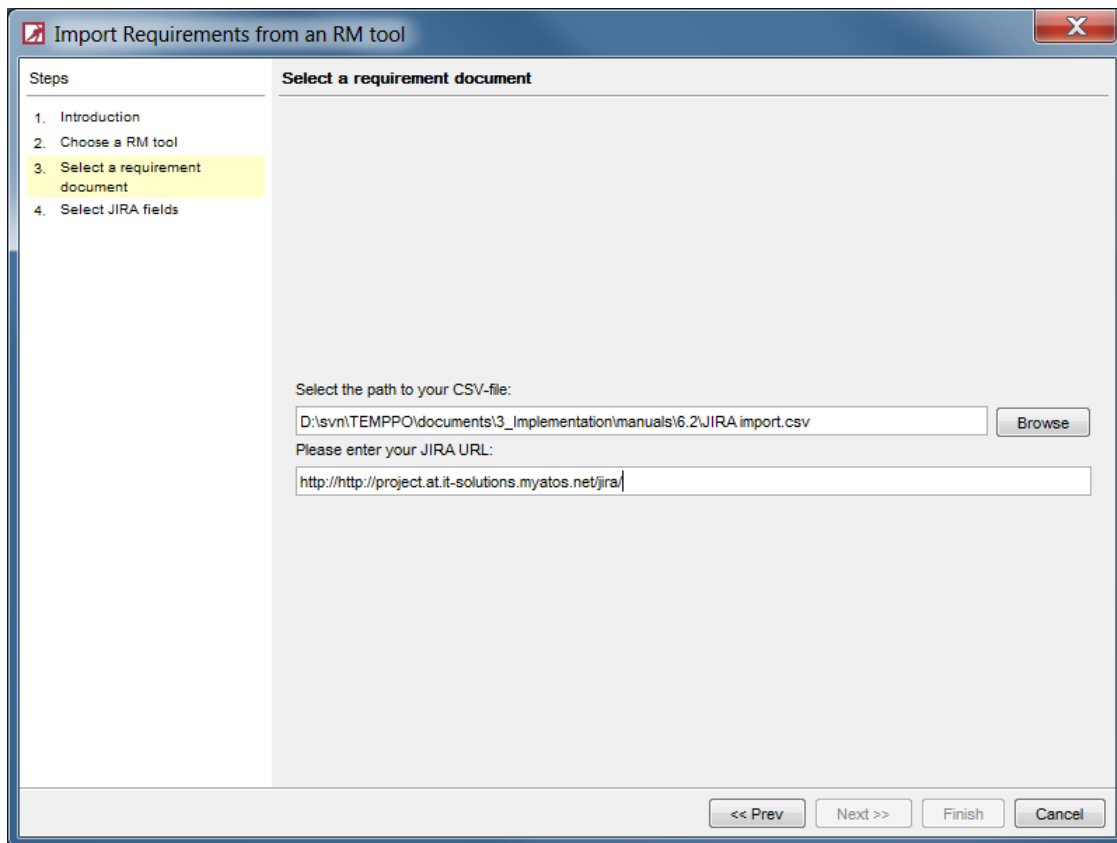


Figure 52 – Import from RM tool – Select CSV and JIRA URL

A real base URL could be <http://project.at.it-solutions.my-company.net>

The URL for a JIRA requirement is always build with <base URL>/browse/<JIRA project name>/<ID>, e.g. <http://project.at.it-solutions.my-company.net/browse/my-project-4711>

Press **Next** and Figure 53 is displayed.

2.5.1.4.7 Steps 7 – Assign requirement properties and attributes

First of all TEMPPO preselects the

- mandatory general requirement properties **Name**, **Requirement ID**, **Description** with the values **Summary**, **Key** and **Description** from JIRA.
- optional general requirement properties **JIRA creator**, **Created in JIRA**, **Update in JIRA** and **Planned Coverage** with the values **Creator**, **Created** and **Updated**.

The corresponding values are also considered for JIRA field names in German language.

As a second step you choose JIRA attributes which are automatically created in TEMPPO then. In Figure 53 **Status**, **Priority** and **Components** are selected.

Import Requirements from an RM tool

Steps

1. Introduction
2. Choose a RM tool
3. Select a requirement document
4. Select JIRA fields

Select JIRA fields

1.) Assign Excel columns to mandatory general requirement properties (Name, Requirement ID, Description).
2.) Activate the checkbox for optional general requirement properties (Short Description, JIRA Creator) and assign an Excel column.
3.) Activate a checkbox in the requirement attributes selection for creating a requirement attribute and its values.

Remarks:
-Attributes displayed in grey color are already used in general requirement properties.
-Attribute values are automatically created in TEMPPO meta data.

General requirement properties

Name:*

Requirement ID:*

Description:*

☐ Short Description:

☒ Planned coverage:

☒ JIRA Creator:

☒ Created in JIRA:

☐ JIRA Updater:

Requirement attributes selection

Column	Import
Project	<input type="checkbox"/>
Key	<input type="checkbox"/>
Summary	<input type="checkbox"/>
Description	<input type="checkbox"/>
Issue Type	<input type="checkbox"/>
Status	<input type="checkbox"/>
Priority	<input type="checkbox"/>
Resolution	<input type="checkbox"/>
Assignee	<input type="checkbox"/>
Reporter	<input type="checkbox"/>
Creator	<input type="checkbox"/>
Created	<input type="checkbox"/>
Last Viewed	<input type="checkbox"/>
Updated	<input type="checkbox"/>
Resolved	<input type="checkbox"/>
Affects Versio...	<input type="checkbox"/>
Fix Version/s	<input type="checkbox"/>
Component/s	<input type="checkbox"/>
Due Date	<input type="checkbox"/>
Votes	<input type="checkbox"/>
Watchers	<input type="checkbox"/>
Images	<input type="checkbox"/>
Original Estimate	<input type="checkbox"/>
Remaining Esti...	<input type="checkbox"/>
Time Spent	<input type="checkbox"/>
Work Ratio	<input type="checkbox"/>
Sub Task	<input type="checkbox"/>

<< Prev Next >> Finish Cancel

Figure 53 - Import from RM tool - Assign requirement properties and attributes

After pressing **Finish** the wizard is closed and you are asked to assign the new created requirement structure to a project. If you press **Yes** you are prompted to select a project. When selecting **No**, you can continue and assign the requirement structure later in the TEMPPO Administrator. After that the imported requirement structure (Figure 55) is displayed.

TEMPPO

Before you can use this requirement structure in TEMPPO, you have to assign it to a project.
Do you want to do this now?

Figure 54 - Assign requirement structure to project

2.5.1.4.8 Imported requirements

If the root node of the requirement structure is selected, the general information is displayed. The JIRA URL is shown as clickable hyperlink.

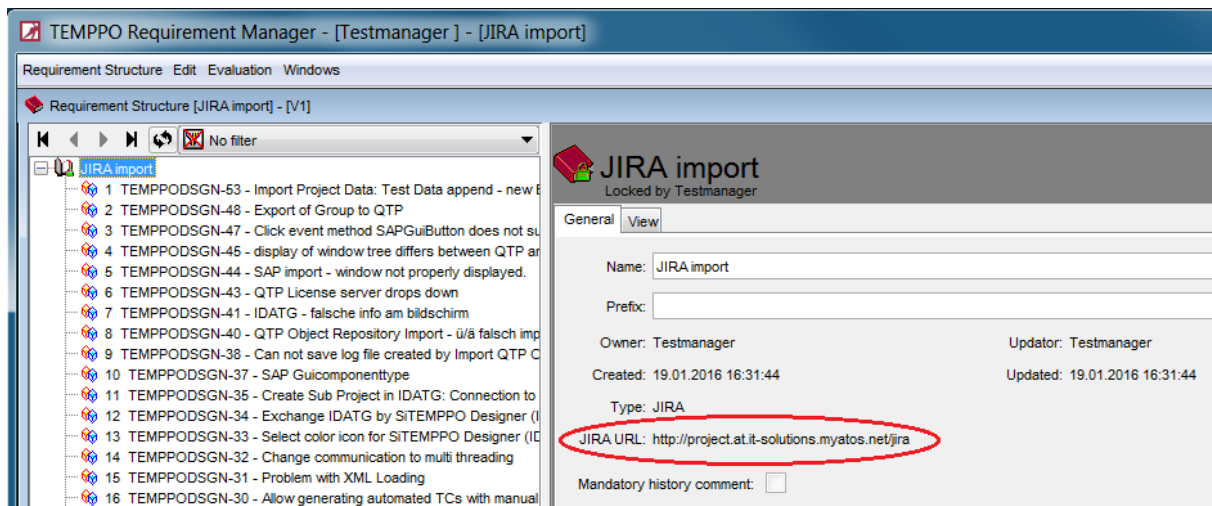


Figure 55 - Imported requirement structure

If a requirement is selected the general requirement properties like

- **Requirement ID**
- **Name**
- **Creator/Owner**
- **Created**
- **Updater**
- **Updated**
- **Creator in JIRA**
- **Created in JIRA**, if date is valid and unique
- **Type**
- **JIRA URL**: Clickable hyperlink in order to open the requirement in JIRA
- **Object Type**: Automatically set to **"Requirement"**
- **Short Description**
- **Description**

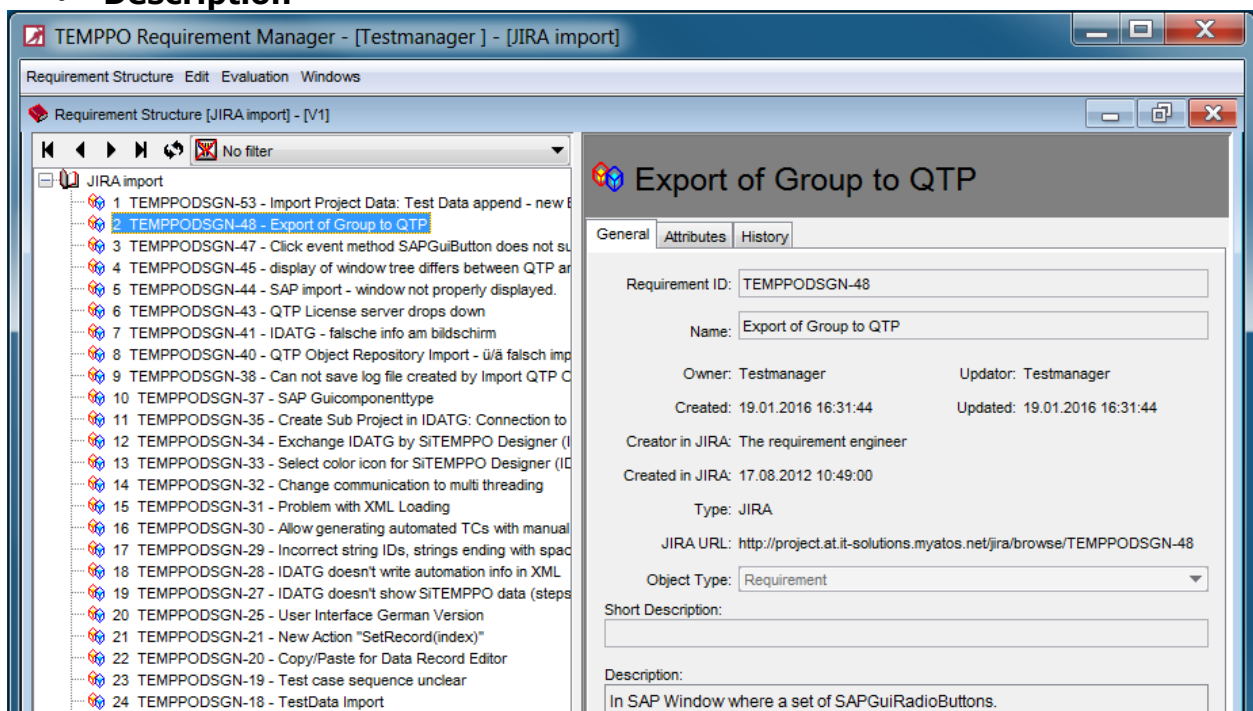


Figure 56 - Imported requirement - general information

If the tab **Attributes** is selected all imported attributes together with their values are displayed. Additionally the **Planned coverage** is also updated.

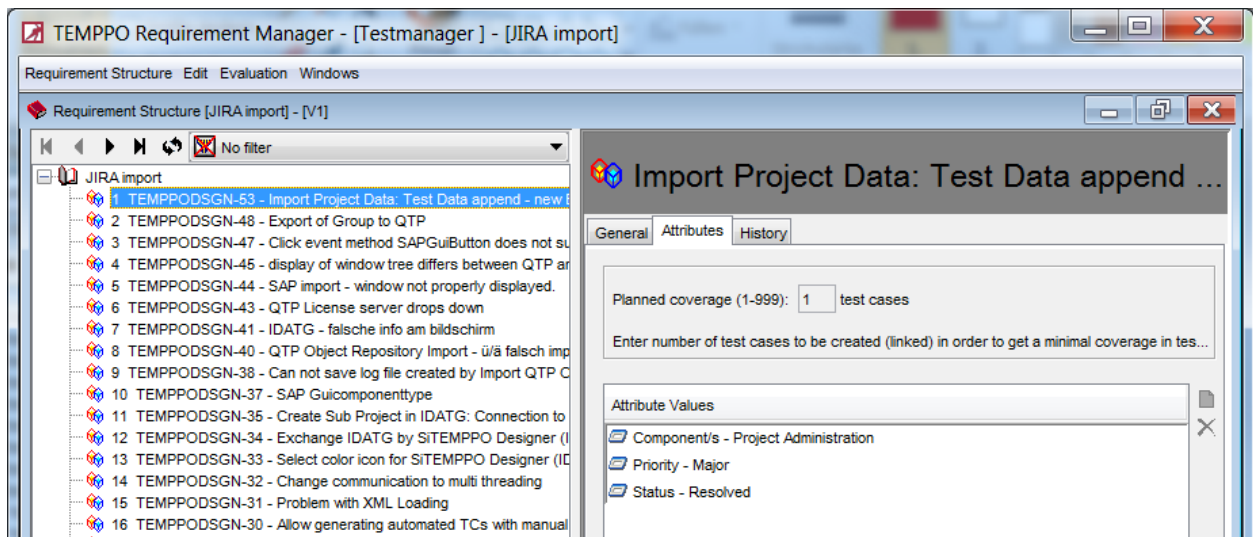


Figure 57 - Imported requirement - attributes

2.5.1.4.9 View concept

Since the view concept is the same like for Enterprise Architect please refer to chapter 2.5.1.3.2.2.

2.5.2 Import from XML

The XML-Import can be started by pressing the menu item **Requirement Structure > Import > From XML**. This menu item is only enabled when no requirement structure is open.

The XML-document to be imported can then be chosen in a file dialog. The XML document is checked against the DTD (Document Type Definition). Your XML file has to have the first line

```
<!DOCTYPE TEMPPO_EXCHANGE SYSTEM "requstructure.dtd" >
```

whereas requstructure.dtd is the DTD file. Otherwise the import will fail.

i In your TEMPPO directory you'll find the DTD (requstructure.dtd).

Stages of Import:

1. Parsing and validation of XML-file, checking of semantics and creation of new objects
2. Saving new objects to the database
3. Reloading of the whole requirement structure from database

When the import of a manual requirement structure is finished, you will be asked, whether you want to check in the requirement structure immediately. This is necessary, if you plan to import a test structure afterwards, which contains requirements of the just imported structure.

At last the following information dialog is displayed:

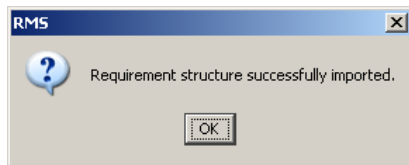


Figure 58 – Import successful

2.5.2.1 Possible errors during the import

Errors	Reaction
XML file doesn't match DTD schema.	Nothing is written to the database, a error message is shown. Correct the file.

2.5.2.1.1 Special cases

Special cases	Reaction
Name of requirement structure exists.	Unique name is generated like "_1", "_2". Message is shown, see Figure 59
Requirement structure or requirement doesn't exist.	Object is created. No message is shown.

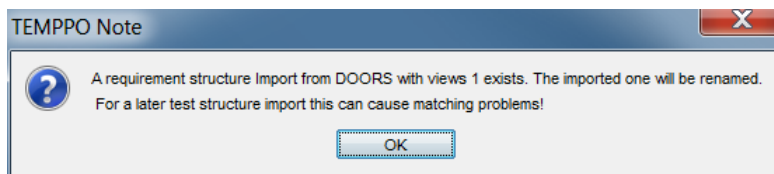


Figure 59 – name of requirement structure already exists

2.5.2.1.2 Example of an XML document

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE TEMPPPO_EXCHANGE SYSTEM "requstructure.dtd">
<?TEMPPPO_VERSION "V6.0 Build 05"?>
<TEMPPPO_EXCHANGE>
  <RS
    name="Benutzerhandbuch"
    version="V3"
    rmstype="Manual"
    prefix="prefix"
    createdrms="21.12.2009 15:00:39"
  >
    <DESCRIPTION>
    </DESCRIPTION>
    <REQUIREMENT
      name="import XML renamed"
      requirementnumber="import3"
      type="Manual"
      shortdescription="Inhalt Kurzbeschreibung"
      createdrms=""
      updatedrms=""
      selectable="0"
```

```

        coveredbytcs="3"
    >
        <DESCRIPTION>
        <![CDATA[<html><body><p style="margin:0;">Ge&#228;nderte
Beschreibung mit <a
href="http://www.siemens.at/TEMPPO">Hyperlink</a></p></body></html>]]>
        </DESCRIPTION>
        <REQUIREMENT
            name="New Requirement ADDED"
            requirementnumber="req41017"
            type="Manual"
            shortdescription=""
            createdrms=""
            updatedrms=""
            selectable="0"
            coveredbytcs="1"
        >
            <DESCRIPTION>
            </DESCRIPTION>
            <USER_DEFINED_ATTRIBUTE
                name="Requirment attribute"
                value="high"
                type="32"
            />
        </REQUIREMENT>
        <REQUIREMENT
            name="New Requirementxcvxcv"
            requirementnumber="req41019"
            type="Manual"
            shortdescription=""
            createdrms=""
            updatedrms=""
            selectable="0"
            coveredbytcs="1"
        >
            <DESCRIPTION>
            <![CDATA[]]>
            </DESCRIPTION>
            <REQUIREMENT
                name="New Requirement"
                requirementnumber="req41020"
                type="Manual"
                shortdescription=""
                createdrms=""
                updatedrms=""
                selectable="0"
                coveredbytcs="1"
            >
                <DESCRIPTION>
                <![CDATA[]]>
                </DESCRIPTION>
            </REQUIREMENT>
        </REQUIREMENT>
    </REQUIREMENT>

```

```
<REQUIREMENT
  name="import XML 2"
  requirementnumber="import32"
  type="Manual"
  shortdescription=""
  createdrms=""
  updatedrms=""
  selectable="0"
  coveredbytcs="5"
>
  <DESCRIPTION>
    <![CDATA[<html><head></head><body><p>import from XML
file2&#160;</p></body></html>]]>
  </DESCRIPTION>
  <USER_DEFINED_ATTRIBUTE
    name="Requirment attribute"
    value="high"
    type="32"
  />
</REQUIREMENT>
</RS>
</TEMPPO_EXCHANGE>
```

2.5.3 Update

With this feature you can update requirement structures imported from

- DOORS
- Requisite Pro
- Enterprise Architect
- JIRA
- XML
- CSV



There is a feature for undo a faulty update. On the one hand you can merge any version to latest one in case of a manual requirement structure (see chapter 2.12). On the other hand you can delete the latest requirement structure version if it is not used yet in test management in case of imported requirement structures from 3rd party products (see chapter 2.12).

2.5.3.1 DOORS

In TEMPPO Requirement Manager data imported from DOORS cannot be updated by a TEMPPO user. DOORS requirements can be updated in DOORS and imported in TEMPPO or changed in latest. The update function is the same as in 2.5.1.1.2. This function checks in the actual latest version (see also 2.11) and updates the new latest version of the requirement structure, irrespective of the activated version.

By pressing the menu item **Requirement Structure > Update** the requirement update process starts, see chapter 2.5.1. The menu item is enabled when a

requirement structure is opened and this requirement structure has the type for the RM tool "Telelogic DOORS", not "Manual".

❗ There is no preview or undo functionality when the wrong requirement structure is selected, but the latest version is checked in before updating. No changes are lost.

2.5.3.1.1 Example for Updating

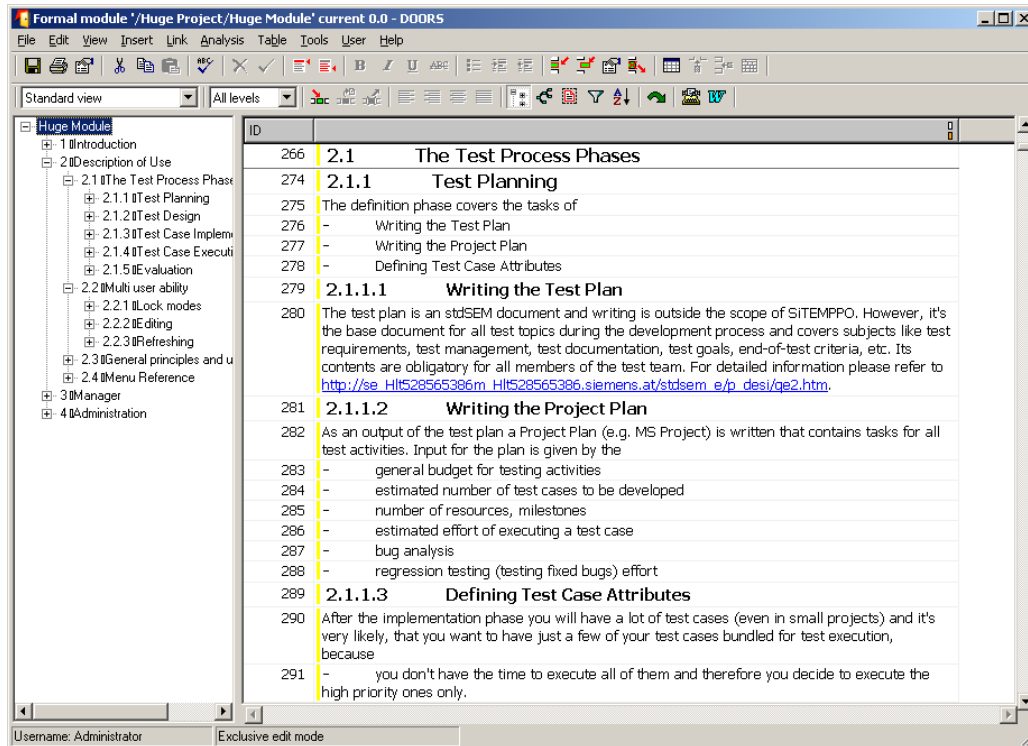


Figure 60 – DOORS: Before changing

The module 'Huge Module' is changed in DOORS and then should be updated in TEMPPO. The requirement 'Introduction' is deleted and the requirement 'Description of Use' is renamed to 'How to Use' (see Figure 61).

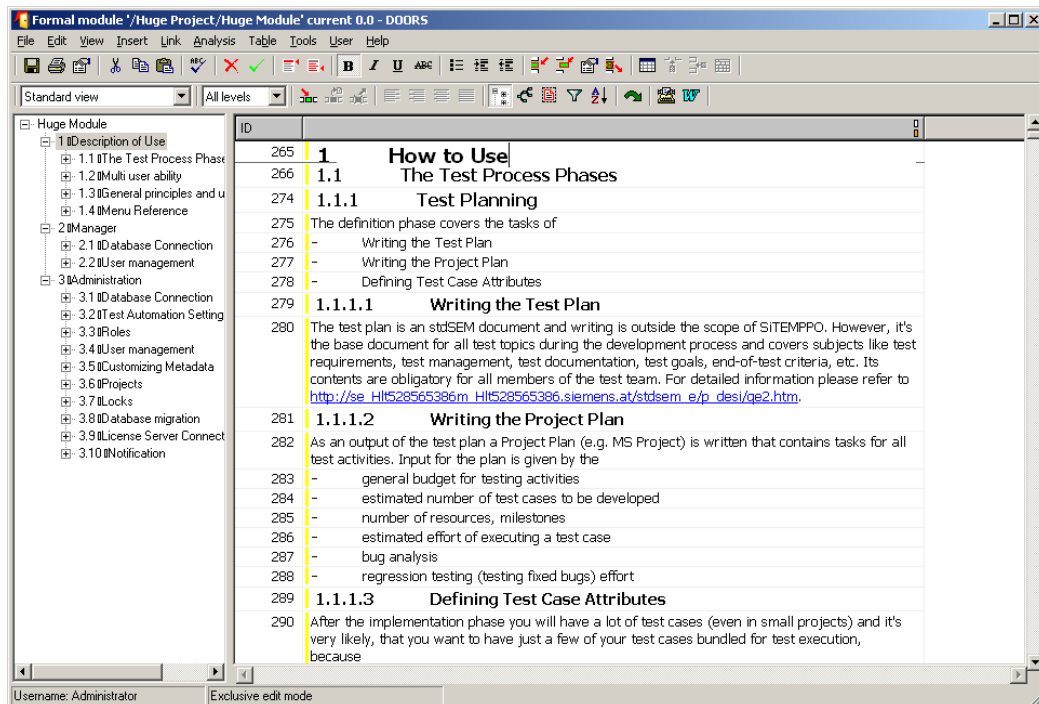
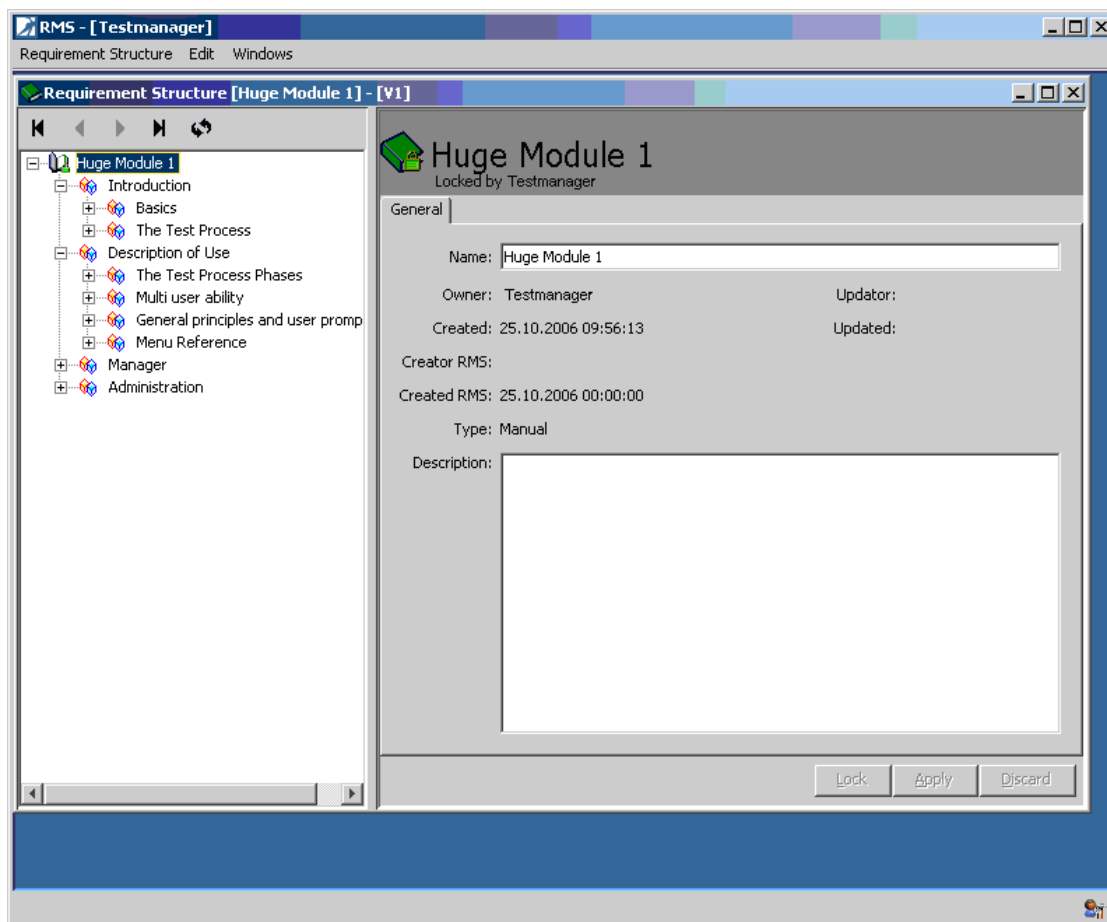


Figure 61 – DOORS: Change requirements

After changing the module in DOORS, start the update process. In the next figure (see Figure 62) you can compare the latest version of requirement structure with the version before.



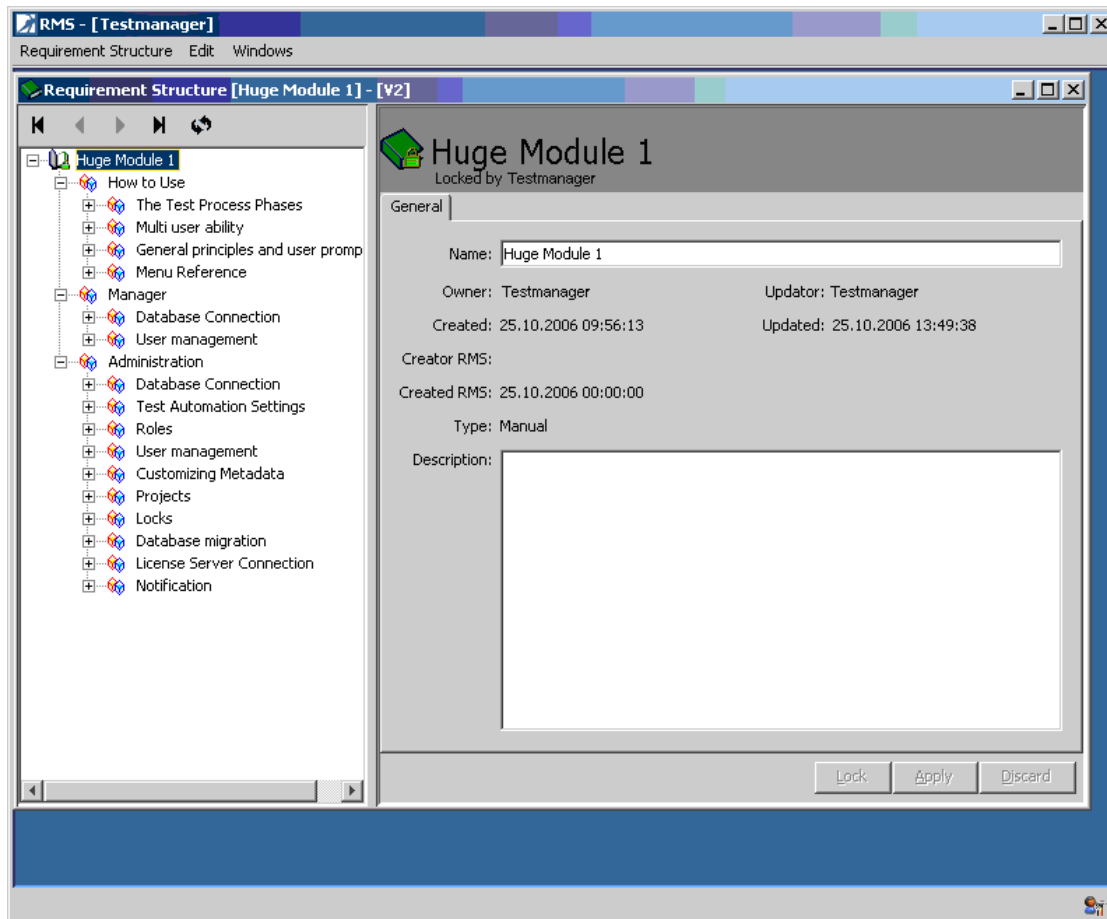


Figure 62 – Compare: before and after updating

2.5.3.2 RequisitePro

With this feature you can update your requirement structure from TEMPPO to the project in RequisitePro.

Data imported from RequisitePro cannot be updated by a TEMPPO user. RequisitePro requirements can be updated in RequisitePro and imported in TEMPPO or changed in latest. The update function is the same as in 2.5.1. This function checks in the actual latest version (see also 2.11) and updates the new latest version of the requirement structure, irrespective of the activated version.

By pressing the menu item **Requirement Structure > Update** the requirement update process starts, see chapter 2.5.1. The menu item is enabled when a requirement structure is opened and this requirement structure has the type for the RM tool "Rational RequisitePro", not "Manual".

i There is no preview or undo functionality when the wrong requirement structure is selected, but the latest version is checked in before updating. No changes are lost.

After updating the requirement structure a new version (=2) is created. In Figure 63 there is displayed the new requirement. Some requirements are missing compared to V1.

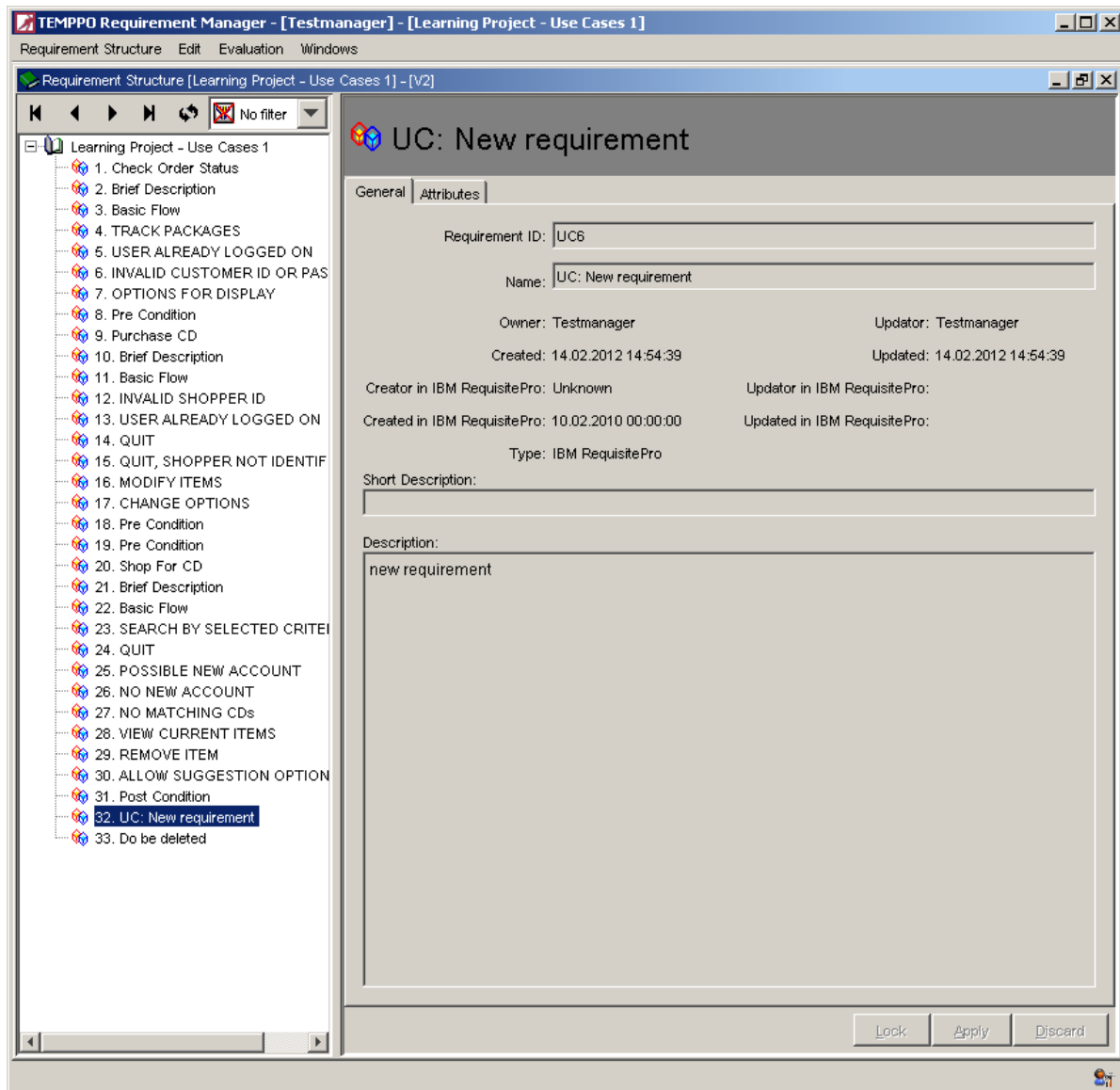


Figure 63 - Requirement Manager – Updated

2.5.3.3 Enterprise Architect

In TEMPPPO Requirement Manager requirements data imported from Enterprise Architect cannot be updated by a TEMPPPO user. Enterprise Architect requirements can be updated in Enterprise Architect and imported again in TEMPPPO. The update function works like the import function, see 2.5.1.3.2.

First export your changes in Enterprise Architect to an XML (XMI) file. Afterwards start TEMPPPO Requirement Manager and open the requirement structure (latest baseline) you want to update.

By pressing the menu item **Requirement Structure > Update -> From RM Tool...** the update wizard opens where you select

- Tool: EA Architect
- XML (XMI) File
- Requirement ID (mapping of an EA attribute to TEMPPPO's Requirement ID)

And press **Finish**.

After that the tree and all requirements based on their content

- Name
- Description
- Short description

are updated.

❗ Changes in attributes (new, delete) are not tracked as a requirement change.

2.5.3.4 JIRA

In TEMPPO Requirement Manager requirements data imported from JIRA cannot be changed by a TEMPPO user. Furthermore it is not possible to restructure the imported list to a tree, because in case of a deleted requirement with a child requirement a tree cannot be built/displayed.

JIRA requirements are changed/updated in JIRA and imported again (=updated) in TEMPPO. The update function works like the import function, see chapter 2.5.3.4.

First export your changes in JIRA to a CSV file. Afterwards start TEMPPO Requirement Manager and open the requirement structure (latest baseline) you want to update.

Please consider the following rules for the update:

- The requirement properties **Requirement ID** (key), **Description** and **Name** are mandatory.
- All **general requirement properties** and **attributes** which were assigned and selected for the import are preselected. If you do not want to change anything and continue the update process, please press **Finish**. All changes in the requirements will now be applied and a new baseline will be created.
- If you want to remove any optional **requirement property** or **attribute** deselect the corresponding checkbox.
- If you want to add any new **requirement property**, select the corresponding checkbox and a value in the combo box.
- If you want to add any new **requirement attribute**, select the corresponding checkbox in the **requirement attributes selection**. If columns are missing in comparison to the import file, the attributes are removed.
- If the order in CSV update file is different to the import one, it also applied.
- New requirements are added.
- Missing requirements are deleted
- Updator and Updated are automatically set by TEMPPO Requirement Manager by the person who does the update and when he does it.

❗ The update of a requirement is identified by a change of name, description or short description.

❗ Changes in attributes (new, delete) are not tracked as a requirement change.

2.5.3.4.1 Example

	A	B	C	D
1	Project	Key	Summary	Description
				<p>Changed text: In SAP Window where a set of SAPGuiRadioButtons.</p> <p>To be able to select one, you have to draw additionally a group in the pane IDATG->Windows.</p> <p>QTP does not support a Group. So a Group should not be exported to QTP when generating and converting a test case.</p>
3	TEMPPO Des	TEMPPODSGN-48	Changed text: Export of the Group to QTP	

Figure 64 - Changed requirement in Excel

Let's consider the following example. The requirement imported in Figure 46 and Figure 56 has changes in the **Name** (in JIRA **Summary**) and **Description**.

First of all select the same filter in JIRA (see chapter 2.5.1.4.1) and exported the requirements to csv.

In the next step press the menu item **Requirement Structure > Update -> From RM Tool...** the update wizard opens where you enter path to the CSV update file.

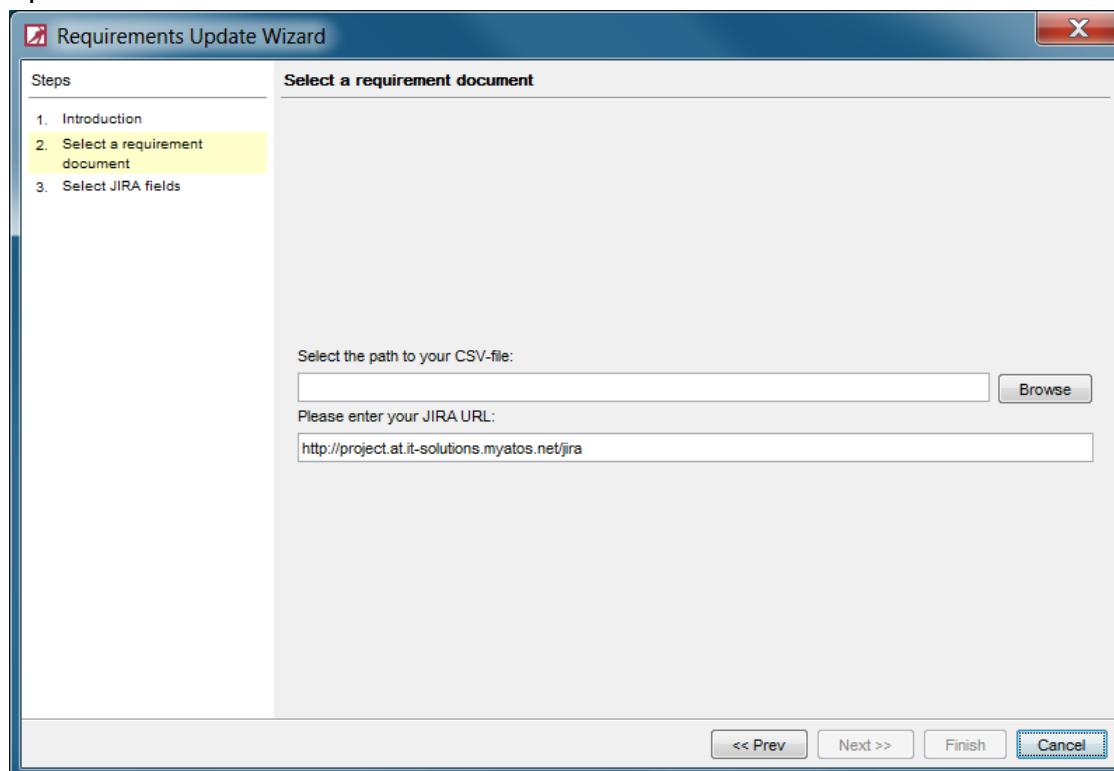


Figure 65 - JIRA update - select CSV file

If you have selected the CSV file, press the button **Next** and Figure 66 is displayed.

In **general requirement properties** there is a preselection

- of matching JIRA attributes for mandatory TEMPPO fields (**Name = Summary, Requirement ID = Key, Description = Description**).
- of matching JIRA attributes for optional TEMPPO fields (**JIRA Creator = Creator, Created in JIRA = Created, Updated in JIRA = Updated**).
Remark: There is no attribute/field in JIRA that provides the information who did the last update.

In **attributes** there is an activation and preselection of the attributes which were initially imported or updated before (**Components, Priority and Status**).

In **requirement attributes selection** you can add more attributes for the import when you activate the checkbox. In Figure 66 **Issue type** and **Resolution** are selected to be added to all requirements.

Requirements Update Wizard

Steps:

1. Introduction
2. Select a requirement document
3. Select JIRA fields

Select JIRA fields

All general requirement properties and attributes which were assigned and selected for the import are preselected. If you do not want to change anything and continue the update process, please press Finish. All changes in the requirements will now be applied and a new baseline will be created.

Possible actions for update:
If you want to remove any optional requirement property or attribute deselect the corresponding checkbox.
If you want to add any requirement property, select the corresponding checkbox and a value in the combo box.
If you want to add a new requirement attribute, select the corresponding checkbox in the requirement attributes selection.

General requirement properties

Name:* Summary
Requirement ID:* Key
Description:* Description

☐ Short Description:
☒ JIRA Creator: Creator
☒ Created in JIRA: Created
☐ JIRA Updater:
☒ Updated in JIRA: Updated

Attributes

☒ Component/s: Component/s
☒ Priority: Priority
☒ Status: Status

Requirement attributes selection

Column	Import
Project	<input type="checkbox"/>
Key	<input type="checkbox"/>
Summary	<input type="checkbox"/>
Description	<input type="checkbox"/>
Issue Type	<input checked="" type="checkbox"/>
Status	<input type="checkbox"/>
Priority	<input type="checkbox"/>
Resolution	<input checked="" type="checkbox"/>
Assignee	<input type="checkbox"/>
Reporter	<input type="checkbox"/>
Creator	<input type="checkbox"/>
Created	<input type="checkbox"/>
Last Viewed	<input type="checkbox"/>
Updated	<input type="checkbox"/>
Resolved	<input type="checkbox"/>
Affects Versio...	<input type="checkbox"/>
Fix Version/s	<input type="checkbox"/>
Component/s	<input type="checkbox"/>
Due Date	<input type="checkbox"/>
Votes	<input type="checkbox"/>
Watchers	<input type="checkbox"/>
Images	<input type="checkbox"/>
Original Estimate	<input type="checkbox"/>
Remaining Esti...	<input type="checkbox"/>
Time Spent	<input type="checkbox"/>
Work Ratio	<input type="checkbox"/>
Sub-Tasks	<input type="checkbox"/>

<< Prev Next >> Finish Cancel

Figure 66 - JIRA update - Select JIRA fields

If you press **Finish** all the settings and changes are applied to the requirements and a new baseline **V2** is created

In Figure 67 the changes in **Name** and **Description** are displayed.

In Figure 68 the new attributes **Issue Type** and **Resolution** are highlighted.

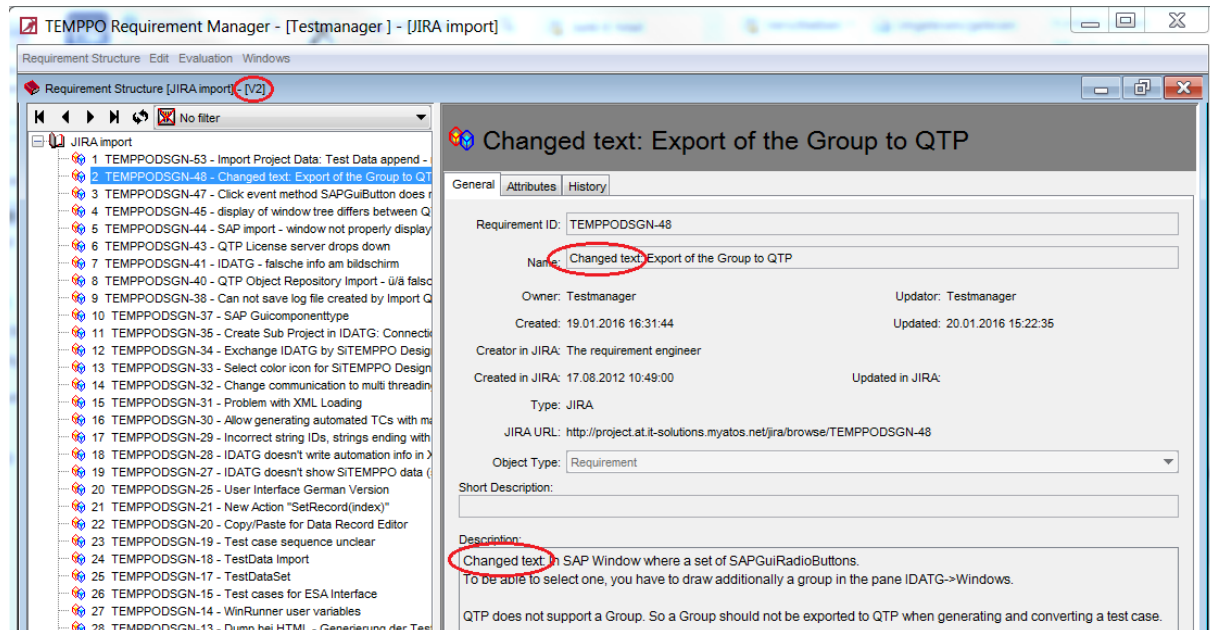


Figure 67 - Applied requirement changes: General requirement information

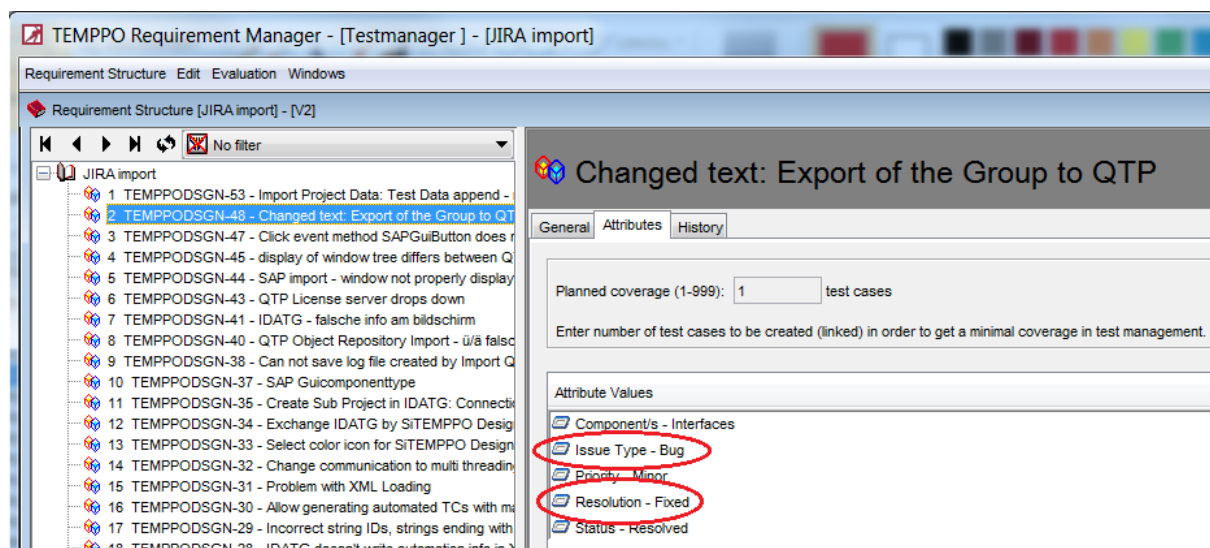


Figure 68 - Applied requirement changes: Attributes

2.5.3.4.2 Limitations

JIRA uses a locale for date/time formatting when exporting it to Excel. When you open the Excel file with own locale setting of your computer, it can happen that some dates are not recognized.

Example: If you are using "Deutschland (Deutsch)" on your JIRA server, a date is created like "11.Jan...", since January is "Januar" in Germany. If you have "Österreich (Deutsch)" on your computer, where you open your Excel file "11.Jan..." is not recognized since January in "Jänner" in Austria.

❗ It is recommended to have the same locale on JIRA server and on the client where you open the Excel file

2.5.3.5 CSV

If requirements have been imported from Excel (csv), they can be also updated in case of maintaining requirements is done in Excel: Changed requirement name, content, short text, attributes.

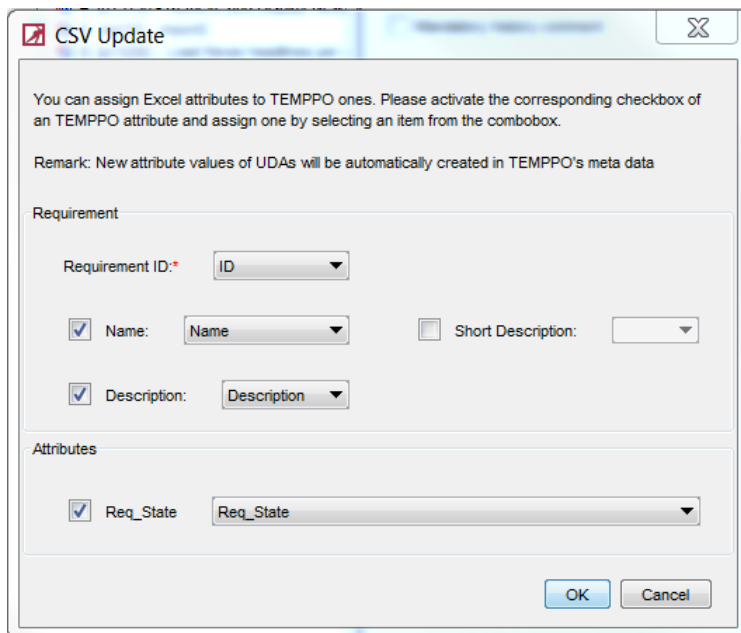


Figure 69 - CSV Update

Deleted requirements are not concerned, since a deleted requirement can have child requirements which would not have any father anymore.

If requirements are imported from csv (of course as a list) and the list is transformed to a tree, an update will keep this tree:

- The tree structure is NOT updated.
- Changed requirements are updated.
- New requirements are added.

2.5.3.6 XML

If requirements have been imported from XML, and are maintained in XML they can be also updated: Changes in requirement name, content, short text.

Also deleted requirements are concerned.

If requirements are imported from csv (of course as a list) and the list is transformed to a tree, an update affects this tree.

2.5.3.7 Result of update

After updating a requirement structure a window is shown that informs you, how many requirements were

- Updated

- Deleted
- Changed

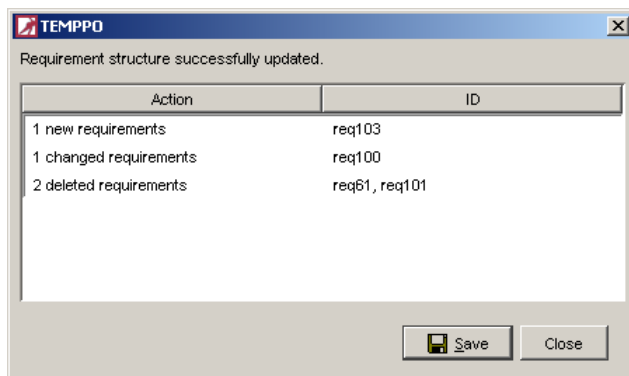


Figure 70 - Update information

2.5.3.8 Apply requirement updates

Requirement structures and test structures live in fully separated environments. So it can be that a latest test structure version works with a not latest requirement structure version. This is always the case after an update of a requirement structure. An automatic update of the current test structure version to the latest requirement structure version may not be wanted by the user and would cause problems anyway, e.g. if more than one user work on this version. It's only possible to propagate to the latest requirement structure version.

So an update to the latest requirement structure version can only be made manually initiated. Open the TEMPPO Test Management environment and open the project and test structure. By pressing the menu **Test Structure > Apply requirement updates...** Figure 71 is shown. All assigned and updated requirement structures are shown in the lists. Select the requirement structures when the assignments should be updated. By clicking **Apply**, the test structure is checked in and then propagation is executed.

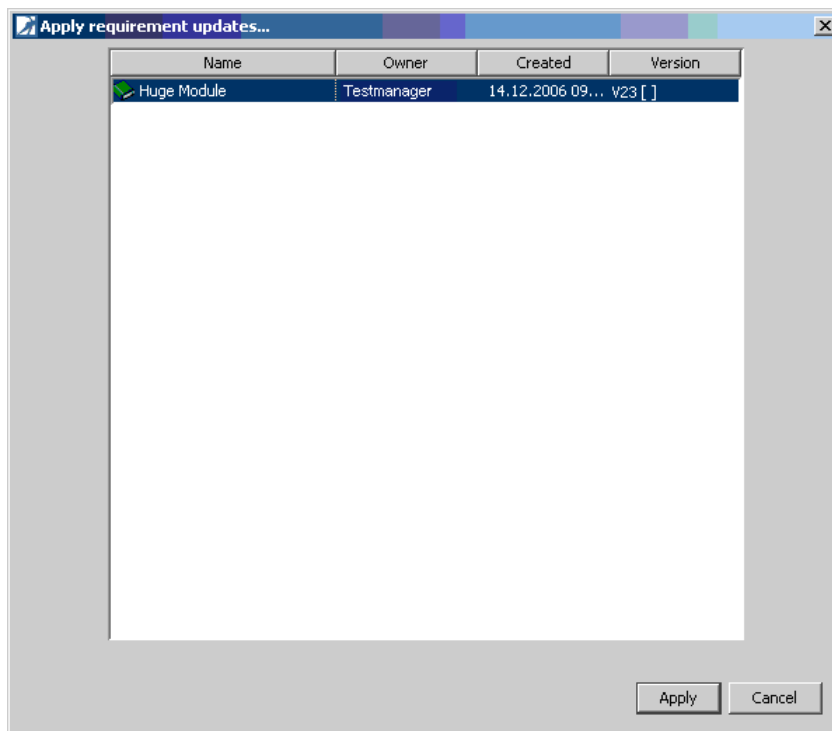


Figure 71 – Apply requirement updates

Updating a requirement structure does not cause that a task list is created, a task list (2.6) is created internally if the test structure is updated to the latest requirement structure version. Deleted requirements are unassigned from the test cases.

i **If only a new column (attribute) is added to view in IBM Telelogic DOORS, but requirements aren't changed. When applying requirement updates these requirements are recognized as unchanged. This means that no tasks are created for these requirements, but the new version of requirement is used and all attributes are available in test structures.**

If there is no implicit propagation to the latest requirement structure version, Figure 72 is shown.

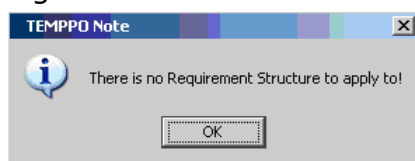


Figure 72 – No requirement structure for updating

2.5.3.9 Example: Apply requirement updates

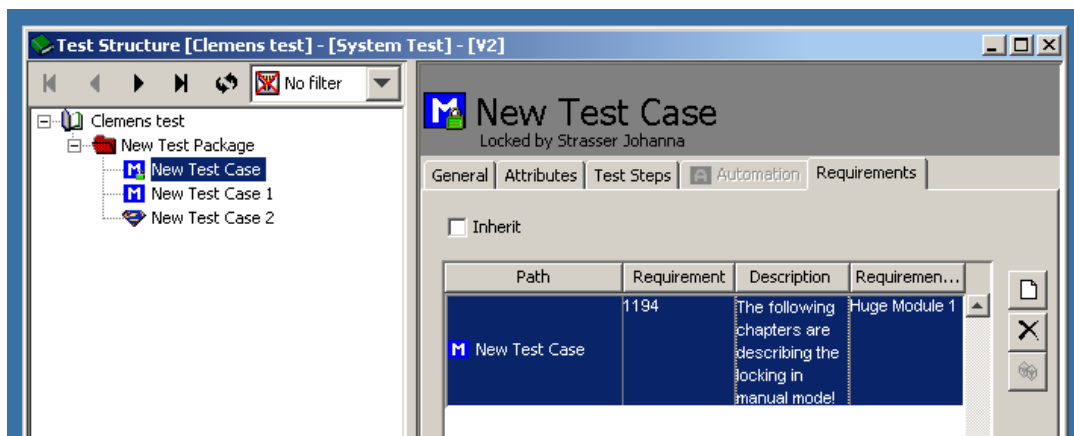


Figure 73 – Assigned requirement

The test case has assigned the requirement "1194" (see Figure 73). Nevertheless, this requirement is deleted in DOORS (Figure 74).

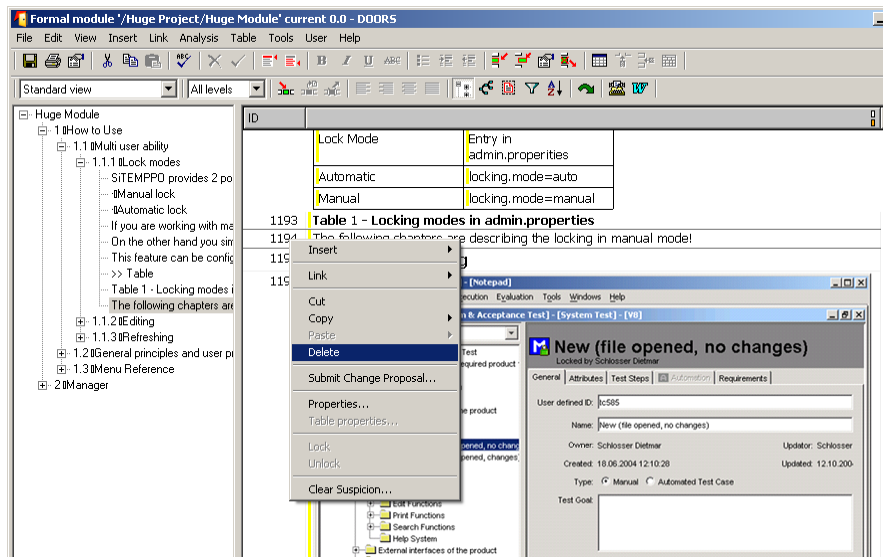


Figure 74 – Delete in DOORS

After deleting, the requirement structure in TEMPPO is updated (**Requirement Structure > Update**), see Figure 75.

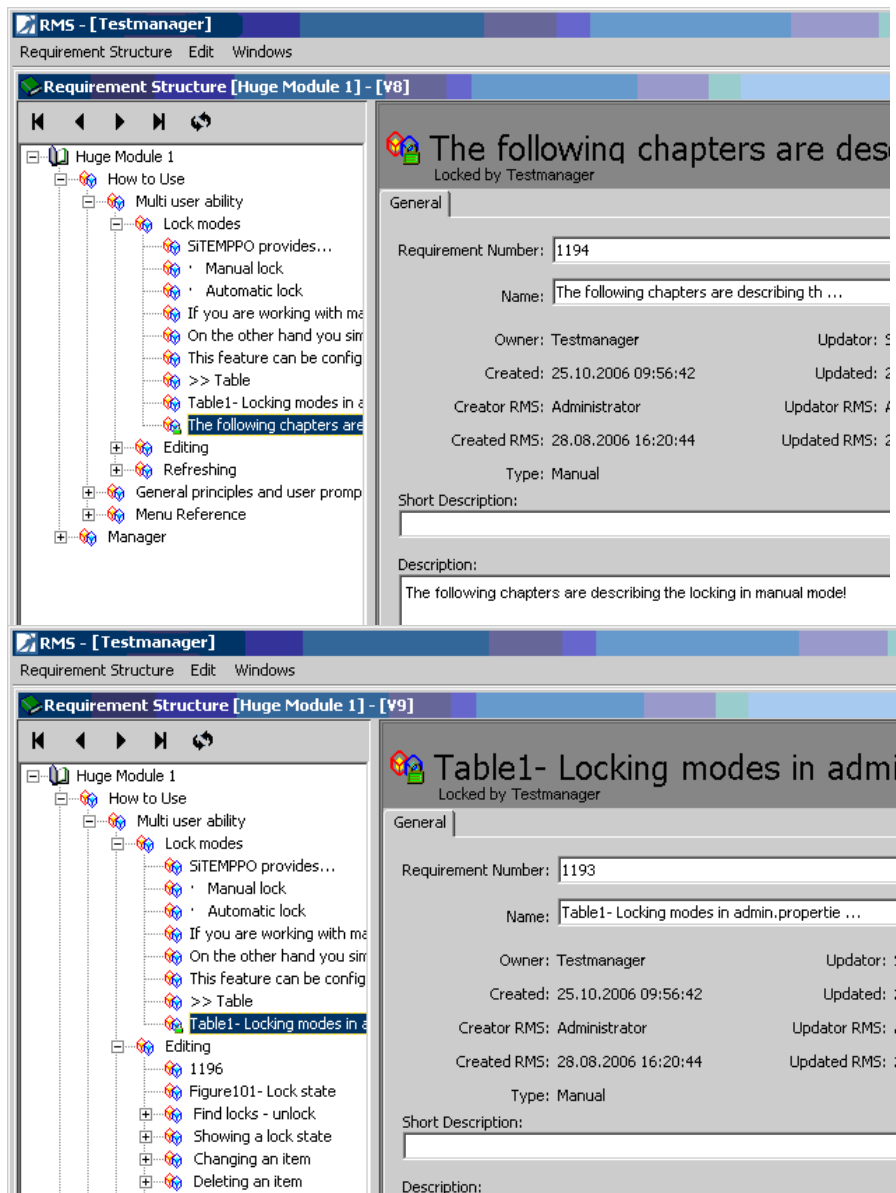


Figure 75 – Before and after update

Open the test structure again and the requirement which is assigned to a test cases isn't the requirement of the latest requirement structure anymore. Now you have to update the assigns (**Test Structure > Apply requirement updates...**).

Then all changed assignments and new requirements are listed in a task list (menu **Test Structure > Task List > Show**) (Figure 76), see also 2.6.

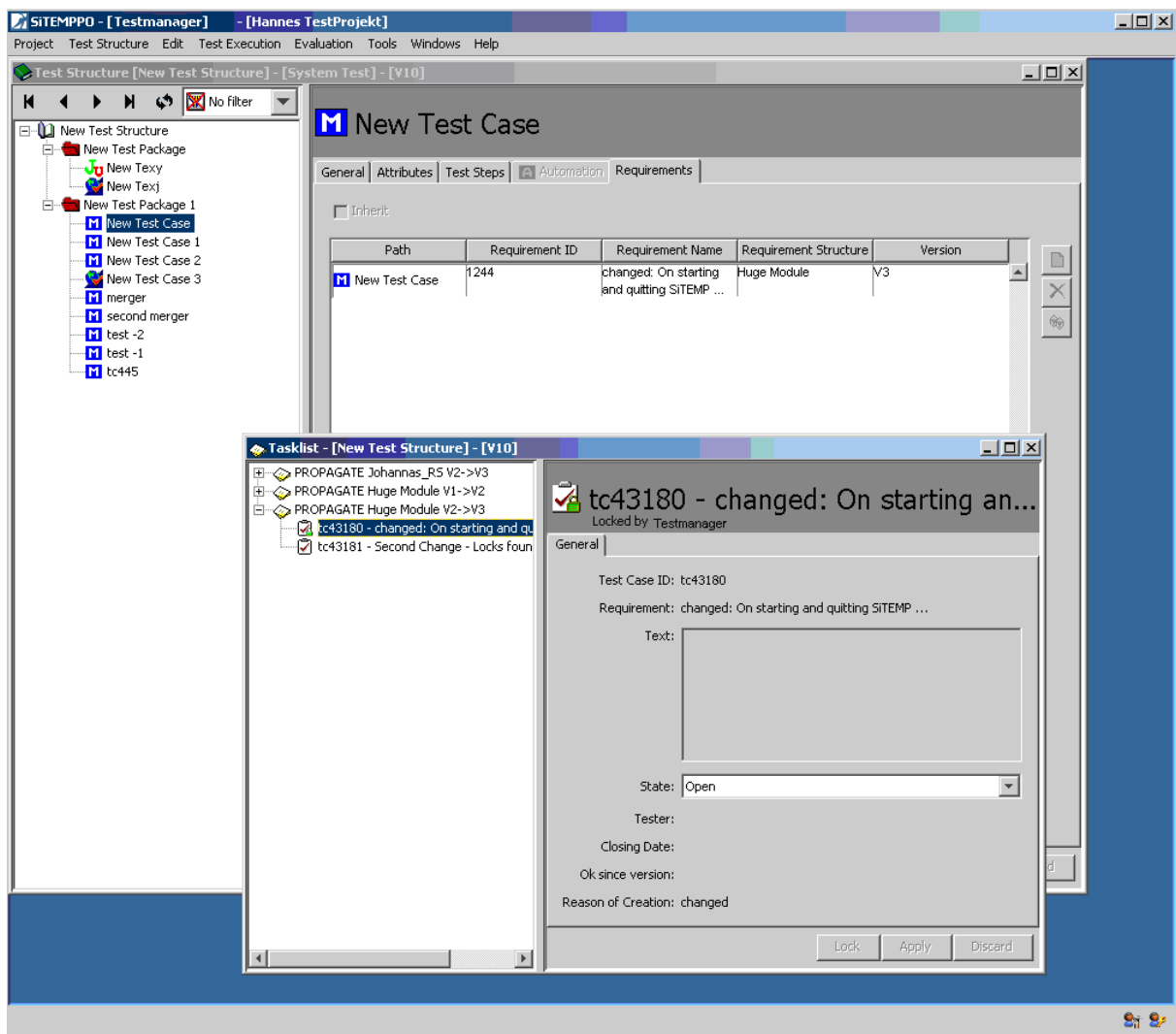


Figure 76 – After updating; Task List

2.6 Task List

A task list contains tasks, each of which consists of a test case - requirement pair. The idea is that each task indicates a test case - requirement combination, which must be corrected.

The task list is assigned to a test structure (and a given or latest version of the test structure). Each entry is defined by a requirement, the assigned test case and a text. The text contains the reason why the requirement – test case assignment could not be added to the DOORS DB. The possible states of the assignments are:

- Open
- Closed

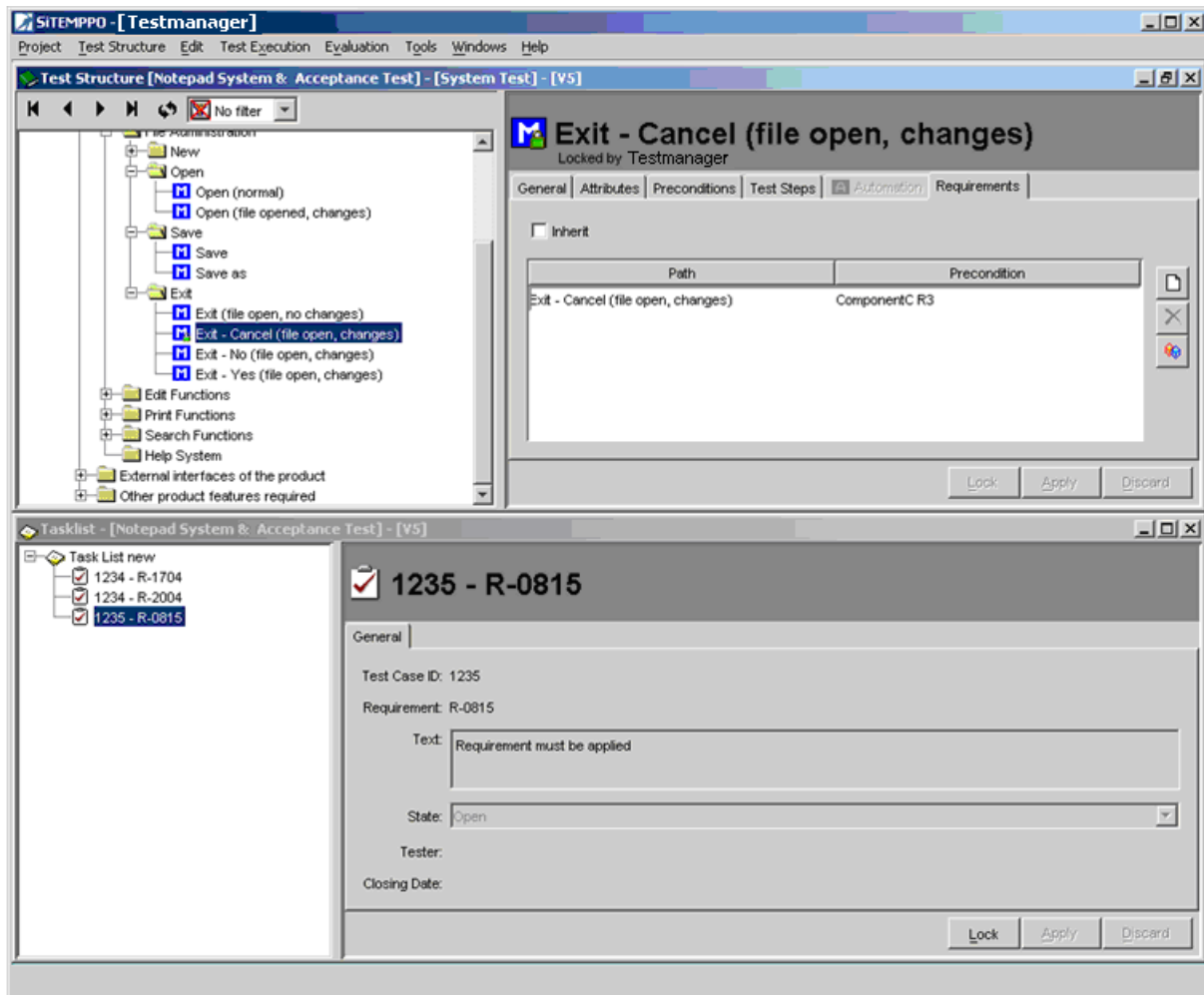


Figure 77 - Task List

The lists are represented by a tree structure. Each list consists of one or many entries. All entries are marked as open the first time they are stored in the DB. If the user clicks an entry, the test case of this entry is selected in the test structure window. The user now has the possibility to change the assignment, delete it or create a new assignment or do nothing (if the failure is DOORS-sided and cannot be corrected in TEMPPO). If all necessary actions are made, the user can mark the entry in the task list as closed (first **"lock"** then **"apply"**) and click upon another task.

Task lists can be deleted in the task list window if all tasks are closed. The task list has to be selected and via the context menu item **"Delete task list"** a confirmation window comes up. Confirming with OK deletes the task list.

2.7 Export to XML

This feature allows exporting the entire requirement structure into an XML document. When a requirement structure is open and the root node or a requirement is selected, the menu item **Requirement Structure > Export to XML** is enabled.

After entering a name, the XML file is stored to the file system (conforming to **requstructure.dtd**).

i The **reqstructure.dtd** can be found in your **TEMPPO/XML** directory.

The following window is shown after exporting successful.

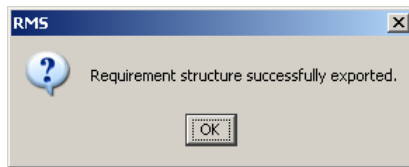


Figure 78 – Requirement structure – Exporting

i When you plan to exchange test and requirement structures over databases via XML, you have to be aware of exporting the correct version of a requirement structure.

2.8 Assign Attributes to Requirement Structures

For a chosen requirement structure, attributes can be assigned to the requirement structure.

Open the TEMPPO Administrator application and after connecting chose the tab **Metadata** and then tab **Requirement Structures**.

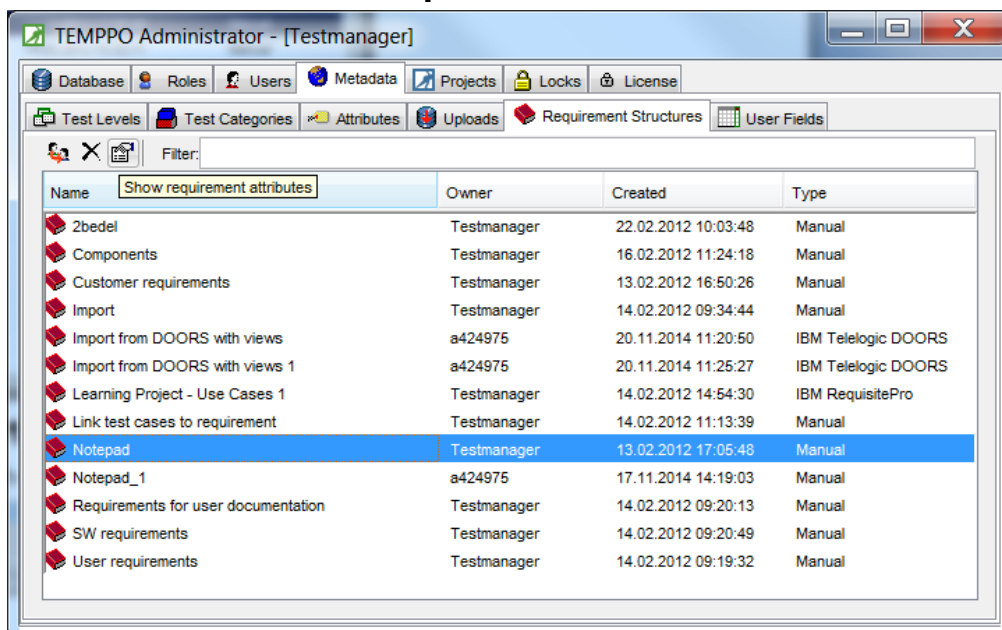


Figure 79 – Assign attributes

The assignment is made for each requirement structure.

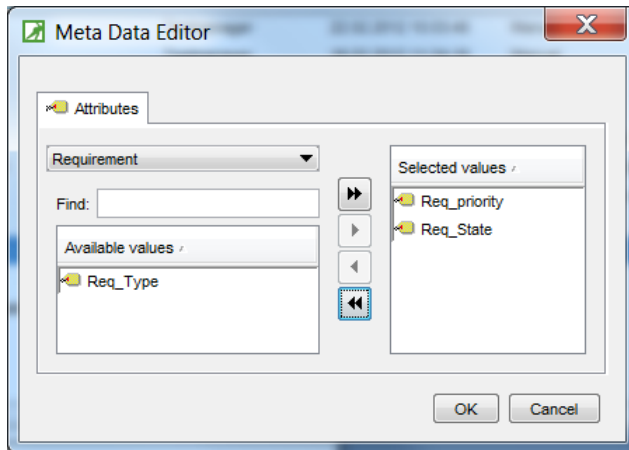


Figure 80 – Meta data editor

On the left side all available attributes are listed. By clicking the buttons >>, >, <,<< the attributes can be moved to right list box. The assignments on the right are saved by pressing the button **Apply**.

2.9 Assign Requirement Structures to project

In the TEMPPO Administrator you can assign the requirement structures to the projects, so that the requirements are available for the test packages or test cases.

Open the TEMPPO Administrator application and after connecting chose the tab **Projects**.

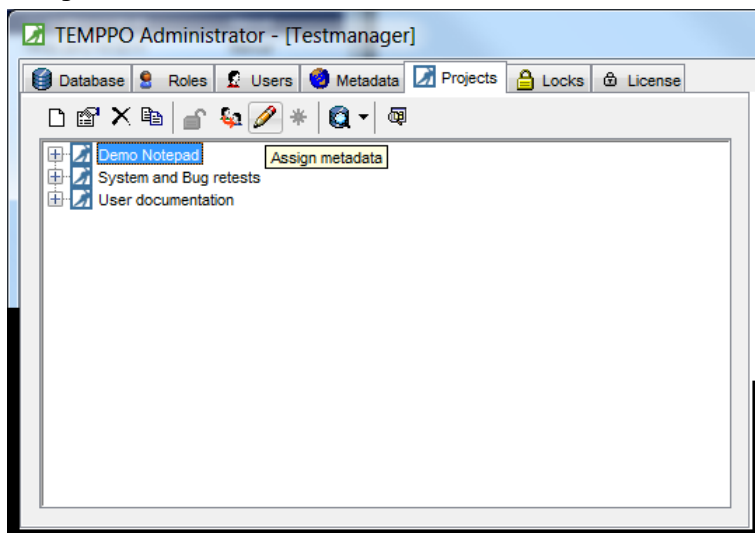


Figure 81 – Assign Metadata

Then click the button **Assign Metadata** (see Figure 81) and then Figure 82 is opened. In the tab **Requirement Structure** you can select the requirement structures for the selected project.

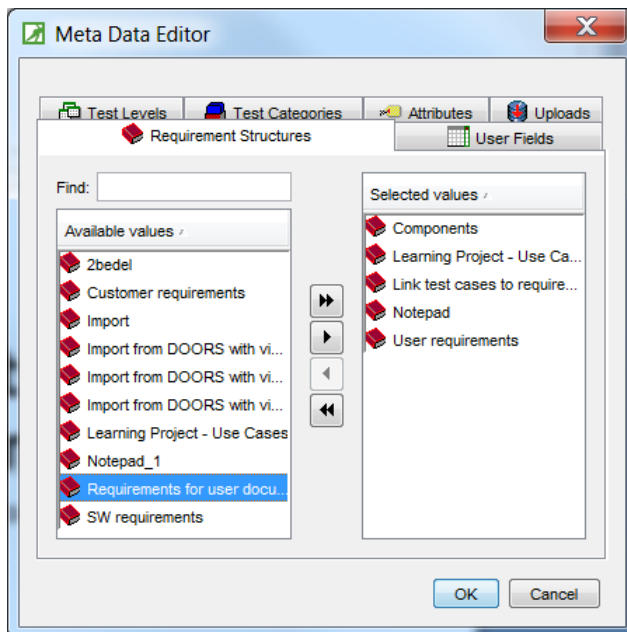


Figure 82 – Assign requirement structure

2.10 Link Requirements

Before you can link test cases to requirements, you have to assign a requirement structure to the project.

For linking requirements, start the TEMPPO Test Manager. After opening the project and the test structure, select a test package or test case and open the tab **Requirements** (see Figure 83).

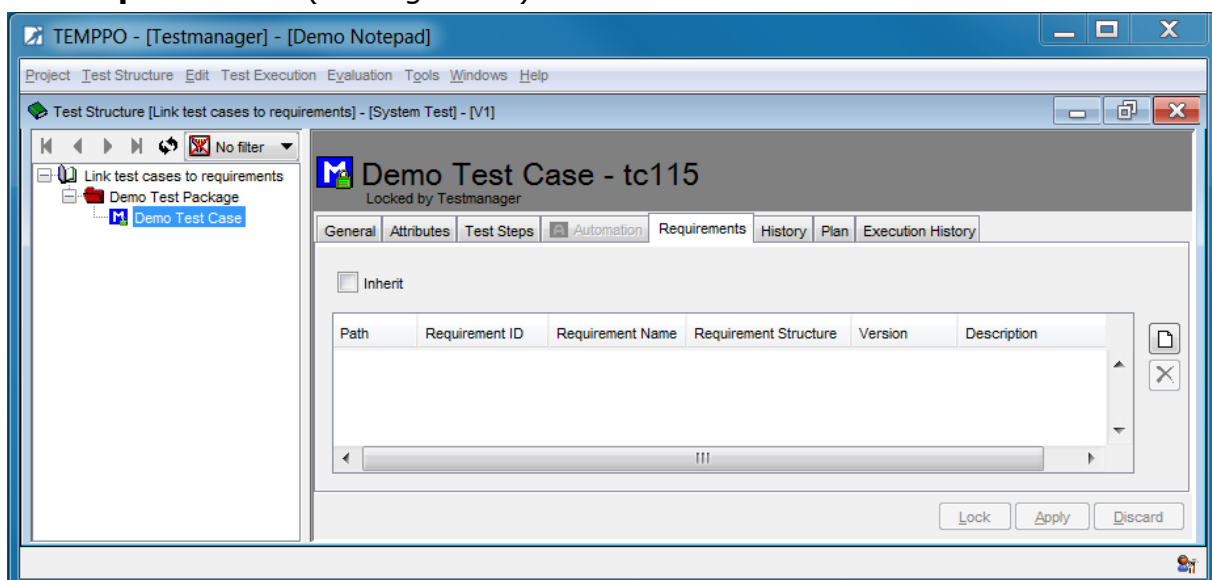


Figure 83 – Link requirements

The test case can inherit from the test package's requirements. Additionally, the selected test case can have associated requirements.

With the button **New** a new window opens, where you can select requirements (see Figure 84). In the combo box you select the requirement structure, and below its requirements are shown. If a requirement is already assigned, it's

written in black, but if there is a new assignment, the requirement is written in grey.

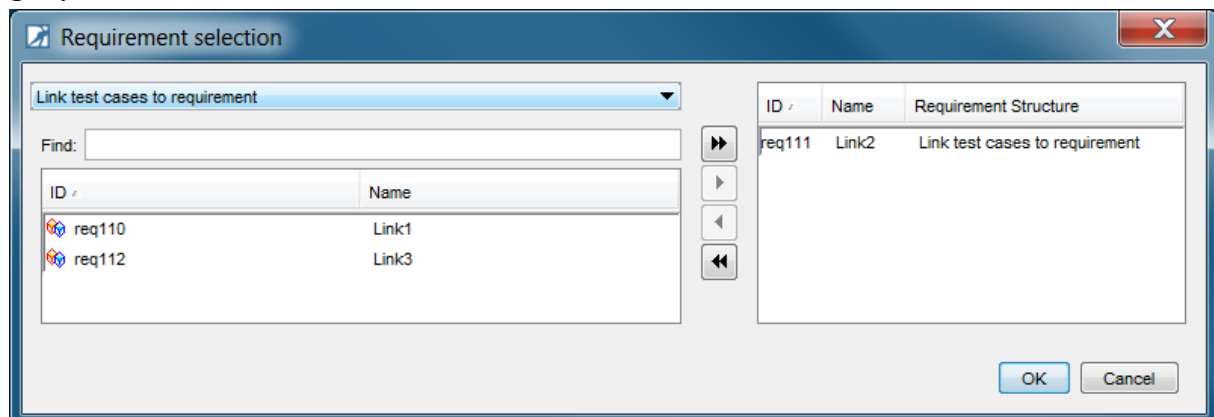


Figure 84 – Requirement selection

After selecting the requirements, the selected ones are shown as a list (see Figure 85).

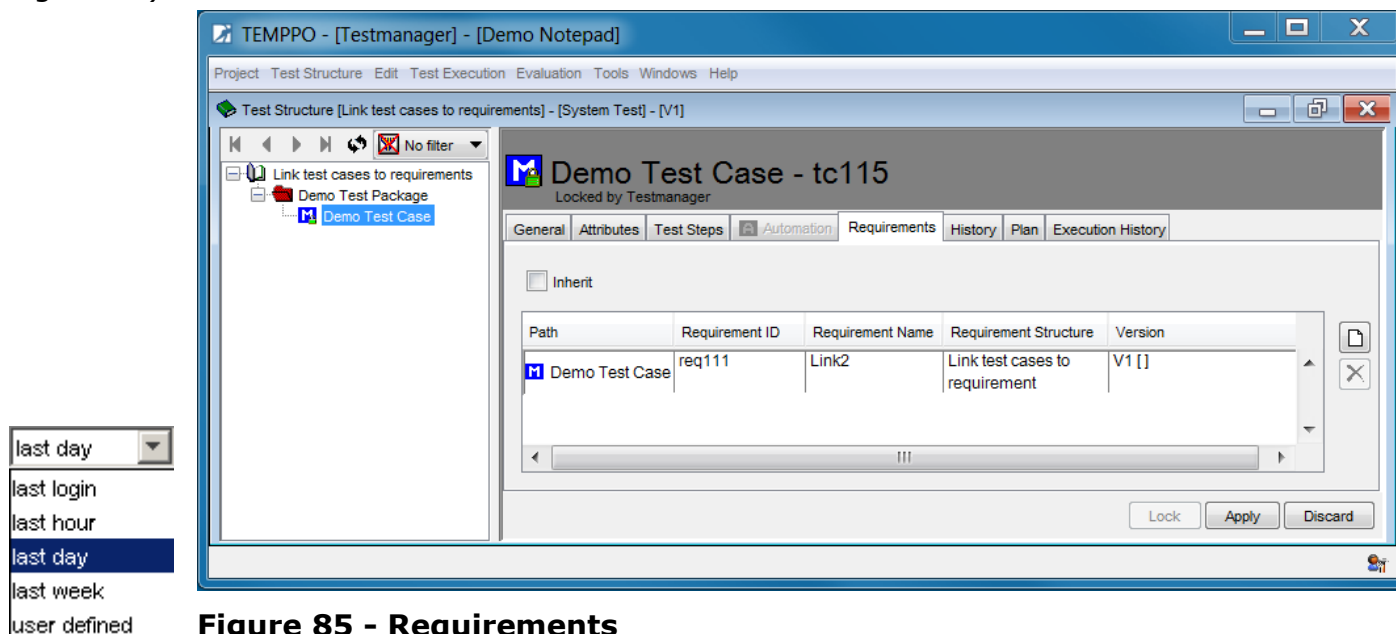


Figure 85 - Requirements

2.11 Newsboard

The newsboard informs the user about changes done on the current requirement structure. It can be opened by calling the menu item **Requirement Structure - > Newsboard**. In **Settings** it can be configured that is it shown automatically after opening a requirement structure. Since time is going on and newsboard doesn't poll, user has to press the **Refresh** button to get the latest "news".

The display of newsboard can be configured by setting **last login**, **last hour**, **last day** **last week** or **user defined**. If **user defined** is selected, a date with calendar and text fields for time (hh, mm) and the **Apply** button are editable.

i If "last login" is selected, the time stamp of user's last logout is chosen!

If a newsboard entry is activated, the corresponding requirement is selected automatically, except if one was deleted. In the newsboard table the action (new, changed, deleted), requirement ID, requirement name, date of action, and the person are shown.

If an item of newsboard is selected, the corresponding one is also highlighted in the requirement structure.

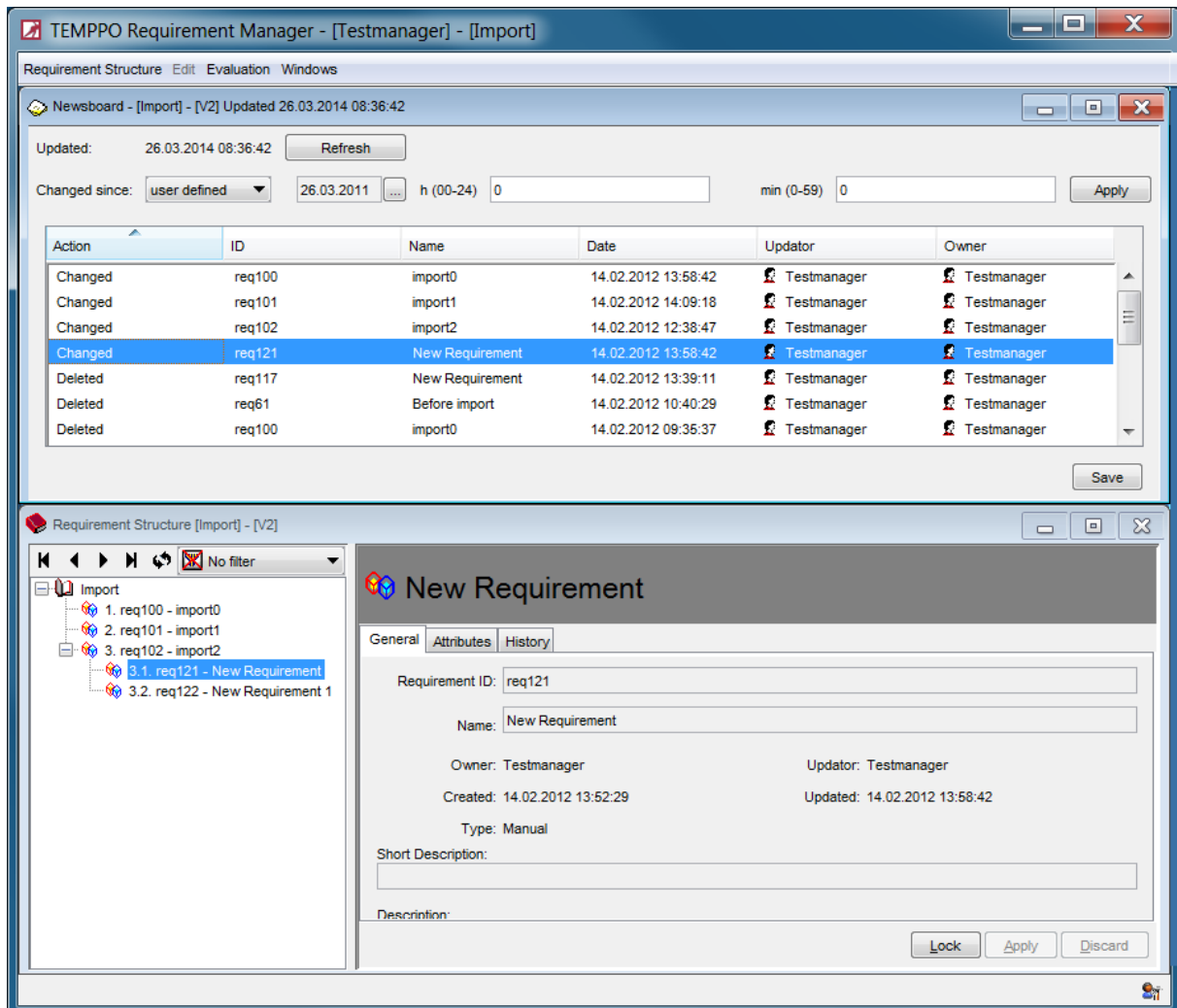


Figure 86 - Newsboard

2.12 Version

Configuration management is a task that covers all phases in projects. Supporting a large palette of CM tools from a very powerful but expensive one like ClearCase to a cheap one with restricted functionality would be a challenge. For example ClearCase offers attributes for each administration unit; VSS does not have such commands.

In TEMPPO it is possible to check in an entire requirement structure, where "whole" means the hierarchical order of all requirements as well as their data. In contrast to other CM tools where check-in and check-out are separate steps, checking in a requirement structure in TEMPPO will check it out again, i.e. a new editable version is created automatically. Naturally you have the possibility to restore any version of the requirement structure that has been checked in.

Versioning is meaningful when you have to change / extend your requirement structure due to version changes of your application.

i **A requirement structure is automatically versioned before an update from a RM Tool.**

Versioning manually and apply a view:

You create and activate versions in TEMPPO Requirement Manager using **Requirement Structure > Version**. The following example should illustrate how the CM features of TEMPPO Requirement Manager work.

First of all you have the possibility to apply a **view** to a requirement structure which you want to baseline (create new version). A view is a filter which includes only requirements you want link to TCs.

Let's consider the following example, where several requirements are created, but some are still in state "in work", which is represented by the requirement attribute Req_State (see Figure 87).

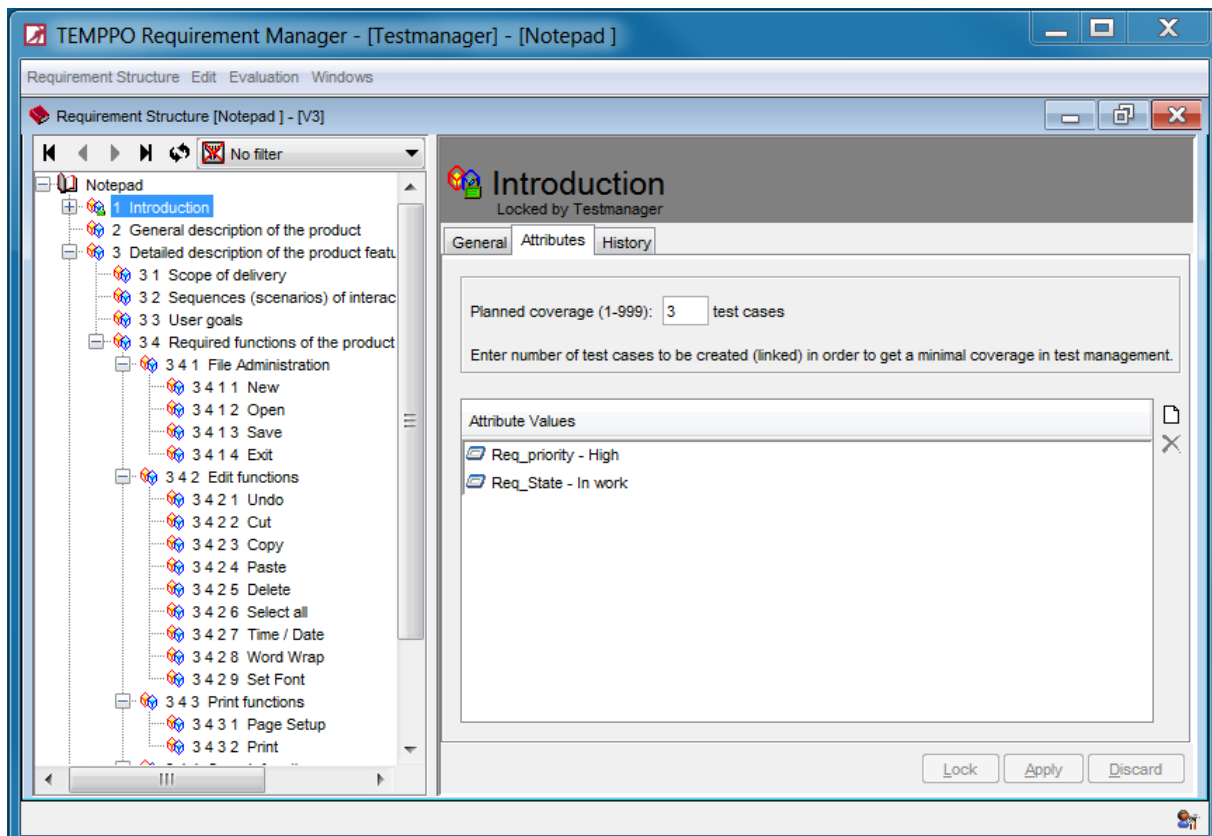


Figure 87 – Before applying a view

If you want now to apply a view the current opened test structure version which has to be the latest one, you have to select the root node and tab **View**. A view can either be set by selecting an existing filter or define a logical expression.

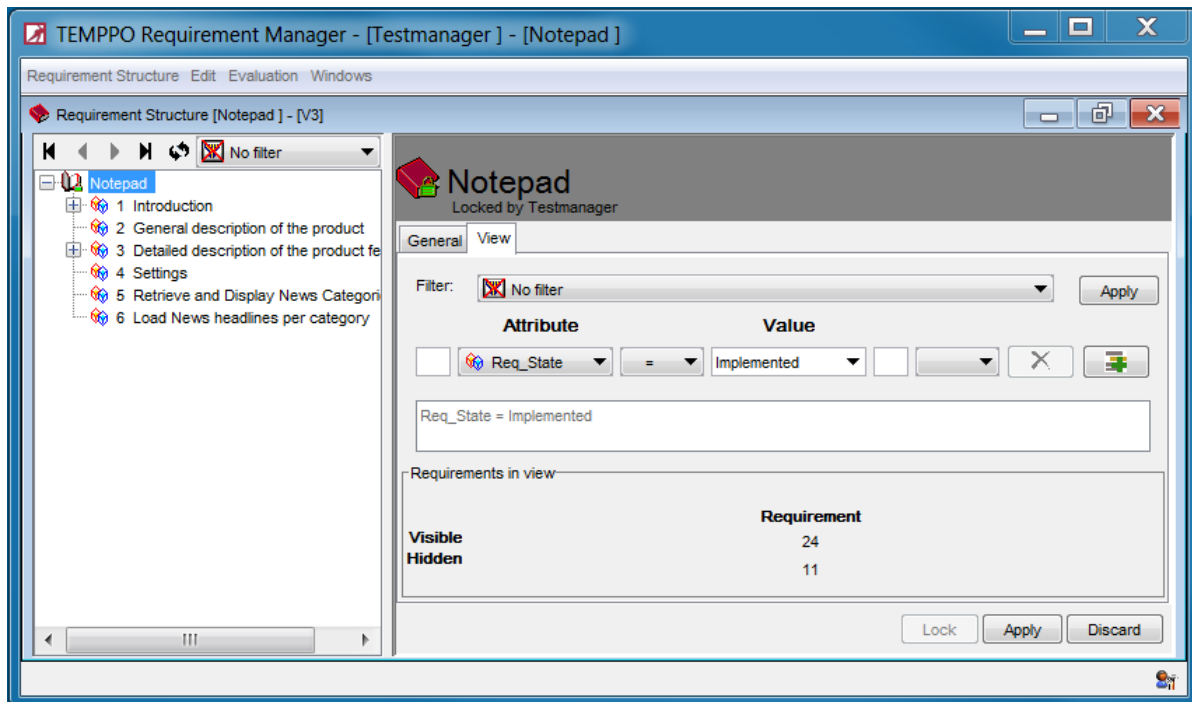
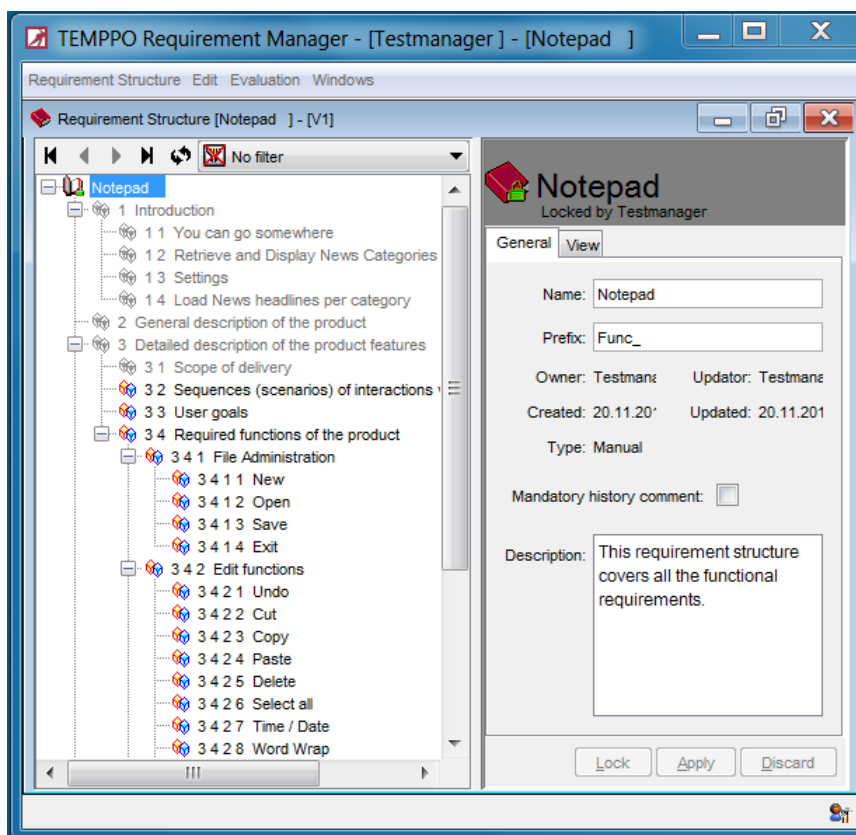


Figure 88 - Create view

When you press the button **Apply**, all requirements which are not "in view" are displayed disabled (grey).



TBD screen shot.

In the next step you have to check in the current requirement structure version. Please activate the menu item **Requirement Structure -> Versions**, and Figure 89 is displayed. Initially there exists just one version of the requirement structure, version "1" on the main line. In TEMPPO, every last version gets the

label "latest", signaling that the requirement structure in this version is checked out for editing.

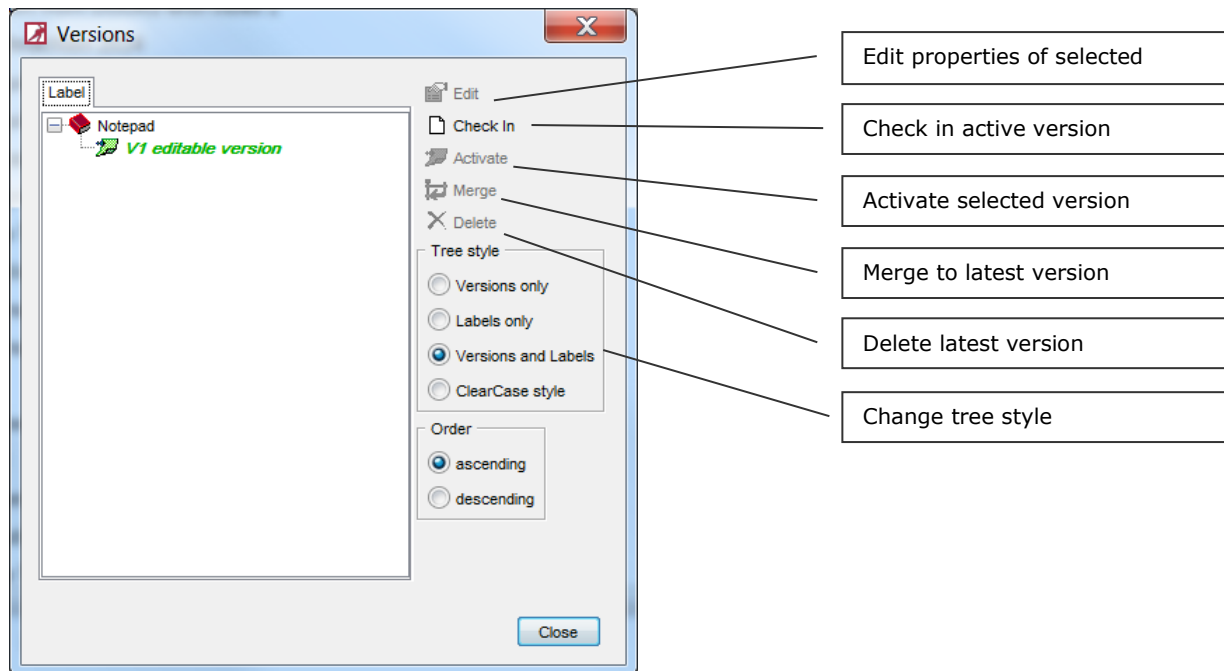



Figure 89 - CM, Version tree before first check in

If you check in the requirement structure by using the **Check in active version** button in the **Versions** dialog you have the possibility to specify a label ("All ready requirements"). Then the version tree looks like displayed in Figure 90. The requirement structure gets checked out immediately and version "V2" is created. The symbol  signals the active version, which is again "latest".

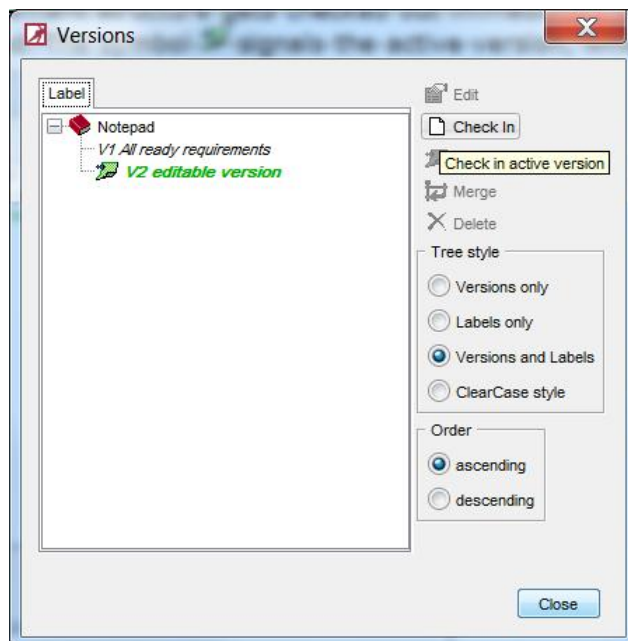


Figure 90 - CM, Version tree after checking in and labeling

Changes in the latest version of the requirement structure will now not affect "All ready requirements". E.g. when inserting a requirement it will only be available in the latest version of the requirement structure.

- i** You can see the active version of your requirement structure in the title bar of the requirement structure explorer.

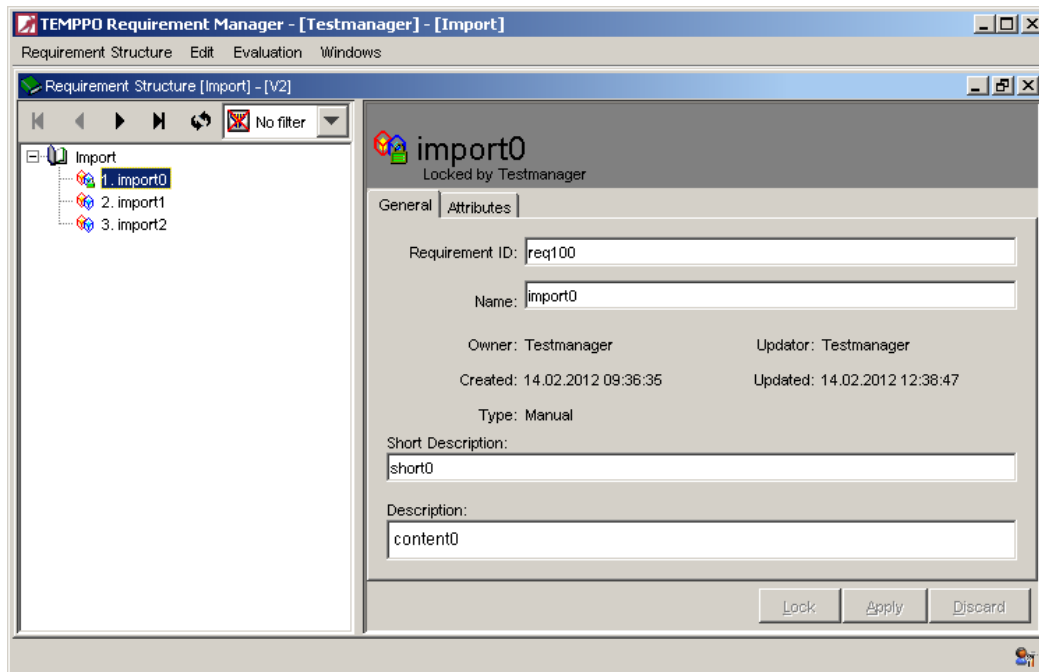



Figure 91 – After check in

1. You can restore the version of a requirement structure by activating it in the versions dialog with button  (**Activate selected version**). You cannot change a requirement structure in a version, which is not "latest".

2.12.1 Merge

If you updated a requirement structure from XML or csv with a faulty file, you have the possibility to undo it by a merge of a previous version to the latest version. Activate the version you want to have as new latest version and press the button **Merge**.

2.12.2 Delete

A version can only be deleted if another version is activated. You cannot delete the current activated version.

If you updated a requirement structure from an RM tool and you have to undo it, you can select the version and press the button **Delete**.

2.13 Split Requirement Structures

Since huge manual requirement structures (> 10000 requirements on first level) are uncomfortable to handle (long loading periods for editing and assigning), the split feature allows to move specific requirements to a new requirement structure. Assignments to test cases are not affected by this process, i.e. a newly created requirement structure is automatically assigned to all affected projects and test structures.

Only first-level requirements are moved, i.e. if a first-level requirement is moved, it is moved to the new requirement structure with its entire sub-tree (see example below).

Splitting is done over all version of a requirement structure. The new requirement structure will have exactly the same version tree, as its source.

Via **Requirement Structure – Split...** the split dialog is opened (the menu is only enabled, if the root node is selected).

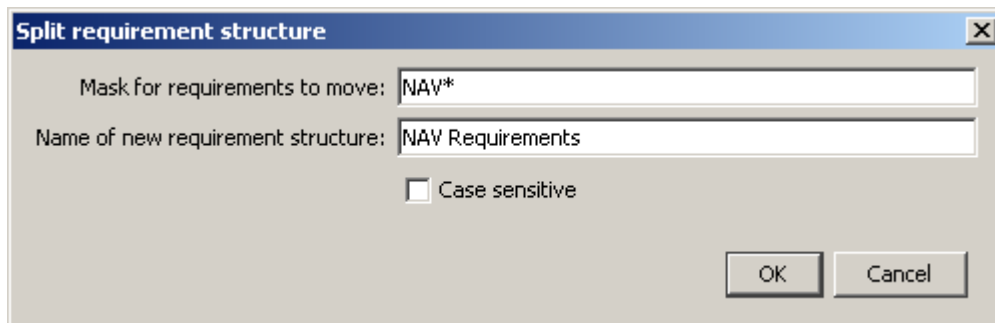


Figure 92 - Split dialog

A mask (wildcards * and ? are supported) for requirements to be moved to the new requirement structure and the name for the new requirement structure can be specified.

When pressing OK, the move process is started. Before moving requirements, the uniqueness of the requirement structure name and locks in affected test structures are checked (no locks may exist). If the checks pass, the requirements will be moved, otherwise a corresponding message is displayed and the process is terminated.

The following example illustrates the splitting process:

Requirement structure before splitting:

```
Requirement Structure
  NAV_001
  NAV_002
  NAVIGATION_003
    MAP_001
      DestInput_001
    MAP_002
  Navi_004
  RADIO_001
  RADIO_002
```

Mask for requirements to move: NAV*

Name of new requirement structure: NAV Requirements

Case sensitive: no

Requirement structures after splitting:

```
Requirement Structure
  RADIO_001
  RADIO_002

NAV Requirements
  NAV_001
  NAV_002
  NAVIGATION_003
    MAP_001
    DestInput_001
    MAP_002
  Navi_004
```

2.14 Filter

Users can see their requirement structures in a filtered way by creating and selecting filters i.e. for the purpose of hiding requirements that are not of interest. All fixed and user-defined attributes can be used to define a filter criterion.

Filters are stored to the database and are user specific not global. Set filters won't remain associated to a requirement structure after closing and reopening TEMPPO Requirement Manager.

2.14.1 Predefined filter

Like TEMPPO Test Manager, TEMPPO Requirement Manager provides a predefined filter. The filter "Selectable requirements" is used for requirement structures imported and updated from 3rd party tools. For the reason of already filtered requirement structures by a view, some requirements are displayed in gray color, which means that they are not selectable. They are displayed in the requirement structure, because they could contain selectable requirements.

If you set the filter "Selectable requirements" all grayed requirements are not displayed.

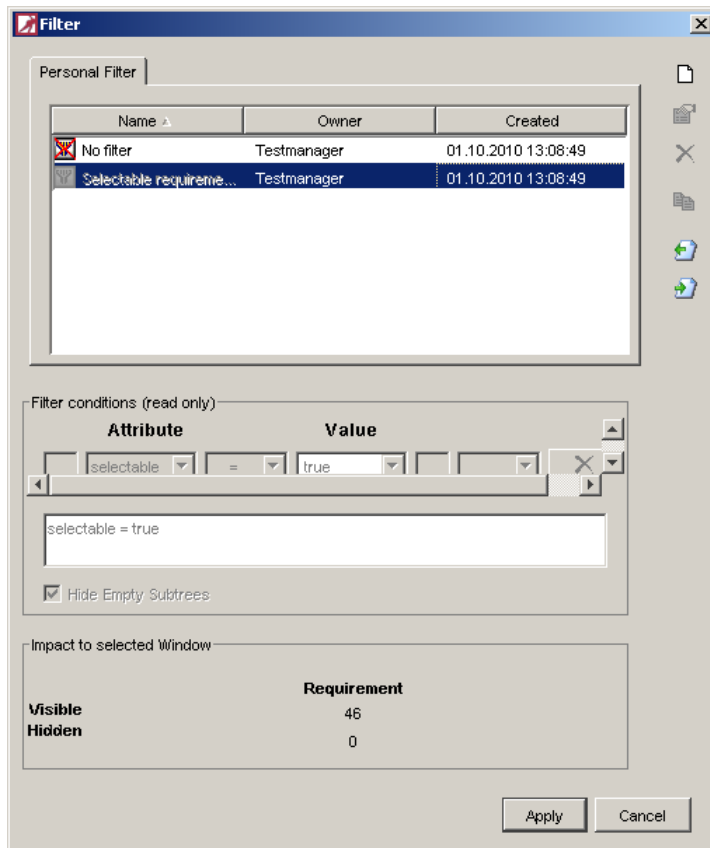


Figure 93 - Predefined filter

2.14.2 Create Filter

You can create a new filter using menu **Edit > Filter** or using the Filter- Combo box **-Edit entries...** in the requirement structure.

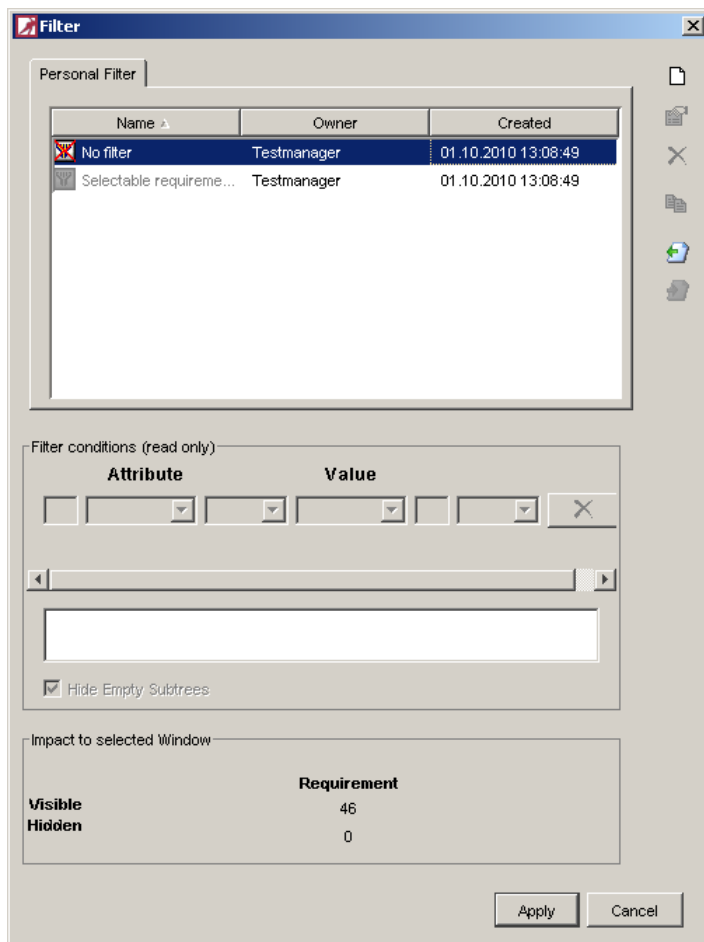


Figure 94 – Create new filter

If you click the **Create new filter** – button, Figure 94 is shown. The name of the filter is set by default with **New Filter** and the filter conditions can be entered. The checkbox **Hide empty subtrees** is not available in TEMPPPO Requirement Manager.

i After creation of a new requirement it may happen that it disappears after saving, if it doesn't match to a set filter.

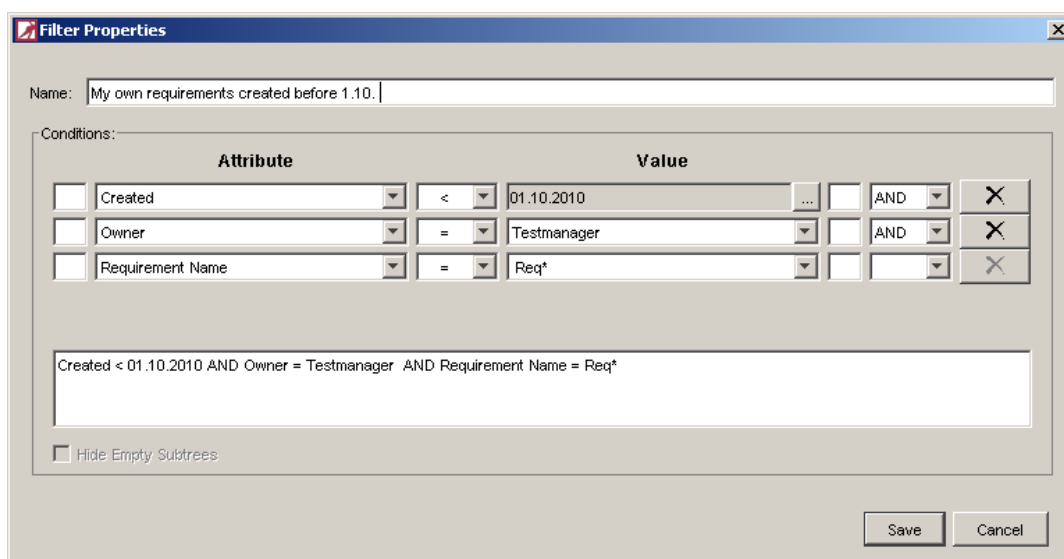
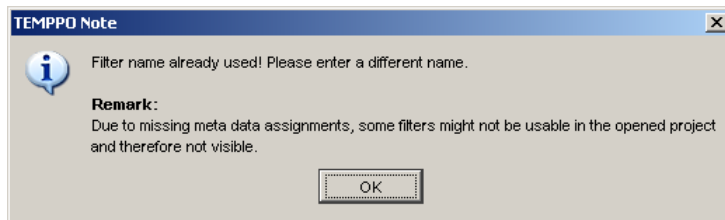


Figure 95 - Filter Properties

Pressing the **Save**-Button, the new filter is saved to the database, if a new name was entered. Otherwise the information window comes up:



After saving the new filter, Figure 95 is closed and Figure 94 is shown. The new filter is inserted and selected in the list box, the filter criterion is displayed read only and the table **visible / hidden requirements** is updated.

2.14.3 Change Filter

You can change existing filters by pressing the **edit filter** button. This button is only enabled when a filter is selected that is not the empty filter (**No filter**).

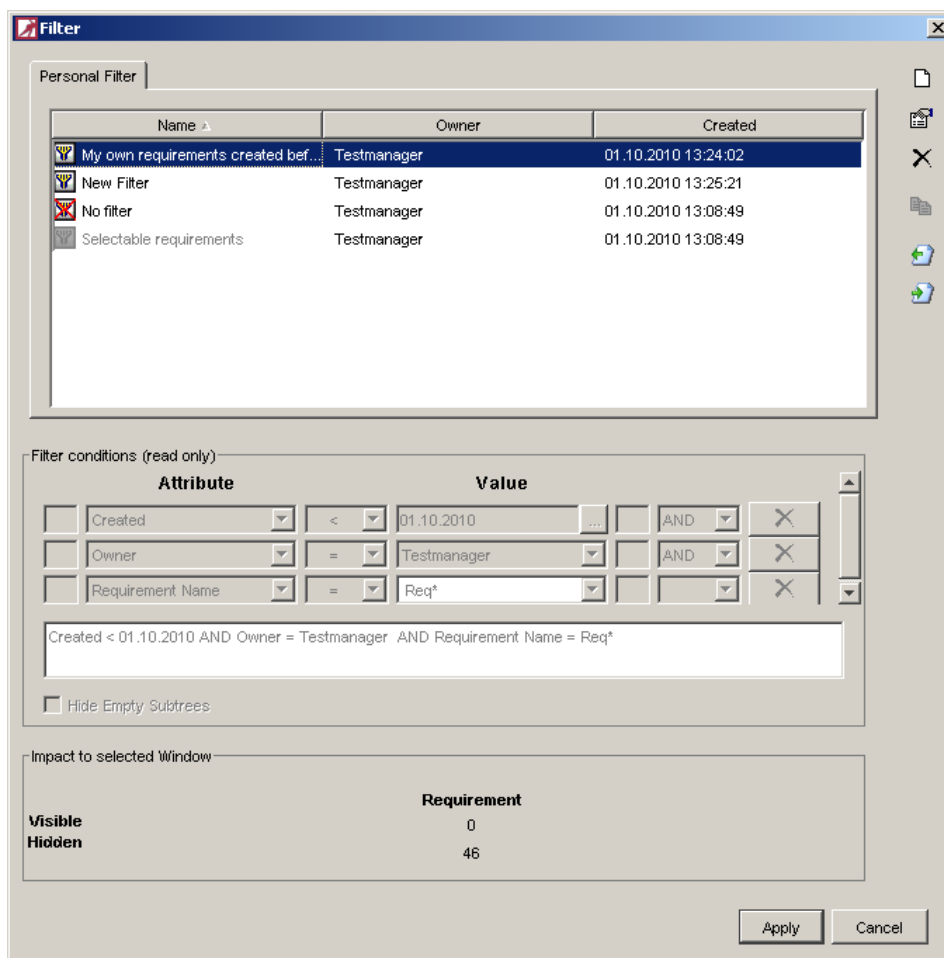


Figure 96 - Open item properties

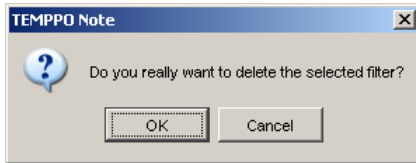
Depending on the selected filter, the conditions are displayed. Filter name is read only, filter conditions can be changed (see Figure 95).

If the filter is in use and was changed, the changes are then applied to the requirement structure.

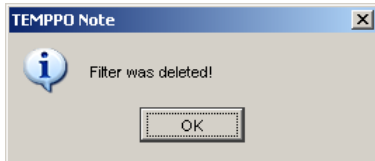
2.14.4 Delete Filter

You can delete an existing filter by pressing the **delete filter** -button. This button is only enabled if the selected filter is not the empty filter (**No filter**).

After activating the **Delete item** -button, the reconfirmation window comes up:



If pressing **Yes**, the information window comes up and the filter is deleted.



After deleting a filter, the **No filter** is highlighted in the list box.

2.14.5 Select Filter

TEMPPO Requirement Manager offers a fast selection mode: with the combo box in the toolbar possible filters can be set without opening the filter window.

2.14.6 Show Filter

If no filter was set before opening the filter window, the list box entry **No filter** is highlighted.

If a filter is set before opening the filter window, the corresponding entry is highlighted.

When clicking on an entry in the list box, the item is highlighted and its impact on the requirement structure is displayed.

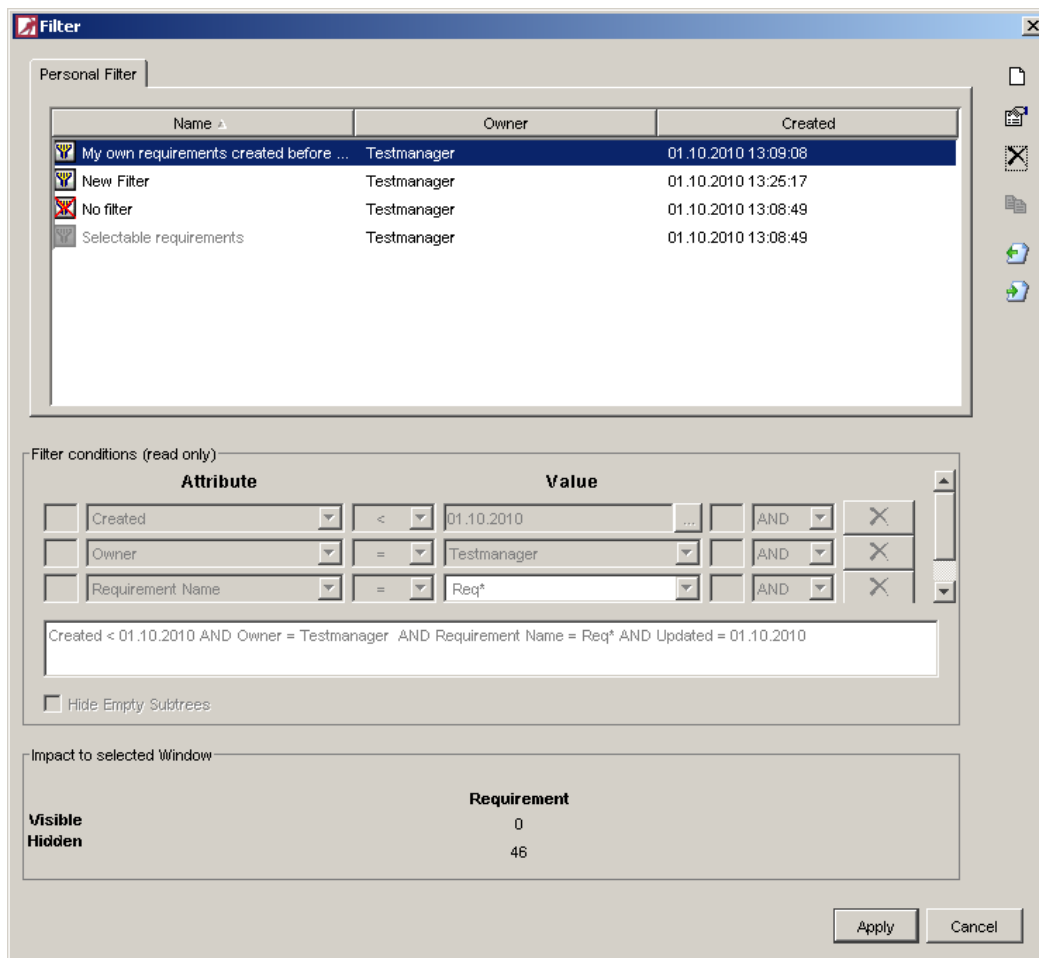


Figure 97 - Show Filter

When clicking **Apply**, Figure 97 is closed, the selected filter is set in the activated window and the combo box in the toolbar shows the current filter.

When clicking **Cancel**, Figure 97 is closed and the previous set filter remains unchanged.

2.14.7 Define the filter criterion

The values of the following attributes can be used as described in Table 3: **Planned coverage, requirement name, requirement short description, requirement ID, owner, updater, created, updated, UDAs and selectable** (if a requirement is in a view).

First of all you have to choose an attribute and an operator (=, !=, IN, NOT IN). If IN or NOT IN is selected, the combo-box value changes to a text field together with the button Then you can enter

- A string with a wild card or
- Press the button ... for selecting several values.

After pressing the button "..." Figure 98 is displayed and the attribute values are selected by moving them to the right. Pressing **OK** applies the selection to the filter window. The selected values are displayed separated by a comma. Now the user can edit this line.

i No blank is allowed, only a comma!

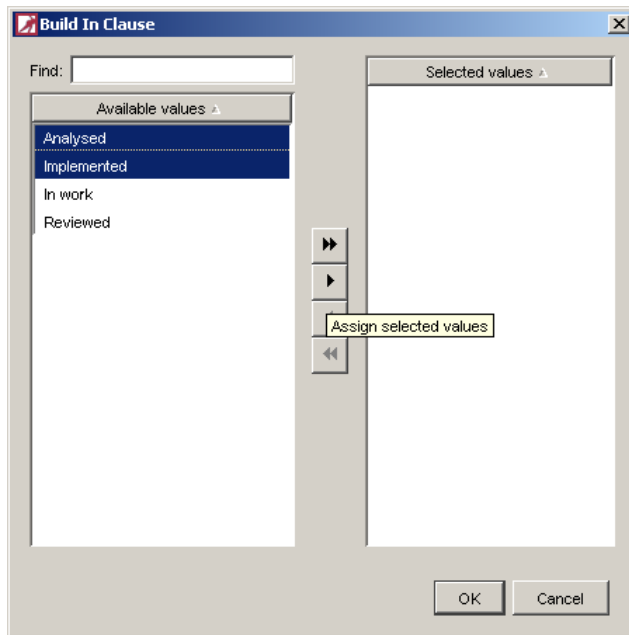


Figure 98 - Selecting attribute values for IN, NOT IN

Attributes	Operator =, !=	Operator IN, NOT IN	Operator <, >, <=, >=	Value editable ¹	Value set ²	Value project assigned	Wild card allowed ³
Planned coverage	Y	N	Y	N	N	-	N
Requirement name	Y	N	N	Y	N	-	Y
Requirement short description	Y	N	N	Y	N	-	Y
Requirement ID	Y	N	N	N	N	-	Y
Owner	Y	Y	N	Y	Y	Y	N
Updater	Y	Y	N	Y	Y	Y	N
Created, Updated	Y	N	Y	N	N	-	-
Requirement attributes	Y	Y	N	Y	Y	Y	Y

¹ Yes, if operators IN, NOT IN are selected

² Yes, if a set of values can be selected

³ Yes, if editable is Yes.

Table 3- Attributes meanings

The user can write free text that may also contain wildcards like

- “*” any number of characters
- “?” any single character

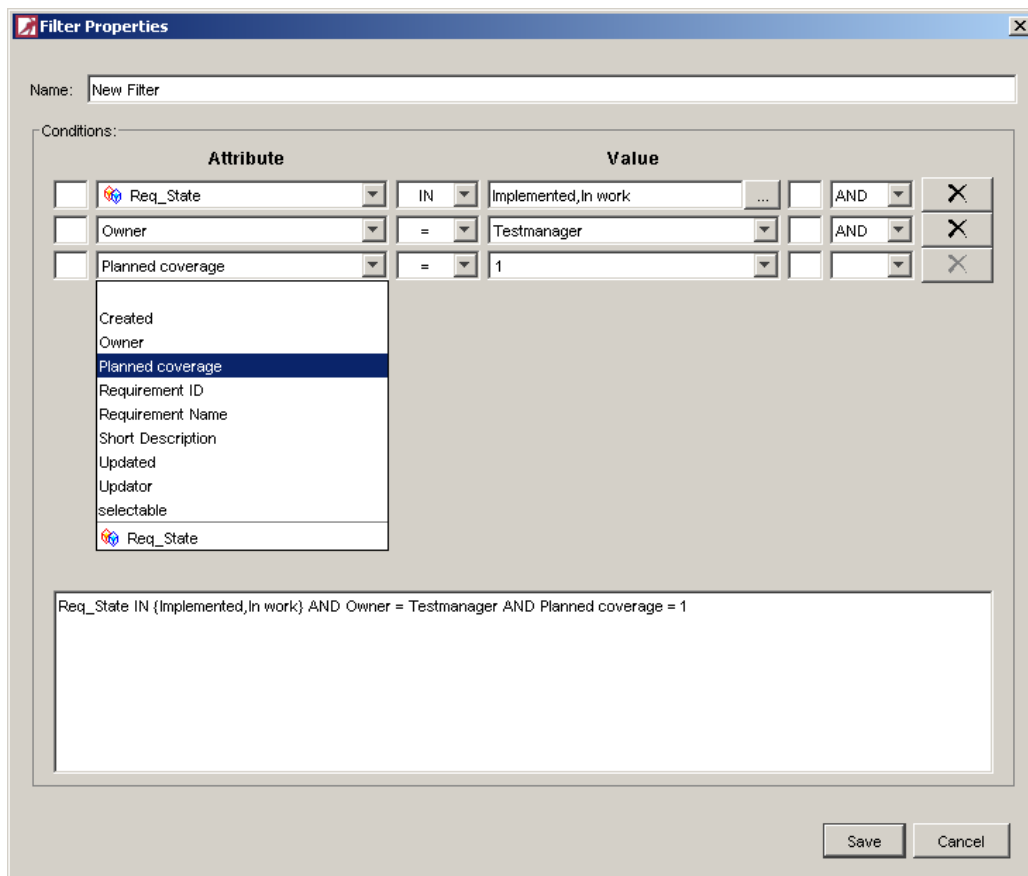


Figure 99 - Filter criterion

2.14.8 Export filter

It is possible to export filters to XML and import them again. When either activating the menu **Filter->Export** or pressing the button **Export selected filters to XML** Figure 100 is displayed and the filter can be saved.

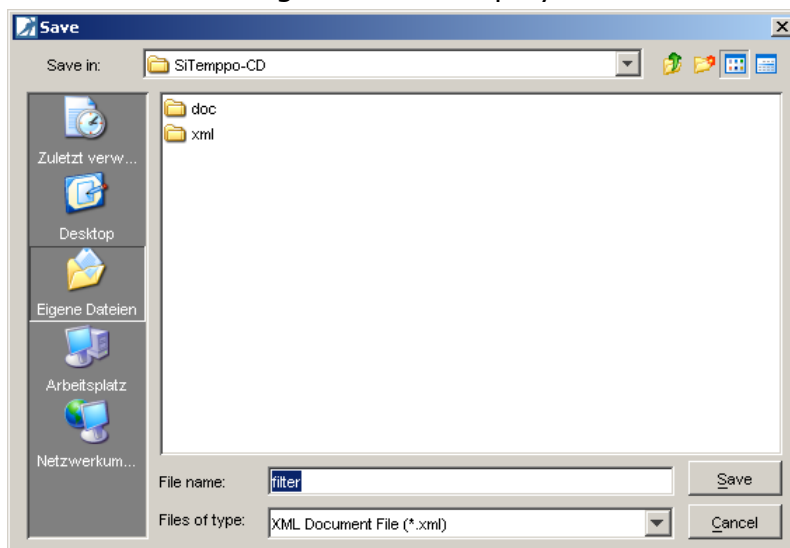


Figure 100 - Export dialog

2.14.9 Import filter

It is possible to import filters from XML either directly by pressing the button **Import filter from XML**. A filter import is rejected, if the filter contains specific requirement attributes that are not assigned to the requirement structure the filter is imported to. An error message is displayed where the names of the NOT imported filters are listed.

The filter contents are checked and the import is only successful, if the attributes match the ones of the selected requirement structure. If the filter is not syntactically correct, the import is cancelled and the user gets an information message.

2.15 Evaluation

2.15.1 Analysis

The analysis feature is used to give you a quick overview about your requirement structure. You create an analysis chart by selecting the node to analyze and activating **Evaluation > Analyse All**. In the Analysis dialog you can set values for X – Axis and group values on the Y - Axis. The following charts for displaying the data are possible:

- **Horizontal bar chart**
- **Horizontal bar chart (3D)**
- **Line chart**
- **Stacked horizontal bar chart**
- **Stacked horizontal bar chart (3D)**
- **Stacked vertical bar chart**
- **Stacked vertical bar chart (3D)**
- **Vertical bar chart**
- **Vertical bar chart (3D)**

For x-axis you can select

- **Created**
- **Owner**
- **Planned Coverage**
- **Updated**
- **Updator**
- **Self-defined requirement attributes**

There is also the possibility to save the chart as .jpg or .png file by pressing the button **Save As...** Figure 101 shows an analysis from a requirement structure, displaying the number requirement for a requirement attribute "Requirement_state".

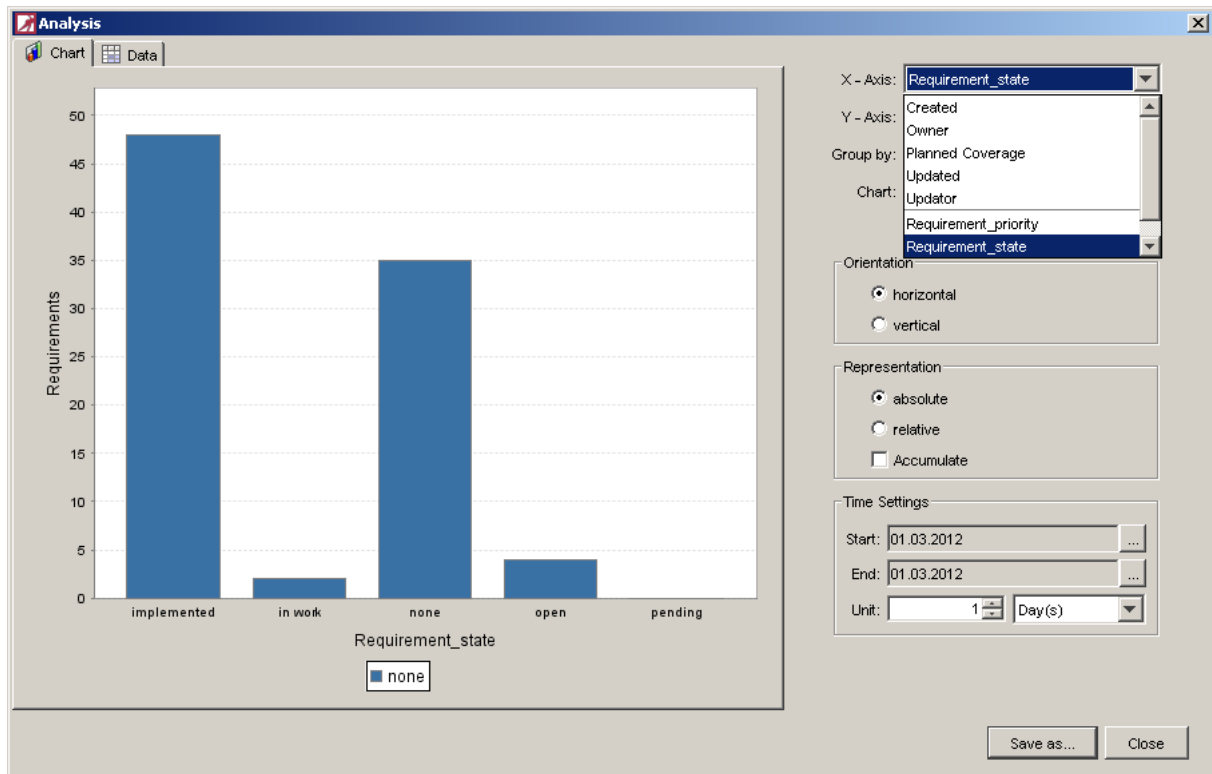


Figure 101 - Requirement structure analysis, x-axis = requirement attribute

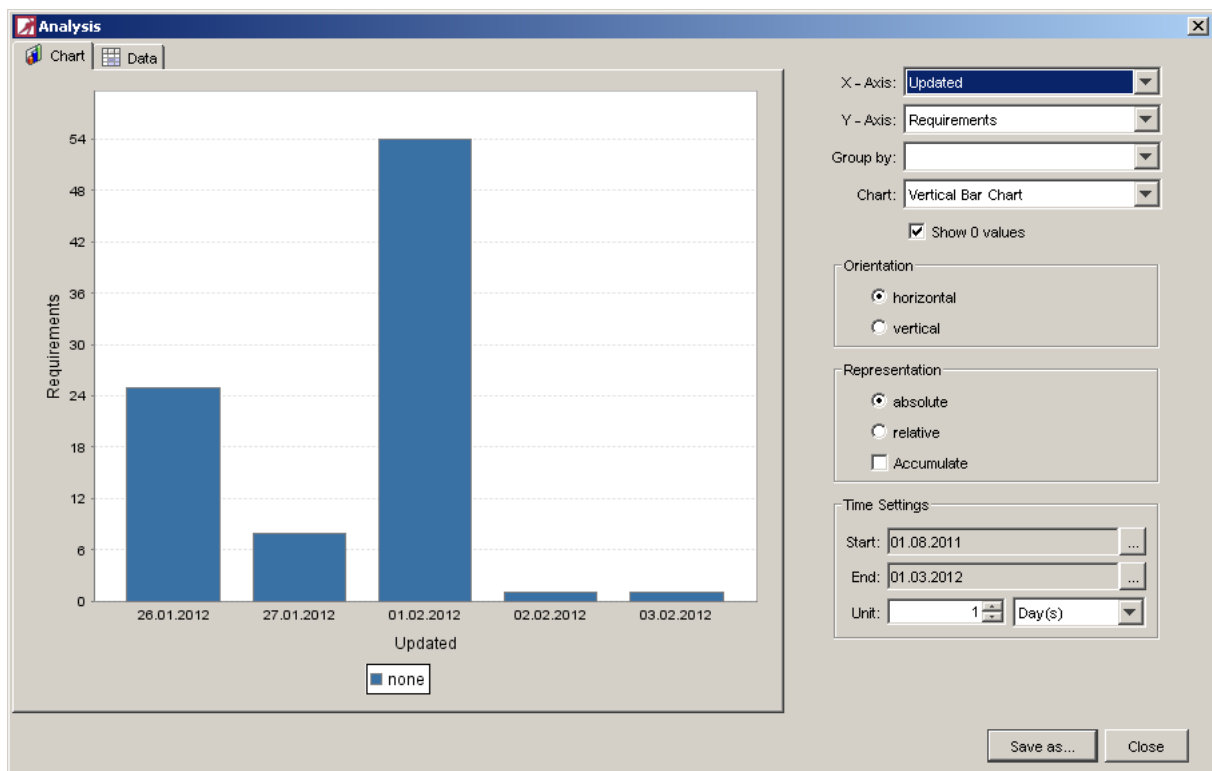


Figure 102 - Requirement analysis, x-axis = Updated

2.15.2 Progress Chart

The progress chart feature is used to give you a quick overview about deltas of requirement structure versions. You can view the progress from one to the next or more versions.

You create a progress chart by selecting the root node and activating **Evaluation > Progress Chart**. By selecting the button **Select Versions** Figure 103 is displayed where you have to select at least 2 versions to be compared.

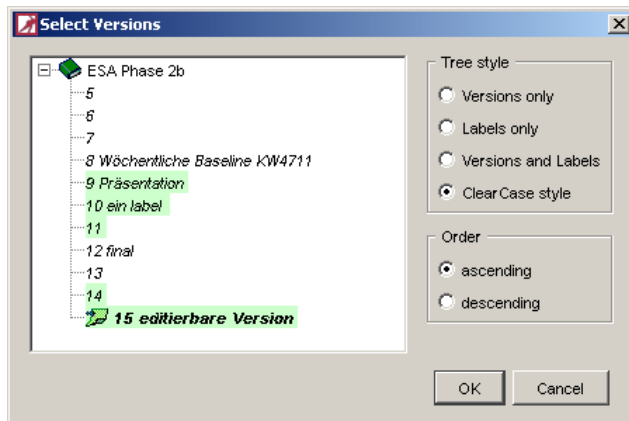


Figure 103 - Select versions

After pressing **OK** the window is closed and Figure 104 is shown.

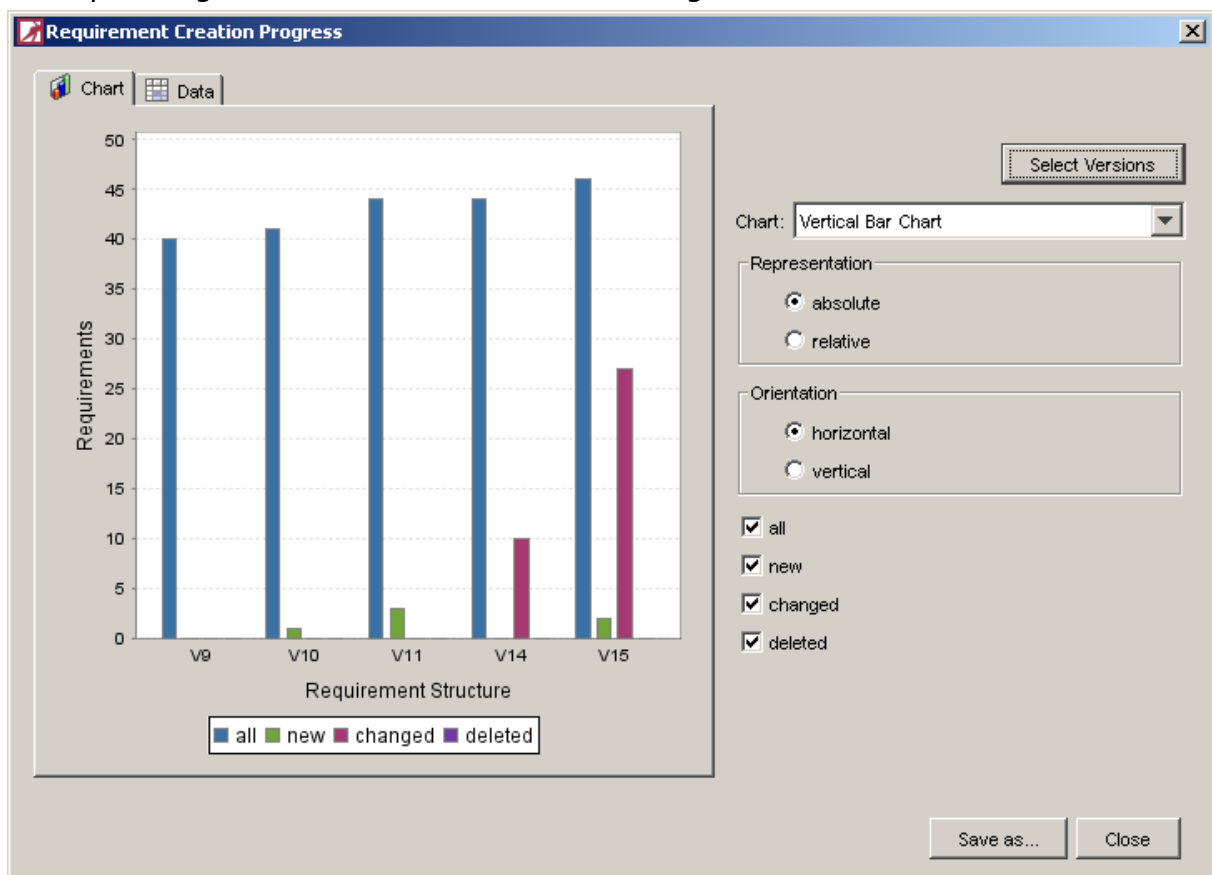


Figure 104 - Requirement creation progress

2.15.3 Reporting

TEMPPO Requirement Manager offers a reporting feature, which allows you to create flexible textual and graphical reports from your requirement structures. A requirement structure report can be created from any node within the structure, even from a single requirement (**Evaluation > Report Selected...**).

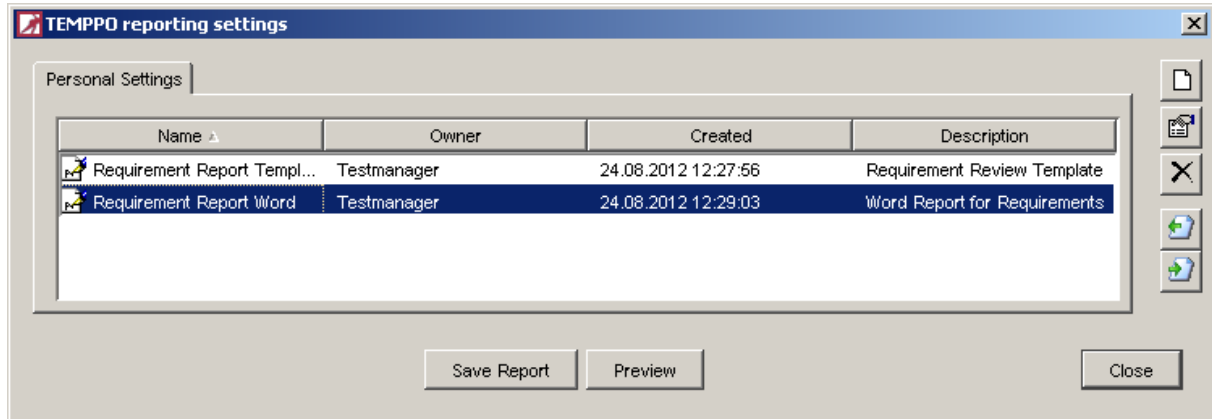


Figure 105 – Report settings

With the buttons on the right side, you can add change and remove settings:

- **New / Edit:** see 2.15.3.1
- **Delete:** Setting(s) are deleted.
- **Import from XML or TRP:** see 2.15.3.3
- **Export to XML file:** see 2.15.3.4

With the buttons below, you can save the report to a directory or create a preview. After Pressing **Save Report**, a file dialog opens where the directory has to be defined and then the report is created.

2.15.3.1 New / Edit

When pressing the button **New** or **Edit** a new window opens to set the properties for creating a report.

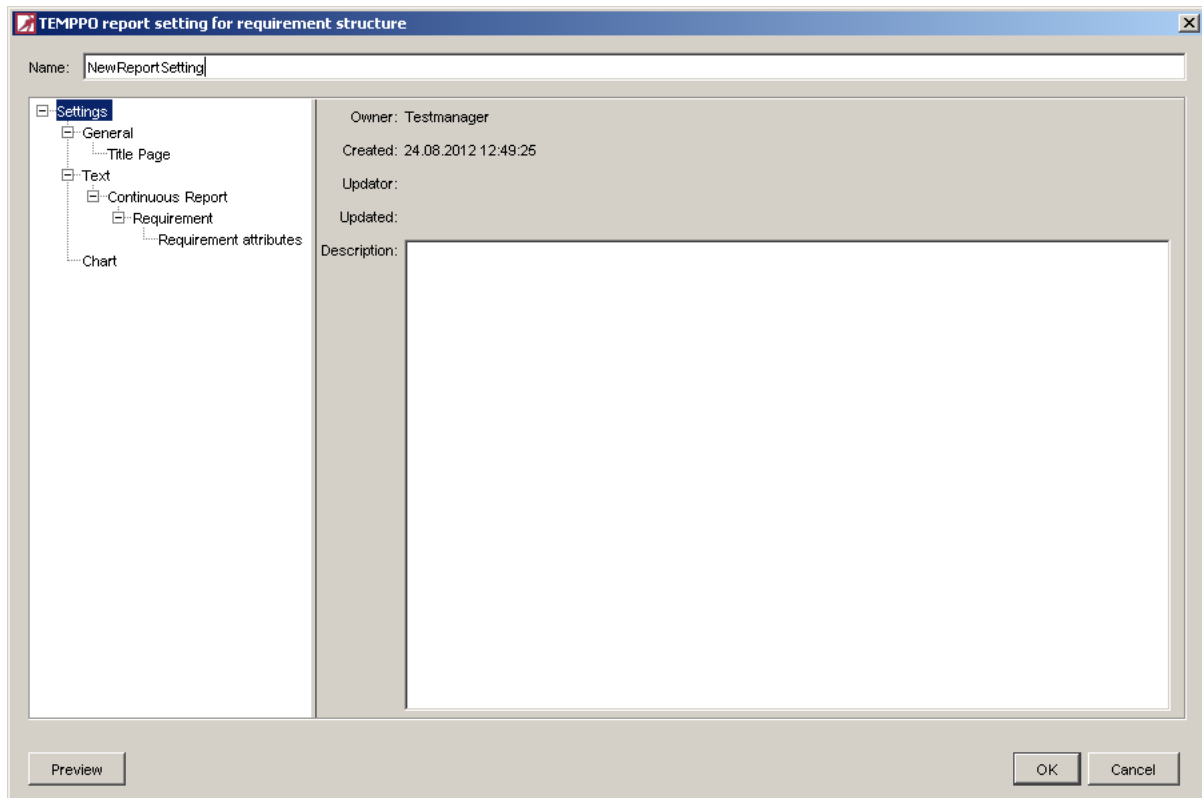


Figure 106 – Report settings overview

The report functionality is divided into four main setting areas, where each of them is subdivided into several parts. The areas are described in the following chapters.

2.15.3.1.1 General

In the general settings area you define the rough layout and contents of your report.

Components

Here you choose the components your report shall contain. Dependent on your selection the tree is changed for doing the relevant settings. The following components are available

- **Title Page**
- **General Information about Test Structure**
- **Text**
- **Chart**

Additionally, you have to select the **Layout:**

Continuous or **Tabular**

and the **Format** for the report:

HTML, Microsoft Word or **Microsoft Excel**

If the format is Microsoft Word, a template file can be defined (loaded) for e.g. header and footer in your report.

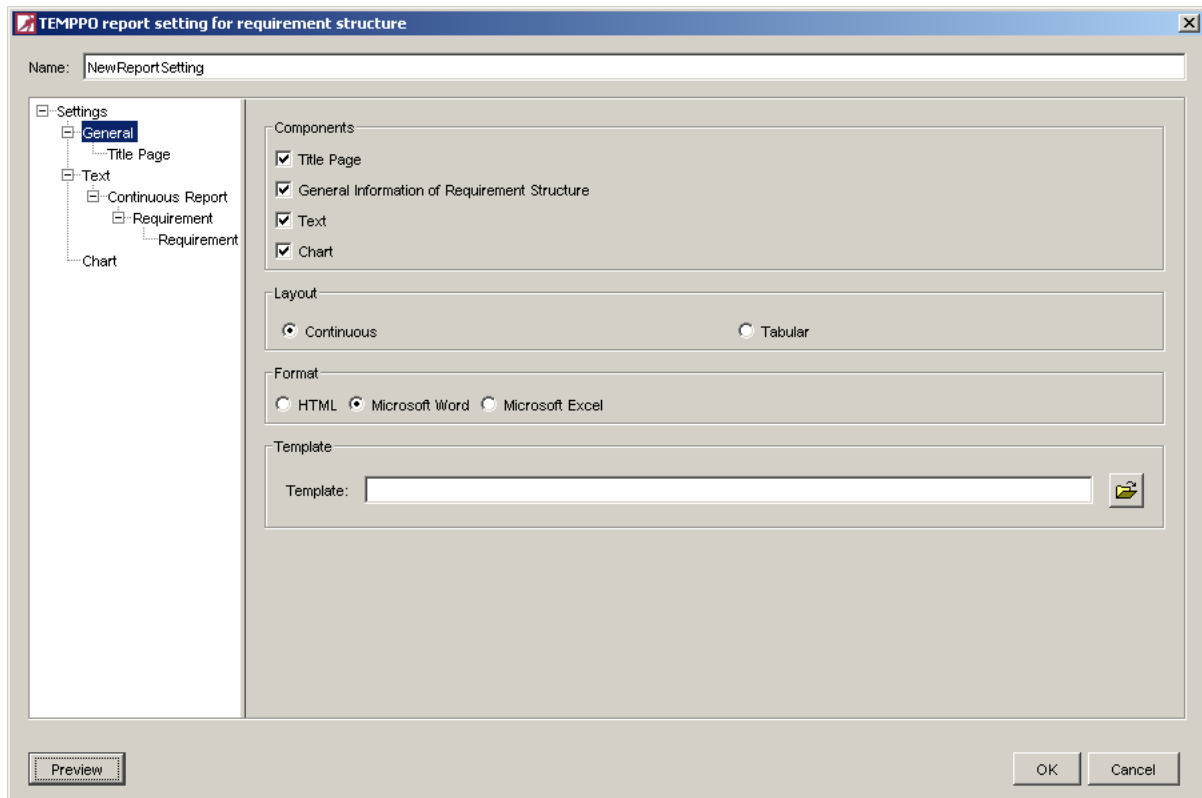


Figure 107 – Reporting: Load template file

There is the restriction that you must save the dot file as xml. TEMPPPO supports only the XML format.

If Microsoft Excel is selected, then you can define a header and footer within the settings (see Figure 109).



Please, consider that Microsoft Word limits the width of pages to 22 inches (<http://support.microsoft.com/?scid=kb%3Ben-us%3B95109&x=14&y=10>)

Title Page

Here you can customize the title page of your report. The **Title page** can contain a **title**, a **project name**, a **status**, the **name** of the **author** and the **current date**. You can also specify if the label should be visible.

The screenshot shows the 'TEMPPPO report setting for requirement structure' dialog box. The 'Name' field is set to 'NewReportSetting'. On the left, a tree view shows 'Settings' expanded, with 'General' selected, and 'Title Page' highlighted. The main area is titled 'Title Page' and contains the following fields and checkboxes:

- TITLE: Projecttitle
- Projectname: Projectname
- Status: Projectstate
- Date: ☒
- Author: ☒
- Show labels: ☒

At the bottom, there is a 'Preview' button on the left and 'OK' and 'Cancel' buttons on the right.

Figure 108 – Reporting: Title Page

Header / Footer

You can customize the header and footer for your report. There are buttons for using the defined keys for **page number, date, time** etc.

The screenshot shows the same dialog box, but with the 'Header / Footer' tab selected in the tree view. The main area is titled 'Header / Footer' and contains the following elements:

- A text box at the top: 'To add a page number, date, time or file insert, position the cursor in the edit box and then click the desired button.'
- Two rows of three empty text boxes each, labeled 'Left', 'Center', and 'Right' for 'Header' and 'Footer' respectively.
- A vertical stack of buttons on the right: 'Page', 'Pages', 'Date', 'Time', 'Path', and 'File name'.

At the bottom, there is a 'Preview' button on the left and 'OK' and 'Cancel' buttons on the right.

Figure 109 – Reporting:Header / Footer

2.15.3.1.2 Text

The text settings are relevant for the textual data contained in your report and also for how they are displayed.

General Text Settings:

First, you can choose the **Layout** if you want your data displayed in continuous text or table format.

Furthermore you can set **Format options:**

- (Do not) ignore information fields with empty values
- (Do not) generate heading numbers
- You can limit the size of your report by defining the depth absolutely. You can use the slider to limit the reported requirement structure tree depth to a fixed level.

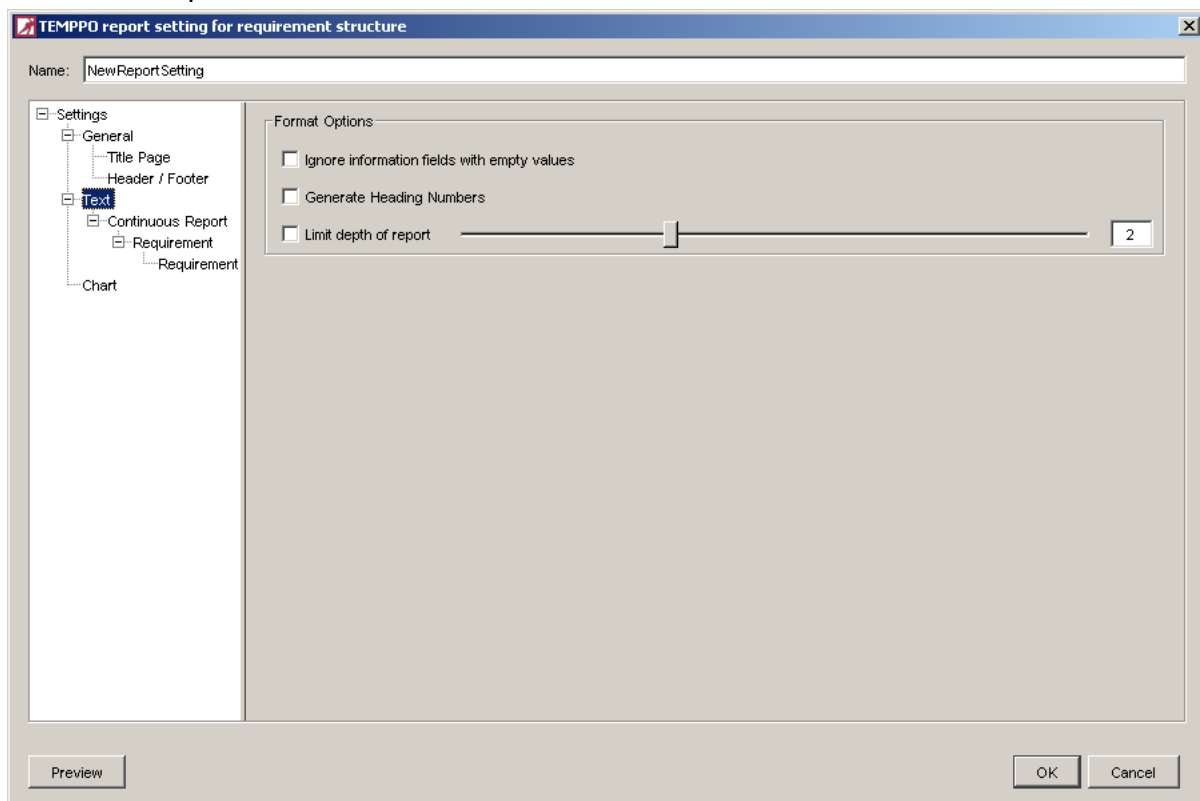


Figure 110 – Reporting: General Text Settings

Continuous Report: Requirement, Requirement Attributes

You can specify which data your report shall contain. With multi selection mode, you can “move” several values to the right part of the window.

If you don’t want to show which attributes your requirement has, deactivate the checkbox above the list.

TEMPPPO report setting for requirement structure

Name: NewReportSetting

Settings

- General
 - Title Page
 - Header / Footer
- Text
 - Continuous Report
 - Requirement**
 - Requirement
 - Chart

☒ **Requirement**

Available Attributes:

Description
Is in view
Owner
Planned coverage
Updated
Updator

Selected Attributes:

ID
Name
Short Description

Preview OK Cancel

TEMPPPO report setting for requirement structure

Name: NewReportSetting

Settings

- General
 - Title Page
 - Header / Footer
- Text
 - Continuous Report
 - Requirement**
 - Requirement
 - Chart

☐ **Requirements Attributes**

Available Attributes:

Req_State
mike-type

Selected Attributes:

--

Preview OK Cancel

Figure 111 – Reporting: Textual Settings

Tabular Report:

You can specify the sequence of the columns by swapping the column headers and for defining the width of the columns in the report you have to move the border of the columns.

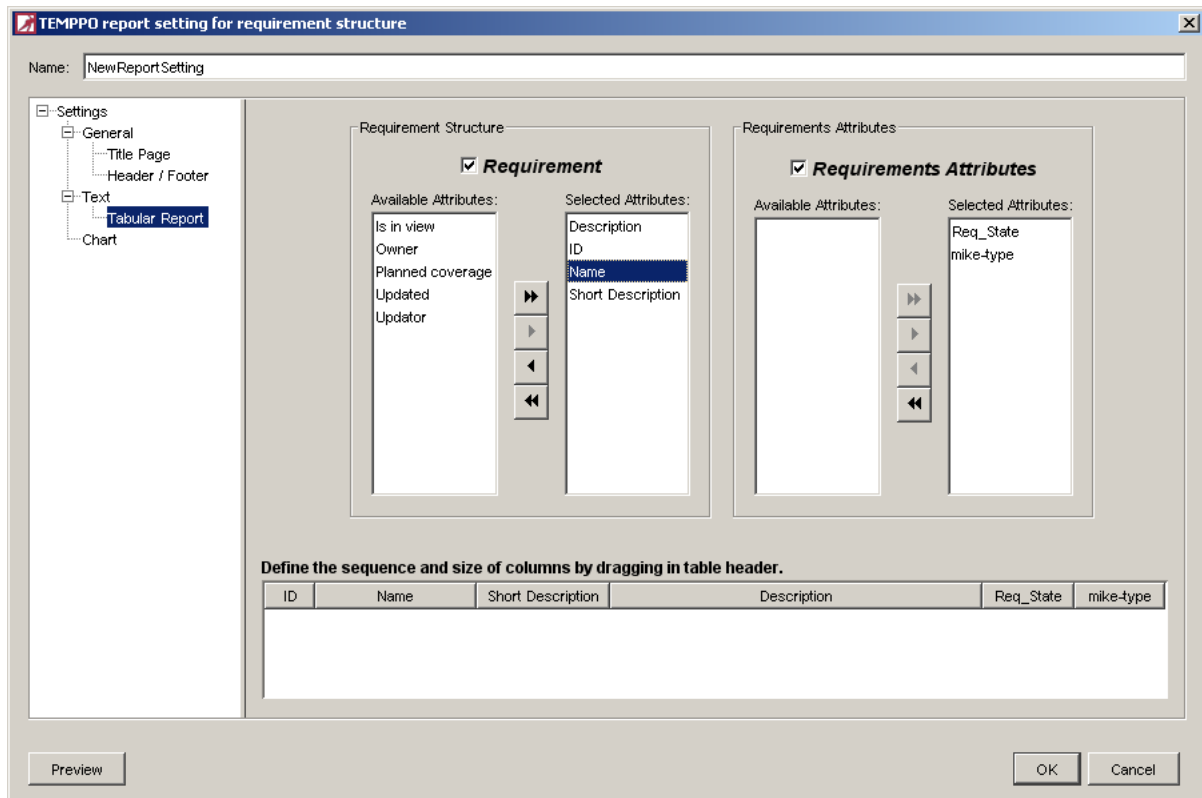


Figure 112 – Reporting:Tabular Report

2.15.3.1.3 Chart Settings

In the chart settings area you can customize the chart added to your report, which represents the data of your test structure or your test suite in a graphical way.

Data Selection:

Choose units for the x- and y- axis and optionally a value subdivision.

Orientation:

You can choose the orientation of the labels in the x-axis.

Representation:

Data can be represented absolutely or relatively. If **Accumulate** is activated, data on y-axis is displayed accumulated.

Time Settings:

If you select in x-axis and/or Group by a date / time attribute, you can configure the chart by setting a start and an end date. Additionally the units (days, weeks, months or years) can be set.

For detailed description of charts see 2.15.1

2.15.3.2 Previewing and Saving

You can either **Preview** the report that will be generated or immediately **Save** it to a HTML-, Word- or Excel-file.

2.15.3.3 Import from XML

For importing report settings, press the button **Import report setting from XML or TRP file** and then the following file dialog opens:

In the file dialog you can set the type of file to .xml. After selecting a file and pressing open, report setting is imported to TEMPPO.

2.15.3.4 Export to XML

For exchange you can export your report settings to an XML file. Press the button **Export report setting to XML file** and then a file dialog opens. After selecting the path and file name, press **Save**. Then the file is exported to XML.

2.16 Multi user ability

Multi user ability establishes an environment for working with several users in a parallel way on the same requirement structure. It prevents unintentional overriding of changes, manages the synchronization between viewed and stored data and avoids inconsistency, if multiple users work on the same database. Moreover it provides features to facilitate the collaboration in a team working on the same TEMPPO requirement structure.

Chapter 2.16.1 describes the behavior when locking and editing an item. On the other hand chapter 2.16.8 illustrates the 2 possibilities of refreshing (manual, automatic).

2.16.1 Lock modes

TEMPPO provides 2 possibilities of locking items (requirements):

- **Manual lock**
- **Automatic lock**

If you are working with manual lock mode, you always have to press the button "Lock" before having the exclusive right to work on that item.

On the other hand you simply have to select an item and it is automatically locked, if another user does not lock it.

This feature can be configured when activating the menu **Windows -> Settings**.

 **The following chapters are describing the locking in manual mode!**

2.16.2 Edit

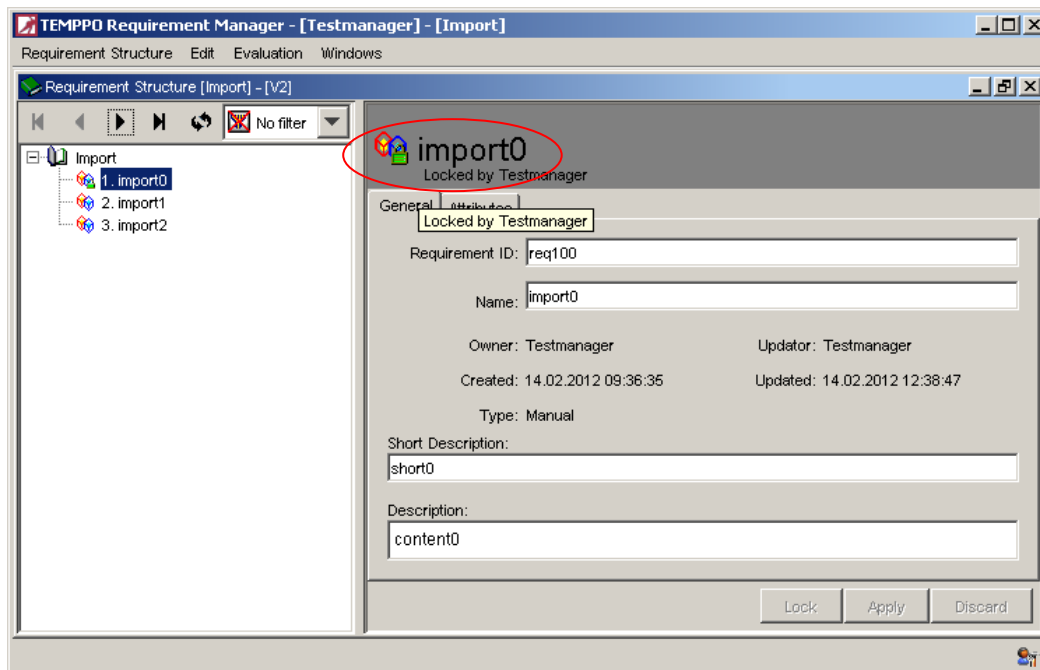


Figure 113 - Lock state

After locking the requirement you can edit the selected requirement.

2.16.3 Find locks – unlock

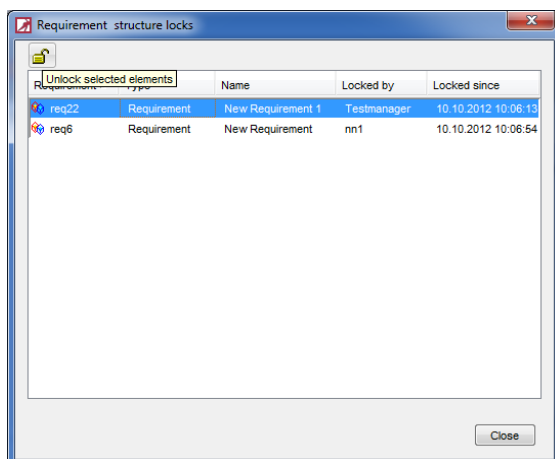


Figure 114 - Requirement structure - Find locks

In principle TEMPPO RM only user locks are possible. The following items can be locked:

- Requirement
- Requirement structure (root)
- Version

Locks can be found either in the requirement structure or test suite

- Requirement structure:
When activating the menu item **Find locks** (menu requirement structure), Figure 114 is displayed. By selecting one or more locks and pressing the button **Unlock selected elements** locks can be removed.

If the user still believes in his locked items and presses the button **Save**, he will get the following message, that the lock has been removed in the meantime.

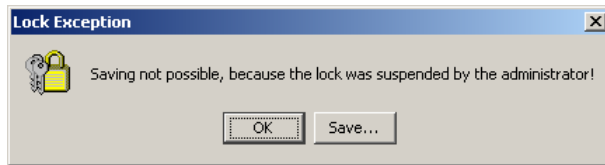


Figure 115 - Lock deletion message

When closing the window by pressing **OK**, he can only discard his changes!

2.16.4 Show a lock state

The locking state of the item is shown by:

Special padlock icon (green: locked by the current user, yellow: locked by another user).

i Tool Tip "Locked by <user>"

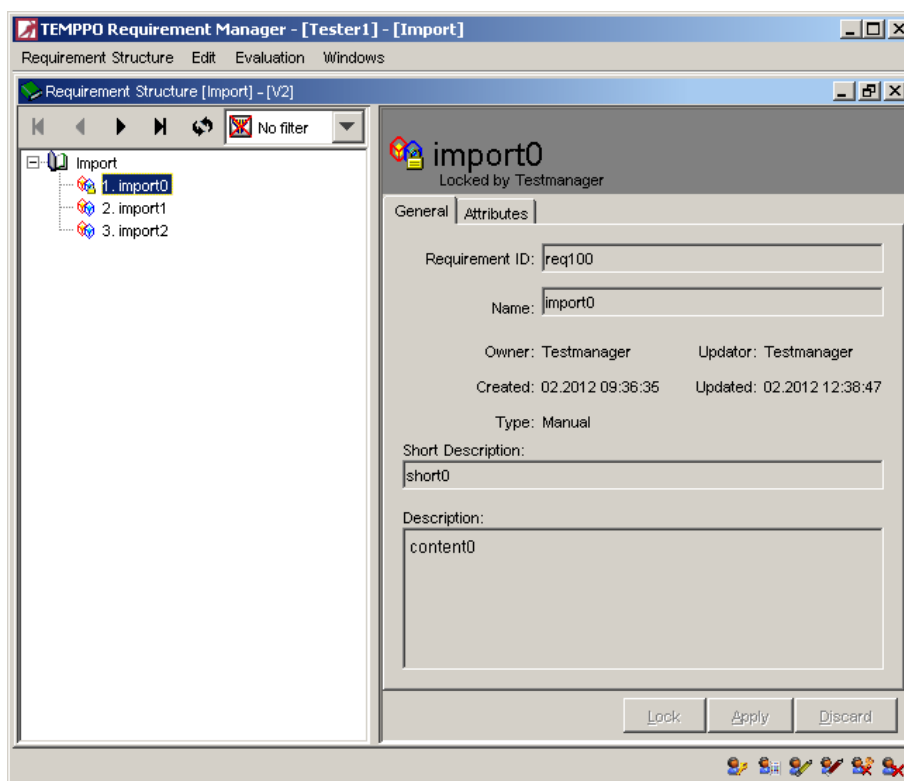


Figure 116 - Lock button

2.16.5 Change an item

Before you can change an item, you have to press the button **Lock** (see Figure 116). If the locking was successful, the item can exclusively be changed by you. The lock is automatically released if you:

- select another item
- apply / discard changes

If locking wasn't successful after pressing the **Lock** button, you will get a dialog. If the reason was that another user has deleted the item in the meantime, the item is removed from the tree and Figure 117 is shown. Reload the whole requirement structure.

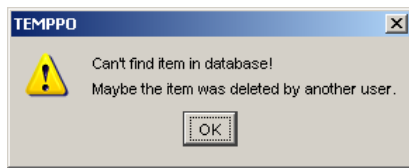


Figure 117 - Item not found information

2.16.6 Delete an item

If you try to delete an item, which itself or any of its children is locked, you will get a dialog (see Figure 118) and you cannot perform this deletion. Moreover the item and all children are refreshed, so you can see which one is locked.

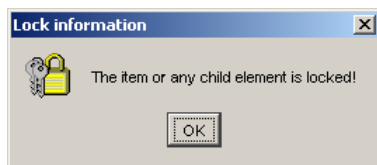


Figure 118 - Child element locked

2.16.7 Find invalid locks

On starting and quitting TEMPPO Requirement Manager, the whole database is checked for any locks which were set by you. Normally there should be no one left. But if there is one (see Figure 119), this is an invalid lock, which can have two reasons: Your last TEMPPO session terminated abnormally (crash etc.). If so, you should confirm the dialog by pressing "Yes" to remove all invalid locks.

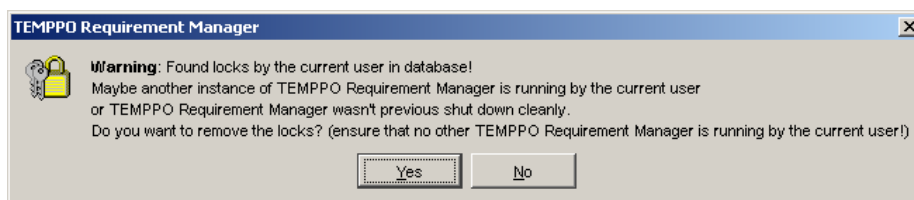



Figure 119 – Locks found in the database on starting/quitting TEMPPO Requirement Manager

2.16.8 Refresh

2.16.8.1 Refresh manually

2.16.8.1.1 Reloading the whole requirement structure

You can reload the whole requirement structure by pressing the reload button  on top of the tree (see Figure 120). This has the same effect as manually reopening the requirement structure.

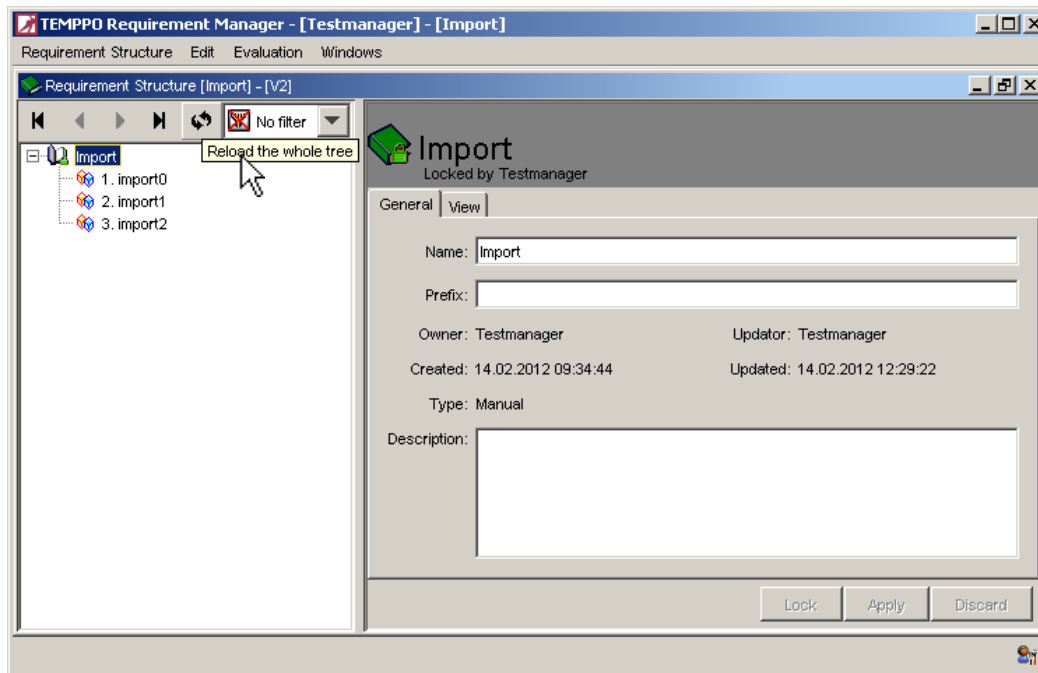


Figure 120 - Button Reload for reloading the whole tree

2.16.8.1.2 Refresh recursively

You can refresh an item including all sub-items by selecting the **refresh recursive** function in the context menu (see Figure 121).

Attention: The selected item with all sub-items will be completely (re)loaded from the database, so it may take a long time.

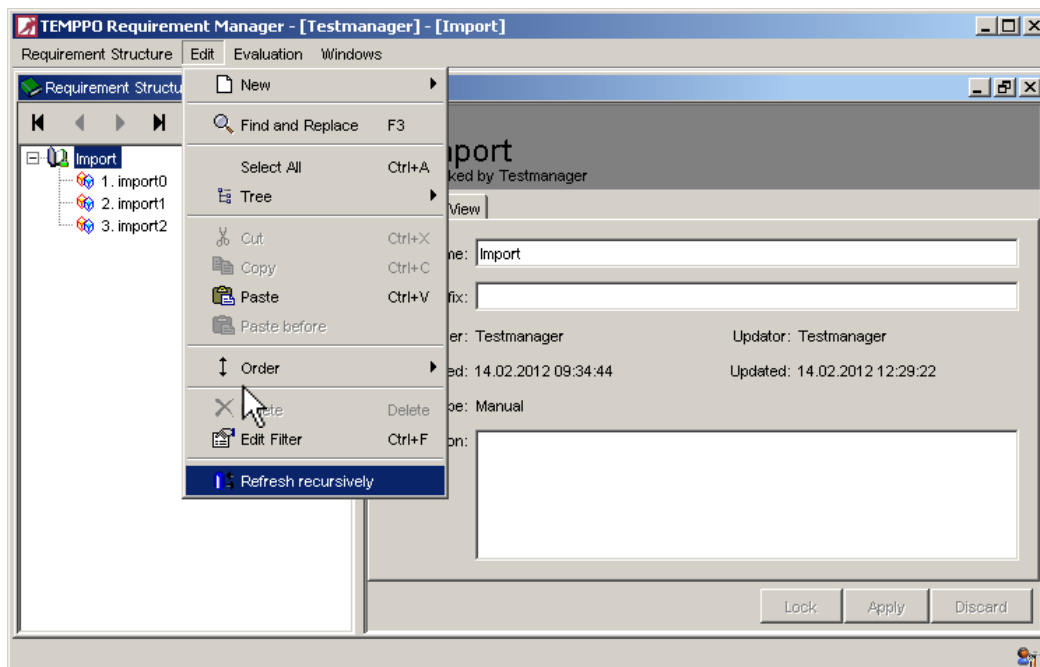


Figure 121 - Refresh recursive menu (also in the context menu)

2.16.8.1.3 Refresh on certain user actions

An item is automatically refreshed (including its lock state and the presence of all direct children) after the following actions:

- selecting in the tree view

- pressing the **Lock** button

If these actions are done on an actually deleted item, the following dialog is shown and the item is removed from the view.

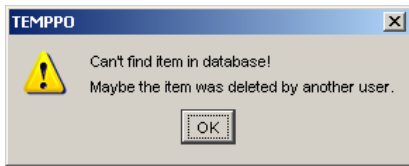


Figure 122 - Deleted item information (after trying to select or to lock)

2.17 General principles

2.17.1 Multi-selection

TEMPPO offers a feature for multi select requirements.
The multi-selection mode can be used for:

- Deleting requirements
- Cutting requirements
- Copying requirements
- Assigning attributes to requirements

When the multi-selection mode is activated the items aren't locked automatically. They are only locked during the time for saving. If items are locked by other users the changes are not applied to these items. They are displayed in a list.

The multi-selection mode is activated when more than one item is selected. If a user selects at least 2 items, the right side (=detailed view) is completely empty.



The user can only activate the multi-selection mode when he has the right.

A multi-selection can be done by using different keys:

- Select all

For selecting all, press <Ctrl> and <A>. The user can also activate the context menu **Select All (Figure 123) or the menu item **Edit → Select All**.**

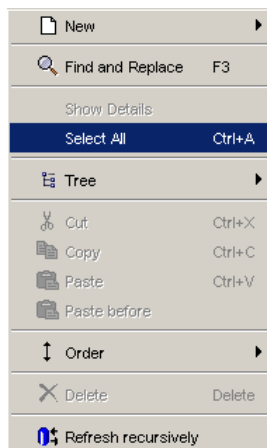


Figure 123 – context menu – “Select All”

Requirement can be selected with <Ctrl> or with <Shift>. After pressing “**Select all**” all sub trees of the requirements are marked.

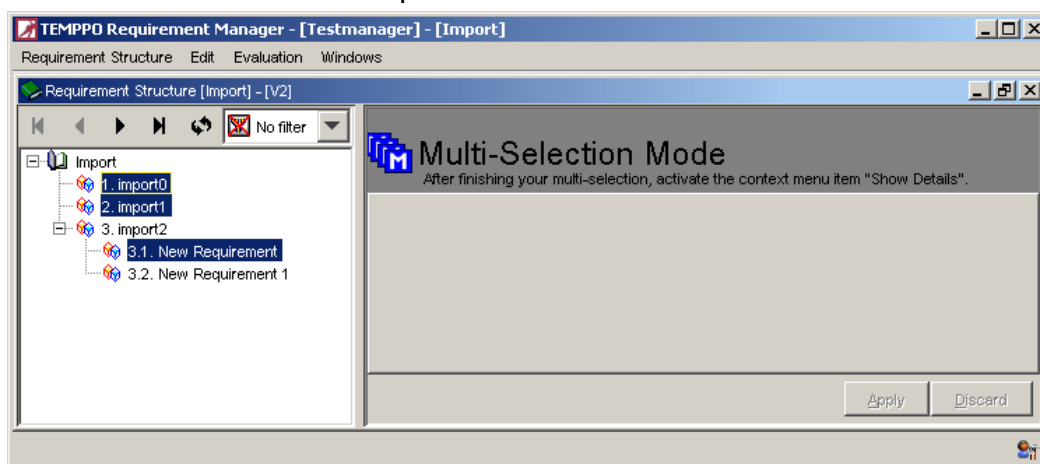


Figure 124 - Multi selected items

By clicking context menu all possible actions are provided to the user.

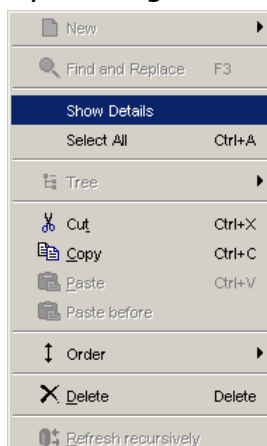


Figure 125 - Context menu

For selected items attributes can be assigned or deleted.

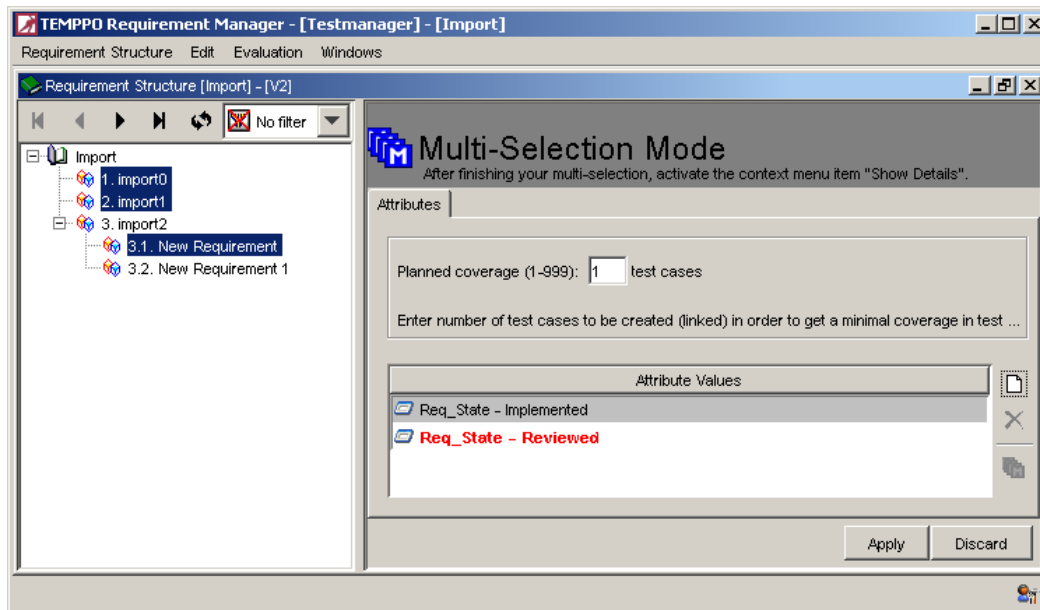
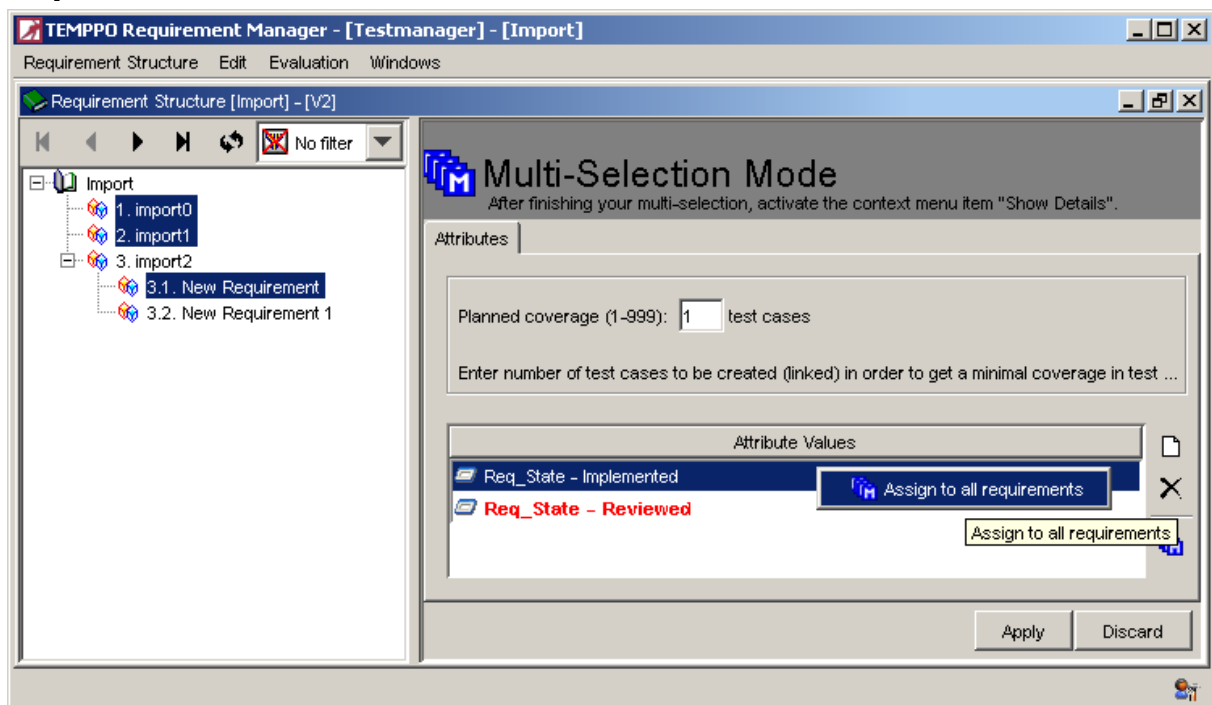


Figure 126 - Assigning attributes

The color "grey" means that the attribute value is only assigned to a subset of the selected requirements. On right mouse click the menu "**Assign to all requirements**" can be called.



2.17.2 Hyperlinks and Uploads

Generally you can mark text as

- Hyperlink to the web
- Hyperlink to a file
- Hyperlink to an upload

2.17.2.1 Create hyperlinks

Hyperlinks to the web, to the file system and to upload can be created for the text field **Description** (requirement structure, requirement).

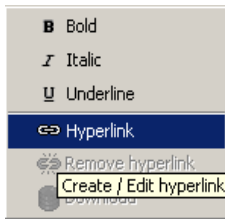


Figure 127 - Menu hyperlink

For creating a hyperlink it is necessary to select at least one character in editable text fields and activate the context sensitive menu **Hyperlink** (see Figure 127), which opens the Hyperlink window (see Figure 128).

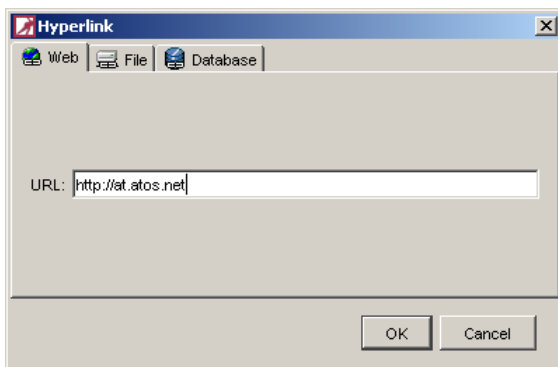


Figure 128 - Hyperlink to the web

You have the possibility to enter a link to the web (specified by an HTTP address) or to the file system (see Figure 129).

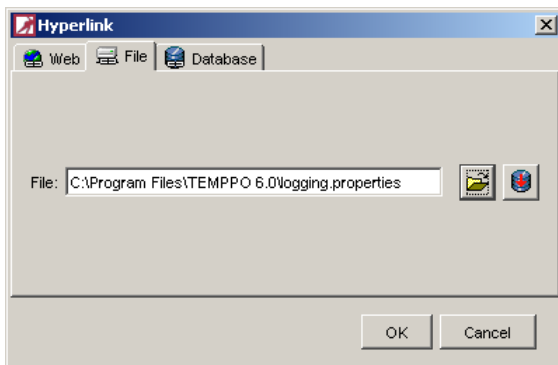


Figure 129 - Hyperlink to the file system

In case of changing drive letters, moving file shares and other similar problems it may be better to upload the files to the database. For referencing an upload you have 2 possibilities: you can upload a new file or use an existing one and create a reference on it. The philosophy of this concept is to upload a file only once and create more references on it (if necessary).

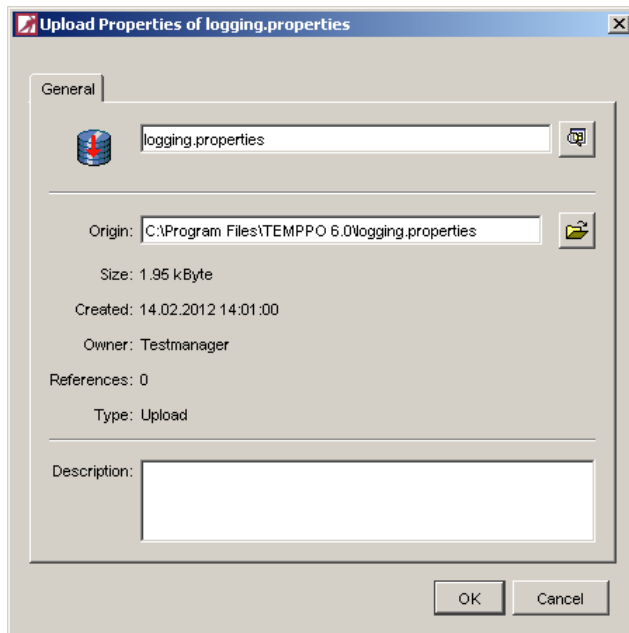


Figure 130 - Upload properties

Upload a new file: You have to activate the **Upload** button to open Figure 130 for specifying a special **name** and **description**. Additionally **owner**, **creation date**, **size**, the number of **references** and the **type** are displayed.

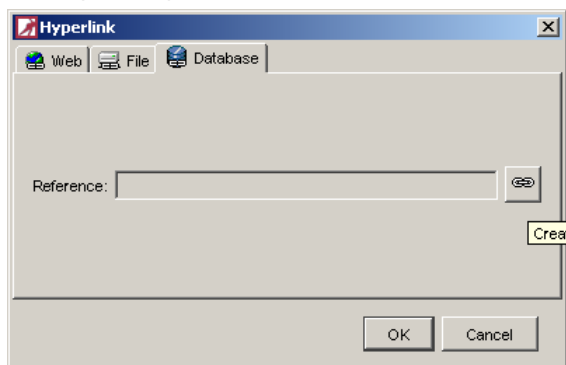


Figure 131 - Hyperlink database

Use an existing upload: You have to activate tab **database** and press button **create reference to uploaded file** to open Figure 132, which shows all uploads of the database. For creating a new reference on an existing upload you simply have to select it and click **OK** in Figure 132 and Figure 131.

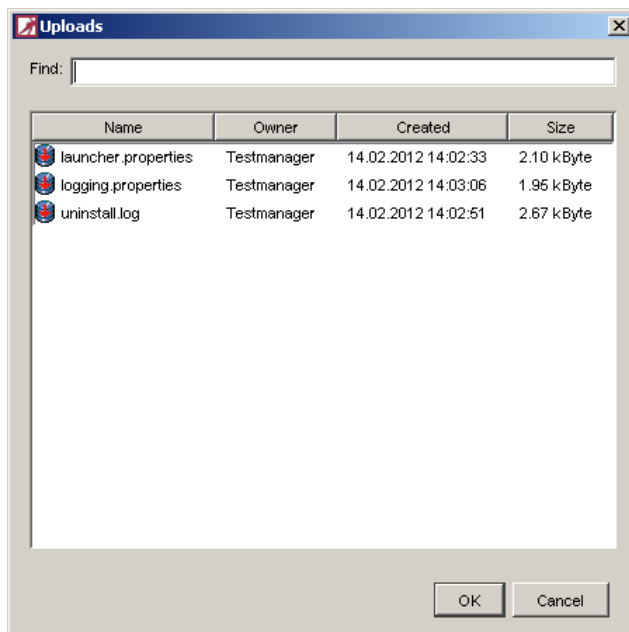


Figure 132 - Uploads

i The upload limit of a file is set to 0.5 MB by default and is specified in the file `admin.properties` (`dbsettings.upload.limit=500000`). But it is only information. Of course, you can upload files that exceed that limit and/or change this value in `admin.properties`.

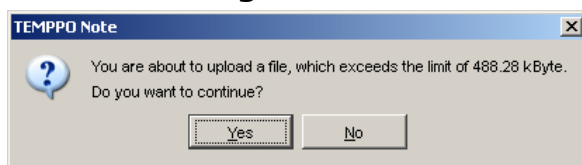


Figure 133 – File size exceeds the upload limit

2.17.2.2 Edit hyperlinks

If you select a hyperlink (web, file system, upload) and activate the context sensitive menu (mouse over hyperlink) and choose the menu **hyperlink**, Figure 129 is shown, where you can change the

- link into the web
- link into the file system
- upload

2.17.2.3 Remove hyperlinks

If you select a hyperlink (web, file system, upload) and activate the context sensitive menu (mouse over hyperlink) and choose the menu **remove hyperlink**, the hyperlink is removed. But take care that an upload remains in the database.

i To remove obsolete uploads, see user manual (administrator) chapter 5.5.5

2.17.2.4 Download

If you select a hyperlink (upload) and activate the context sensitive menu (mouse over hyperlink) and choose the menu **download**, Figure 134 is shown to select a directory for the file download.

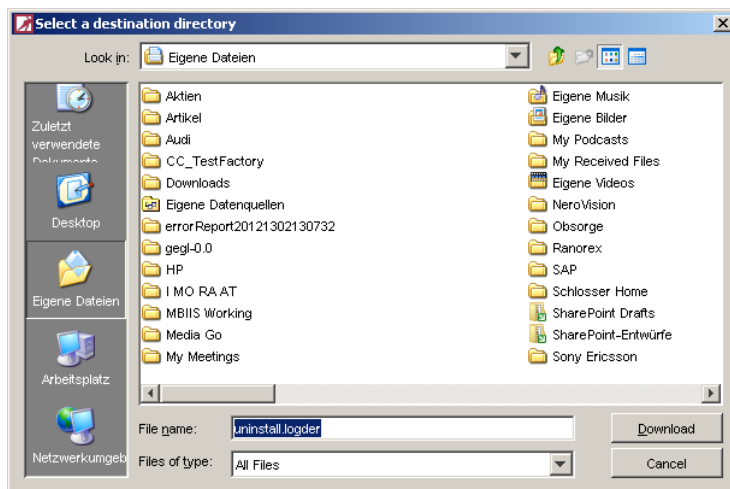


Figure 134 - Destination selection

2.17.3 Applying / Discarding

When working with requirement structures, you can save your changes within requirements using the button **Apply**.

By pressing button **Discard**, your changes will be undone after a confirmation message. The buttons are only enabled, if the selected node has been changed since it was loaded.

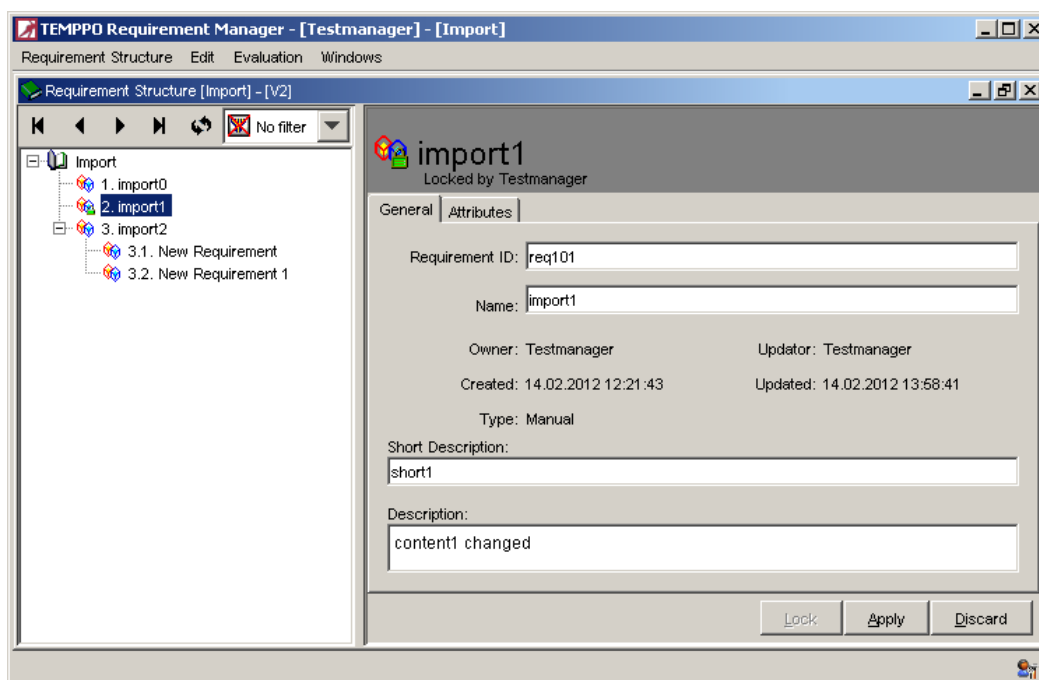


Figure 135 - Apply / Discard

2.17.4 Find and Replace

TEMPPO offers a find and replace mechanism. With the menu item **Edit > Find and Replace** Figure 136 is shown.

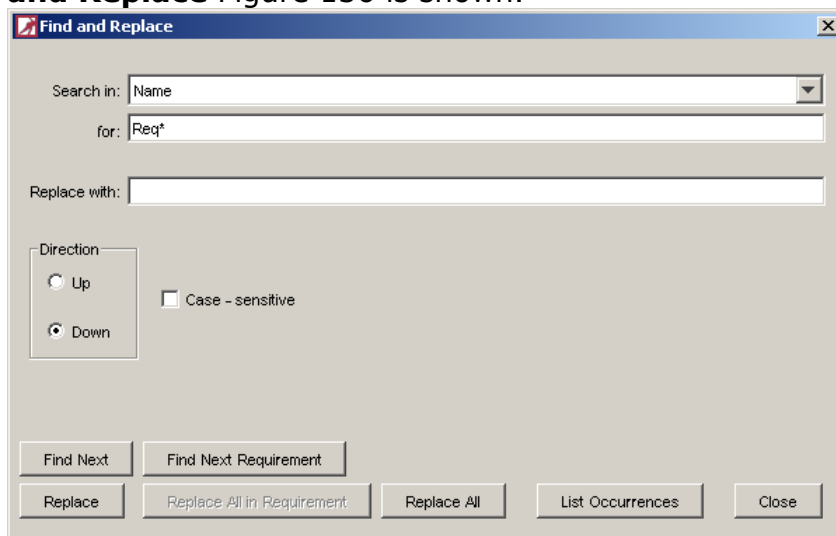


Figure 136 – Find and Replace

A requirement can be found via searching for its user defined ID, name, short description or description. The search criteria can be specified using the wildcards * (0..n arbitrary characters) or/and ? (Exactly one arbitrary character) and is case sensitive.

The replace function searches for the requirement and then the searched part will be replaced to the entered name. The replace function is available for name, short description and description.

Example:

You want to change the name of the requirements. The part "Requirement" should be changed to the German name "Anforderung", so you select "Name" in **Search in:** and write in the text field **for:** "Requirement". In the **Replace with –** text field you write "Anforderung".

A searching direction can be chosen, too. The searching algorithm starts from the selected node in the tree. Is the tree root selected, the whole tree is searched whatever direction is selected.

2.17.4.1 Find

There are two possibilities for finding requirements:

- **Find Next:** With clicking **Find Next** the first requirement is searched and selected in the tree. With the next click, the next one is searched. If there is no element (anymore) a message is shown (see Figure 137).

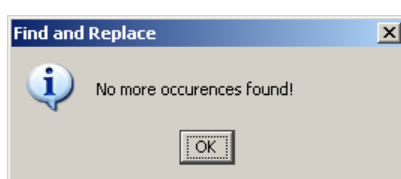


Figure 137 – No more occurrences found

- **List occurrences:** With the button **List occurrences** the searching result is shown in a list (see Figure 138). When clicking a requirement in the list, it's selected in the test structure tree.

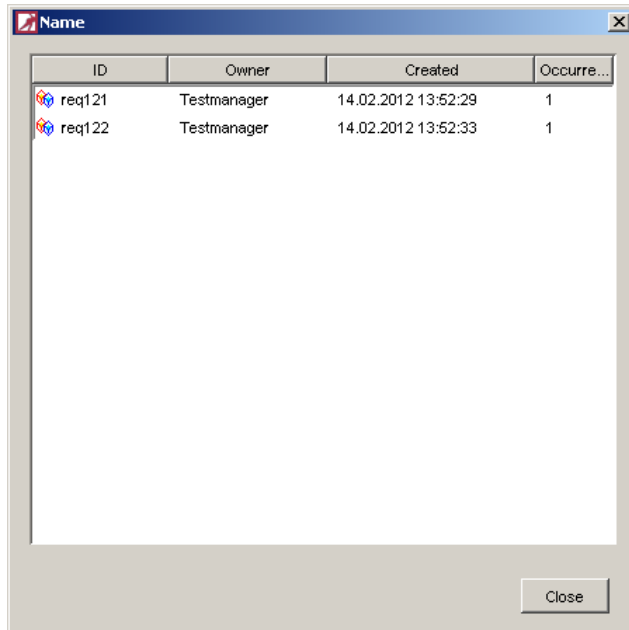


Figure 138 – List occurrences

2.17.4.2 Replace

There are also two possibilities for replacing:

- **Replace:** At first a requirement is searched and selected. The user has to click again for replacing the field and then searching the next one. If the requirement is locked, the requirement isn't changed, i.e. the next requirement is searched.
- **Replace All:** The selected field of all requirements is changed which contains the text. After replacing all, a message is shown (see Figure 139) with the number of replaced requirements and number of requirements which couldn't be replaced, because of locks, etc.

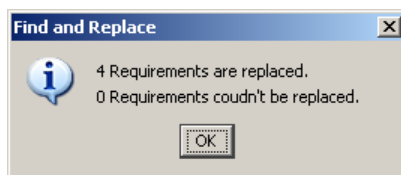


Figure 139 – Replace result

i The replace – functionality is disabled, if the user has not the right for changing requirements.

2.17.5 Settings

TEMPPO differs between global and application specific settings.

2.17.5.1 Global Settings

For global settings please refer to /1/ - chapter Settings

2.17.5.2 Specific Settings

Specific settings e.g. tree display, etc. can be configured in the settings dialog in TEMPPO Requirement Manager. This dialog is opened via **Windows > Settings**. On the left side, there is a tree where the user can select the setting group which should be configured. Above the tree there is a "fast search" field for more efficient navigation. Enter a (sub)string and all matching settings are shown.

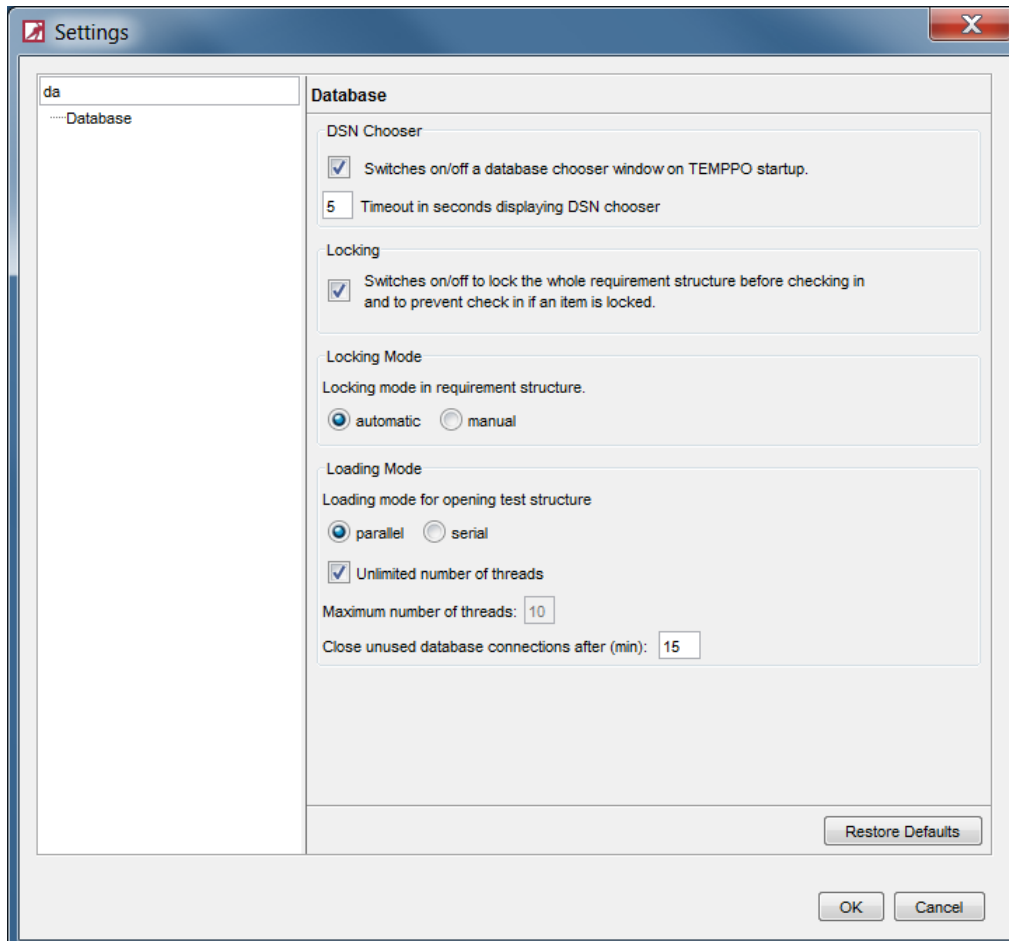


Figure 140 - Settings - Fast search

On the right side all single settings can be edited (see Figure 141).

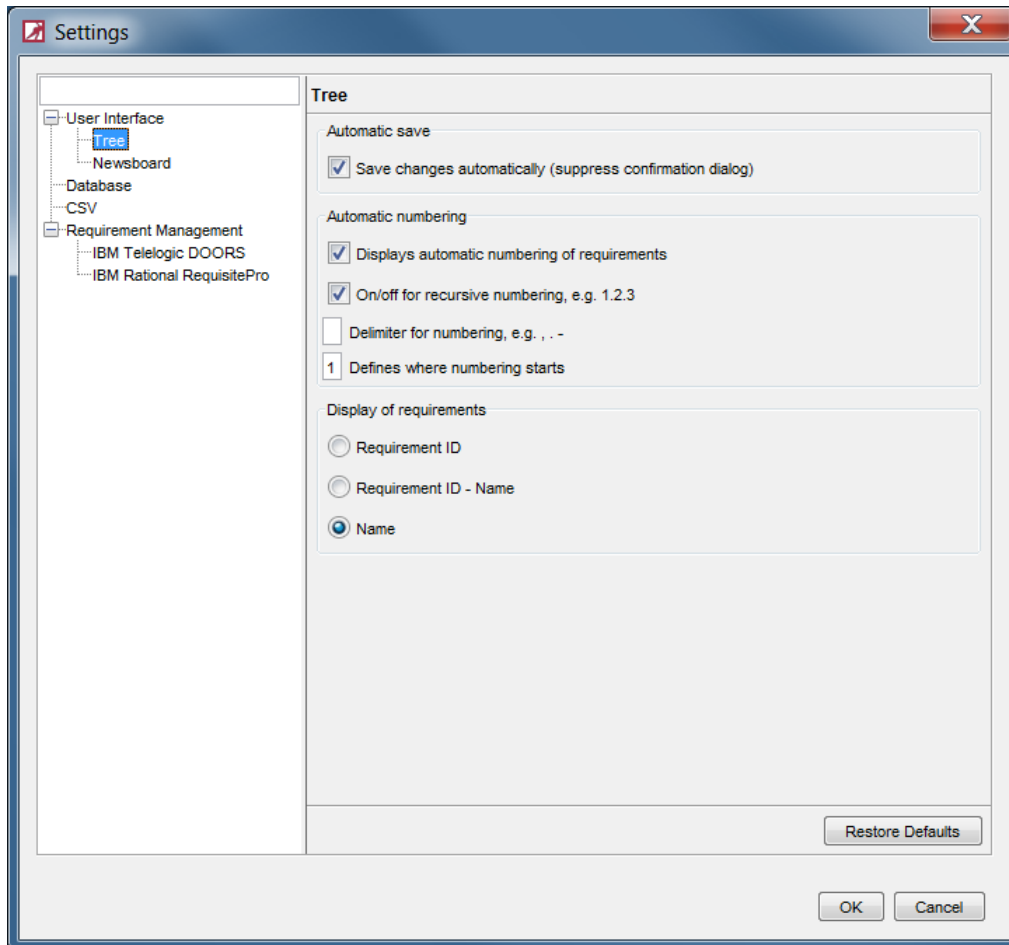


Figure 141 – Settings: Tree

Via button **Restore Defaults** all settings of the selected setting group are restored to the default values.

Following settings can be configured in TEMPPO Requirement Manager:

- User Interface
 - Tree
 - Newsboard
- Database settings
- CSV
- Requirement Management
 - IBM Telelogic DOORS
 - IBM Rational RequisitePro

For Sparx System Enterprise Architect and Atlassian JIRA there are no configuration parameters.

For user interface and database, please refer to /1/ - chapter Settings.

2.17.5.3 Database settings

See User Manual Test Manager

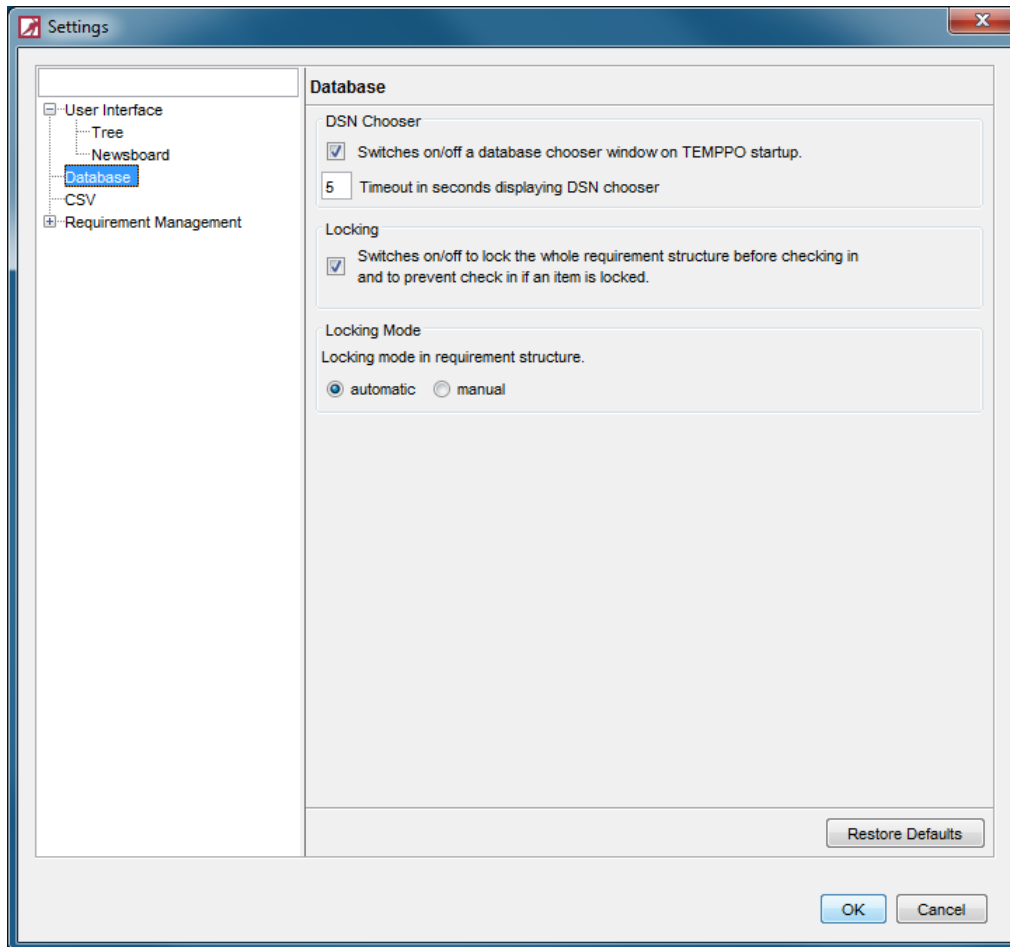


Figure 142 – Settings: Database

2.17.5.4 CSV

For importing requirements from Excel or JIRA it is necessary to save them as CSV. Here you specify the delimiter which is used by Excel.

Additionally you can determine the quotation character which is used in Excel.

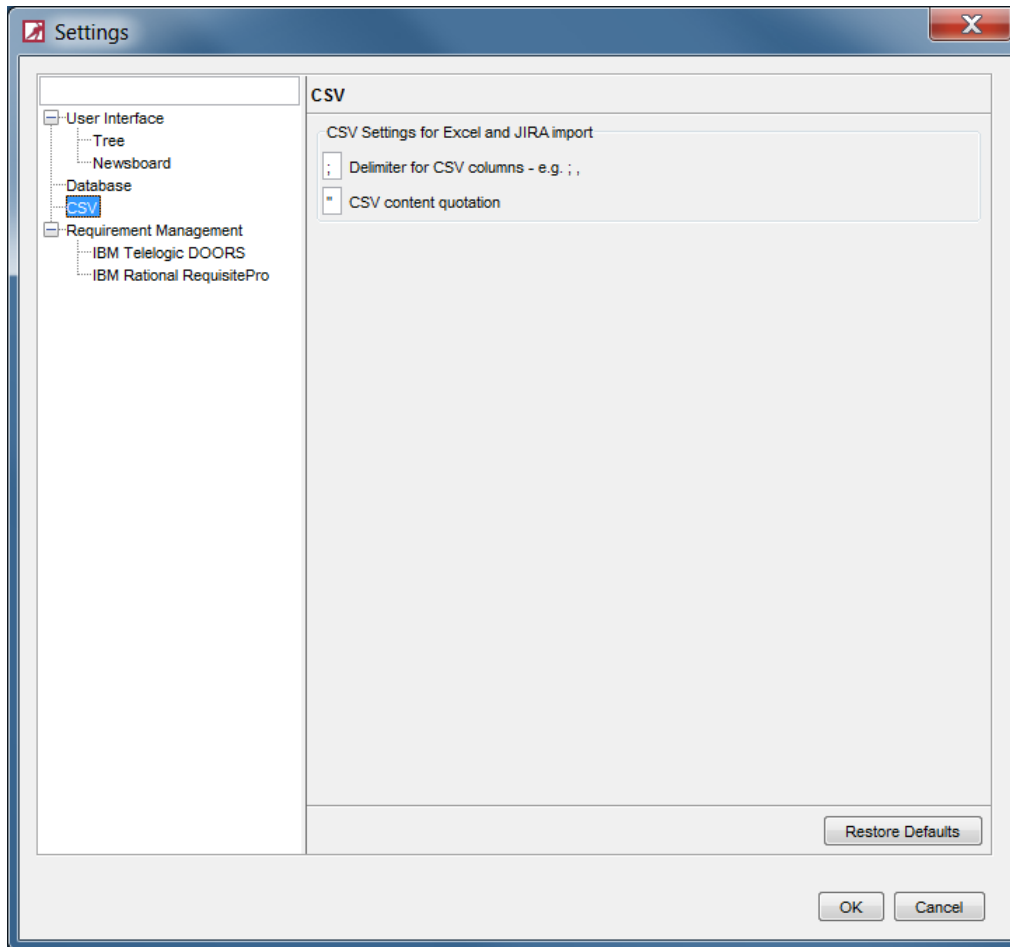


Figure 143 - Settings: CSV

2.17.5.5 Requirement Management

2.17.5.5.1 IBM Telelogic DOORS

The **User**, **Password**, **Path to the local DOORS** and **(DOORS) parameters** can be edited.

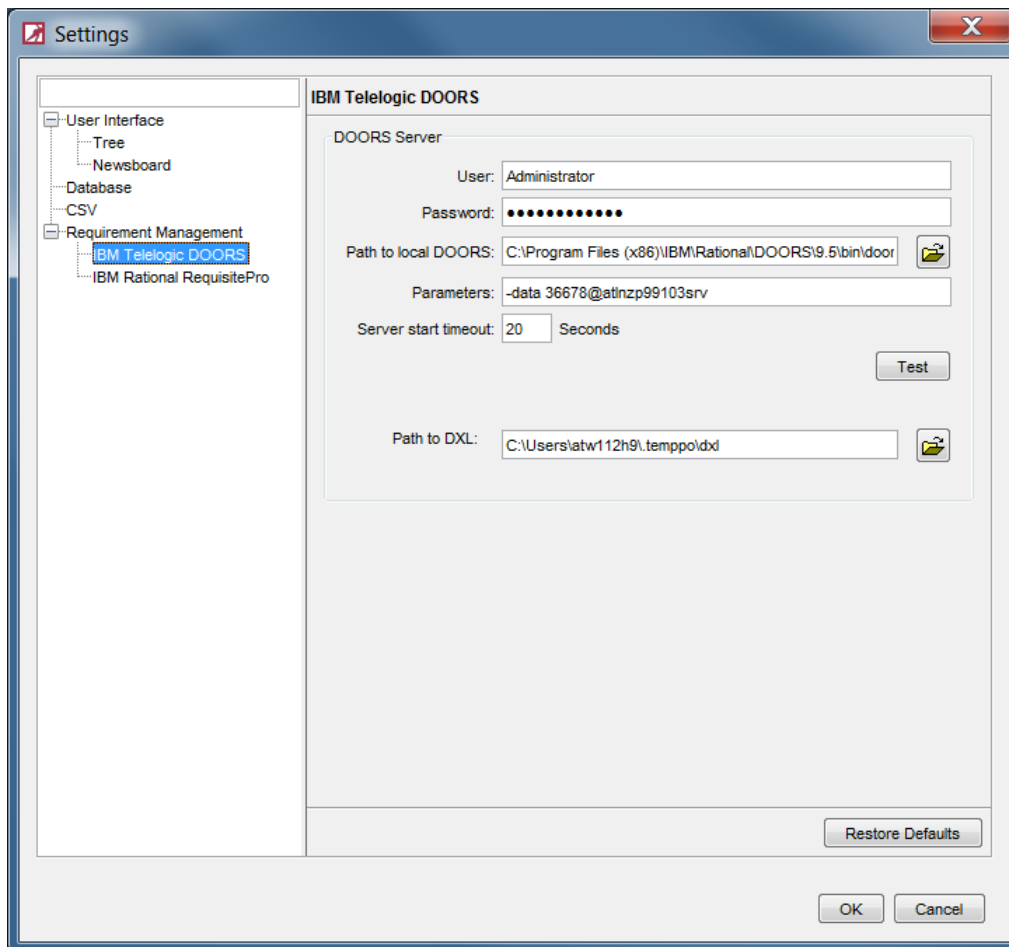


Figure 144 - Settings: Telelogic DOORS

DOORS user, password and path to DOORS.exe are needed for the start of connection to the DOORS server (see chapter 2.5.1).

With the field Parameters you specify e.g. the database connection as DOORS command line parameter:

Switch	Parameter	Description
-data	port@server	Specifies which DOORS database to use. The parameter specifies the port that the server is using and the name of the server computer (for example, 36677@myserver). Note that a DOORS 8.2 client can't use a pre-8.0 database server.

The path to DXL defines where TEMPPPO copies DXL scripts needed for the DOORS communication.

2.17.5.5.2 IBM Rational RequisitePro

The version of RequisitePro can be changed here.

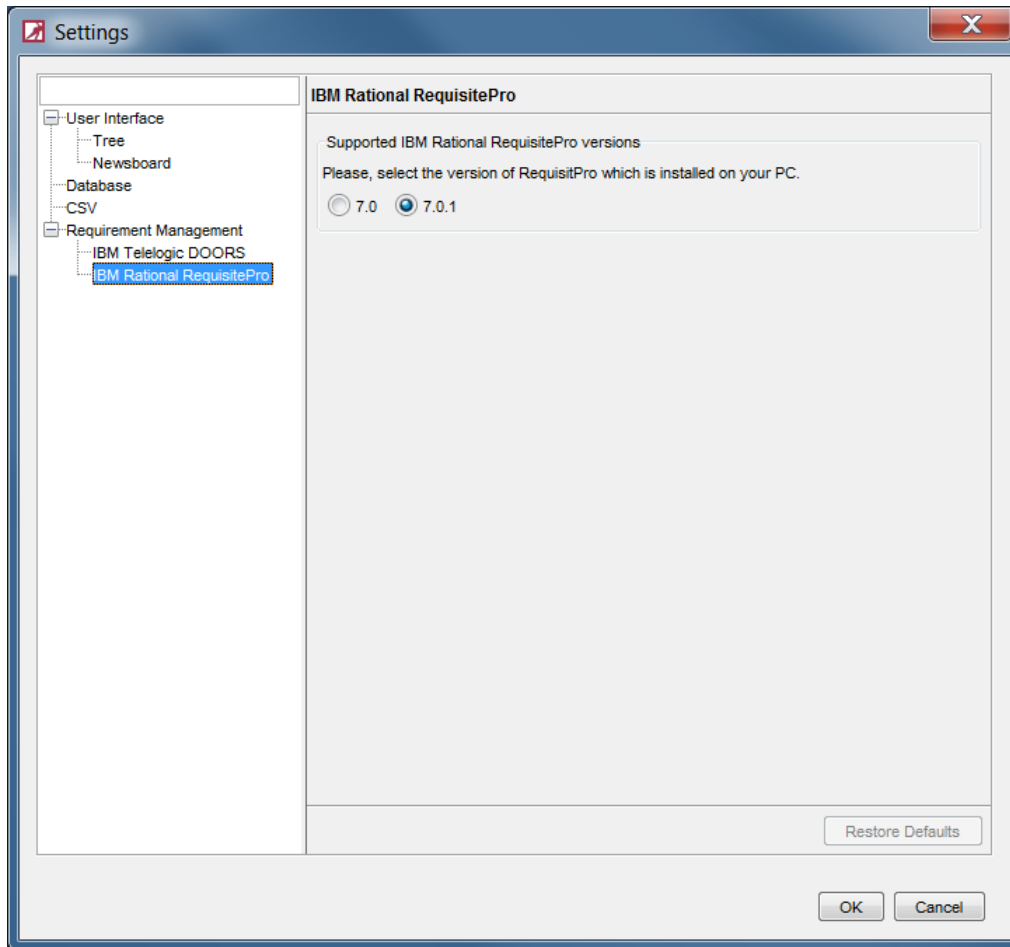


Figure 145 – Settings: RequisitePro

- Use Case "RequisitePro" is already installed
If "RequisitePro" is already installed and TEMPPO is just installed, TEMPPO gets the RequisitePro version from MS Windows registry and stores it. In case of a not supported RequisitePro version, the last supported one will be stored.
- Use Case "TEMPPO" is installed and "RequisitePro" is updated
If you update "RequisitePro" to a new version, you have to change the version in settings dialog (see Figure 145). Afterwards all TEMPPO applications have to be closed and a batch file (changeReqProVersion.bat) has to be executed.

3 Literature

/1/ User Manual
TEMPPO user manual
November 2015

4 Abbreviations

DB	Database
HW	Hardware
RM	Requirement Management
GUI	Graphical User Interface
SW	Software
DSN	Data Source Name
ODBC	Open Database Connectivity
UAI	Universal Automation Interface

5 Appendix

5.1 DTD-Schema for XML-Import (Requirement Structure)

See XML directory of TEMPPO's installation directory.

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