



HOME

User Manual

DELMIA Process Engineer[®]

PPR Navigator



Foreword

This manual provides an introduction to the basic operations and functions of the PPR Navigator.

While developing these functions we have made every effort to create a clearly organized, easy-to-understand program structure.

A user-friendly interface as well as a clear menu guide will enable you to quickly learn how to operate the program and to get familiar with its functions so that you can carry out your planning tasks in a quick and reliable way.

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1. Introduction

This manual explains how to use the Process Engineer PPR Navigator for your planning purposes. The PPR Navigator is the basic instrument for most actions to be performed in DELMIA Process Engineer. The PPR Navigator generates the project structures you need for your work with program modules within the Process Engineer. For example, if you are planning a Manufacturing Concept, you should create three different structures (product, process, and resource structure). The PPR Navigator is also used to export and import data.

1.1 How to Use this Manual

This manual enables you to get familiar with the operation and functions of the PPR Navigator. This manual briefly describes:

- How to create a project in the PPR Navigator
- How to generate project structures in the PPR Navigator
- How to generate relations between the objects and the structures
- The interfaces to further program modules in the Process Engineer



Note

When handling the PPR Navigator functions, please remember that there is a general introduction to the Process Engineer in the Basic Manual.



Click [General Introduction](#) to access the manual.

1.2 Documentation Conventions and Symbols

The symbols used in this manual are intended to provide you with keys to the contents in an immediately understandable manner.



This symbol is used to introduce key concepts that are covered in the sections immediately following this symbol. As a result, this symbol most frequently appears at the beginning of chapters or sections.



Note

*This symbol is used to mark notes, which provide you with additional information you need to have for further work. You will either find the Note sign at the beginning of a chapter or in a particular text passage in the chapter. Texts bearing this sign are additionally marked with **Note**. The text is always in italics.*



Caution

This symbol indicates that the text that follows describes particular circumstances that you must avoid to avoid potential errors with the operation of the program or harm to data. You will either find the Caution sign at the beginning of a chapter or near a particular text passage in the chapter. Texts that are in-

roduced by this sign are additionally marked with **Caution**. The text is always in italics.

Example

This symbol marks examples which serve to illustrate a certain situation.

This symbol marks the individual operational steps involved in a particular operating instruction. Operating instructions describe operational steps, for example, how to open a menu or execute a function.



This symbol marks listed subjects. The symbol for listed subjects can be either used to structure a continuous text or to list main subject keywords.

This symbol marks list inside a bulleted or numbered list.



This symbol marks cross reference information that is available in another manual.

1.3 New Functions in PPR Navigator

Exclude Versions of Planning State

A new attribute **Exclude versions of planning state** in **Filter** tab of **Properties** dialog box specifies the planning state of the versions to be restricted

Expand PPR Tree Number of Levels

The contextual menu command **Expand Selection** helps to expand the PPR tree till desired number of levels.

Filtering by Variant

Apply other filters even if the PPR component has link with the selected calculation model and can also filter product structure using filter by variant. Filter by variant has higher priority than other filters.

Deleting Change Protocol Entries

Delete the list of entries in Change protocol either through DPE Scripting API or CAA interface methods.

Version Filter by Priority

Filter the versions of the component by priority number stored on each versions of the component and priority on the project.

Filtering the Versions of the Component

Filter the versions of the component depending on the selected action.

Enabling Implicit Filtering

The implicit filter behavior is applicable only if components are filtered using other filters.

2. Overview

This user manual familiarized you with general aspects of the PPR-Navigator. The PPR-Navigator was developed for supporting planning processes. When interacting with the various planning processes - such as preliminary planning/detailed planning/layout planning/process planning - it can become necessary that the planning steps of the different areas refer to the same project data, but they are created at different points in time in the areas.

The PPR Navigator supports such requirements by illustrating the respective organizational structures and assigning the corresponding user rights. A unified structure can make the same planning content available to user groups and the tasks can be prepared and displayed accordingly.

Before using the software, you should try to become familiar with the different options of creating structures, user management facilities, and the configuration of the user interface so that you can adapt the PPR Navigator according to your specific requirements.



For more information, *Please refer to the* [Administration Manual](#).

PPR Navigator Advantages

- **Easy User Guidance:** The PPR Navigator **Easy user guidance** has been largely adapted according to Microsoft Windows standard procedures similar to the Microsoft Windows Explorer.
- **Configuration:** The user interface of the PPR Navigator is configurable, i.e. you can easily adjust the name of any displayed object to the specific project requirements of your Company.
- **Project Structuring:** The hierarchical structuring of the projects is defined in the plantypesets.
- **Display of Variants:** You are provided with several filter functions to display multiple variants of the same product.
- **History:** You can log and value any modifications to planned objects.
- **Versioning:** You can create versions for all objects and assign planning states to them. This enables you to receive the preliminary results of different sequential states of the current planning process and to manage existing planning tasks at the same time.
- **Consistency Check:** The query algorithm in the PPR-Navigator makes it possible to check the project for the correctness of the entries relevant to planning.
- **Valuation:** The valuation forms can be easily adapted to your specific needs in order to create your own standard form.



For more information, *Please refer to the* [Printing Manual](#).

- **User Management:** Apart from viewing different project and organizational structures, you can also assign the respective user rights in a multi-user mode.

The following sections describe the PPR Navigator's basic operations.

2.1 Creating and Editing a Project

An essential prerequisite for creating a new project is setting the project structure in advance. This requires that you familiarize yourself with the basic data model of the PPR-Navigator as well as its views.

2.1.1 Creating a New Project

Each project created within the DELMIA Process Engineer® must be assigned to a plantype set. The assigned plantype set defines the project structure according to the plantypes included. i.e. the three hierarchical levels below the three planning areas product, process, resource, and the arrangement of the hierarchical levels.

To Open a New Project

- 1) Click **File** and select the **New Project** option or click the **New Project**  icon.

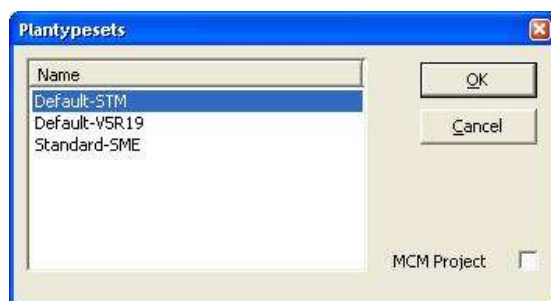


Figure 1: Open a New Project

- 2) Select a PTS (PlanTypeSet).
- 3) Enter the general project data (project name, number etc) in the **Properties** dialog that opens. If you do not make any entries and finish the dialog by pressing the **OK** button, a New Project is to be generated. Use **Cancel** button to cancel the project creation.

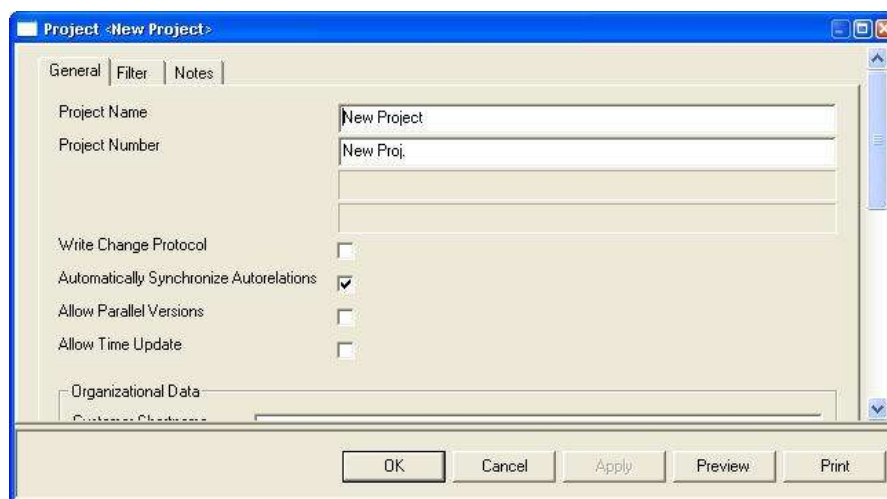



Figure 2: Creating a New Project

2.1.1.1 New Project Properties

There are properties dialogs available for all objects of the PPR-Navigator: you can find them on almost all hierarchical levels of the project structure of

the PPR-Navigator. This dialog is used to define and describe an individual object.

To Open Properties Dialog

- 1) Click **File < New Project < Select Plantype < Enter project Data details.**
- 2) Click **OK.** The **New Project** dialog comes.
- 3) Right-click **New Project**  Icon. The **New Project Properties** dialog appears.
You can invoke the properties dialog of an object manually (provided user interface) in the following ways:
 - Right-click the object and then, from the contextual menu select “**Properties**”.
 - Double click the object.
 - Select the object, go to **Edit** menu and select “**Properties (Ctrl+T)**”.
 - Invoke the `.properties` dialog of the object via script by calling the method `OpenProperties (ObjectId)` inside a script.

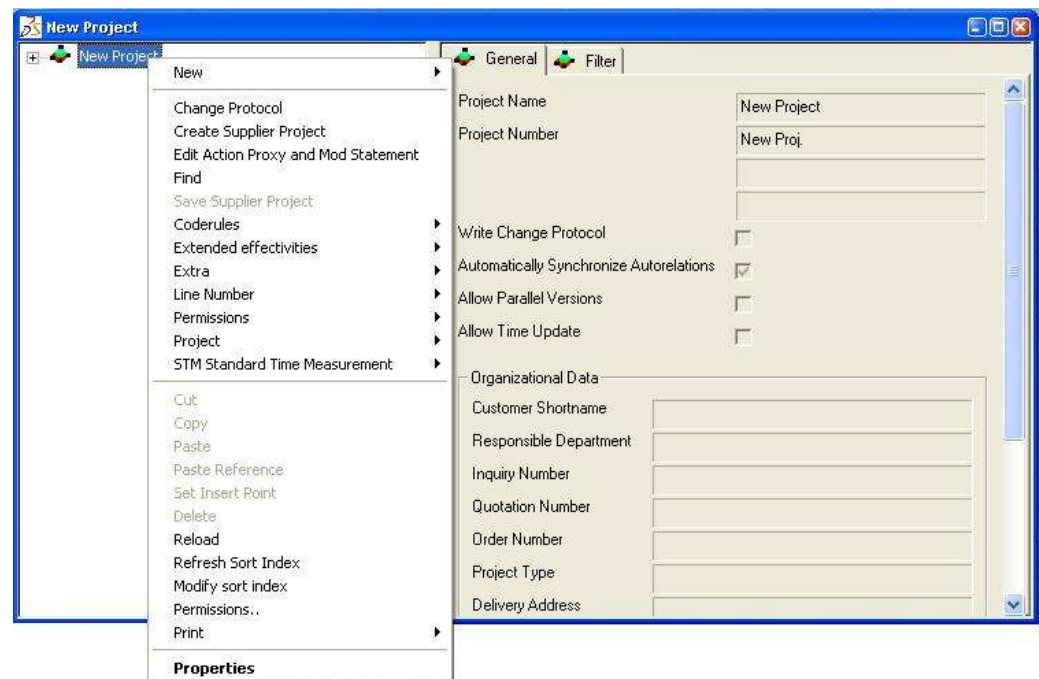


Figure 3: New Project Properties Dialog

The properties of an object are displayed in the display area of the PPR-Navigator. The **Properties** dialog is divided into individual registers (tabs) that are also displayed in the display area of the PPR-Navigator.

You cannot edit any data in the display area. If you wish to edit data, you must open the **Properties** dialog. You can access this dialog either using the contextual menu or simply by double-clicking the respective object.

Expand Selection

Use contextual menu command **Expand Selection** to expand the PPR tree till the specified number of levels.

- 1) Open Configuration tool (**Ctrl G**).
- 2) Set **Browser on single select** property to **Yes**.
This allows to display the **Expand Selection** command in the contextual

menu.

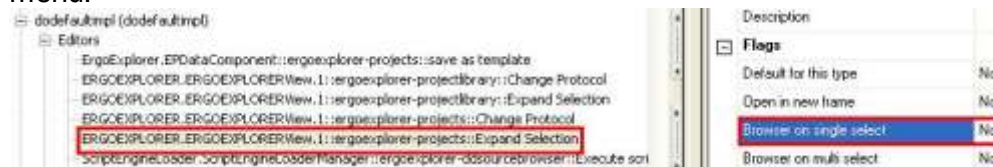


Figure 4: Customization for Expand Selection command

- 3) Right-click PPR Tree component and select **Expand Selection**.
The following dialog box appears.

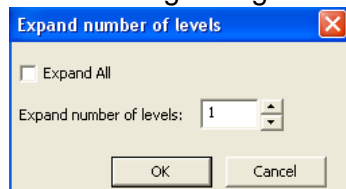


Figure 5: Expand Number of Levels

- 4) Select **Expand All** to expand the tree till the last node.
OR
Specify the **number of levels** upto which PPR tree needs to be expanded.

Note

If you cannot view all tabs from the “Properties” dialog in the display area, they have been hidden for layout reasons. You can show or hide any tab, including the entries of individual tabs.

For more information on how to show/hide tabs and other items, please refer to the [Administration Manual](#).

The properties of a project are described in detail below.

General Tab

The General tab defines general properties data. The four checkboxes are further described in this manual when dealing with [Change Protocol](#), [Overview - Autorelations](#), [OrgIDs](#) and [Versioning](#).

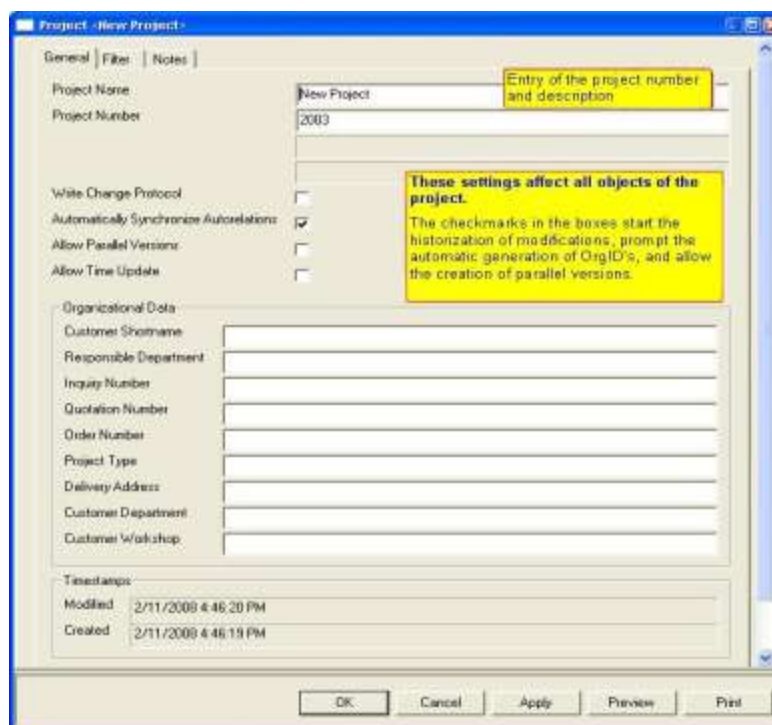


Figure 6: Project Properties Menu – General Tab

The specifications on the **Organizational Data** are for information purposes only. The date of creation is automatically entered upon creation of the object.

Filter Tab

The Filter tab defines filter information. This is helpful, for example, if you want to view a display that has been selected according to special filter criteria. Filters can be coderules, production numbers, or label filters. The Filter tab is only available in the properties menu of a particular project.

Note

When creating a new project, no filter should be set because at this point in time there are no filters available in the project. Filters can be only set, when assigning, for example, coderules or project numbers to existing objects.

General Filter Notes

Coderule Mode: Standard Mode with operators () . + /

Coderule Type: Relative

Effectivity filter Mode: 0

Category-Label Separator: .

Apply Implicit Filtering: ☐

MCM Detached Mode: ☐

MCM Project: ☐

MCM Out of Scope Creation of Versionable Objects: ☐

Show All Top Level Versions: ☒

Extended Effectivity Settings: ENOVIA_SYNTAX_ALLOWED=1

Exclude versions of Planning State: ☐

Filter Mode: ignore if filter type missing

Version Filter By Priority: 0

Current Filter:

Global:

Process:

Product:

Resource:

Display of set calculation models and validity date.

Apply Implicit Filtering. Please refer to the Projectlibrary manual.

Figure 7: Project Properties Menu – Filter Tab

Version Filter by Priority

Filter the versions of the component by priority number stored on each version of the component and priority on the project. This attribute is not available by default, make the customization change, shown below, in Ergoproject in the Configuration tool.

ergoproject (Project)	Control type	Edit
Base Type: dodefaultimpl (dodefaultimpl)	Group	Group:1050 ()-Page:1010 (Filter)
Editors	Description	
Attributes	Display and Position	
Value 9 (dbl_attribute_9)	Display in editor	Yes
Version Filter By Priority (versionfilterbypriority)	Display in browser	Yes
Wage Structure (wagestructure)		

Figure 8: Customization Changes for Version Filter By Priority

By default, the value is **0** and default behavior of version filter is applied on the project. Change the default value for the attribute **Version Filter By Priority** on project before or after opening the project by script or manually.

Note

The default version filter behavior is called, if both the versions have same priority.

Nothing is displayed if all the versions have priority value greater than the priority on project.

Example

For three operations Op1.1, Op1.2, and Op1.3 assign **Version Priority** as 1, 2, and 3 by opening **Process Properties** dialog box and specifying **Version Priority**.

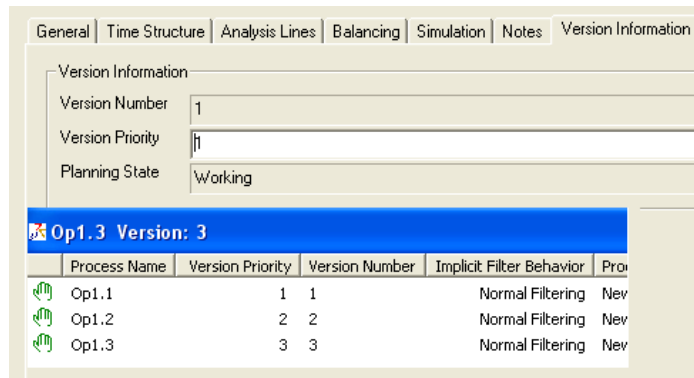


Figure 9: Version Priority for Operations

When the value for **Version Filter By Priority** is set to **0**, the default behavior of version filter is applied on the project and the latest version Op1.3 is displayed.

If the value of **Version Filter By Priority** is changed, the priority version display is applied on the project and the versions of the components are filtered by considering the priority on each versions and priority on the project.

Case 1: When the value for **Version Filter By Priority** is set to **3**, then the version Op1.3 is displayed.

Case 2: When the value for **Version Filter By Priority** is set to **2**, then the version Op1.2 is displayed.

Case 3: When the value for **Version Filter By Priority** is set to **4**, then the version Op1.3 is displayed, because it has priority 3 that is less than 4 on the project.

Case 4: When the value for **Version Filter By Priority** is set to **1**, then the version Op1.1 is displayed.

Exclude Versions of Planning State

Specify the planning state of the versions to be restricted in the **Exclude versions of planning state**. By default, the attribute is empty.

If the value of **Exclude versions of planning state** is specified to some planning state, the exclude versions of planning state is applied on the project and the versions of the components are filtered by considering the selected excluded planning state. This attribute is not available by default, make the customization change in Ergoproject in the Configuration tool.

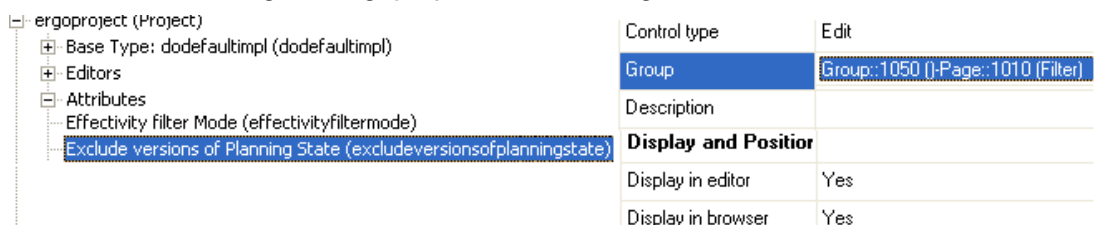


Figure 10: Customization Changes for Exclude Versions of Planning State

- 1) Create a MCM Project using default PTS in detached mode as shown below.

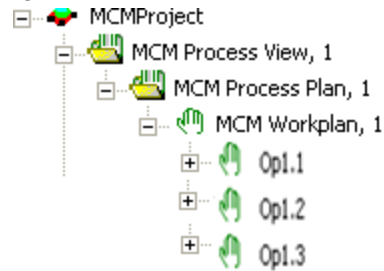


Figure 11: Project Structure for Exclude Versions of Planning State

- Create Planning States: Working, InWork, and Released as shown below in Project library and make sure Working has “0” sortindex and InWork has “1” sortindex.



Figure 12: Actions and Planning States in Project Library

- Create three Actions
 A1 (with Action State = “InWork”),
 A2 (with Action State = “InWork”), and
 A3 (with Action State = “Working”) with modification statements.
 Version Op1.1 is created using action A1 and planning state “Released”.
 Version Op1.2 is created using action A2 and planning state “InWork”.
 Version Op1.3 is created using action A3 and planning state “Working”.
- 2) Specify the planning states under **Exclude versions of planning state** in the **Open Project** dialog box.

Case 1: Open MCMProject by selecting action A1 and exclude planning state as Released.

No versions of Op1 are displayed in PPR tree because MCM Process Plan has planning state released, so that itself filtered out. In **Components** folder under Project Library, the version Op1.3 is displayed because it is the latest version and is not created using planning state “Released”.

Case 2: Open MCMProject by selecting action A2 and exclude planning state as “InWork”.

Version Op1.3 is displayed because it is the latest version and is not created using planning state “InWork”.

Case 3: Open MCMProject by selecting action A3 and exclude planning state as “Working”.

Version Op1.2 is displayed, because it is not created using planning state “Working”.

Using Action Filter for VersionFiltering

You can filter the versions of the component depending on the selected action. Select an **Action Filter** check box on the Project **Properties** dialog box to filter the versions of the component. By default, the check box is not selected and is not available on the Project **Properties** dialog box.

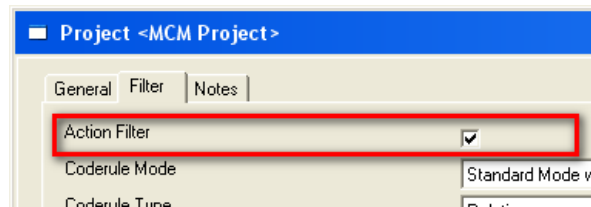


Figure 13: “Action Filter” Transient Attribute in Filter Tab of Project Property

Activate this behavior by selecting transient Boolean attribute **Action Filter** in the configuration tool. This attribute has **0** as default value and default behavior of version filter is applied on the project.

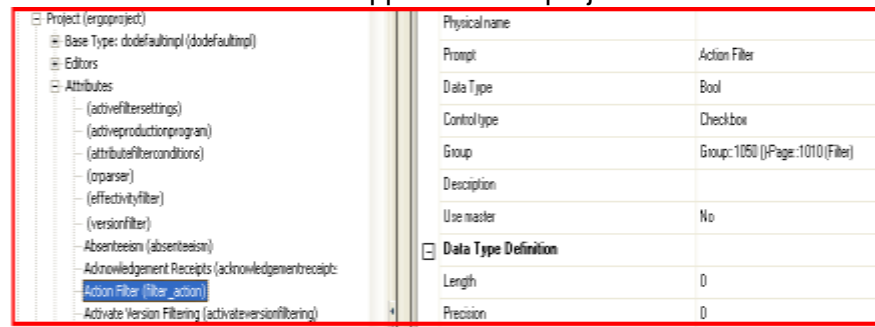


Figure 14: Filter_action Attribute under Type Project in Configuration Tool

If the value of **Action Filter** is changed to **1**, the action filter is applied on the project and the versions of the components are filtered according to the selected action.

When none of the versions are linked with the selected action and value of “**Action Filter**” is **1**, the versions are filtered as per default version filter behavior.

When value of “**Action Filter**” is **1**, versions of the components are filtered according to selected action.

The **Action Filter** has highest priority compared to the version filter and lower priority compared to all other filters. If there exist any doubt in versions after applying all other filters, the doubt gets resolved in **Action Filter**, if any doubt is returned through the **Action Filter** that its is resolved in the version filter.

Extended Effectivity Settings

Starting with version PE 5.17 you can use extended effectivities individually or combined for filtering projects by selecting process, product, and resource effectivities.



For more information, please refer to the [Project Library Manual](#).

Notes Tab

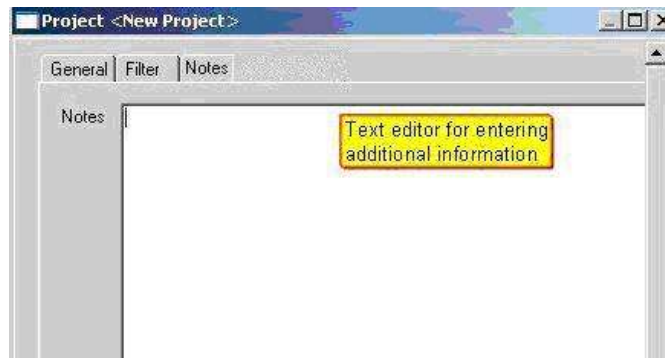


Figure 15: Project Properties – Notes Input Dialog

Invoke the Properties dialog via Script

- 1) Create a Script in Project Library and call the method `OpenProperties (ObjectId)` of Class `ScriptItemData`. Please refer to the *Creating Scripts* in [Scripting Manual](#).

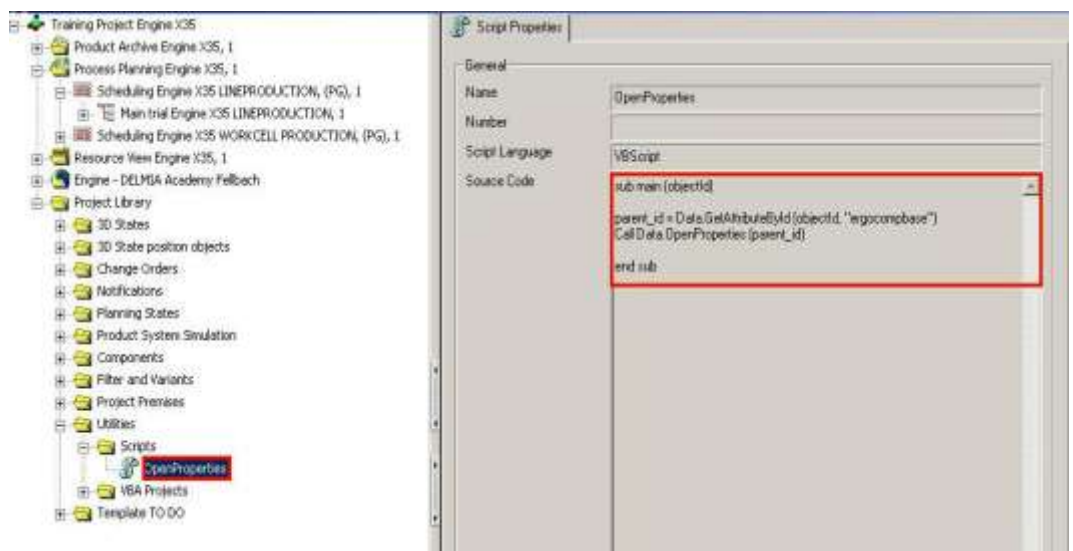


Figure 16: Create script in project library which calls **OpenProperties (...)** method

- 2) Create a script command “OpenProperties Command” to assign the `OpenProperties` script and then assign the script command to plantype “Process Flow”. Please refer to the *Creating Script Commands* in [Scripting Manual](#).

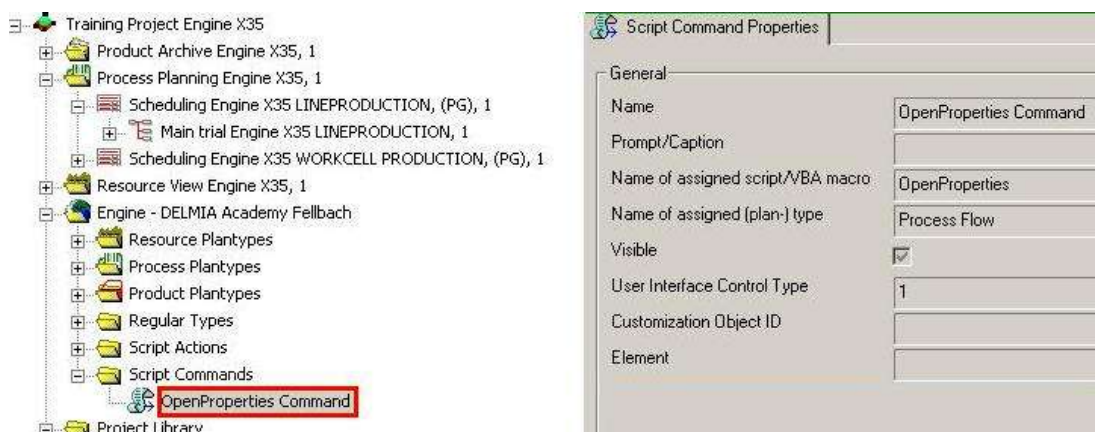


Figure 17: Create Script Command for the Script “OpenProperties”

- 3) Execute the script command “OpenProperties” from Process Flow component invokes the properties dialog of process flow component. *Please refer to the Executing Script in the contextual menu in [Scripting Manual](#).*

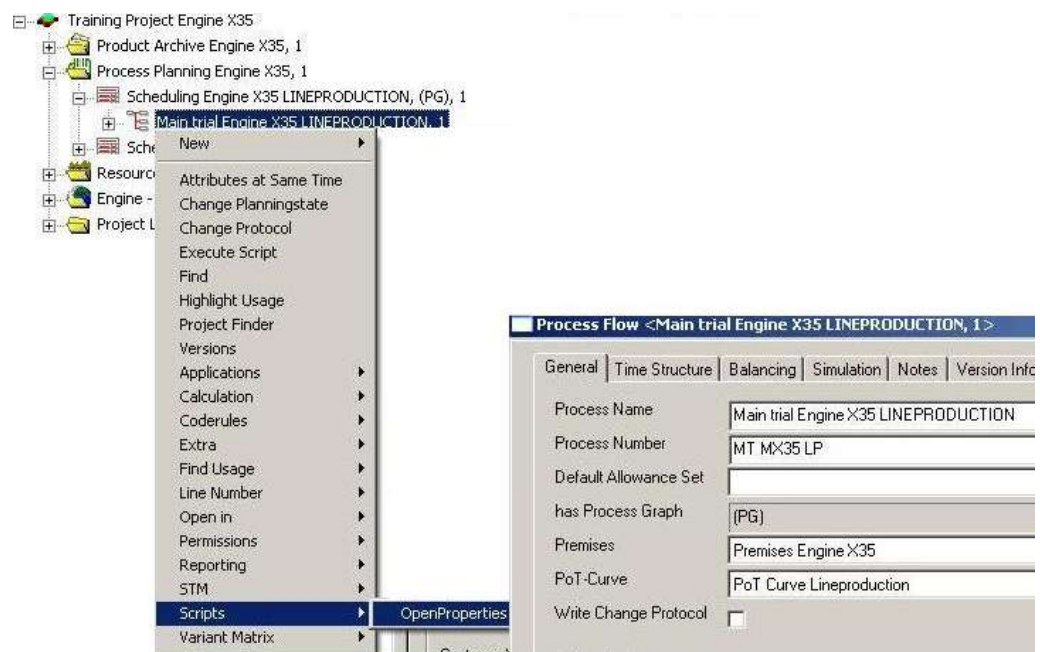


Figure 18: Invoking Script Command “OpenProperties Command” on Process Flow

2.1.2 Opening an Existing Project




When opening a MCM-Project you can set additional filters.

For more information, *Please refer to the [Manufacturing Concept Manual](#).*

2.1.2.1 Using the Filter Function



There are several ways to open and edit your projects:

- 1) Open a new project using the **File < Open Project**. OR Click **Open Project**  icon. The **Open Project** dialog apperas.

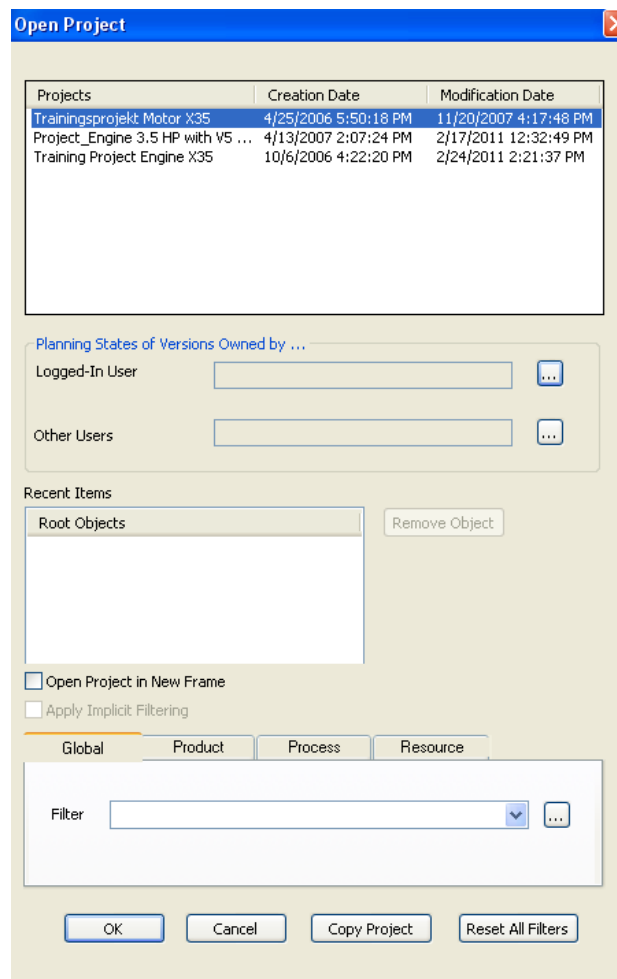


Figure 19: Opening a Project

- The **Project** list shows all projects for which you have the required access rights.
- The **Recent Items** list contains all entries that you have saved using the **Save As Recent Item** function from the contextual menu. You can open a project on these nodes. This entry can then be removed from the list using the **Remove Object** button.
- The **Copy Project** button allows you to copy a selected project. You can only copy projects if you have the required access rights.
- The lower part of the dialog allows you to specify the filters with which you want to open the relevant project.



Note

All filters, except for the Attribute Filters, are created in the project library. These filter criteria are assigned to individual objects or nodes.



For more information on other filters, please refer to the [Project Library Manual](#).

- 2) Select the project in **Open Project** dialog.
- 3) Select the required **Filter** tab. Please refer to the [Figure 19](#).
- 4) Select filter from the drop-down list and click **OK**.



Note

The last used filter for a project is saved in the manufacturing hub using the session data manager. When you open an DPE project the last used filter is selected.

When filter is selected for global, product, process, or resource, it will be stored in registry as last used filter, when you click **OK** and open the project. If you select a filter before clicking **OK**, and then switch to another project in OPD and re-select the previous project with the same filter, it will not be stored in registry as last used filter.

To Create a New Filter


- 5) Select the project in **Open Project** dialog.
- 6) Click  symbol in **Filter** drop-down list. Please refer to the [Figure 19](#). The **Edit Filter** dialog appears.

Figure 20: Edit Filter Dialog

- 7) Enter filter name in **Name** field.
Do not use blank spaces in filter name. Instead of blank spaces use underscores.
- 8) Select the required filter type in **Types of Filter**.

You can create three types of filters: Public, Personal, and Temporary.

- **Public Filter:** The creator has full access right and others have only read-only access.
- **Personal Filter:** The creator has full access right and others have no access right.
- **Temporary Filter:** No functional right is required to create temporary filter.

To create personal and public filters, you need the following rights:

- **Functional Rights:** “Create global filter” and “create personal filter”.

- **Project Access Rights:** Read (Right to see Object Name displayed), Execute (Right to see sub information of object), and Add Child (Right to add a child).

If you have added calculation model as regular type then you need the access right, **Create (Right to create kind of object)**, on regular type. For more information on regular type, please refer to the [User Management Manual](#).

9) Specify filter values. Please refer to the [Filter Values](#).

10) Click **Save as new** and **OK**.

The newly created filter gets displayed in the **Filter** drop-down list. Please refer to the [Figure 21](#).

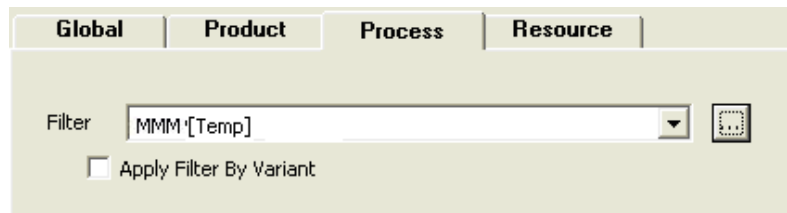


Figure 21: Newly Created Filter

Filter Values

- **Effectivity Beginning Date/Effectivity End Date:** This displays the **Effectivity** dialog. Specify the date and filter mode in this dialog.

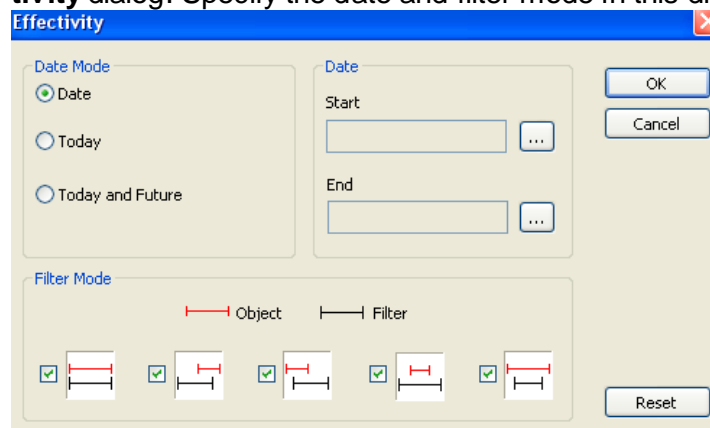


Figure 22: Effectivity Beginning Date/ End Date Filter

- **Component Filter:** This displays the **Filter Settings** dialog box.

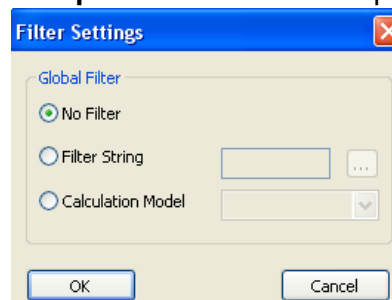


Figure 23: Component Filter

- **Extended Effectivity Filter:** This displays the **Filter Settings** dialog with an **Additional Filter String** option.

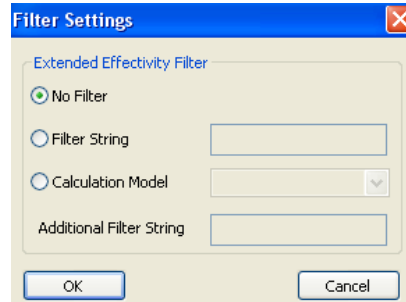


Figure 24: Extended Effectivity Filter

- **Attribute Filter:** This displays the **Attribute Filter Settings** dialog. *Please refer to the [Attribute Filter](#).*
- **Line Number Filter:** This displays the **Linelist** dialog. Specify the filter Line number and name.

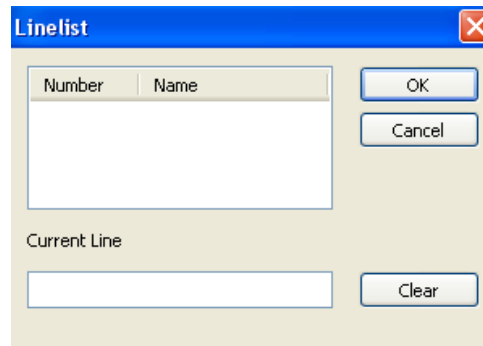


Figure 25: Line Number Filter

- **Label Nuber Filter:** This displays the **Label Filter** dialog. Specify the labels for the selected categories.




Figure 26: Label Nuber Filter



For more information on filter values, *please refer to the [Project Library Manual](#)*

Invalid Names in Calculation Models

Invalid names allowed in calculation models can be changed during filtering.

- 1) Open the project properties dialog box and click  button in Current Filter.

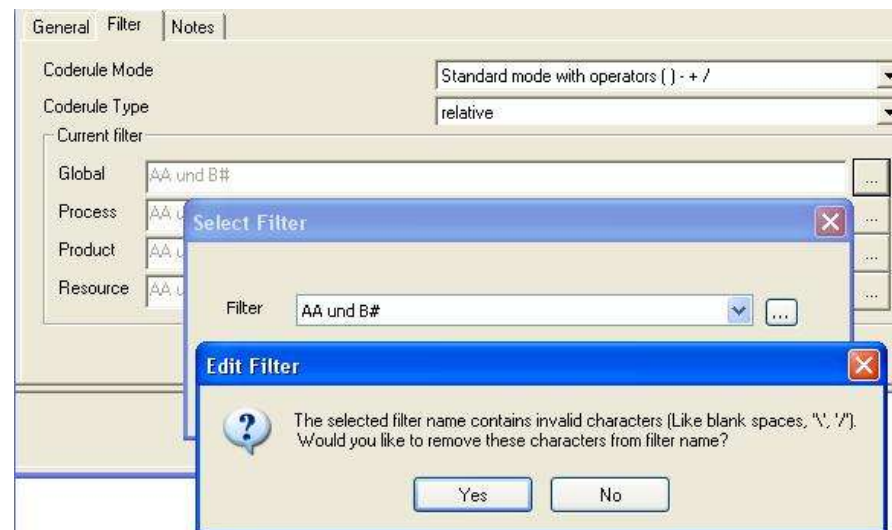



Figure 27: Invalid Name in Calculation Model

- 2) Click  button in **Select Filter** dialog box. The warning message comes, in case of invalid CM name.
- 3) Select Yes in warning message and change CM name in **Edit Filter** dialog box.

Filter Settings

If you have created calculation models in your project, you can use filters for the three standard views.

You can use the calculation models for the product, process, and/or resource view. You can also set various filters in the different views.

The filters can have an effect on your project data if your product components have code rules and relationships exist to processes and resources if required.

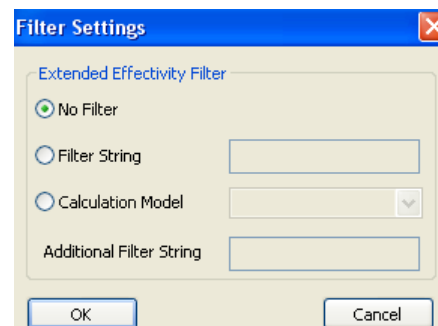


Figure 28: Filter Setting

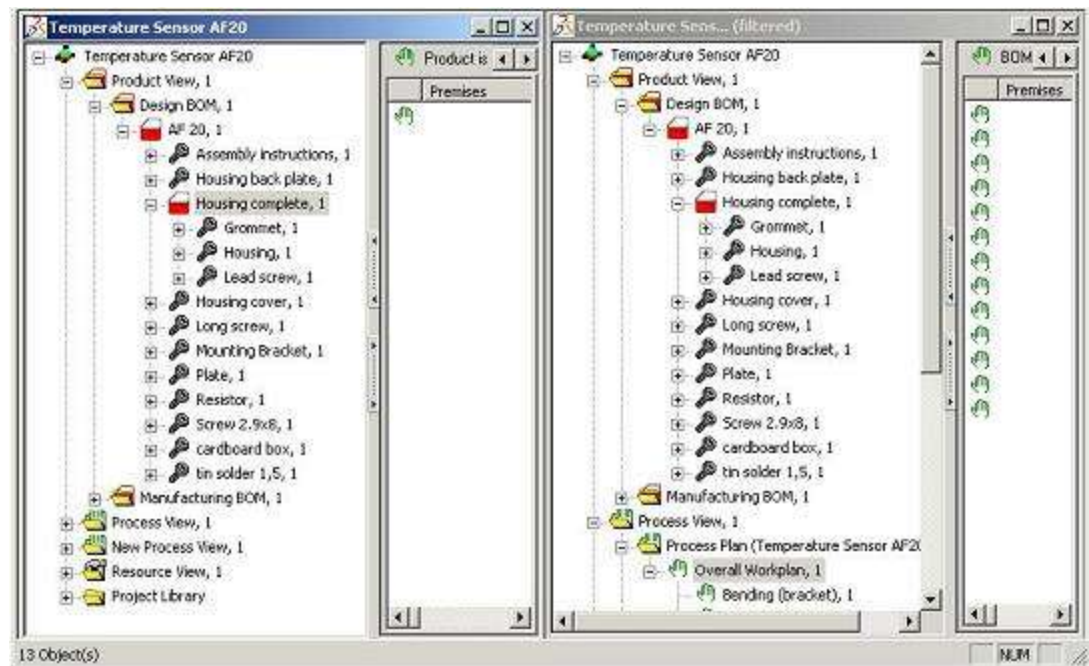


Figure 29: Set Filters

Our example uses two product variants:

- **Variant 1:** Display by **SA code**: Filtered by **GES**. The temperature sensor product structure is presented with a screw on cover.
- **Variant 2:** Display by **SA code**: Filtered by **GCL**. The temperature sensor product structure is presented with clipped cover.

The left section shows the projects without the set filter. You can view all work plans and product components.

In the right section, the “Temperature Sensor, clipped” filter has been set for the product view and the “Temperature Sensor screwed on” filter has been set for the process view. Only the objects are displayed for which the filter is valid. Relations are not affected.

Multiple Usage is possible for all components (products, processes, and resources). As a result, the same component can be displayed several times in a tree view. For example, the same subassembly can be simultaneously displayed below department “A1”, maintenance group “paint” and SE group “SE 7”. Additionally, this subassembly can be displayed below a product in the technical view as well as in the project library.

However, the database cannot generate any copies for such Multiple Usage items. The subassembly exists only once. This means that any changed property of the subassembly is displayed at points of subassembly usage.

2.1.2.2 Displaying Filters and Calculation Models

Previously, in **Open project** dialog filter combo box displays both filters (created through OPD) and calculation model (created in project library as well as transferred through bridge). In Extended effectivity filter and component filter calculation model combo displays both filters as well as calculation models.

Required Behavior

- Only calculation models should be displayed in extended effectivity and component filters calculation model combo box.

- The filter containers should be suffixed with [filter] so there should be a distinction between filters and calculation models in **Open Project** dialog.

For this purpose a new type filter container is introduced in Configuration Manager:

- CRCalcModelBase (Earlier CRCalcModel is changed to CRCalcModel-Base)
- FilterContainer

The filtercontainer is derived from CRCalcModelBase and now the CRCalcModelBase is derived from ergoitemversion.

Changes in Registry Settings

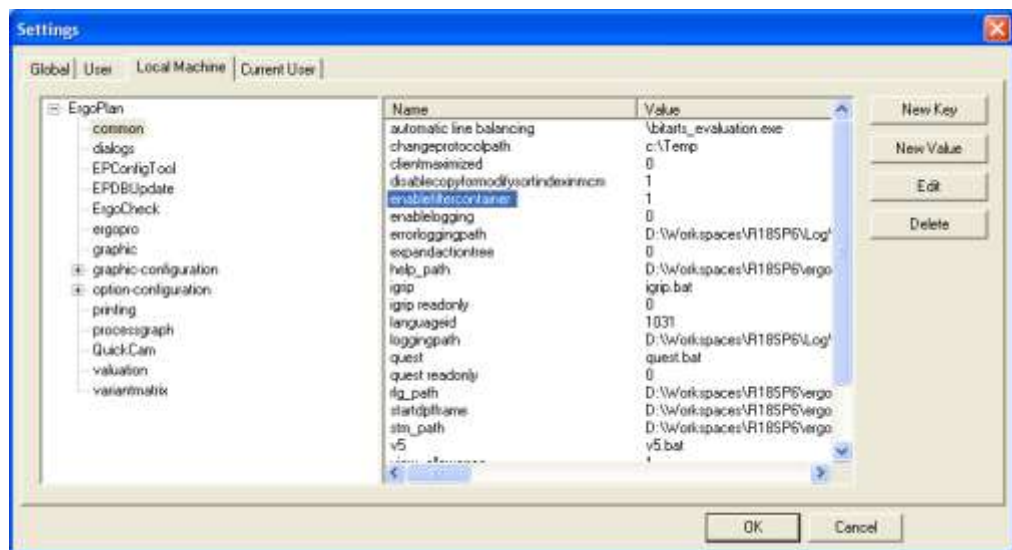


Figure 30: Registry Settings

You need to set new registry setting to 1 (TRUE) to get the [required behavior](#) LOCAL_MACHINE\ergoplan\common enablefiltercontainers = 0 (By default).

Migration/Upgrade from Other Releases

If you are migrating from some previous releases (.... ,R16, R17) to R18SP6 you will get new modified *ergoplan.ini* imported, and there is no need to import *ergoplan.ini* manually and you will get latest configuration.

If you are migrating between R18 SP's, you have two options:

- You can select 'update database' in IPDServer Setup, then the configuration is imported automatically.
- Otherwise you **must** import the configuration manually (DBAssistant or configtool).

If you are not upgrading database and you are just changing releases (R18SP1, R18SP4,) to R18SP6 then you will not get modified configuration and you have to import it manually.

The direct installation of R18SP6 setup will import modified *ergoplan.ini*.

Conversion of Crcalcmodel" to "Filtercontainer

After migration you can change CRCalcModels to FilterContainers manually in project library in CRCalcModel properties dialog. In migration software does not change CRCalcModels to FilterContainers.

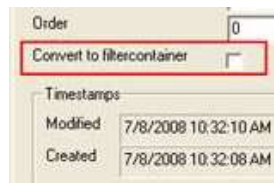


Figure 31: Conversion of Crcalcmodel to Filtercontainer

The attribute “Convert to filtercontainer” is not visible in CRCalcModel properties by default. Set the following configuration to make it visible in CRCalcModel properties.

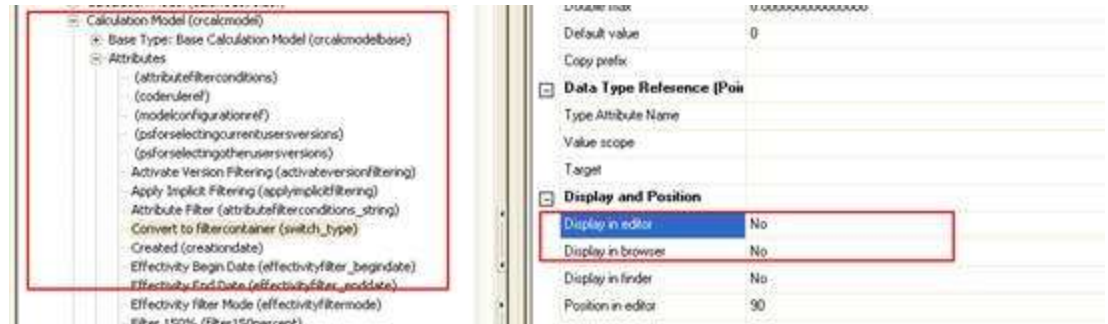


Figure 32: Configuration Settings

If CRCalcModel has relation with Mfg Change Orders then server would not allow you to convert it to filtercontainer and you get the below mentioned message.



Figure 33: Error Message

Recognize a Filter Container and Calculation Model

You can easily distinguish between a filter container and calculation model. In the project library, filter container and calculation model are shown in different folders.



Figure 34: Filter Container in Project Library

2.1.2.3 Changing Calculation Models Area Information

The filter created in a PPR area can be made available for different plant area (Product, Process, and Resource). Area information for existing calculation model can be changed from project library.



For more information, *Please refer to the* [Project Library](#).

To Change Area Information via Properties Dialog Box

- 1) Open Project Library.
- 2) Select **Filter and Variants** and select calculation model, corresponding to the filter, for which you wants to change area information.
- 3) Right-click calculation model and select **Properties**.
- 4) Change the attribute Calculation Model Area by selecting the radio button for different areas. *Please refer to the* [Figure 35](#).



Figure 35: Area Information for Calculation Model

If you have already existing calculation model in project, the property of calculation model is unknown by default. You have to modify appropriate area by opening the calculation model properties and selecting the particular radio button.



Note

After migration to R20, all the calculation models in R19 are set to unknown by default.

Duplicate Filter name duplicates are not allowed in different areas.

A filter “Prod_Filter” is created in Product Area. If you create filter with same name in same or in any other area it will not allow and gives error message.

Example

To Change Area Information by Editing Calculation Model in Open Project Dialog Box

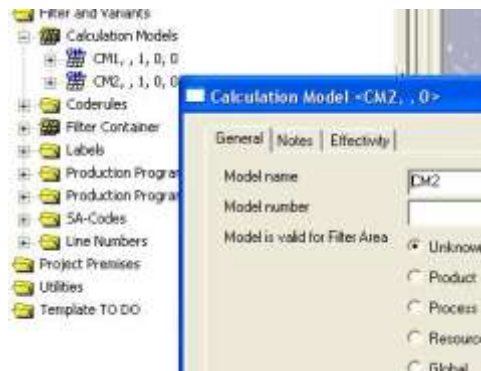


Figure 36: Calculation Model with Unknown Area Information

If you have some calculation models having area information as **Unknown** and you want to change the area information for them, then perform the following steps:

- 1) Go to **File > Open Project**
The **Open Project** dialog box appears.
- 2) Select a project and select particular **Filter** tab, say **Global**.

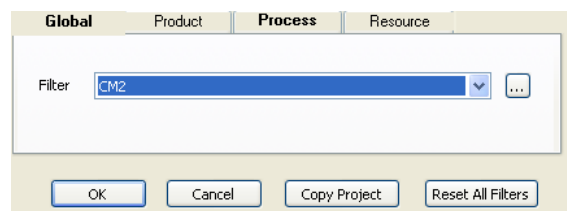



Figure 37: Open Project Dialog with Calculation Model CM2

Note

*The calculation model with area information as **Unknown** will be available under all **Filter** tabs. The changes in area information for this calculation model depend under which **Filter** tab it is opened.*

- 3) Select **Calculation Model**, say **CM2** under **Global** tab and click  to open **Edit Filter** dialog box.
- 4) Click **OK** in **Edit Filter** dialog box.
If you click **Cancel** in **Edit Filter** dialog box, then it is not possible to change the area information for calculation model **CM2**.
- 5) Click **OK** in **Open Project** dialog box and right-click calculation model **CM2** and select **Properties** to open **Properties** dialog box.
The area information for this calculation model **CM2** changes from **Unknown** to **Global**.

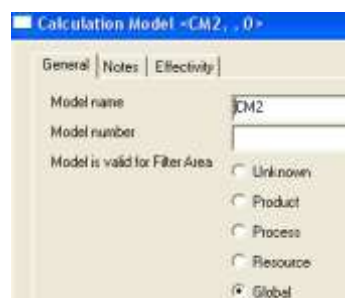


Figure 38: Calculation Model with Changed Area Information

2.1.2.4 Filtering by Variant

You can apply other filters even if the PPR component has link with the selected calculation model and can also filter product structure using **Filter By Variant**. **Filter By Variant** has higher priority than other filters. The **Filter By Variant** filter is applied first on all the children, and then other filters are applied on the remaining (filtered result after **Filter By Variant**) children.

The filtering mechanism applies the variant filtering before any other filtering. The filtering considers the relation relationship_component_variant. The filtering rules are:

- 1) If there is a relation between a selected calculation model and a process, then the process are visible only if other filter condition is satisfied.
- 2) If there is a relation between a process and another calculation model but not the selected one, then the process is not visible. No additional filtering by effectivity is applied.
- 3) If the process has no relation (relationship_component_variant) to any calculation model, then only other filtering is applied.

To filter product structure using **Filter By Variant**, a transient attribute “filter2_applyfilterbyvariant_product” is provided on project to activate the **Filter By Variant** for product structure.

The **Filter By Variant** for product structure can be set by either using script or by customizing the attribute on project (transient attribute filter2_applyfilterbyvariant_product).

If “filter2_applyfilterbyvariant_product” is 0, turn the variant filtering off

If “filter2_applyfilterbyvariant_product” is 1, turn the variant filtering on



Note

*The **Filter By Change Order** applied on the project to filter product structure has highest priority than any other filters on product structure including **Filter By Variant**.*

2.1.2.5 Applying Filters in Separate PPR Areas

- 1) Create “Filter_Global” in global tab, “Filter_Product” in product tab, filter “Filter_Process” in process tab and, filter “Filter_Resource” in resource tab in **Open Project** Dialog.
- 2) Select the filter “Filter_Product” in product tab, filter “Filter_Process” in process tab and, filter “Filter_Resource” in resource tab in **Open Project** Dialog.
- 3) Click **OK** to open the project.
- 4) Click **Reset All Filters** and select filter “Filter_Global” in global tab. The Global filter is filter out in all three PPR areas (Product, Process, and Resource)..

2.1.2.6 Planning State as a Filter for the Display of Versions

Projects can be filtered according to the planning state when opened.

The selection is based on the planning state used in the project. After the planning state has been selected under both options; **Logged-In User** and **Other Users**, the most current version is determined in the project and then displayed after opening the project.

- 1) In order to open a project filtered according the planning state, enter the planning state into both fields **Logged-In User** and **Other Users**.

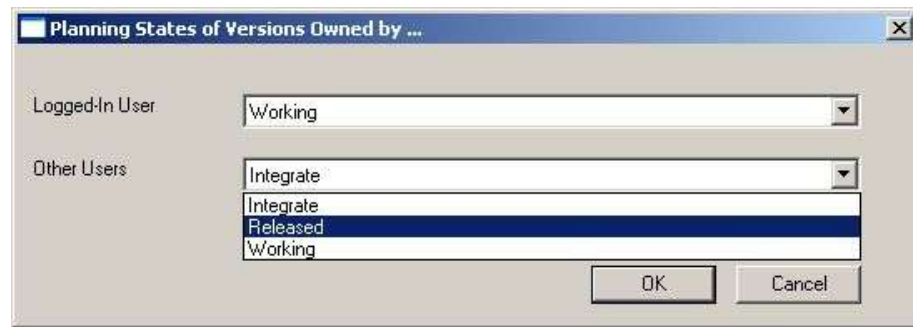


Figure 39: Select Planning State



For more information, Please refer to the [Manufacturing Concept Manual](#).

Table with Examples

Six planning states are created in the project. The numbering of the planning states and the versions corresponds to the priority or the age of a version. P1 has the lowest value and P6 the highest. The version numbers 1-4 indicate the age of a version. For instance, the logged-in user JNH selects in all cases the planning state P3 as **Logged-In User** and the other user DUF selects the planning state P5 as **Other Users**. Please refer to the [Table 1](#).

The table shows some possible cases for the display of versions when the filter settings for the planning state are used.

In the first **three** columns of the table, the properties of the version are described. Column **four** indicates which essential filter settings were selected on opening. Column **five** shows green which versions fulfil the selected filter settings.

Table 1: Display Versions – Important Cases

Version number	Owner	Planning state	Filter settings when opening the project	Filter settings fulfilled.
Case 1				
Even though version V2 is more current, version V1 is displayed: This is because version V2 does correspond to the filter settings (others). Planning state P1 is low er than filter setting P5.				
V1	DUF	P6	>= P5 (Others)	fulfilled
V2	DUF	P1	>= P5 (Others)	not fulfilled
Case 2				
Even though version V2 is more current, version V1 is displayed. V2 does not correspond to the filter settings of the Logged-In Users. Planning state P1 is lower than filter setting P5.				
V1	DUF	P6	>= P5 (Others)	fulfilled
V2	JNH	P1	>= P3 (Logged-In User)	not fulfilled
Case 3				
Both versions correspond to the filter conditions.				
V1	DUF	P6	>= P5 (Others)	fulfilled
V2	JNH	P3	>= P3 (Logged-In User)	fulfilled
Case 4				
Three of the versions (V1, V2, V3) correspond to the filter settings. These three versions are displayed in this case.				
V1	DUF	P6	>= P5 (Others)	fulfilled
V2	JNH	P5	>= P3 (Logged-In User)	fulfilled
V3	DUF	P5	>= P5 (Others)	fulfilled
V4	JNH	P2	>= P3 (Logged-In User)	not fulfilled

Version number	Owner	Planning state	Filter settings when opening the project	Filter settings fulfilled.
Case 5				
Two versions (V1, V2) correspond to the filter settings. These two versions are also displayed in this case.				
V1	DUF	P6	>= P5 (Others)	fulfilled
V2	JNH	P5	>= P3 (Logged-In User)	fulfilled
V3	DUF	P4	>= P5 (Others)	not fulfilled
V4	JNH	P2	>= P3 (Logged-In User)	not fulfilled

2.1.2.7 Attribute Filter

The procedure for definition of filter criteria is always the same, regardless of whether the rules are set while opening or while editing the project.

- 1) Select a filter type and click  icon.
The **Attribute Filter Settings** dialog opens.

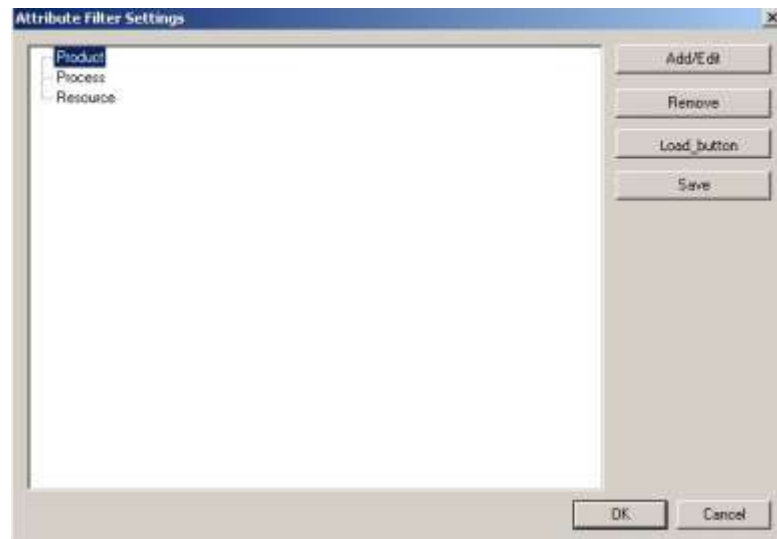


Figure 40: Attribute Filter Settings

The left section of the dialog displays the filter criteria set. When the dialog box is opened for the first time, it does not contain filter criteria other than the filter type. You can only pick from three attribute filter types.

The right section of the dialog shows contains control buttons. In the beginning, the two buttons **Add/Edit** and **Load** are important. With the **Load** button, you can load attribute filters that have been saved (using the **Save** button) as filter criteria. This makes sense only if filter criteria have already been defined. The saving and loading of filter criteria is described in the section [Saving and Loading Attribute Filters](#).



Caution

Select only a filter type that corresponds to the desired view. For example, if you are opening a process view, do not enter a product filter type. The system allows you to enter any kind of filter type, so unless you select the correct filter, you may get unexpected results.

To Set an Attribute Filter

- 2) Select a filter (Product, Process, Resource) and click **Add/Edit**.
A dialog for setup and editing of the attribute filter opens.

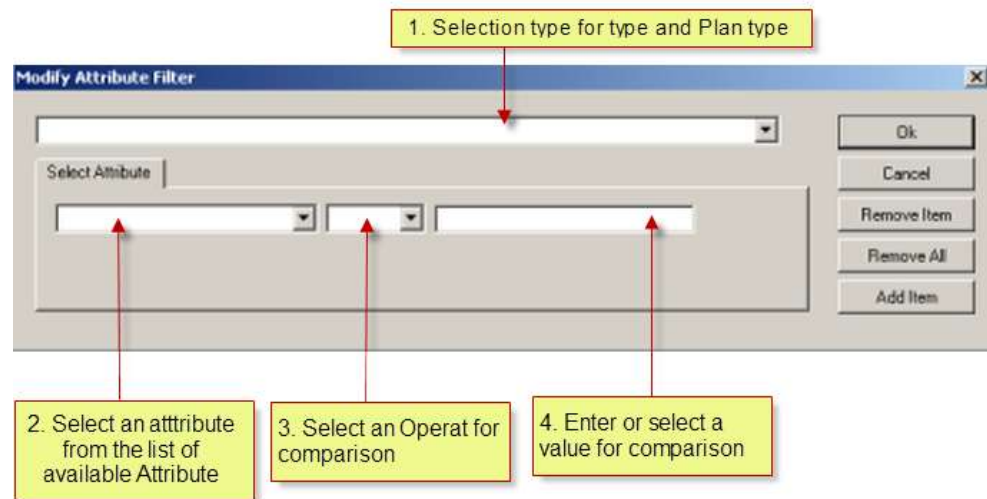


Figure 41: Dialog for Setup and Editing of Attribute Filters



Note: The "Modify Attribute Filter" dialog is the updated, beginning from versions PE 5.16SP4 and PE 5.17.

- 3) In the top selection field, select the corresponding plantype, depending on the attribute filter selected (Product, Process, Resource).
- 4) Select the attribute for filtering may be selected. The selection options for the attributes can be configured.



Caution

Filtering is limited to attributes for which the Show in finder option in the configurations manager has been set to yes. In other words, all attributes that have been defined as search criteria for individual types or plantypes can also be used for filtering.

- 5) Set the operand. The operand determines how the filter criterion is used, influencing its function. For instance, if you filter for the number 10, you may select from several different operands. You may want to see all objects in which the attribute selected in field 2 matches 10, or you want to see all objects which do not match 10. In the first case, use the equal sign ('=') as the operand, in the second case, use the not equal sign ('!=') as operand. *Please refer to the [Operand Types](#) for a list of possible operands.*
- 6) Enter the filter value in the next column. In the example described above, the value is 10. Depending on the attribute selected, you may enter any combination of letters, figures, and special characters in this field. If the attribute is a date field, is selected from a combobox, or is activated in a checkbox, you cannot enter anything, but can only select from available entries.
- 7) If you have one filter criterion, click **OK**, and the filter gets activated. If you want to extend or refine the filter, click **Add Item**, a new line adds, which lets you to define an additional filter criterion. The filter criteria are combined by logic AND ("all filter criteria must be met").

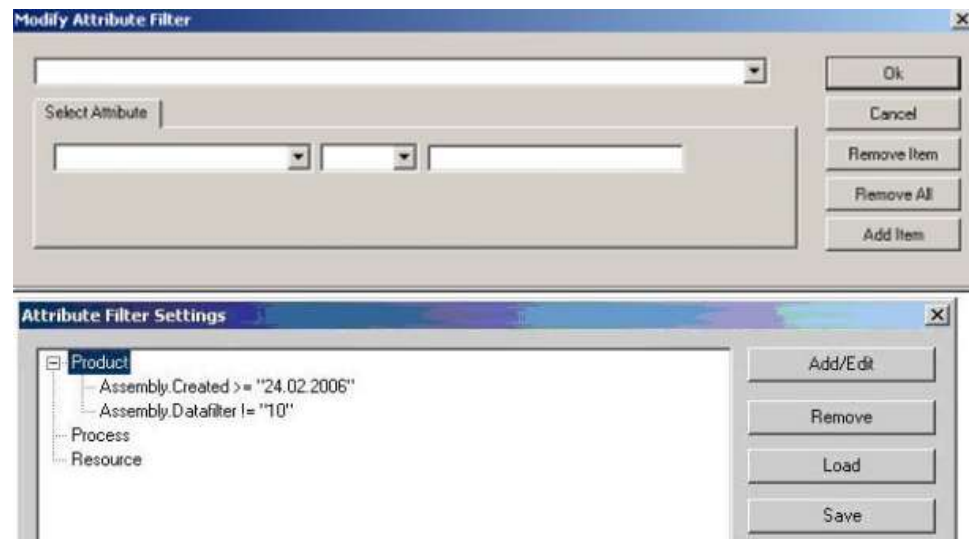


Figure 42: Example of a Product Filter

- 8) Once you exit the attribute filter dialog by clicking **OK**, the filter you just created is shown in the **Attribute Filter Settings** dialog.
- You may delete the filter by clicking **Remove**.
- If you wish to edit the filter, click **Add/Edit**. This offers several options:
 - If a filter criterion already exists, select it and click **Add/Edit**.
=> The **Modify Attribute Filter** dialog opens and you can edit the existing filter criterion.

If you select one of the top nodes, i.e. the product node shown in [Figure 42](#) and then click **Add/Edit**, the dialog for setup and change of attribute filters reappear. If you select the same plantype as is set for an already existing filter, that filter opens for editing. If you select a different plantype, a new filter is created.

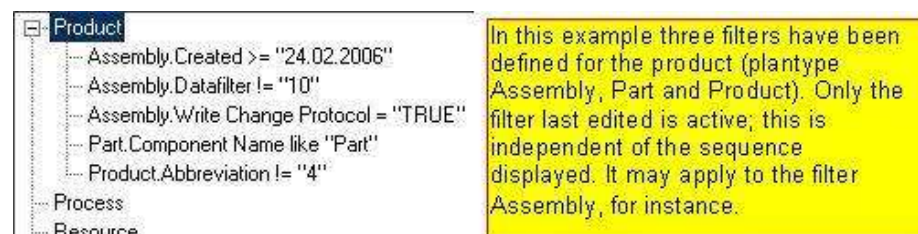


Figure 43: Defined Filters

This is the same for all attribute filters (Product, Process, and Resource).

Important: Only the filter last edited is active.

- 9) If you leave the **Attribute Filter Settings** dialog by clicking **OK**, the filter is activated.
- 10) The criteria last set are saved as standard and are automatically applied when you reopen the project.

2.1.2.8 Operand Types

When selecting the operand type consider the data type of the attribute. For instance, for numeric fields (Float or Integer attributes) and date fields logical operands are used, while fields containing letters (String attributes) are processed with operands for comparison. The following is a list of all operands that may be used.

Logical Operands

If you have to specify numbers as filter criteria (i.e. attributes such as length, width, or date), you may select from the following operands **=**, **<**, **<=**, **>** and **>=**.

- The equal to sign **=** means that the value entered must be matched exactly.
- If the options **<** or **>** are selected, all objects are displayed as hits in which the corresponding numeric value is lower or higher than the value entered.
- If the options **<=** or **>=** are selected, all objects are displayed as hits in which the corresponding numeric value is lower or equal to or higher or equal to the value entered.

Such an instruction can be meaningful, if you are looking for objects that were created on, before or after a certain date. The required option is selected to the left of the input field for the relevant criterion. To make a selection, click the arrow button to the right of this field and select the corresponding condition from the selection field..

Operands for String Values

- The option **!=** means that all objects are displayed which **do not precisely** match the entry.
- The option **=** means that all objects are displayed which **exactly** match the entry.
- The option **"AS"** means that all objects can be found which match the entry, regardless of where it appears in the string value. Variables (wildcards) may be used.
- The option **"!AS"** means that all objects are found which do not match the filter value, regardless of where in the string value a match is found. Variables (wildcards) may be used.

Variables (Wildcards)

You may use the variable (wildcard) **"*"**. The asterisk (*) replaces all characters that follow. For instance, if you enter **"*sensor"** as a search criterion, you can find objects with the designations **"outdoor temperature sensor"** and **"temperature sensor project"**. The following rules apply to the use of variables (wildcards):

- Leading variable (wildcard): All values matching the string that follows the variable are found.
- Variable (wildcard) at the end: Only the string value preceding the variable is considered.
- A variable (wildcard) located at any other position in a term is considered a normal character; it is not considered a variable (wildcard).
- Variables (wildcards) are used only in connection with the options **AS** and not as **(!AS)**.

In general, the search is upper and lowercase sensitive.



Checkboxes

If you search for properties with a checkbox attribute, you can only use the operand “=”.

The value of such an attribute can only be

True = activated

False = not activated

Combobox

If an attribute with the control type combobox is selected as a filter criterion, you may select only one value from the value list.

Limitations

The following limitations can come while the use of combined filter criteria.

- Several filter criteria for different attributes of a type/plantype can only be combined with “AND”.
- Several filter criteria for a single attribute can only be combined with “AND” if the operand “!=” has been used; if the operand “=” has been used, they can only be combined by “OR”.
- Filter criteria cannot be overwritten by definitions in derivative types/plantype.
=> If a filter criterion for a single attribute is entered for the base type/plantype and the derivative type/plantype, the conditions are combined by “AND”.

Dates

You have two options for filtering by date (such as “created on” or “modified on”):

- You can either enter the date directly in the corresponding input field,
- You can use a calendar to select a date.
The calendar opens with a left click the arrow button to the right of the input field. You can page through successive individual months by clicking the arrow button in the calendar, and select the desired day with a left click. You can set the time in the field to the right of the date. As standard, the time of creation of the filter criterion is adopted.

Important: Only full days are filtered, the time setting is ignored.

2.1.2.9 Attribute Filter Examples

Activated criteria are only included if they are precisely specified in the adjacent line. In this line, you can enter any combination of letters, numbers, and special characters. A few simple examples illustrate the function of the attribute filters.

Prerequisites

The following product structure is given:

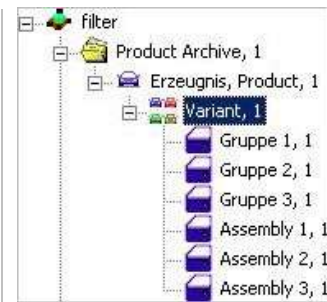


Figure 44: Product Structure

Five attributes are considered:

Table 2: Attributes

Designation	Name	Data Type	Control Type	Defined To
Designation	name	String	Edit	ergocompproductdefault
Short description	nameshort	String	Edit	ergocompproductdefault
Update Information	update_info	String	Combobox	PTS Assembly
Write change protocol	writchange-protocol	Bool	Checkbox	ergocompproductdefault
Date created	creationdate	Date Time	Edit	ergocompproductdefault

The following values have five attributes:

Table 3: Attributes

Designation	Short description	Update Information	Write change protocol	Date created
Group 1	G1	New	No	24.02.06
Group 2	G2	updated	Yes	23.02.06
Group 3	G3	updated	No	23.02.06
Assembly 1		New	No	22.02.06
Assembly 2		New	No	23.02.06
Assembly 3	A3	moved	Yes	24.02.06

- Target: Show all assemblies that are not designated “Gruppe” and do not have a short description.

With the aid of variables (wildcards) the filter is quickly defined.

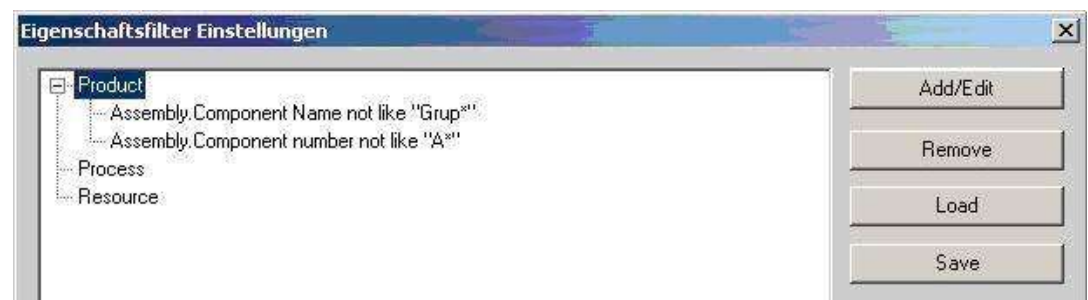


Figure 45: Define Filter

- Only Assembly 1 and 2 are displayed.

If not as (!AS) A* is replaced by as (AS) A*, only assembly 3 is displayed.



Figure 46: Display of Assembly 3

The same results if the filter only looks for *Update Information = moved*.



Figure 47: Result

- Target: Show all assemblies created on 24.02.06.

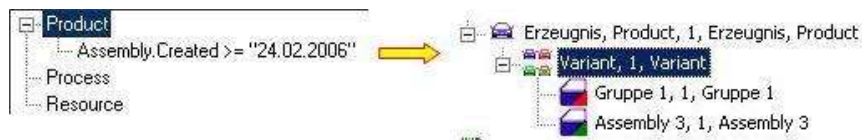


Figure 48: Show Assemblies Created on a Date

- In the last example the search is for assemblies that have a change protocol.

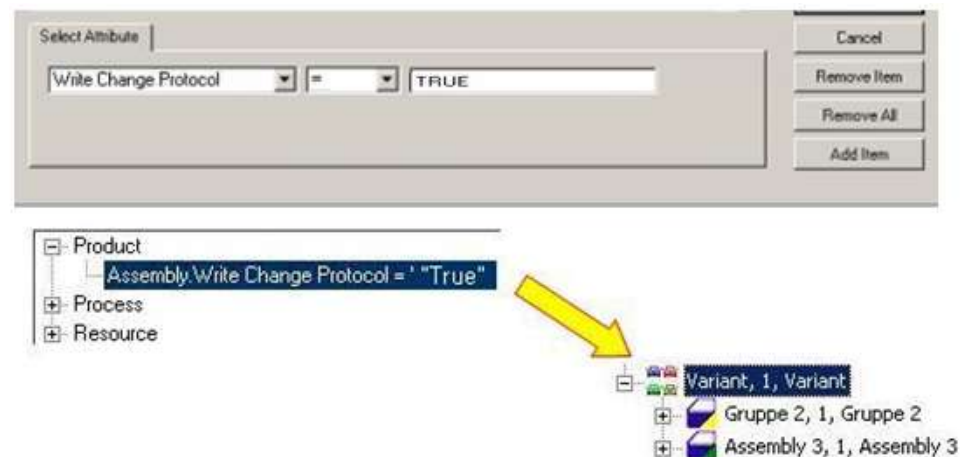


Figure 49: Search Assemblies Having Similar protocol

2.1.2.10 Combining Filter Criteria

The filter criteria are combined by logic AND ("all filter criteria must be met"). The combination is managed by the program and cannot be selected. Clicking the link field (left mouse click the arrow button, selection in the selection field) only adds a new line and new input fields for the next filter criterion.

Important: If the filter criterion in one line is invalid, all subsequent lines are ignored.

2.1.2.11 Saving and Loading Attribute Filters

Filter criteria can be saved and reused. The filtering term is saved along with the selected filter criteria – such as system element name, order number, additional filter criteria (i.e. tables, version number, and amount in Euros) or mathematical operands.



Saving Filter Criteria

- 1) Set the filter term and the filter criteria before saving search criteria.
- 2) Click **Save** to open the **Save Attribute Filter** dialog.

Note

If a name for a filter criterion has already been assigned, you can decide whether the name is to be overwritten – i.e. if you want to save other criteria under that name.

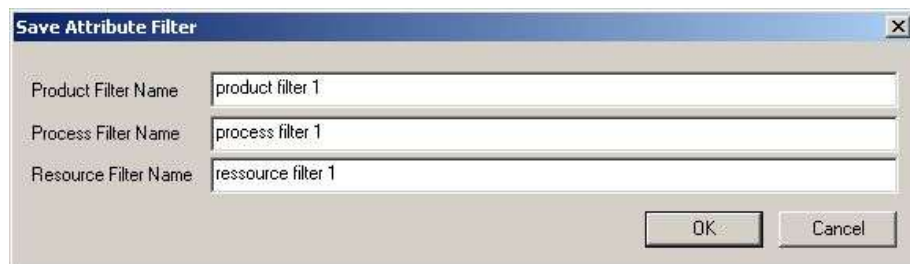


Figure 50: Save Attribute Filter Dialog

- 3) For each planning view, enter the corresponding filter name (to learn about planning views, *Please refer to the [Planning Views](#)*.
- When you open projects and when you view the properties dialog of a project, you see the filter identified with a name determined by you.

Dedicated filters can be defined for each view, and the user-determined designation of each filter allows you to determine quickly what view is associated with which filter and for what the filter is used.

Loading Filter Criteria

- 1) Click **Load** to open the **Load Attribute Filter** dialog.

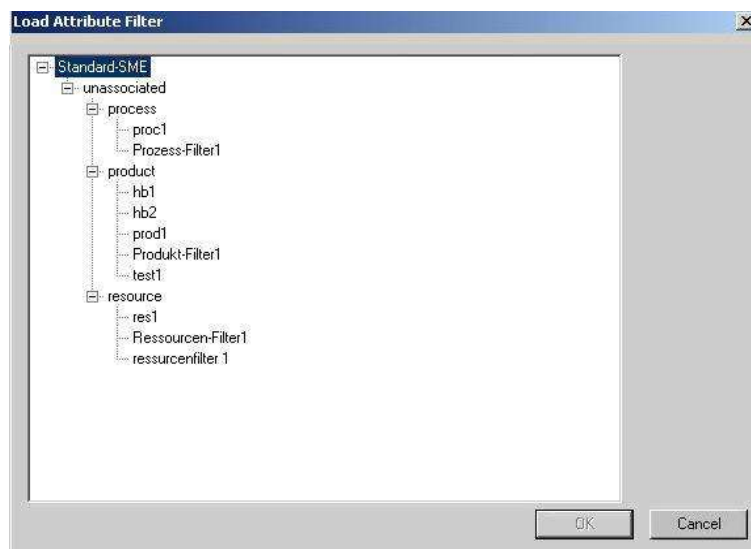


Figure 51: Load Attribute Filter Dialog

- 2) Select a filter for the respective view, then click **OK**.
Only the selected filter is loaded. The filters of the other two planning views are not affected.

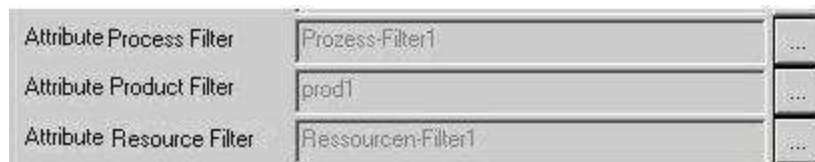


Figure 52: Loading Selected Filter

**Note**

The Plantypeset short name is used as unique name in key path while storing attribute filters in database. If you change the short name (Abbreviation) of Plantypeset, there is no possibility to access the attribute filters stored for that Plantypeset.

2.1.2.12 Tab Repositioning

This allows to display relationship tab pages right/left in the browser.

- 1) Select **Tools > Settings > Miscellaneous > Show relationship tab pages in browser at the end (restart project)**.

If the setting is enabled, the relationship tab pages appear right in the browser

You cannot change the display order of the relationship pages.

Relationship pages can be shown on left or right side in the browser.



Figure 53: Relationship Tab Pages Right in the Browser

This setting changes appear in browser when you open or re-open (if already project is opened) via **Open Project** dialog box.

2.1.2.13 Display of Filter Settings

- Open the project dialog
 - Select filters in the **Filter** drop-down menu.
 - Click **OK** to open the project.
- The project window title displays selected filters.

[G-Filter_Global Prd-Filter_Product Prc-Filter_Process Res-Filter_Resource]

The following are different states of window according to which filter settings display can differ:

Non Docking Windows

- 1) Without Floating [Maximized State]: Filter Settings are displayed on DPE Title Bar.



Figure 54: Non Docking Window-Without Floating [Maximized State] Filter Settings

- 2) With Floating: Filter Setting are displayed on Project window Title bar.

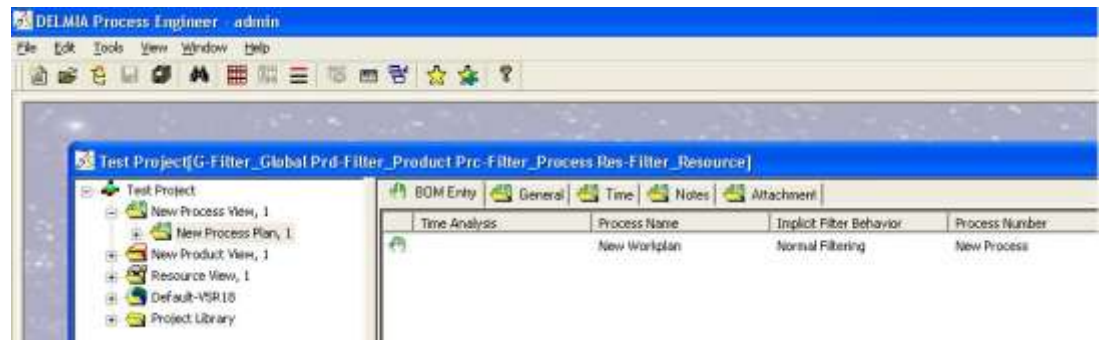


Figure 55: Non Docking Window-Floating: Filter Setting

Docking Windows

1) With Floating: Filter Settings are displayed on Project window Title Bar.

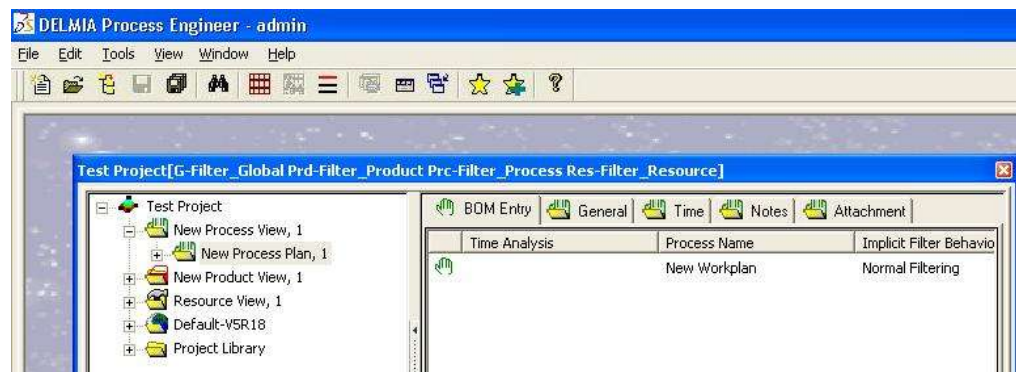


Figure 56: Docking Window-With Floating: Filter Settings

2) Without Floating [Maximized State]: Filter Setting are not displayed.

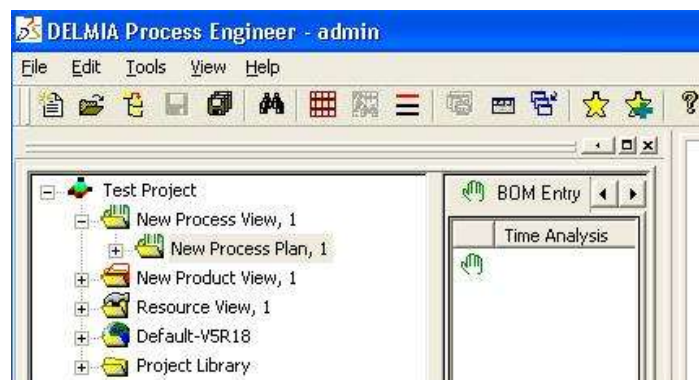


Figure 57: Docking Window-Without Floating [Maximized State] Filter Setting

2.1.2.14 Enabling Implicit Filtering

The implicit filter behavior is applicable only if components are filtered using other filters. In **Open Project** dialog box, if no other filter is selected for the project, the **Apply Implicit Filtering** check box is disabled. In **Filter** tab of the Project **Properties** dialog box also the **Apply Implicit Filtering** check box is disabled.

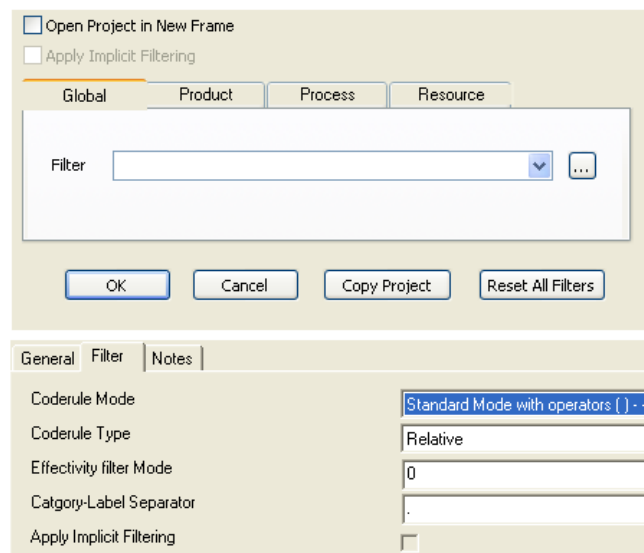


Figure 58: Apply Implicit Filtering Check box Disabled

The check box becomes enabled in both **Open Project** dialog box and In **Filter** tab of the Project **Properties** dialog box only if any other filter is selected.

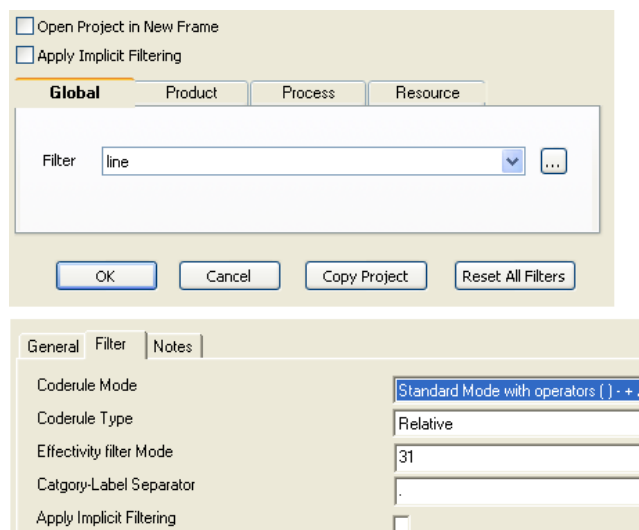


Figure 59: Apply Implicit Filtering Check box Enabled

1) Create a project structure as shown below.

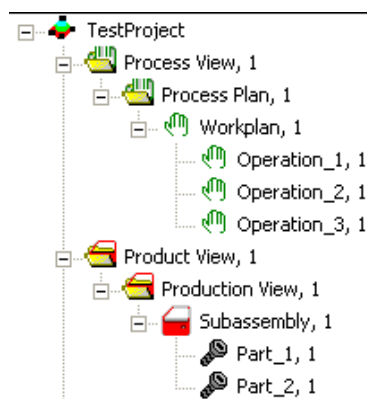


Figure 60: Project Structure for Implicit Filtering

2) Create relationships of the type "*proc_firstprocesses_prod*" from Operation 1 to Part_1 and Operation_3 to Part_2.

- 3) In configuration tool, change the Parent Child Relationship (PC) for relationship “proc_firstprocesses_prod” between type ergocompprocessdefault and type ergocompproductdefault, and set the property **Consider for Activation by Link** to **Yes** on the PC representing the forward direction.
- 4) Set the attribute **Implicit Filter Behavior** as **Link Activated** for Operation_1 and Operation_3 and **Normal Filtering** for Operation_2.

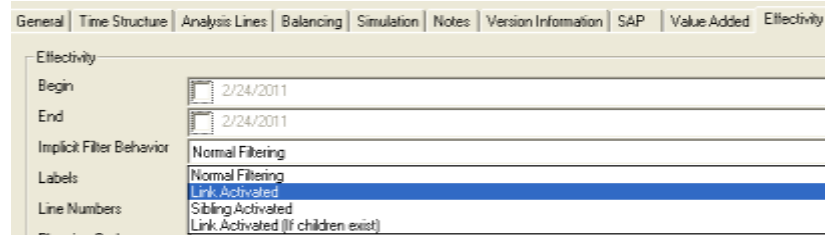


Figure 61: Set the Attribute Implicit Filter Behavior

- 5) Set line number “1” for Part_1 and for Part_2.
 - 6) Create line number filter “test_prod” with line number “2”
 - 7) Open project by applying line number filter “test_prod” and select **Apply Implicit Filtering** check box.
- The result is, Operation_2 having normal filtering is displayed. Operation_1 and Operation_3 are filtered out because both are link activated. Part_1 and Part_2 are filtered out because they have line number “1”.

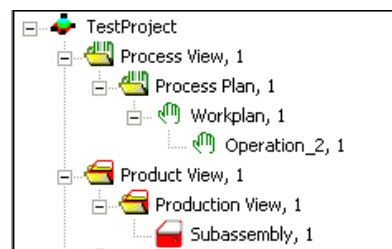


Figure 62: Open Project with Implicit Filtering

2.1.2.15 Customization to Open New Project Dialog

- 1) Set the following environment variable “**LOCAL MACHINE < ErgoPlan < dialogs < activatenewopenprojectdialog**” to “1”. This causes the new Open project dialog to show up by default every time DPE is started or when the Open Project command is invoked.

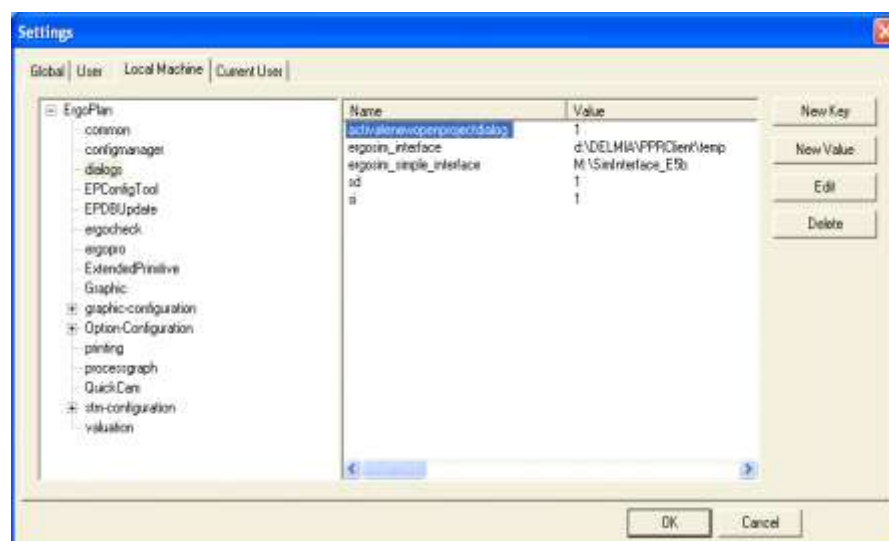


Figure 63: Settings for New Project Dialog

2.2 Copying and Deleting Projects

2.2.1 Copying a Project

You can only copy projects if you have the required access right to copy projects. Large projects may take a while to copy.

- 1) Select **Open Project** from the **File**. Select the project you want to copy from the **Open Project** dialog and click **Copy Project** button.

2.2.2 Deleting a Project

Delete Project



Any deletion of projects results in a loss of data that have been generated within the project. These may include, for example, attributes that you have specifically defined for this project.

Note

A project may only be deleted if no user is currently accessing or editing the project.

To Delete a Project

- 1) Click **File < Open Project**. Select the project you want to delete from the **Open Project** dialog.
- 2) Click **Tools < Delete Project**. The **Delete Project** dialog appears.

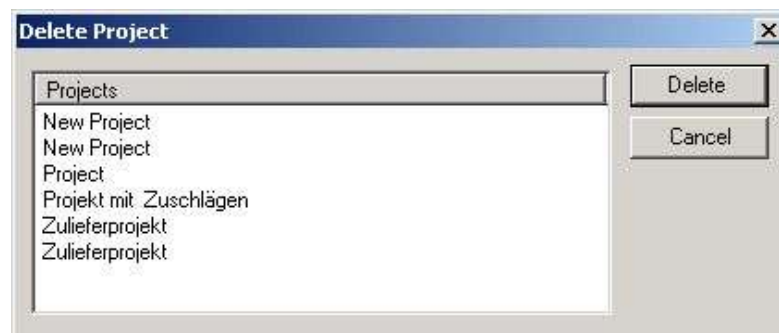


Figure 64: Delete Project Dialog

- 3) Select the project from **Delete Project** dialog and click **Delete** button. Confirm the message that appears with **Yes**.

2.3 Lock Manager

Opening property pages on any component locks in WRITE mode. When you create relationship, parent and child data objects are locked in LINK mode. You can create link while object is being edited by other user. As the objects locked in WRITE mode can be locked in LINK mode also.

When User 1 opens property pages on process object, it locks data object in WRITE mode. If Users 2 tries to open property pages on same process object, the message comes "object is locked". User 2 can drag and drop a product object to locked process object, the product gets linked to the process object.

Table 4: Reference Lock Compatibility Table

Try to lock	NOT	NOT	READ	LINK	WRITE	DELETE
-------------	-----	-----	------	------	-------	--------

Object is locked by another client	DELETE	LINK				
NOT_DELETE	X	X	X	X	X	-
NOT_LINK	X	X	X	-	X	-
READ	X	X	X	X	-	-
LINK	X	-	X	X	X	-
WRITE	X	X	-	X	-	-
DELETE	-	-	-	-	-	-

X: Allowed case

-: Case not allowed

3. Structuring a Project

3.1 PlanTypeSet and Structures

PlanTypeSets (PTS) mirror the structure of the company and the project. Depending on the company, the structures are illustrated in a different way. For this reason, the PTS must be redesigned and customized when you start a new project. To customize structures in a quick and simple way the general PlanTypeSet structure is illustrated.

PlanTypeSets generally consist of three basic types:

P- Product **P- Process** **R- Resource**

The **PPR-Navigator** displays each basic type individually. Thus, all product related information is displayed separately from information related to planning processes and resources. The display of objects from one basic type is referred to as a **View**. Thus, there are three standard views: **Product view**, **Process view**, and **Resource view**.

The standard views allow you to create user-defined sub views (planning views). Planning views are defined within the standard views (Product, Process, and Resource) and enable you to get a better overview of project data.

You can organize the planning process using the parent-child relations, which you can define between the plantypes.

The PTS defines any project-specific object and describes their arrangement in relation to each other. You can freely define your planning objects within the standard views and assign hierarchical levels for object relations.

The PPR Navigator templates for such project structure arrangements are called "**PlanTypeSets**". PlanTypeSets usually consist of (*Please refer to the [Figure 63](#)*) Standard views and user-defined views

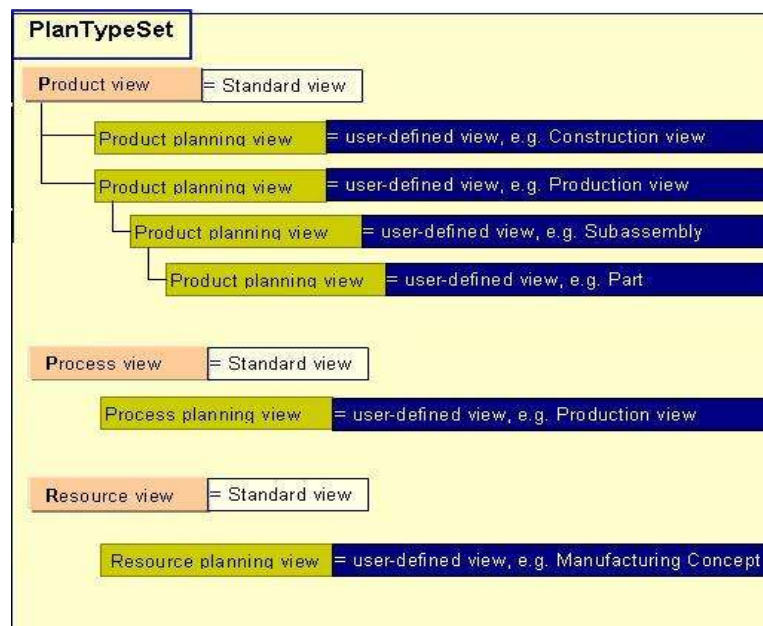


Figure 65: PlanTypeSet Arrangement

PlanTypeSets are used to structure a project. You can create as many PTS as you like, however, you can only assign one PTS to each project.

There is a distinction between technical and organizational objects within the three standard views.

- Each **technical item** describes a **planning item** (for example, a component, work sequence, operating resources). Relations can only be established between these objects. Technical objects can be defined in a way that allows the creation of further technical objects for the current object (**technical structure item**). (i.e. you can create further technical objects called “partial work plans” below the general “work plan” structure).
- Each **organizational object** describes a **project structure item** (for example, sphere of responsibility/department/technical workshop). Among other things, they serve to illustrate the planning process organisation of a project (**org. structure items**).



Note

A technical structure can be depicted in an organizational structure, but an organizational structure cannot be depicted in a technical structure. You can define several structures within the standard views simultaneously (planning views).



For more information on how to create PTS, please refer to the [Administration Manual](#).



Note

There exists a limitation for value list entries in configuration and plantype.

If the value list entry for an attribute have some property value (Item name, Item value etc) which has comma in it, then after exporting the configuration as INI file when you try to import it you may get error or wrong values. The error comes as while parsing the INI file commas are considered as delimiters for value list entry properties. You will not get any error if you export the configuration as xml since xml have tag for values.

3.2 Planning Views

The individual views are discussed in brief below. Since – depending on the product and other factors – each of the three views can be different for each company, the following may be considered as a general introduction to the PPR Navigator, to help you understand the structure and basic handling procedures for plantype sets.

Product View

The product view looks at the product or the manufactured item. In this view, bills of materials (BOMs) of the products are referenced.

Process View

Depending on the product, the arrangement of processes is the first step within the overall creation, planning and control process of your company.

According to DIN ISO 9001, a process is defined as a system of activities that uses resources to change inputs into outputs.

Resource View

When planning resources, two different views need to be considered:

- The first view relates to the planning of resources within an independent site planning, a general concept and a manufacturing concept. The re-

sources and their combinations are defined in the manufacturing concept to help you make detailed decisions about how the manufacturing concept needs to be arranged.

The results are then converted to your company's "site plan". The manufacturing concept is a level that can be arranged recursively.

- The second view relates to the site planning (site/plant/company) divided into individual areas. As a result, each resource view may consist of two different structure trees.

Schematic Display of the Resource View:

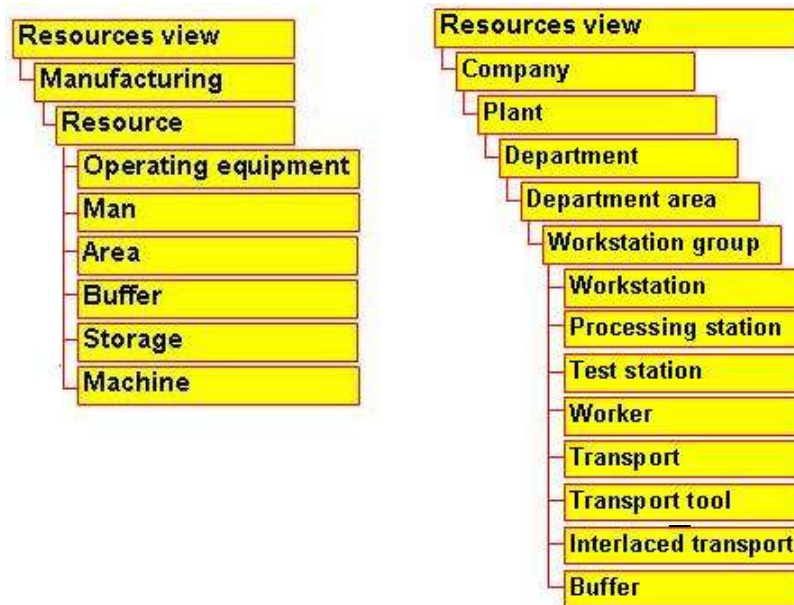


Figure 66: Resource View

Example

A plantype set in the three standard views can be arranged as shown in [Figure 65](#).

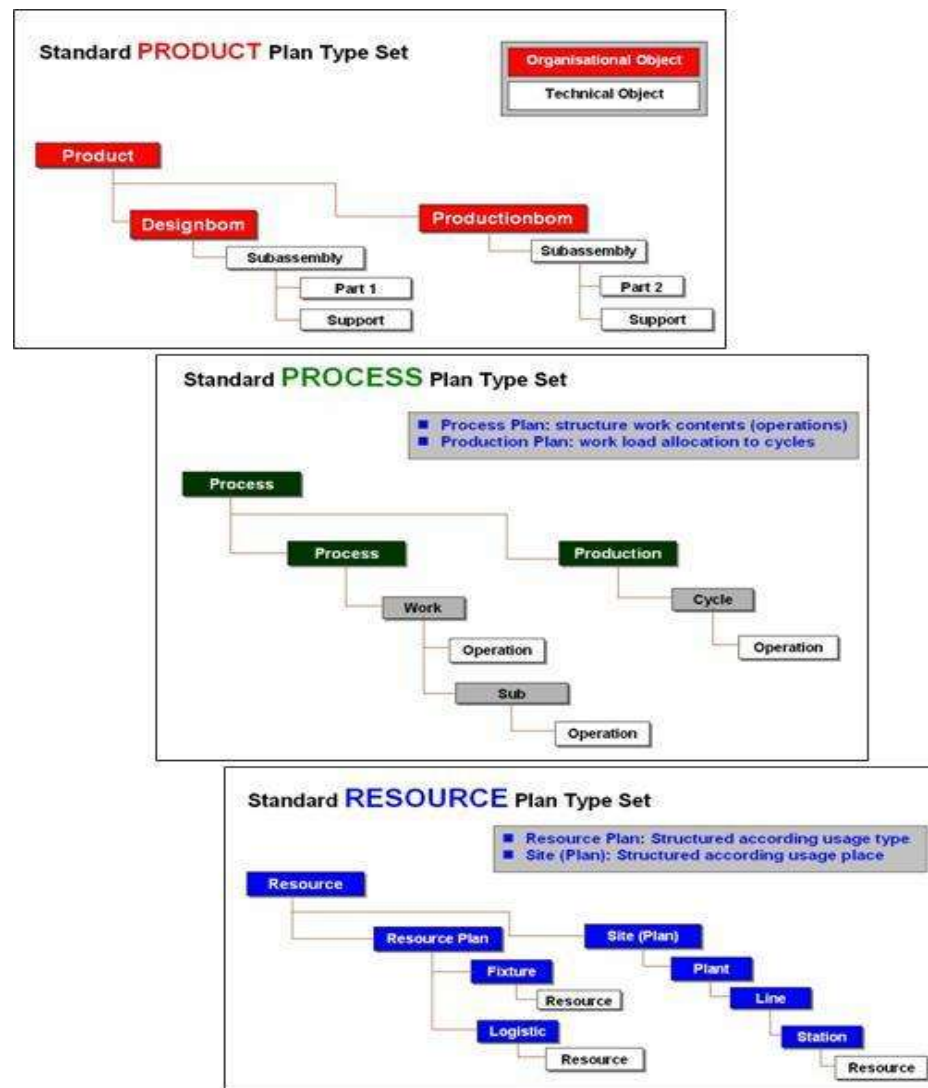


Figure 67: The Standard Views of each Plantype Set

3.3 Generating Project Structures

You are already familiar with the plantype sets in theory. The following sections show you how to put this knowledge into practice.

To Generate a View

- 1) Create a product, process, or resource structure by selecting **New** from the contextual menu of the relevant project. The system offer you structures that have been defined within the plantype set.
- 2) The structures are created by selecting the project node and the selection of the contextual menu entry **New**.



Figure 68: Generating New View

Plantype sets allow you to create structures that may be different from other plantype set structures. If you base your selection on [Figure 65](#), for example, the structures are set up as follows:

Two structures for the product view

- Construction view
- Production view

Two structures for the process view

- Manufacturing plan
- Process plan

Two structures for the resource view

- Location
- Resource plan

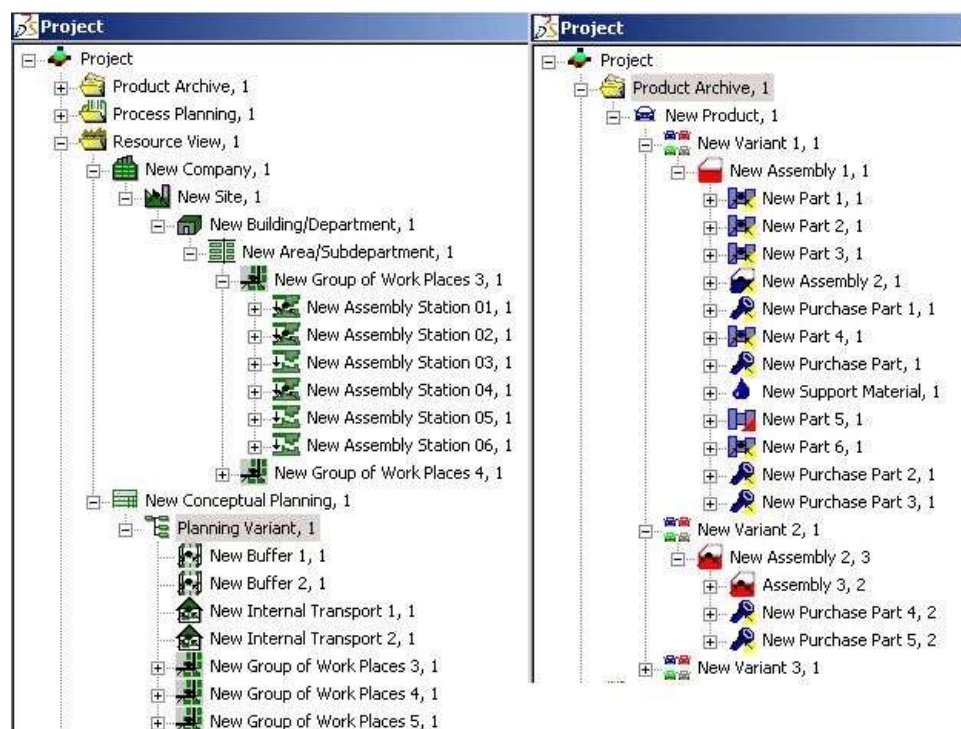


Figure 69: Example of a Resource Structure and Product Structure

Each standard view allows you to use planning objects linked to planning views. Each object appears only once in a database. However, the same object may be available several times in the planning view as a linked object. As a result, changes to objects are updated in the respective planning views.

The project library displays all objects used according to their plantype. Objects that may have been deleted in the planning view are also managed within the library.

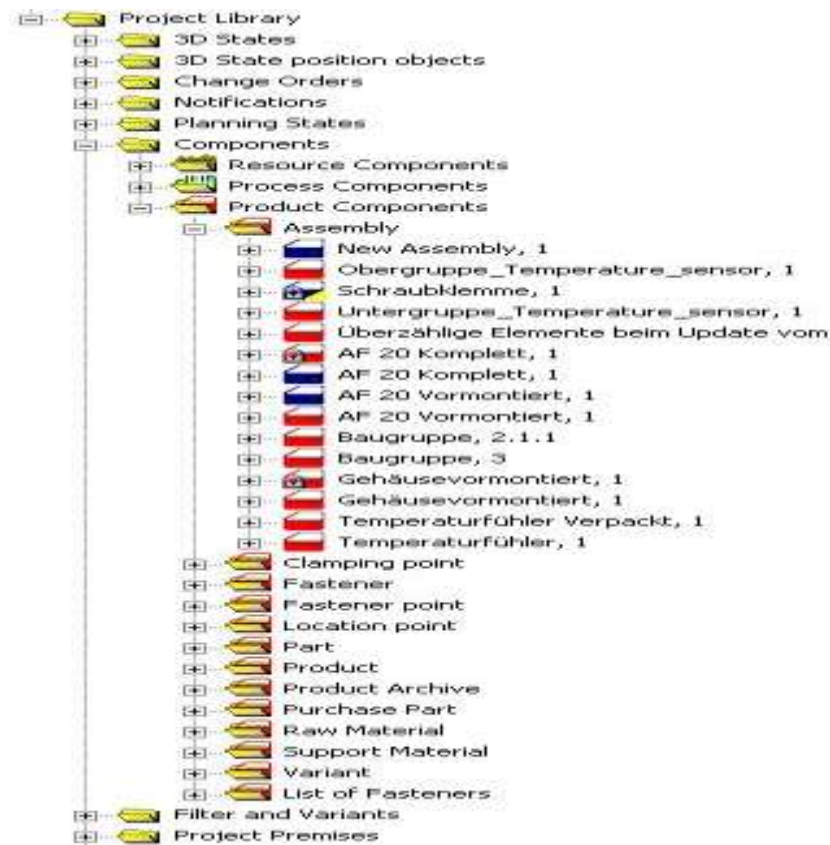


Figure 70: Project Library Section

The project library contains definitions relating to product, process, and resource components as well as further planning details and boundary conditions.

You always have to proceed in the same way: First of all, you must generate and name a sub-object. Depending on the current object you can then assign further properties in the **Extended Properties** dialog. The project library definitions include:

Overhead rates, Calculation models, Media, Planning state, Premises, Production programs, SA codes; filters, Shift models, Targets, and Wage groups

The project library is an integral part of the PPR Navigator.



For more information on how to work with the project library, please refer to the [Project Library Manual](#).

3.4 Switching between Editing Views

There are two further processing views apart from the standard views in the PPR-Navigator that are available for processing graphic 3D layouts or graphs such as the manufacturing concept and the process graph:

- Process view
- Resource view

Switch to the process view or resource view when, for example, you are planning the process run in the process graph or setting the arrangement and specifications of the resources in the manufacturing concept.

- 1) To open one of the two editing views, select the required hierarchical level from the PPR Navigator and open the contextual menu.

- 2) Click **Open in Process Engineer** in the contextual menu. In the example, the process view is switched to.

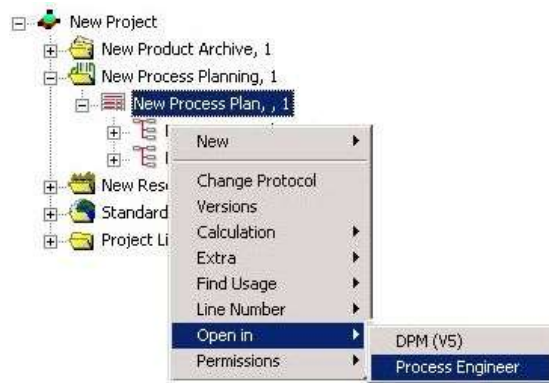


Figure 71: Opening (this frame) – Principle Scheme

Process View

The contextual menu provides functions to edit any displayed hierarchical level from the process view. To create or edit a process graph you must open the contextual menu of the highest hierarchical level in the process view.



Figure 72: Process View with Contextual Menu Functions

Resource View

The contextual menu provides functions to edit any displayed hierarchical level from the resource view. To create or edit a manufacturing concept you must open the contextual Menu of the highest hierarchical level in the resource view.

The contextual menu allows you, for example, to open the two program modules **Edit Graphic** and **Automatic Line Balancing**.

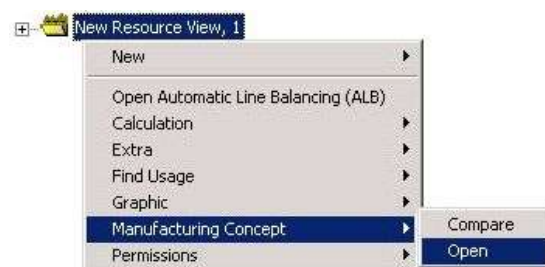


Figure 73: Resource View with Contextual Menu Functions

3.4.1 Overview – Planning and Editing Views

In this schematic display, you can see a brief overview of the planning and editing views and their essential modes of functioning.

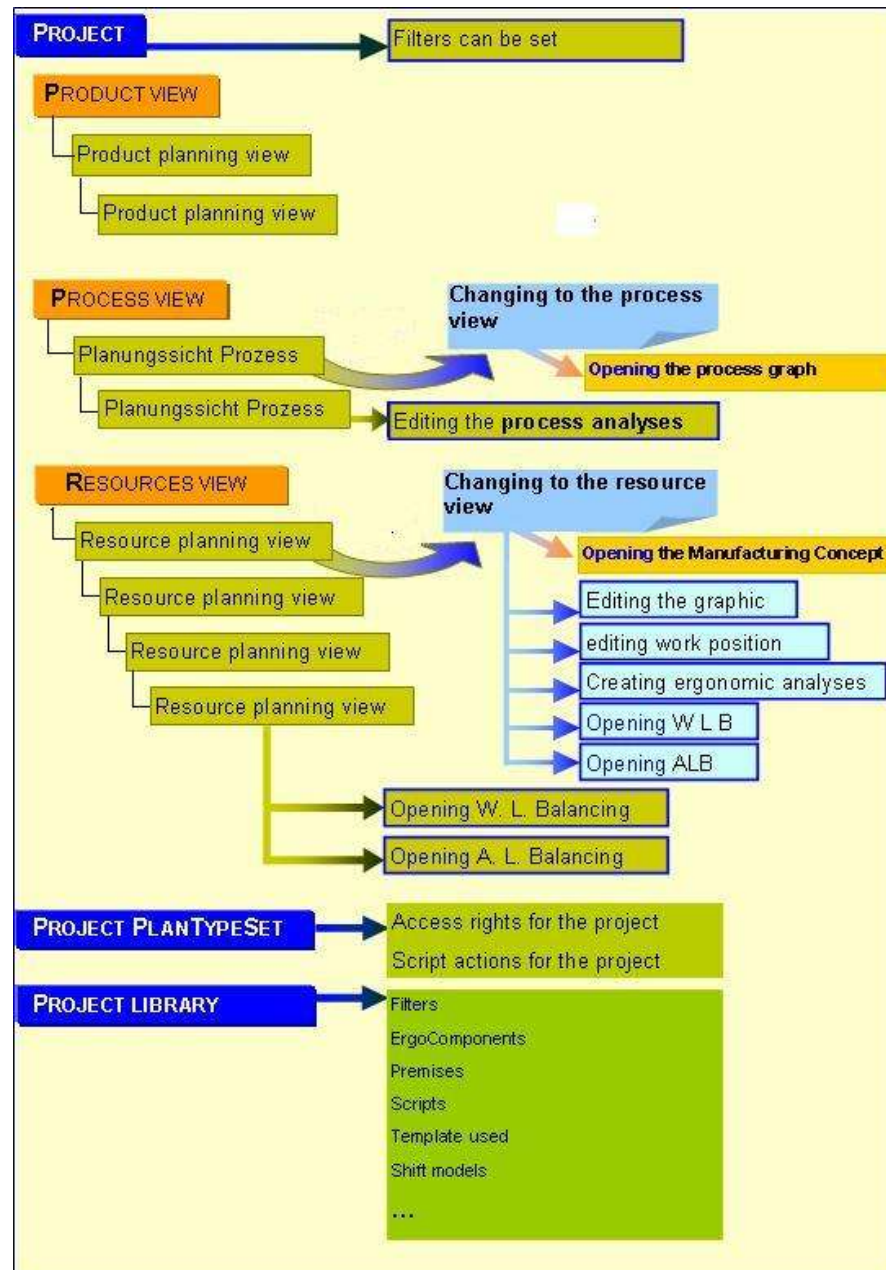


Figure 74: Overview: Planning and Editing View

4. Planning Product View

The product view takes into consideration the product or the manufactured article. In this view, the bills of materials of the products are referenced.

A product structure can be planned under the planning view **product view**.

The planning of a product structure can be carried out in two ways: On the one hand, the product structure set by the constructing engineer (construction bill of materials) can be displayed under the node construction view. On the other hand, the product structure actually used in the manufacture (manufacturing bill of materials) can be displayed under the node production view.

The basis of this manufacturing bill of materials is the product structure as it is shown in the construction view. Both planning views set conditions for each other. In order always to have the most current status of a product, the product structure in the construction view should be continuously maintained and updated. Changes or new components can be integrated in this way, directly from the construction bill of materials into the manufacturing bill of materials.

You can display an unlimited number of manufactured articles, subassemblies, and components in a product structure. The hierarchical structure levels are set in the plantype set (principle of structure bill of materials tree) in accordance to which the product structure can be set up.

4.1 Setting the Product View

The product view is an organizational object. Further objects are:

Design BOM

The design BOM is a material bill that is created in the construction area, giving you information about the structural assembly of the respective product. It comprises at least their number of pieces and a full description. The design BOM can be transferred either from CAD or PDM systems. It serves as a basis for the development of manufacturing and assembly processes. It is usually independent of any particular job or manufacturing process. The design BOM is an organizational object.

Manufacturing BOM

The Manufacturing BOM is a bill of materials designed to meet the manufacturing requirements in terms of structure and content. It serves as a basic document for the organizational preparation, processing, and the production of a product (DIN 6789). It is usually created by processing or supplementing the design BOM and is order-dependent. The design BOM is an organizational object as well.

Manufactured Item (product)

A product is a manufactured, serviceable item. Products are technical objects.

Subassembly = (group)

The subassembly is an item that consists of two or more parts and groups. Subassemblies are technical objects.

Part

A part is an item that does not need to be broken down any further from the user's point of view. Parts are technical objects.

Individual Part

Individual parts cannot be dismantled without causing any damage. Individual parts are technical objects.

Raw Material

Raw material provides the basic material for parts or individual parts. Depending on the respective vertical range of manufacture, raw material can either be raw material, semi-finished material etc. In this planning view, the raw material is located on the lowest level. Raw materials are technical objects.

Auxiliary Material

Auxiliary material is a material/substance/medium used to support the manufacturing and assembly processes (adhesive, solder wire etc.). Auxiliary materials are technical objects.

4.2 Creating Product Structure

A product structure is organized hierarchically. The product structure is created with the menu items of the contextual menu. The individual menu items of the contextual menu are set in the used plantype set.

In the following example, a product structure with several hierarchical levels is shown – examples of levels include manufactured article, variants, subassemblies, components, and auxiliary materials.

Parallel structures can be displayed for every manufactured article (such as variants or subassemblies) which refer to the same basic structure but, for example, are different in the execution of the variants.

To Create Product Structure Using the Contextual Menu

Use the contextual menu on the respective hierarchical level to create a product structure.

- 1) In order to create the product structure, open the contextual menu and select the menu item **New**.
If there is no product structure available in the project, open the contextual menu on the project node first. All further structure elements are created on the respective hierarchical level of the structure.
- 2) The individual structure elements are defined in the plantypes - such as variants, subassemblies, or components and they are displayed in the contextual menu accordingly.

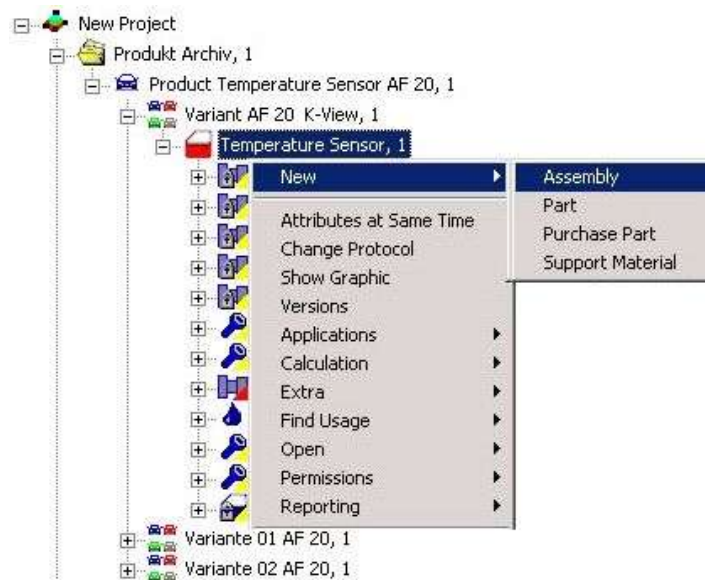


Figure 75: Example of a Product Structure with Several Variants

4.3 Setting the Properties

The properties dialog can be opened from the object contextual menu or by double-clicking the respective object. The dialog structure depends on the selected object.



Note

The properties of an object may be different depending on the database used.

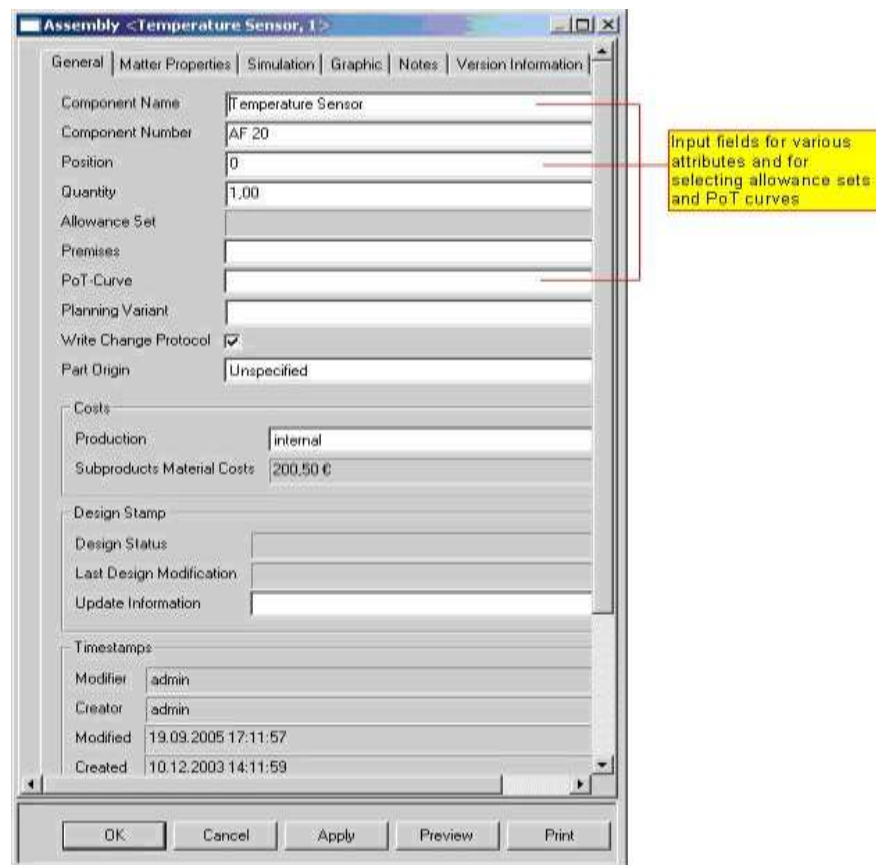


Figure 76: Properties – General Input Dialog

Subassembly <AF 20,,, 1>

General Organization Graphic Costs Matter Properties Simulation Notes Version Information

Org. ID No. 1
Org. ID No. 2
Org. ID No. 3
Org. ID No. 4
Org. ID No. 5
Cost Center
Planning State

Input fields for the OrgID

Figure 77: Properties – Organization Input Dialog

Assembly <Temperature Sensor, 1>

General Matter Properties Simulation Graphic Notes Version Information

Material: any material
Unit: Piece
Form Type:
Size 1 (length): 0,00 mm
Size 2 (width/diameter): 0,00 mm
Size 3 (height): 0,00 mm
Mass per Unit: 0,00 kg

This list box allows you to select the required form type.

Input fields for dimensions

Display field of the calculated mass

Figure 78: Properties – Dimensions Input Dialog

Assembly <Temperature Sensor, 1>

General Matter Properties Simulation Graphic Notes Version Information

General Attributes:
Simulation representation:
Graphic Attributes:
Quest Graphic:
Graphic D5:

Input field for the simulation geometry

Figure 79: Properties – Simulation Input Dialog

Assembly <Temperature Sensor, 1>

General Matter Properties Simulation Graphic Notes Version Information

CAD File:
Graphic V5:

Entry field for path and file name of a CAD graphic file. If you select "Display graphic" from the context menu, the required CAD file will be opened.

Figure 80: Properties – Graphic Input Dialog

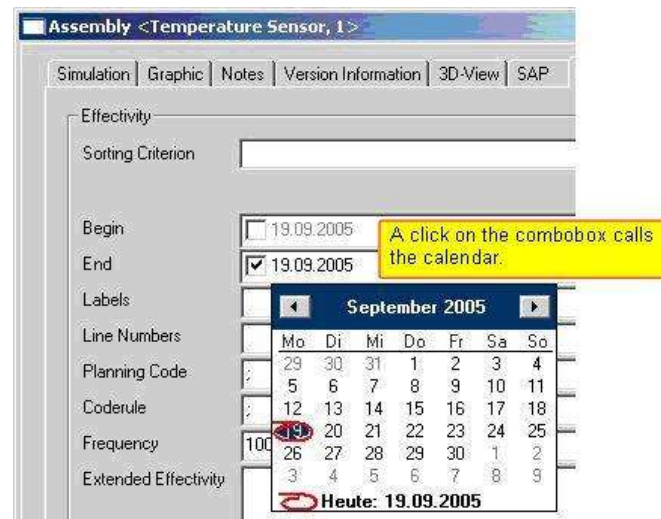


Figure 81: Properties – Effectivity Input Dialog

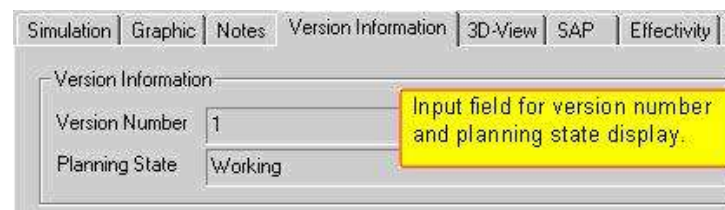


Figure 82: Properties – Version Information Input Dialog

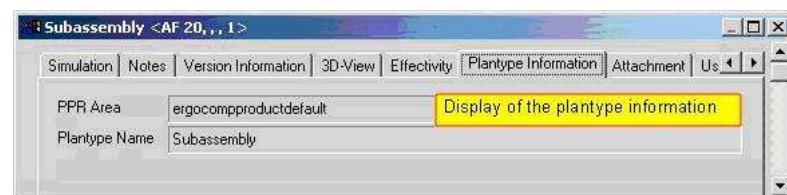


Figure 83: Properties – Planttype Information Input Dialog

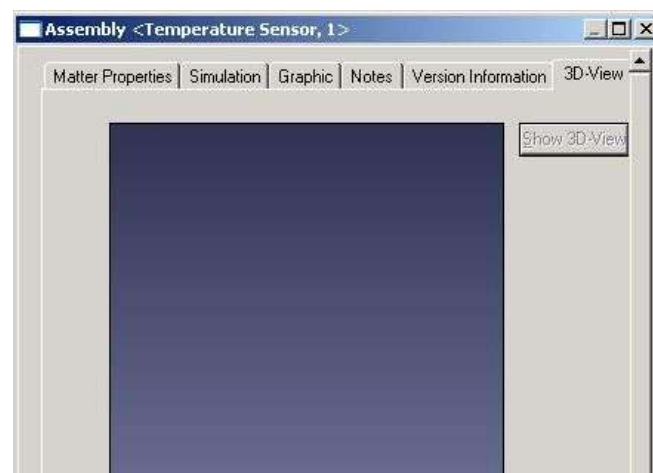


Figure 84: Properties of a Product – Properties – 3D View

4.4 Relations to the Product

You can link products to processes and resources via relations. Additional information on relations can be found in the chapter [Relations and Autorelations](#).

Table 5: Relations Product to Process

Process – product Product – process	Description (Internal Name)
<p>First processes product</p> <p>Product is first processed by process</p> <p>The part is processed and edited for the first time in the process chain. This means that the bin must be provided here if the process is placed on a resource.</p> <p>This relation is necessary if the bin is to be displayed in the layout via the autorelations.</p>	<p>proc_firstprocesses_prod</p>
<p>Process processes product</p> <p>Product is processed by process</p> <p>Part is processed (without bin) - combined in sub-assembly</p>	<p>proc_processes_prod</p> <p>proc_processes_prod_reverse</p>
<p>Process removed product</p> <p>Product is removed by process</p> <p>Disassembly of subassemblies / removal of parts. (informative)</p>	<p>proc_removes_prod</p> <p>proc_removes_prod_reverse</p>
<p>Process creates product</p> <p>Product is created by process</p> <p>OUTPUT which comes from process.</p> <p>Example: Several parts are combined in a subassembly (could also be an intermediate subassembly that would have to be created in the product view (as a so-called pseudo-subassembly). This subassembly "leaves" the process (actually the workplace). This can happen in a new bin which, however, does not appear as an autorelation on the resource via this relation.</p>	<p>proc_creates_prod</p> <p>proc_creates_prod_reverse</p>

5. Planning Process View

The process view is for processes that are necessary for the manufacturing of a product.

A process structure can be planned under the planning view **Process view**.

You can set all nodes, the sequence, and the number of processes that are required for editing and processing of the planned product under the **Process view**.

The hierarchical structure levels are set in the plantype set (principle of the structure bill of materials tree) in accordance with which the process structure can be set up.

You can link processes to products and resources via relations.

Additional information on relations can be found in the chapter [Relations and Autorelations](#).



For more information on process planning, *please refer to the* [Process Graph Manual](#), [Work Load Balancing Manual](#), and [Automatic Line Balancing Manual](#).

5.1 Setting the Process View

The process view itself is an organizational object. Further objects are:

Work Plan

Using the work plan the manufacturing planning serves to record details on how to manufacture parts from raw materials or how to assemble products and groups. The work plan provides the process sequence required to manufacture parts, a group or a product.

Process Work Plan

It contains all work procedures in their logical sequence as required for the production or assembly of a work object. Each work procedure records **where**, **with what**, and **when** input is changed. To describe work procedures it is necessary to break them down into individual process sections.

Element of Work Cycle

The Element of Work Cycle is a technical process. The further subdivision of the Process Flow in addition to the processes allows a more intricate structuring of process. The Element of Work Cycle is a combination of processes (procedures) that under certain conditions can exist parallel to other processes.

Procedure

A procedure is defined as the section of a work procedure comprising the performance on a quantity unit for a particular work assignment. Each procedure for a work order can be repeated.

Partial Procedure

A partial procedure comprises multiple procedure steps and often takes more time than 0.1 minutes; for example, pack drilling machine, clamp workpiece, assemble computer housing.

Procedure Step

A procedure step comprises multiple procedure elements and takes 0.01 to 0.1 minutes; for example, a sequence of moving elements, inserting a screw into a bore hole, answering the phone, lighting a cigarette.

Procedure Element

Procedure elements cannot be broken down further and take 0.001 minutes to 0.01 minutes.

5.2 Creating a Process Structure

A process structure is organized hierarchically. The process structure is created with the menu items of the contextual menu. The individual menu items of the contextual menu are set in the used plantype set.

The example below shows a process structure that has several hierarchical levels – for example sequence planning, manufacture, assembly, and sequence stage.

Creating the Process Structure Using Contextual Menu

Use the contextual menu on the respective hierarchical level to create a process structure.

- 1) In order to create the process structure, open the contextual menu and select the menu item **New**.
If there is no process structure available in the project, open the contextual menu on the project node first.
- 2) All further structure elements are created on the respective hierarchical level of the structure.

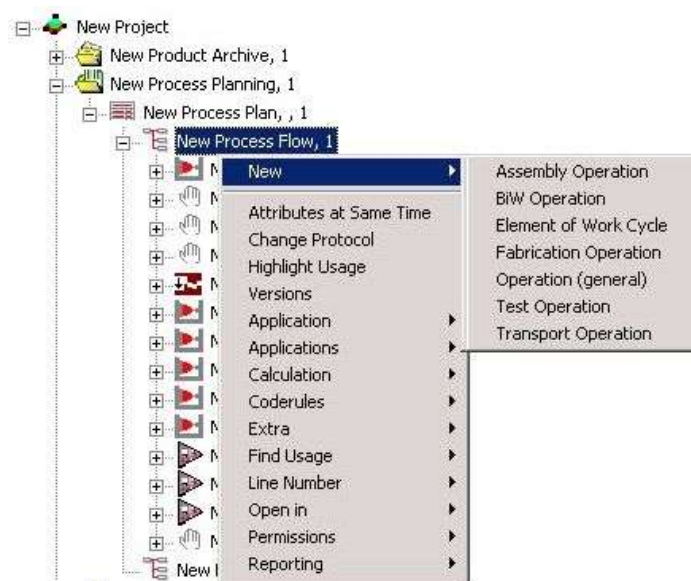


Figure 85: Example of a Process Structure with Assembly and Mechanical Manufacturing

5.3 Setting the Properties

The **Properties** dialog can be opened via the contextual menu of objects or by double-clicking on the respective object. The setup of the dialog Property depends on the selected object.

Note



The properties of an object may be different depending on the database used.

General | Time Structure | Analysis Lines | Balancing | Simulation | Notes | Version Information | SAP | Value Added | Effectivity | Attachment | process running on resource |

Process Name: Motor auf Ladungsträger positionieren (90 Grad vor, 90 Grad hint.)

Process Number: 14

Classification: Standard Process

Long Text:

Premises: Prämissen Motor X35

PoT Curve: TPZ-UNIFERTIGUNG

Write Change Protocol: ☐

Timestamps:

Modifier: admin

Creator: admin

Created: 6/19/2006 12:22:06 AM

Modified: 12/4/2007 12:39:56 AM

Figure 86: Properties – General Input Dialog

Operation (general) <New Operation (general), 1>

General | Time Structure | Analysis Lines | Balancing | Simulation | Notes | Version Information | SAP | Value Added | Effectivity | Attachment |

Calculation Settings:

Valid Time: estimated

Allowance Set:

Estimated Times:

Manual Time (ttb): 0.00000 min

Process Time (ttu): 0.00000 min

Waiting Time (tw): 0.00000 min

Set-Up Time (trg): 0.00000 min

Total Times:

Standard Time (te): 0.0000 min

Basic Time (tg): 0.0000 min

Set-Up Time (tr): 0.0000 min

Calculated Times:

Manual Time (ttb): 0.0000 min

Process Time (ttu): 0.0000 min

Waiting Time (tw): 0.0000 min

Set-Up Time (trg): 0.0000 min

Allowances %:

0.00 %

0.00 %

0.00 %

0.00 %

Allowances Times:

0.00000 min

0.00000 min

Xmax: 0.00

Xmin: 0.00

Ymax: 0.00

Ymin: 0.00

Zmax: 0.00

Zmin: 0.00

0.00000 min

0.00000 min

OK Cancel Apply Preview Print

Figure 87: Properties – Time Input Dialog

Properties – Time Input Dialog Description

- **Valid Time:** Select the valid time for the calculation here: estimated or calculated.
- **Allowance Set:** Time periods can be supplemented by an allowance set. Allowance sets are created in the project library. If you have selected a valid allowance set, the individual allowances are displayed under **Allowance %**.



For more information about process analyses, process times, data cards, settings for process analyses, and value added percentages, *please refer to the [STM Manual](#)*.

6. Planning Resource View

The resource view is for resources that are necessary for the manufacture of a product.

A resource structure can be planned under the planning view **Resource view**.

You can set all nodes, the sequence, and the number of resources that are required for editing and processing the planned product under the **Resource view**.

The hierarchical structure levels are set in the plantype set (principle of structure bill of materials tree) in accordance to which the resource structure can be set up.

Resources are linked via relations to products and processes.

Additional information on relations can be found in the chapter [Relations and Autorelations](#).



For more information on resource planning, *please refer to the* [Manufacturing Concept Manual](#), [Work Load Balancing Manual](#), [Automatic Line Balancing Manual](#), and [Graphic Tools Manual](#).

6.1 Setting the Resource View

The resource view itself is an organizational object. Further objects are:

Conceptual Planning

Concept Planning is the general node for presenting the resource structure of **one** product in a hierarchical structure regardless of the location.

In principle, Concept Planning serves to generate plan variants independent of location planning for purposes of making decisions.

- Conceptual Planning is an organizational node. With the help of this node, you can structure the concept of the resource structure for a product, regardless the respective area, for example, plant, building, or department. You can create an unlimited number of nodes of the type Concept planning under the node **Resource view**.
- You can also create the technical nodes for variants possible for the product under this node (Conceptual Planning).


Planning Variant

Planning variants are used to define individual variants of a product or a specific series. You can create an unlimited number of variants under the node **Conceptual Planning**.

- Planning Variant is a technical node under which resources such as workplace groups, buffers, or transports can be created.
- These resources are initially not assigned to any certain organizational unit in this structure. You can make this assignment under the node Company, which mirrors the organizational company structure with assigned technical resources.

 New Conceptual Planning, 1


 New Planning Variant, 1

 Group of Work Places, 1

 New Internal Transport, 1

 New External Transport, 1

 New Company, 1

 New Site, 1
585858

 New Building/Department, 1

 New Area/Subdepartment

Group of Work Place

Group of Work Place is used for one connected workplace, for example for an assembly line or workplace group. You can create an unlimited number of workplace groups under the node **Plan variants**.

- The workplace group is a technical node that you can use not only for planning a manufacturing concept but also for the balancing process of assembly processes.
- The workplace group is the area in which the planners execute their plans for the individual stations and workplaces.

Internal Transport

The **Internal Transport** is used to define the transports between, for example, Group of Work Place or assembly lines located within an organizational unit. You can create an unlimited number of Internal Transport under the node **Plan variants**. Internal Transport is a technical object.

External Transport

External Transport is used to define transports between, for example, workplace groups or assembly lines located in different organizational units (**plant 1 to plant 2**). You can create an unlimited number of External Transports under the node **Plan variants**. External Transport is a technical object.

Company

The node **Company** is used to define the organizational units of a company structure for a project to which you assign technical resources. You can create an unlimited number of nodes of the type Company under the node **Resource View**.

The node Company is an organizational node. Use this node to structure the organizational structure of a company, such as plant, building, or production area. The technical resources on which processes for manufacturing products are run are planned for a production area.

Site

The node **Site** is used to define the organizational area in a company that manufactures the planned product. An organizational area is, for example, a plant or another business area in the company. You can create an unlimited number of Plant-type nodes under the node **Company**.

- The node **Site** is an organizational node. This node is used to define the local organizational area for manufacturing the product. The Site can also be viewed as a location.

Building/Department

The node **Building/department** is used to define the local areas for operations, such as building units for technical and commercial areas (departments). You can create an unlimited number of nodes of type Building/Department under the node **Plant**.

- The node **Building/Department** is a technical node. This node is used, for example, to show layouts of the production areas of one building.

Area/Subdepartment

The node **Area/Subdepartment** is used to define the local areas for a department, such as room units for technical and commercial areas departments. You can create an unlimited number of nodes of type **Area /Subdepartment area** under the node **Building/Department**.

- The node **Area /Subdepartment** a technical node. This node is used, for example, to show layouts of the production areas for departments.

 New Assembly Station, 1

Assembly Station

The **Assembly Station** is used for defining the technical resources for assembly processes. You can create an unlimited number of assembly stations under the node **workplace groups**.

- The assembly process is a technical object under which an unlimited number of assembly stations can be created, for example, for when you want to combine several assembly stations in a group or in an assembly line.
- The Assembly Station is used for manual workplaces.

Machine

The **Machine** (processing station) is used to define the technical resources for machines, for example for automatic processing centers, CNC machines, or assembly robots. You can create an unlimited number of Machines under the node **workplace groups**.

- The Machine is a technical object for which you can set technical data, for example for investment costs, order, and delivery date, and shift models.

Test Station

You can use a **Test Station** to define the technical data of a test and measuring process. You can define an unlimited number of *Test Station* under the node **Workplace group**.

- Use this type of resource if you want to plan an unlimited number of Test Station in the resource structure. This type of resource belongs in the category of non-value-adding resources. The Test Station is a technical object.

Work Place

Work Place is used to define employees for work positions to be carried out either manually or mechanically. You can create an unlimited number of *Work Places* under the node **workplace groups**.

- The Work Place is a technical object. A Work Place generally requires several employees defined, for example, via shift models or the balancing process of an assembly line.

Buffer

A **Buffer** is used to define the buffers for the workplace groups that are necessary for the optimal throughput of a product. You can create an unlimited number of Buffers under the node **workplace groups**.

- A buffer is a technical object. Shelves, box pallets, and pallets can be used as buffers.
- Buffers are used for the planning of the product throughput, for example in the balancing process of an assembly line for the material provision.


Transport


The **Transport** is used to define the transport within a workplace group or to another workplace group. You can create an unlimited number of Transports under the node **workplace groups**.

- The Transport is a technical object. A transport is a process that describes the transport between resources. In order for a transport to be able to be carried out physically, a means of transport is always assigned to this defined transport.

Transport Tool

 New Machine, 1

 New Test Station, 1

 New Work Place, 1

 New Buffer, 1

 New Transport, 1

 New Transport Tool, 1

The **Transport Tool** is used to define the manner in which a transport is carried out. You can create an unlimited number of Transport Tools under the node **workplace groups**.

- The Transport Tool is a technical object. A Transport Tool is always connected to a defined transport.
- Transport Tool includes stacker trucks and forklift trucks.

Interlaced transport

The **interlaced transport** is used to define transports, which take place in closed systems, for example, a band-conveyor that connects several constantly connected assembly units. You can create an unlimited number of interlaced transports under the node **workplace groups**.

- The interlaced transport is a technical object that you can use for manual and automatic means of transport. In automatic transport systems, the interlaced transport should be linked to the technical object circulation in order to provide these data for the simulation in **QUEST**.

Circulation

Circulation is used to mark the logistical sequences of an assembly line of which the individual stations are constantly connected with each other. You can create an unlimited number of technical objects of type circulation under the node **workplace groups**.

- Circulation is a technical object. All interlaced transports linked to a circulation inherit the parameters set in the **Properties** dialog of a circulation.
- The parameters for the simulation in **QUEST** are provided via the resource circulation.

6.2 Creating a Resource Structure

A resource structure is organized hierarchically. The resource structure is created with the menu items of the contextual menu. The individual menu items of the contextual menu are set in the used plantype set.

An example of a resource structure with several hierarchical levels is shown in the following – for example, a concept and manufacturing plan with assembly and mechanical processing (prefabrication).

Creating Resource Structure Using the Contextual Menu

Use the contextual menu on the respective hierarchical level to create a resource structure.

- 1) In order to create the resource structure, open the contextual menu and select the menu item **New**.
If there is no resource structure available in the project, open the contextual menu on the project node first.
- 2) All further structure elements are created on the respective hierarchical level of the structure.

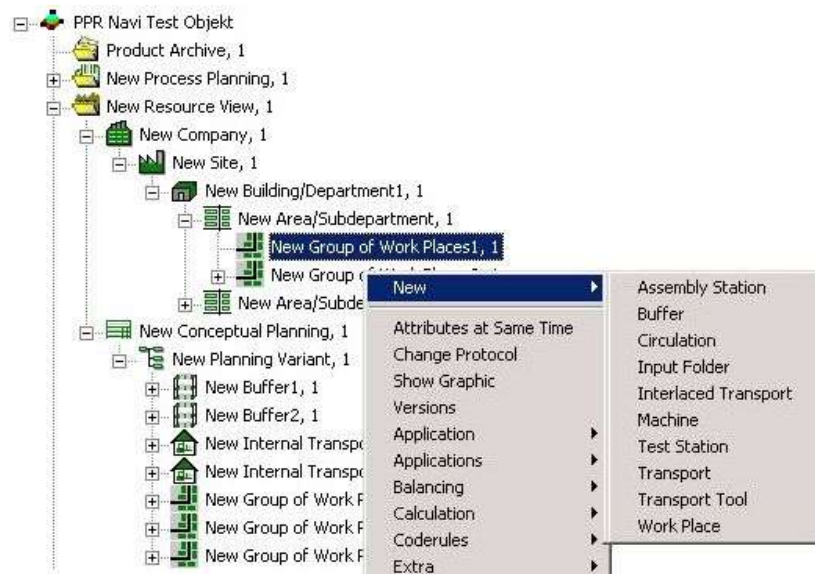


Figure 88: Example of a Resource Structure with a Concept and Manufacturing Plan

6.3 Setting the Properties

The **Properties** dialog can be opened via the contextual menu of objects or by double-clicking on the respective object. The setup of the dialog Property depends on the selected object.



Note

The properties of an object may be different depending on the database used.

Assembly Station <New Assembly Station, 1>

General | Investment | Simulation | Notes | Version Information | 3D-View | Effects

Resource Name	New Assembly Station
Resource Number	M001
Order Date	13.06.2005
Supply Date	13.06.2005
Length	6,00 m
Width	5,00 m
Height	3,00 m
Area	80,00 m²
Occupancy	0,00 %
Availability	95,00 %
Allowance Set	
Premises	Prämissen
Shift Model	2-Schichtsystem in Berlin
Wage Group	Maschinenführer
Write Change Protocol	<input checked="" type="checkbox"/>
Rejected Parts Concerned	<input type="checkbox"/>
Use Block Layout	<input checked="" type="checkbox"/>

Timestamps
Modifier: admin

OK Cancel Apply Preview Print

Entry of general resource data

Information about the geometry of the resource. The entry of the floor height is important (comparative height to other objects)

A change protocol is only created if this checkbox has been activated. Additionally, this function must be activated in the configuration.

Figure 89: Properties– General

Assembly Station <New Assembly Station, 1>

General | Investment | Simulation | Notes | Version Information | 3D-View | Effects

Investment

Estimated Investment: 15000,00 €

Cum. Estimated Investment: 0,00 €

Calculated Valid Invest: 0,00 €

Calc. Investment is valid: ☒

Investment Type: Not accessible

Fixed Shares

Tool costs: 1000,00 €

Installation: 55,00 %

Customs: 5,00 %

Transport: 5,00 %

Spare parts: 5,00 %

Risk allowance: 5,00 %

Imputed Interest: 5,00 %

Running Tool Costs: 5,00 €/y

Maintenance: 5,00 €/y

Variable Shares

Other Variable Costs: 5,00 €/h

Calculation

Depreciation Duration: 5,00 a

Depreciation Costs: 0,00 €/y

Fixed Manufacturing Cost Multiplier: 0,00 €/h

Variable Manufacturing Cost Multiplier: 0,00 €/h

Manufacturing Costs Multiplier: 0,00 €/h

Entered Manufacturing Cost Multiplier: 0,00 €/h

Calculated Manufacturing Cost Multiplier is Valid: ☐

OK Cancel Apply Preview Print

Annotations:

- Input field for estimated
- Display fields for the accumulated estimated investments as well as for the calculated investments of the sub-objects.
- When the field Calc. Investment is valid is checked the calculated investment is valid. Otherwise for further calculation the estimated investment will be used.
- Input field for type of investment.

Figure 90: Properties– Investment

Resource <New Resource, , 1>

General | Investment | Organization | Area | Graphic Settings | Notes | Version Information

Org ID. 1:

Org ID. 2:

Org ID. 3:

Org ID. 4:

Org ID. 5:

OK Cancel Apply Preview Print

Annotation:

- Input fields for Organizational IDs.

Figure 91: Properties – Organization

7. Additional Features

7.1 Consistency Check

Each technical object or each process must be assigned to an organizational structure to ensure that planning is fully implemented. . Consistency check means to check any links of components from the **technical product structure** or the **process structure** to the **organizational structure**. Thus, the consistency check always relates to entire projects.

On a project-wide basis, you can either compare the entire **technical product structure** or the entire **process structure** with the **organizational structure**.

A component from the technical product structure or the process structure is considered as inconsistent if the component itself or one of its sub-objects has a reference to an organizational structure.

To Start the Consistency Check

- 1) Click **Tools < Database Utilities < Consistency < Check Process**.
- 2) Select a project from **Choose a Project** dialog.
- 3) Click **OK**.



Note

You can only check either the technical product structure or the process structure at a time. If you want to check both structures, you need to check one after the other by clicking the “Check Product” and “Check Process” options.

The consistency check opens the “Select Project” dialog. Left-click the required project and confirm your selection using the OK button to complete the check.

- 4) Errors, if any, are displayed in the **Product Consistency Check** or **Process Consistency Check** dialog boxes.

Number	Component	Error
A 168 682 16 64	I-Tafelaussenhaut	Missing Assignment
A 168 682 47 84	Luftkanale	Missing Assignment
A 168 682 00 34	ZB_Kombiaufnahme	Missing Assignment
A 168 689 35 08	Kombi-Hutze	Missing Assignment
A 168 689 15 08	Kombi-Kragen	Missing Assignment
A 168 680 08 36	ZB Blende Miko	Missing Assignment

Figure 92: Example of a Result of the “Product Consistency Check”

Any incorrect (missing) links from a product or process to an organizational structure should now be corrected to establish consistency.

7.2 Continue Linking

You can create link between two objects by drag and drop finder result into PPR tree to create link between objects.

You can create link between two objects by drag and drop in PPR tree.

- 1) Drag and drop finder result into PPR tree to create link between objects. The right side finder result contains product objects and left side PPR tree. Create link between product objects and process objects by drag

and drop from finder (product objects) to PPR tree (process objects). Please refer to the [Figure 91](#).

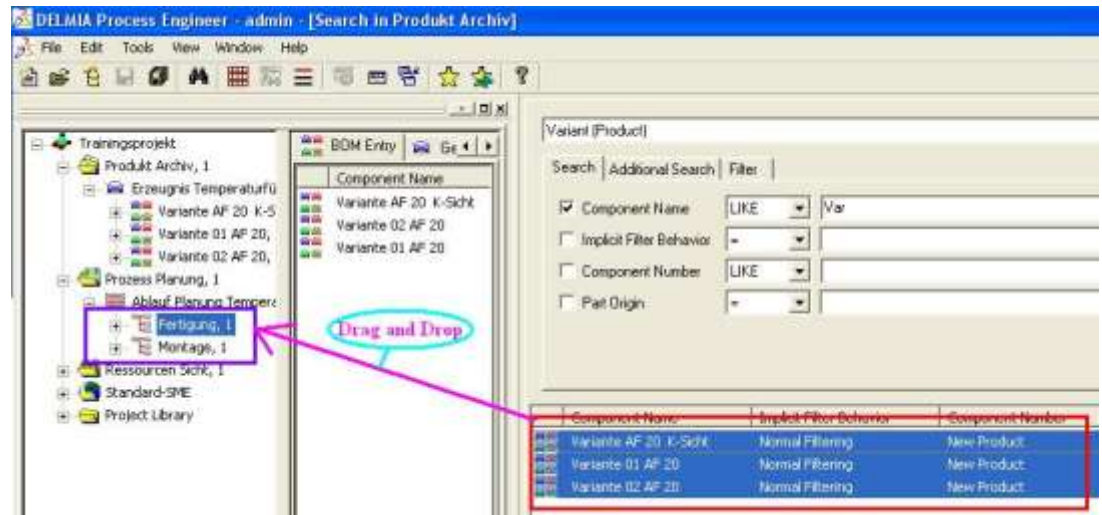


Figure 93: Create Link by Drag and Drop

- 2) You get a confirmation message after drag and drop. Please refer to the [Figure 92](#).

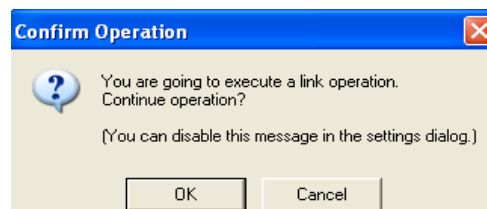


Figure 94: Conformation Message after Drag and Drop

- 3) Select type of link from the **Relate** dialog, and click **OK** create selected link between selected objects

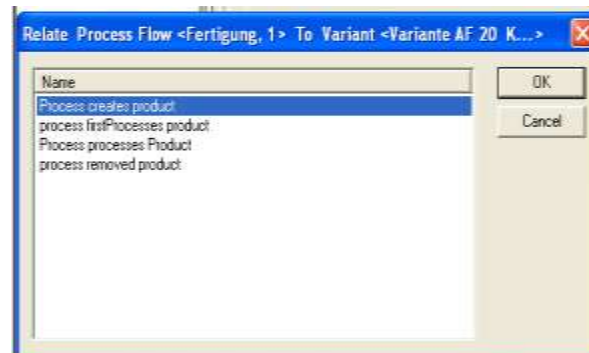


Figure 95: Relate Dialog

- 4) If no link exists between selected objects, the new link of selected type is created. If link already exists between selected objects (and also for MCM-projects when the extended effectivity on the relation and the selected modstatement extended effectivity is overlapping), the **Common Browser Component: Information** dialog come up with objects that already have same link type. Please refer to the [Figure 94](#).

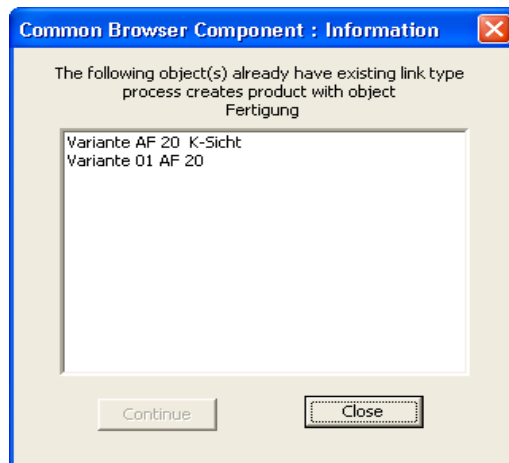


Figure 96: Common Browser Component: Information Dialog



Note

If some of the selected objects have configuration to create same link type twice then it continue to create same link type of objects second time.

7.3 Display of Attachments

- 1) Select **Tools < Settings < ChangeSettings < Browser and Menu Items** tab.
- 2) Select the checkbox **Show overlay-bitmap for attachments**. This activates the new implementation (clip icon in treeview). Uncheck to deactivate the new implementation.
- 3) Select the Project component, Right-click and open **Properties** dialog.
- 4) Select **Attachment** tab. Attach the files in **Attachment** dialog. Project elements having attachments are displayed with overlaid bit-map_clip icon. Objects those not having the attachment are displayed with the pre assigned icons. *Please refer to the Figure 95.*

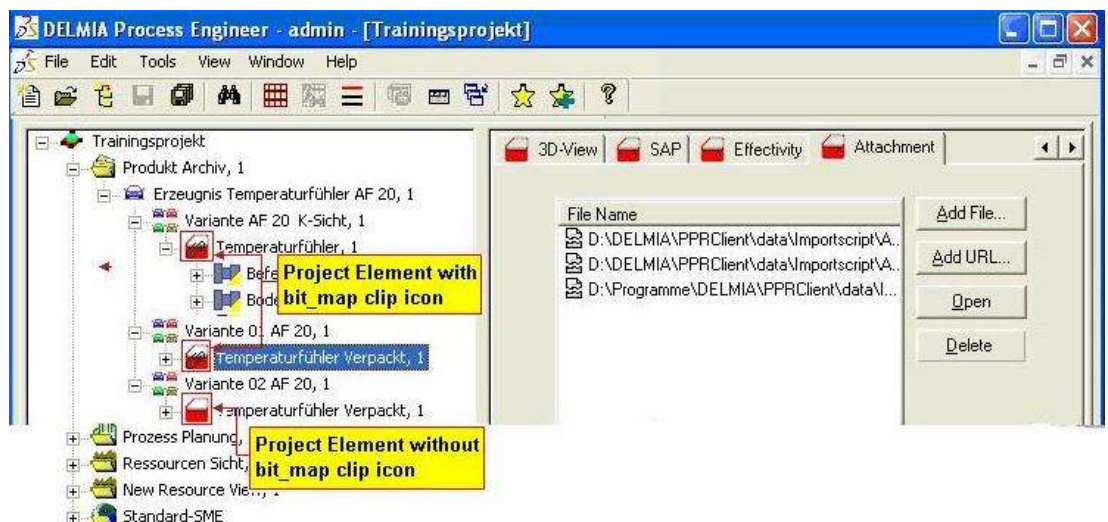


Figure 97: Project Elements with Attachments

7.4 Callback to Esc Function

- 1) Go to **Tools < Settings < Maintenance Tool < Global** tab. Add new key **propertiesdialog/activatecallbacktoESC** and set value to **True**.

- The value **True** is to activate the new implementation. And value **False** is to deactivate the new implementation.
- 2) Open **Properties** dialog on some element.
 - 3) Make changes in data and press **Esc** on the keyboard. The **Save Changes** dialog apperas.
 - 4) Select **Yes** to save the changes and **NO** to discard the changes.

7.5 Setting Height of Control

A attribute property “Height confined to” is created to control the height of controls (like RTF Edit, Multi Line Edit, and File Viewer) in property pages.

Height confined to = n (no. of lines)

$n = 0$ - means non – fixed height control (existing behaviour).

$n > 0$ – means fixed height control.

Height of line is calculated based on font. For example, calculated height of line is h. User input for “Height confined to” is n. Then height of control is $(n * h)$.

This property is used by controls which are resizable in height. For fixed height controls (like edit, combo, checkbox) the value defined for new property (Height confined to) is not applicable.

7.6 Sorting Project Structures

You can set whether the assigned structure (children) are sorted alphabetically or numerically for all three project structures (product, process, and resources) in the respective properties dialog of the structure (parent node). If you make no specifications with regard to sorting, the sort index is used as the basis for sorting. Sorting according to sort term takes effect only on the structures in the PPR Navigator. *Please refer to the [Refresh Sort Index](#).*

Setting the Sort Term

You can use both sort terms for homogenous structures. Alphanumerical names cannot be sorted with two terms.

- **Numeric setting:** Numeric sorting is used whenever a number designates products, resources, and processes. For example, products are designated by identification numbers; processes by process numbers; and resources by machine numbers.
- **Alphabetic setting:** Alphabetic sorting is used whenever the designations contain only letters of the alphabet.



Figure 98: Setting the Sort Term in the Properties Dialog

Example

Two examples of the process structure are included here to clarify the procedure. In both examples, the sort terms are set on the hierarchical levels **Sort processes numerically** and **Sort alphabetically**.

Sorting Processes Numerically

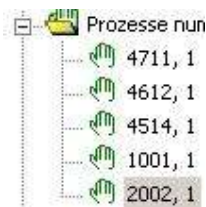


Figure 99: Example: Processes – Numeric Sorting - Initial Situation

- 1) Update the view to execute sorting, for example, with the menu entry **Reload** in the contextual menu of the project node. Sorting is executed according to the value of the number.

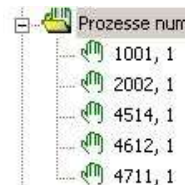


Figure 100: Example: Processes – Numeric Sorting - Result

Sorting Processes Alphabetically

Example



Figure 101: Example: Processes – Alphabetic Sorting – Initial Situation

Sorting is executed according to letters of the alphabet.



Figure 102: Example: Processes – Alphabetic Sorting - Result

7.7 Modify Sort Index

With help of function **Modify Sort Index** you can move PPR-components in the **listview** and reorder them. Furthermore, it is possible to indicate the background in color by activating the function. As so far, you can also copy and reference PPR-components in this **Edit** mode.

- 1) In order to move a PPR-component select it in listview, press **ALT** Key and then move with help of the left mouse button the PPR-component.
- 2) If you want to move several PPR-components at the same time, select the PPR-components before in the listview either with the **Shift** Key or with the **Control** Key and then press **ALT** Key. Furthermore, you can move PPR-components between **listview** and PPR-Navigator in both directions.

Making Color Setting

In Edit mode you can make the work area colored.

You can make the settings for the color code in menu **Tools < Settings < Maintenance Tool < User**.

Only if you activate this key you receive a colored background. The background color depends on which value you have selected for color code.

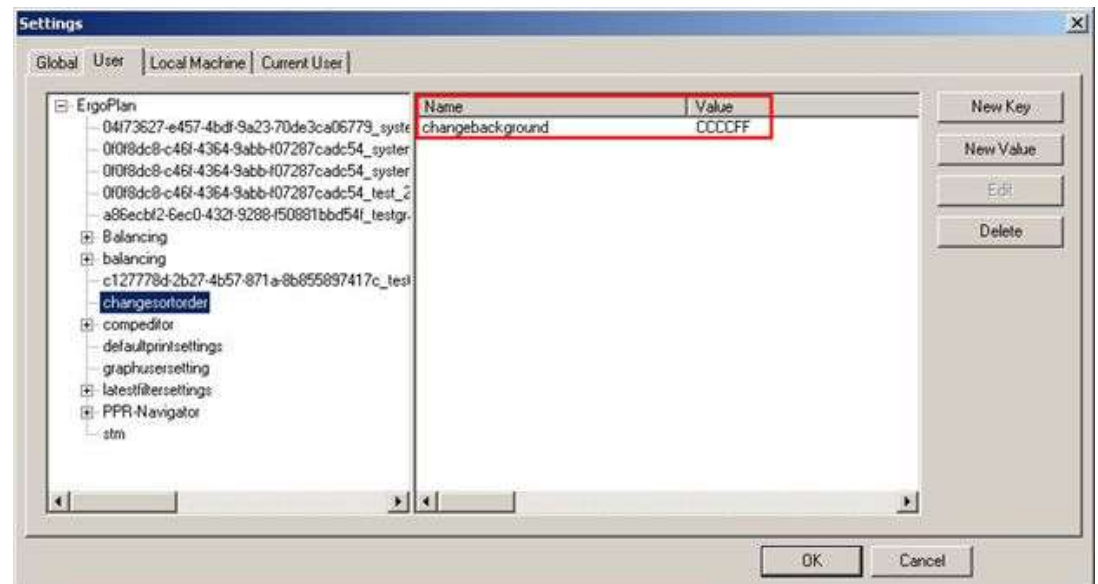


Figure 103: Activate Color Code for Background

7.8 Changing Sortorder

In this section you can learn the procedure to start the function and to move PPR-components in the **listview**.



For more information on moving of PPR-components *please refer to the [General Introduction](#)*.

To Start Function Change Sortorder

You can start function **Change Sortorder** in three ways:

- With help of icon  **Reorder Mode** in the toolbar.
- With help of menu **Edit < Change Sortorder**.
- With help of key combination Control Key (Ctrl) + D.

After starting the function the icon  is displayed in Edit mode.

Moving PPR-Components in listview

Before moving with help of PPR-components make sure that the following two settings are activated:

- The Sortindex (usage) has to be displayed and be activated in **listview**.
- You set **Sortindex (usage)** in configuration tool with relation **nodes**. An administrator or an equal co-worker should do this setting.
- A moving of PPR-components is only possible when the listview was sorted according to **Sortindex (usage)**.

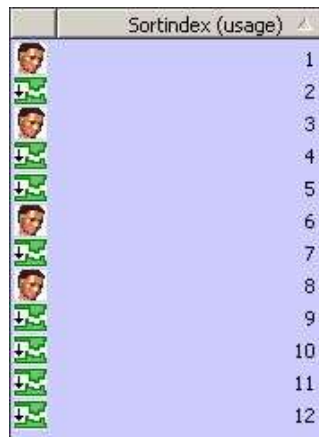


Figure 104: Display Sortindex (usage)

- In order to save modifications of sort sequence in database you have to activate in menu **Tools < Settings < Change < Browser and Menu Items < Restore sorting in listviews**.



Icon *Reorder Mode* is activated.

- 1) In order to move PPR-components in listview, click icon **Reorder Mode** in toolbar.
- 2) The colored background corresponds to the adjusted color code. *Please refer to the Figure 101.*
- 3) Select PPR-components in listview. In the example several PPR-components are selected with help of Control Key.

Sortindex (usage) ▲	Resource Name	Implicit Filter Behavior	Resource Number
1	Work place 1	Normal Filtering	
2	Assembly Station 02	Normal Filtering	M002
3	Work place 2	Normal Filtering	
4	Assembly Station 03	Normal Filtering	M003
5	Assembly Station 04	Normal Filtering	M004
6	Work place 3	Normal Filtering	
7	Assembly Station 05	Normal Filtering	M005
8	Work place 4	Normal Filtering	
9	Assembly Station 06	Normal Filtering	M006
10	New Assembly Station	Normal Filtering	M001
11	New Assembly Station	Normal Filtering	
12	New Assembly Station	Normal Filtering	

Figure 105: Select PPR-Components

- 4) With help of the left mouse button you can move selected PPR-components. Press in addition ALT Key and keep these pressed during moving.

	Sortindex (usage)	Resource Name	Implicit Filter Behavior	Resource Number
	1	Work place 1	Normal Filtering	
	2	Assembly Station 02	Normal Filtering	M002
	3	Work place 2	Normal Filtering	
	4	Assembly Station 03	Normal Filtering	M003
	5	Assembly Station 04	Normal Filtering	M004
	6	Work place 3	Normal Filtering	
	7	Assembly Station 05	Normal Filtering	M005
	8	Work place 4	Normal Filtering	
	9	Assembly Station 06	Normal Filtering	M006
	10	New Assembly Station	Normal Filtering	M001
	11	New Assembly Station	Normal Filtering	
	12	New Assembly Station	Normal Filtering	

Figure 106: Moving PPR-Components

- 5) After releasing the two keys the PPR-components are re-ordered and shown in listview.

	Sortindex (usage)	Resource Name	Implicit Filter Behavior	Resource Number
	2	Assembly Station 02	Normal Filtering	M002
	4	Assembly Station 03	Normal Filtering	M003
	5	Assembly Station 04	Normal Filtering	M004
	7	Assembly Station 05	Normal Filtering	M005
	9	Assembly Station 06	Normal Filtering	M006
	10	New Assembly Station	Normal Filtering	M001
	11	New Assembly Station	Normal Filtering	
	12	New Assembly Station	Normal Filtering	
	13	Work place 1	Normal Filtering	
	14	Work place 2	Normal Filtering	
	15	Work place 3	Normal Filtering	
	16	Work place 4	Normal Filtering	

Figure 107: New Sorting of PPR-Components by Moving

The sort sequence can also be changed in tree view in PPR-Navigator.

	MontageTemperaturfühler (WLB), 1
	Assembly Station 02, 1
	Assembly Station 03, 1
	Assembly Station 04, 1
	Assembly Station 05, 1
	Assembly Station 06, 1
	New Assembly Station, 1
	New Assembly Station, 1
	New Assembly Station, 1
	Work place 1, 1
	Work place 2, 1
	Work place 3, 1
	Work place 4, 1

Figure 108: New Sort Sequence in Tree View



Icon *Reorder Mode* is activated.

Linking PPR-Components in Reorder Mode

- 1) In order to Link PPR-components in reorder mode, click icon **Reorder Mode** in toolbar.
The colored background corresponds to the adjusted color code. *Please refer to the [Figure 107](#).*

- 2) Select PPR-components in listview. You can select several PPR-components with the help of **Ctrl** Key.

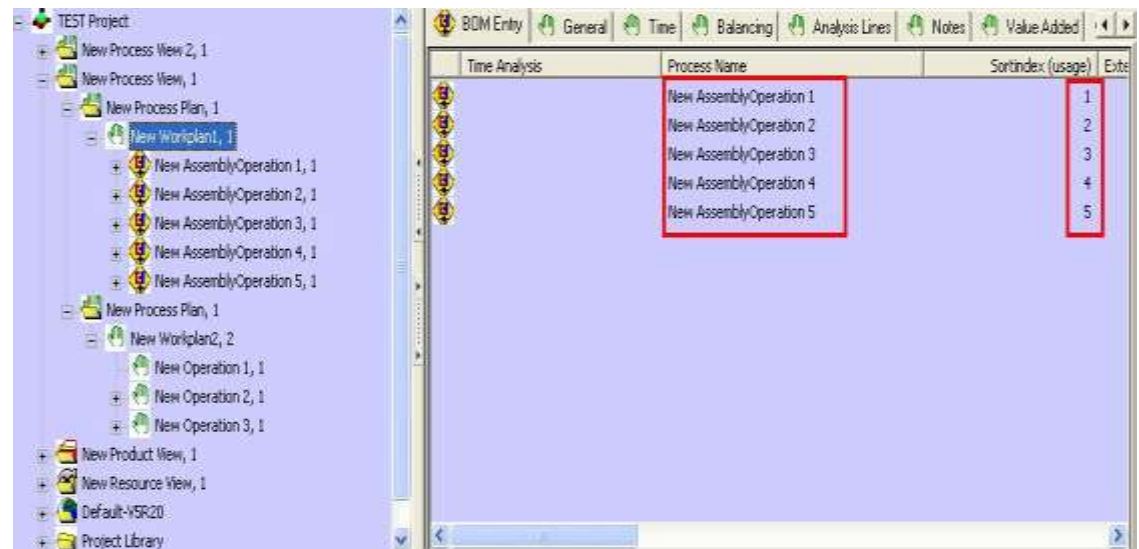


Figure 109: Selected PPR-Components for Linking

- 3) Link selected PPR-components with parent node using drag and drop, with help of the left mouse button. You can specify the sort order while drag and drop.

Please refer the [Figure 108](#). In this example we are creating a link between **New Workplan1** with **New AssemblyOperation5**.

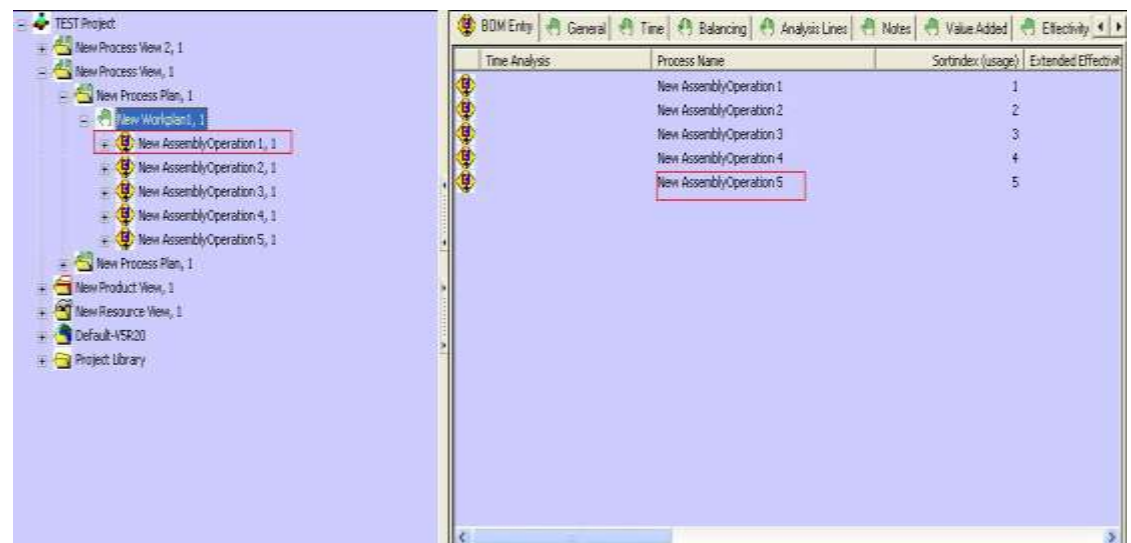


Figure 110: Link between New Workplan1 with New AssemblyOperation5

- 4) After drag and drop, the PPR-components are linked and re-ordered in the listview.

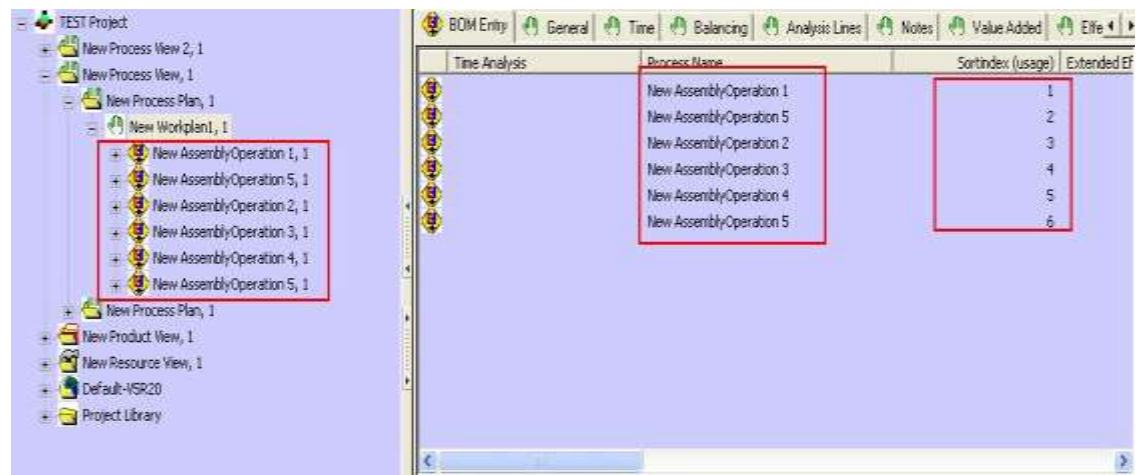


Figure 111: Linked and Re-ordered PPR-Components in Listview

Copying PPR-Components in Reorder Mode



Icon *Reorder Mode* is activated.

- 1) In order to copy PPR-components in reorder mode, click icon **Reorder Mode** in toolbar.
The colored background corresponds to the adjusted color code. *Please refer to the [Figure 110](#).*
- 2) Select PPR-components in listview. You can select several PPR-components with the help of **Ctrl** Key.

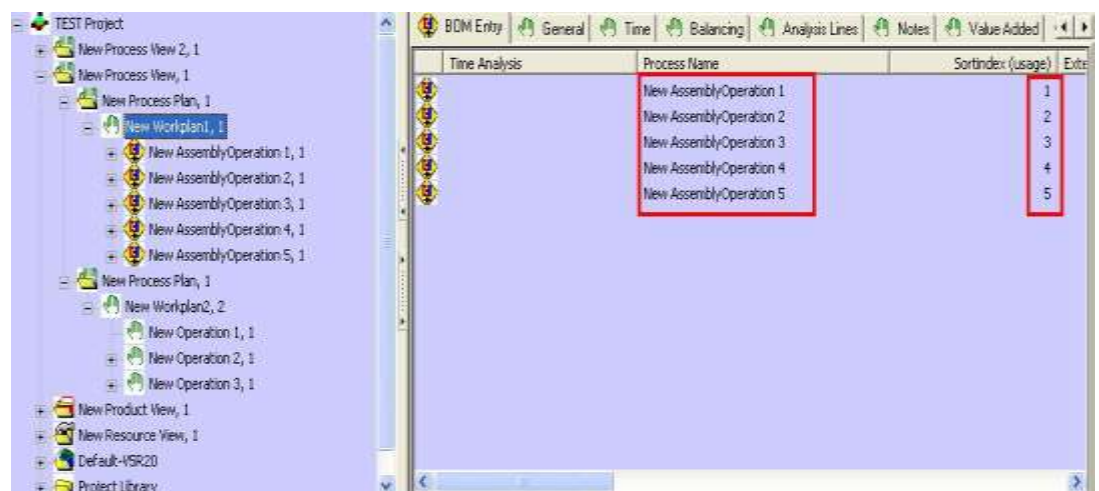


Figure 112: Selected PPR-Components for Copying

- 4) With help of the left mouse button you can copy selected PPR-components. Press in addition **CTRL** key and keep these pressed during drag and drop. *Please refer the [Figure 111](#).* In this example we are copying **New AssemblyOperation4** under **New Workplan1**.

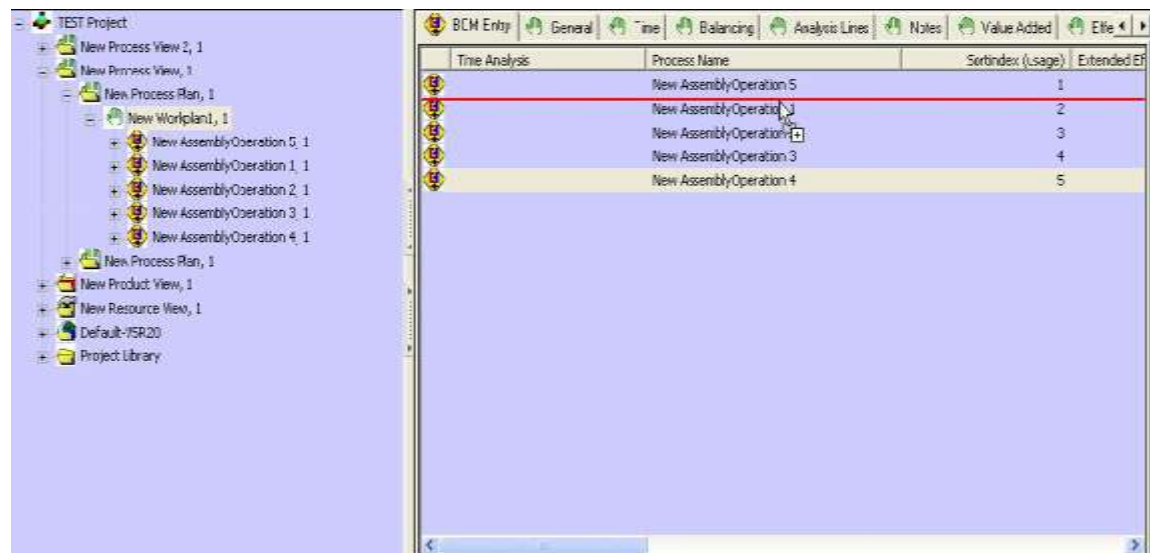


Figure 113: Copying New AssemblyOperation4 under new Workplan1

- 5) After releasing the two keys the PPR-components are copied and re-ordered in listview. The sort sequence can also be changed in tree view in PPR-Navigator.

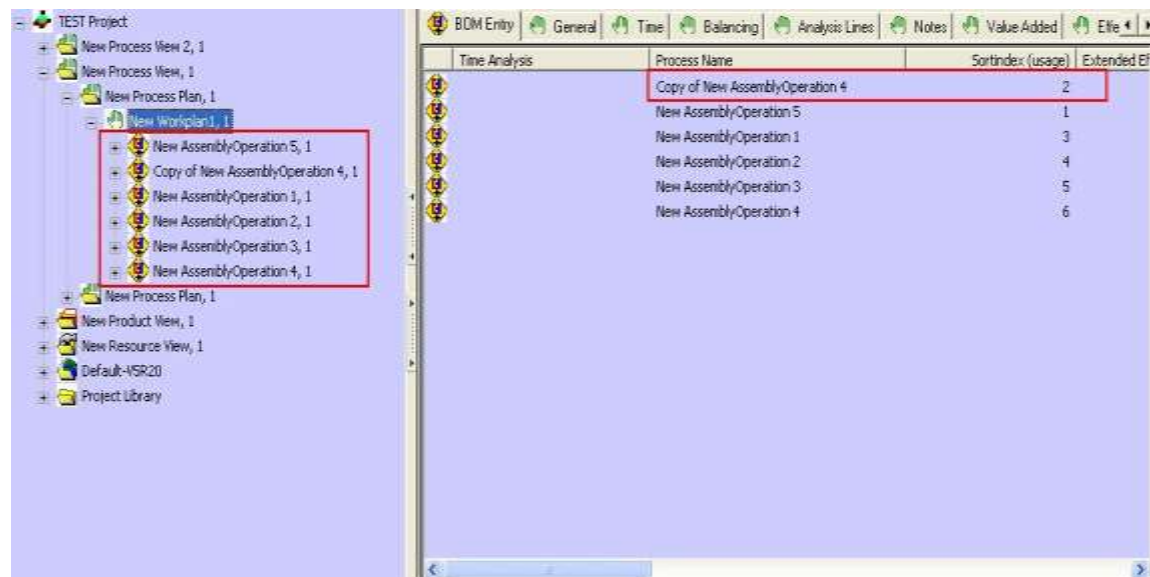


Figure 114: PPR-Components Copied and Re-ordered in Listview

7.9 Variant Planning

To Open Variant Matrix

- 1) Open Project Library with process and calculation models defined.
- 2) Right-click the selected process node and select **Variant Matrix**.

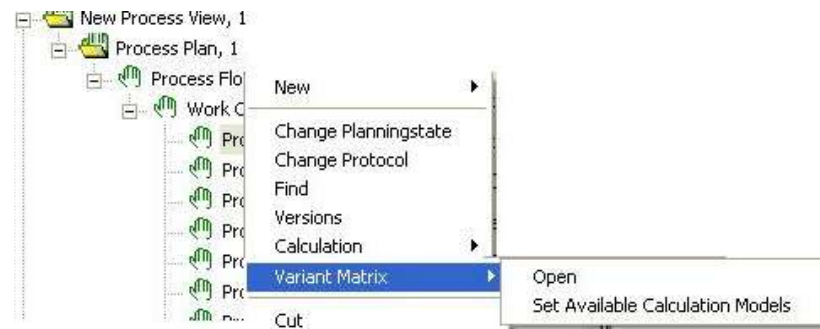


Figure 115: Variant Matrix

3) Click **Open**

This opens a dialog with a list of already saved profiles and activated calculation models. Please refer to the [Figure 114](#).

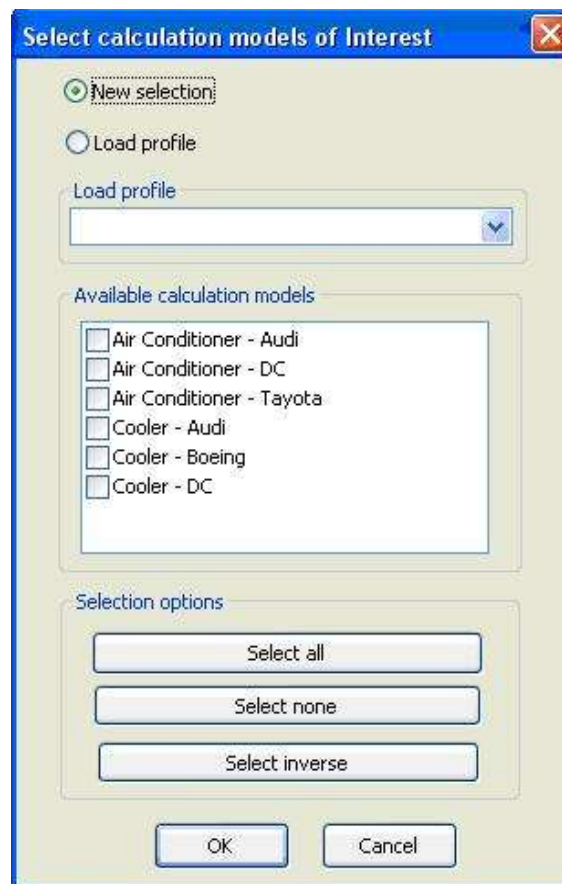


Figure 116: Select Calculation Models of Interest

- **New selection:** Select this option if you do not need any existing profile to be used to open the variant matrix window.
- **Load profile:** List all the user profiles created on the selected process in the variant matrix window. Profiles can be created in the variant matrix window; these profiles contain all the information of attributes, Calc-Models, format display.

You can select any existing profile saved before. If no profile exists for the selected process node then only **New selection** is available.

- **Available Calculation models:** List all the Calc-Models assigned to the selected process.

Here you can select those Calculation Models that need to be displayed in the variant matrix window.

4) Click **Set Available Calculation Models**.

It shows the list of all available calculation models defined within the check list box. Here you can select those Calculation Models which needs to the assigned to the selected Process node. *Please refer to the [Figure 115](#).*

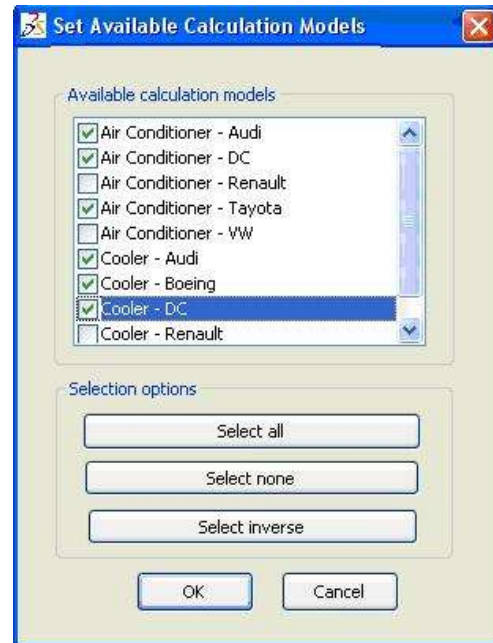


Figure 117: Set Available Calculation Models

- **Select all:** Checks all the Calculation Models available in the List box.
- **Select none:** Uncheck all selected Calculation Models.
- **Select inverse:** Uncheck the selected Calculation Models and checks the unselected Calculation Models.

5) After selection of Calculation Model and profile if any, Right-click the selected node in Project Library and select **Variant Matrix** < **Open Variant Matrix**.

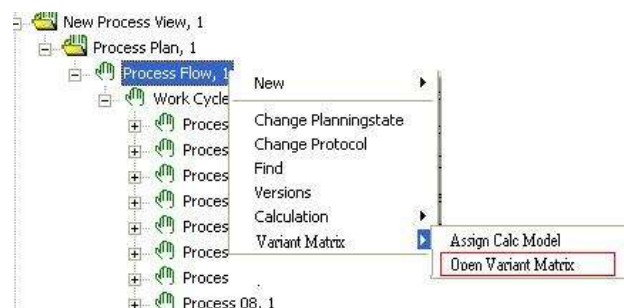


Figure 118: Open Variant Matrix

6) The variant window is launched. *Please refer to the [Figure 117](#).*

Usage Block		Attributes Block		Calculation Model Block			
Level no	Process name	Calculated Time [min]	Estimated Time [min]	Air Conditioner - Audi	Air Conditioner - Renault	Cooler - Audi	Cooler - Boeing
0	Workplan	0	0				
1	Process 01	0	0				
1	Process 02	0	0				
1	Process 03	0	0				
1	Process 04	0	0				
1	Process 05	0	0				
1	Process 06	0	0				
1	Process 07	0	0				
1	Process 08	0	0				
1	Process 09	0	0				

Figure 119: Variant Window

The Figure 117 is divided into three blocks. Usage Block, Attribute Block, and Calculation Model Block

Usage Block: This contains two column fields:

- **Level Number:** Level number displays the hierarchical level of the child with respect to the selected process node parent from which variant matrix window was initiated.
- **Process Name:** The multi level approach in variant matrix window is available. It is possible to see children at multiple hierarchical levels under the parent. The extreme left most column shows the level relative to the parent. Zero denotes the immediate child from which the variant matrix is opened, and it is incremented by one for each level.

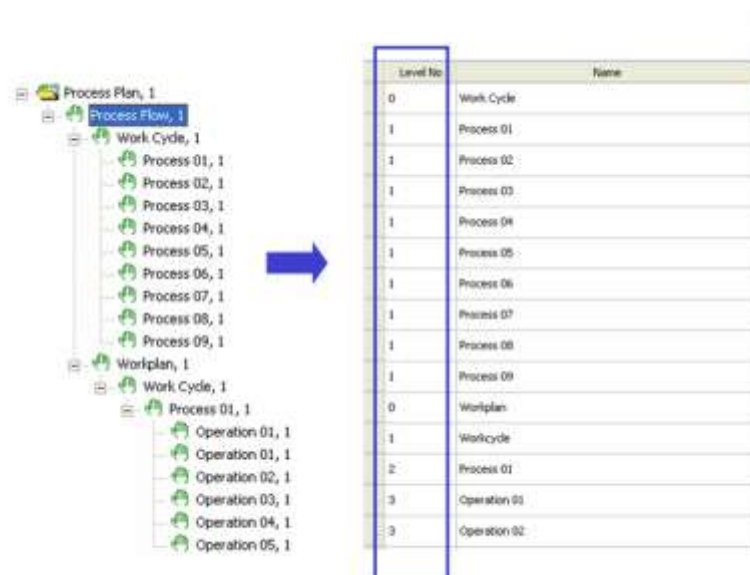


Figure 120: Multilevel approach in Variant Matrix

Attributes Block: This contains two column fields:
Calculated Time and Estimated Time

All time related attributes are displayed, only those attributes will be considered whose following properties must be set. The attribute property Display in browser must be set to:

Display in browser Yes

The attributes property Data-Type can be set to either float or integer. The attribute property Unit category must be set to:

Unit category time

Calculation Model Block

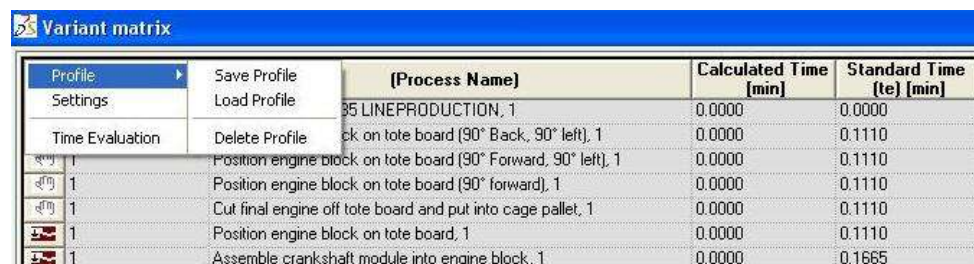
Displays the calculation models assigned to the selected process component and also display the weights assigned to the corresponding process component. You can enter the weights in the calculation model block.

There are two modes of entering the weightings in the calculation model block:

- **X Mode:** In “X” mode you can click cell which acts a toggle between “X” and empty. The “X” means 100% and empty means 0.
- **Fraction Mode:** In this mode, you can enter fractions for weightings.

Time Evaluation

Time evaluation is for showing summation of different times, based on weightings. You can click on the top left corner of the variant matrix, to display a new contextual menu with an entry “Time Evaluation”.



Variant matrix			Calculated Time [min]	Standard Time [te] [min]
Profile	Save Profile	(Process Name)		
Settings	Load Profile	35 LINEPRODUCTION, 1	0.0000	0.0000
Time Evaluation	Delete Profile	Pick on tote board (90° Back, 90° left), 1	0.0000	0.1110
		Position engine block on tote board (90° Forward, 90° left), 1	0.0000	0.1110
		Position engine block on tote board (90° forward), 1	0.0000	0.1110
		Cut final engine off tote board and put into cage pallet, 1	0.0000	0.1110
		Position engine block on tote board, 1	0.0000	0.1110
		Assemble crankshaft module into engine block, 1	0.0000	0.1665

Figure 121: Time Evaluation in Variant Matrix

Click **Time Evaluation** to displays a **Time Evaluation** dialog. Time evaluation computes the summation of times based on weightings. The row represents the time related attributes and column represents the corresponding calculation models.



	Air Conditioner - Audi	Air Conditioner - DC	Cooler - Boeing	Cooler - DC
Setup-time (trg)	19.2	11.1	13	16.5
Setup-time (tg)	17	12.9	13.8	18.5
Valid-time (tg)	24.4	13.9	15	20.9
Valid-time (tt)	19.3	12.3	15.6	14.7

Figure 122: Summation of Times

The summation of weights is calculated by each Calculation Model weight multiplied with each time attribute value.

Variant Planning Customization

- 1) Click **Settings** in Variant Matrix. *Please refer to the [Figure 119](#).*

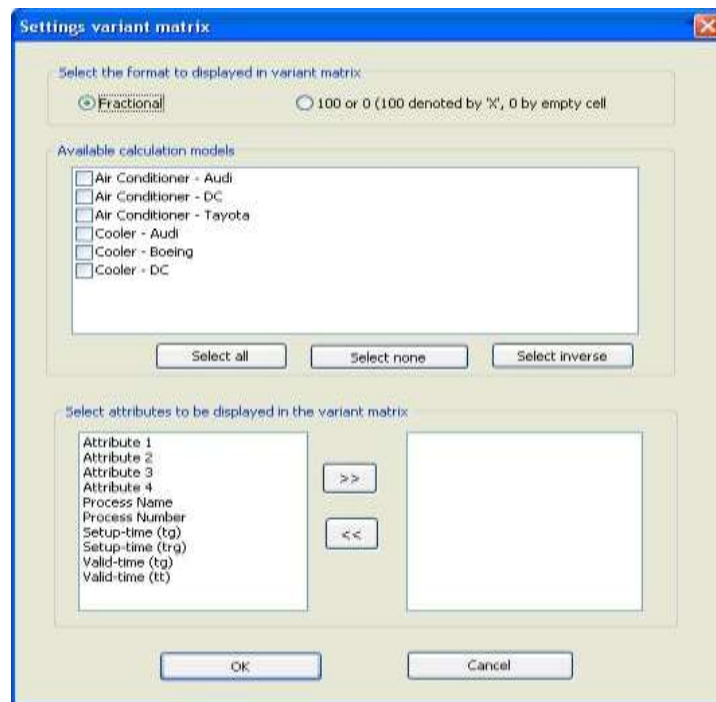




Figure 123: Settings in Variant Matrix

- 2) Select the format to display in Variant Matrix:

- **Fractional:** This mode allows you to enter fraction (100% or fraction) in corresponding cell.
- **100 or 0 (100 denoted by “X”, 0 by empty cell):** In 100% mode the cell acts as a toggle button. Single click turns 100 or zero. 100% is denoted as “X” and zero is a blank.

- 3) Select Calculation Models of Interest.

- 4) Select Attributes to be displayed in the Variant Matrix using  and  buttons.

Once the Settings are made using “Settings Variant Matrix” dialog, the variant matrix window is updated as per the settings.

Saving and Loading Profiles

You can save these settings in new profile or overwrite already existing profile.

- 1) Right-click on the top left corner of the variant matrix window to displays a contextual menu profile. *Please refer to the [Figure 119](#).* The contextual menu profile contains two other sub contextual menu available “Save Profile” and “Load Profile”.
- 2) Make the appropriate changes and click “Save Profile”.



Figure 124: Save Profile

- 3) Enter the **Profile Name** and click **OK**.
The profile name can be any combination of Alphabets (A to Z/ a to z), digits (0 to 9), underscores, hyphen, dots. No other special characters are allowed. All the settings information like attributes displayed, Calc-Models displayed, column width /order are saved in the profile. The profile is stored relative to a selected process node plan-type and is valid for all process objects of the same plan-type.
- 4) Click **Load profile**, if any other profiles are already stored with reference to the selected process node plantype, it can loaded into the variant matrix window. The dialog displays all those profiles which where created with reference to the selected process node plantype.

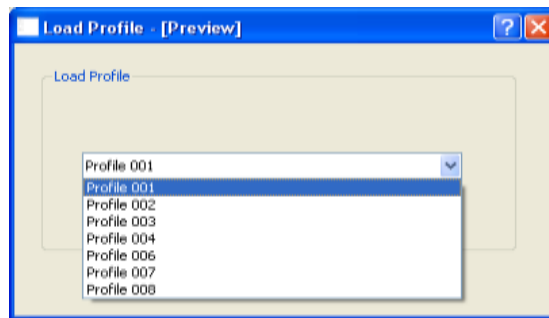


Figure 125: Load Profile

- 5) Select any of the profile and click **OK**.

Editing Attributes of the Plan Types and Weights on Calculation Models

Drag the cell contents to copy/paste weights from one calculation model to the other calculation models horizontally and vertically. You can use Find and replace dialog as well as contextual menu to cut, copy, and paste from one cell contents to another.

Variant Matrix Printing

You can export the data available in the table view in various format like (*.XLS, *.CSV). Select the whole grid by just right-click on the top left hand corner of the variant matrix.



Figure 126: Dat Export Modes

- **Export as XLS:** It exports all the values as well as headers in a suitable excel format.
- **Export as CSV:** It exports all the values as well as headers in a suitable Commas Separated value format.
- **Print whole Grid:** With this option the whole grid content including header and columns can be printed.

Variant Filtering

Variant filtering considers the relation *relationship_component_variant*. When enabled, variant filtering is considered before any other filtering by effectivity is applied in accordance with the following rules:

- If a relation exists between a selected calculation model and a process, the process is visible. No additional filtering by effectivity is applied.
- If relation exists between a process and another calculation model, but *not* the one selected, the process is not visible. No additional filtering by effectivity will be applied.
- If the process has no relation (*relationship_component_variant*) to any calculation model, filtering by effectivity is applied.

7.10 Regular Expression Support for Property Pages

For attributes two new properties “Validation Pattern” and “Validation Pattern Description” are added in configuration tool. Validation Pattern property is valid only for attributes of data type string and of control type edit.

You can enter a value for the attribute property “Validation Pattern”. This value will be the regular expression pattern against which the value entered will be validated.

When you finish entering a value in the property page or table view and when the input focus is lost the validation will be done. If the validation fails, an error message comes and you will not be able to save the value unless a proper value is entered. The error message displayed will have the required “Validation Pattern Description” in it.

Validation pattern description explains the expected value for property attribute.



Note

The validation is case sensitive.

The Validation Pattern and Validation Pattern Description properties of the attribute will be readable by scripting APIs and C++ APIs which read attribute property.

Validation Pattern in Multiple Languages

When working in multiple languages the validation pattern given should be given in such a way that the value valid in one language should be valid in other also.

To Disable the RegularExpression

To disable the regular expression, the attributes property “Validation Pattern” must have an empty value. By default all attributes will have empty value for “Validation Pattern” and hence no check is done by default.

Example

Example

Attribute ‘name’ has data type string, control type edit and Validation Pattern has the value “^A” (*this is a regular expression pattern*) and the Validation Pattern Description has the value “*value should start with A*”. The attribute name is displayed in property page.

[-] Basics	
Name	name
Physical name	m_name
Prompt	Name
Data Type	String
Control type	Edit
Group	Group::1 (Information)-Page::1 (3D State properties)
Description	
Use master	No
[-] Data Type Definition	
Length	64
Precision	2
Unit category	
Unit	
Validation Pattern	^A
Validation Pattern Description	value should start with A
Integer min	0
Integer max	2147483647
Double min	0.0000000000000000
Double max	9999999999.9999008000000000
Default value	New 3D State
Copy prefix	Copy of
[-] Data Type Reference (Pointer)	
Type Attribute Name	
Value scope	
Target	
[-] Display and Position	

Figure 127: Validation Pattern

With this attribute, you can give some value which starts with “A”. If you give some value which does not start with “A” and changes the focus from edit control then an error message comes with a message that the value given is not a valid one, the message also shows the value given for the attribute in the Validation Pattern Description property. You will not be allowed to save the value. You can save the values only when the proper value is given.

Limitations

- 1) Regular expression is supported only in the Property page and table view.
- 2) The following are not supported for Regular expression:
 - No \A or \Z anchors to match the start or end of the string using a caret or dollar
 - Look behind is not supported
 - Automatic grouping is not supported
 - No Unicode support
 - No named capturing groups use numbered capturing groups instead
 - No mode modifiers to set matching options with the regular expression
 - No conditionals
 - No regular expression comments
 - The regular expression cannot start with “*”, “+”, “?” (which denote the number of matches)
 - While checking the repetition using {x,y} the upper limit is not considered

- 3) If the value is set through scripts, it will not be validated.
- 4) Validation Pattern cannot be used to prevent empty values. No regular expression check will be done if there is no value.

be moved within a block. Changes in the table view are saved; the sequence of the attributes and the column width are saved.

The table view is a further development of the function **Attributes at same time**, and it replaces the function successively.

Table with display of several pages

	Process Name	Modified	version number	Planning state	Line numbers	Alternative name	Begin	End
🔍	P1	17.11.2003	1	Working	10			
🔍	P2	17.11.2003	1	Working	11			
🔍	P3	17.11.2003	1	Working	12			
🔍	P4	17.11.2003	1	Working	13		02.11.200	18.11.2003
🔍	P5	17.11.2003	1	Working	14			

Figure 130: Example – Display of Several Pages

Details about Table Views

The table view is divided into two blocks:

- Display of the attributes of the PPR components, such as object designation, planning code, or process number.
- Display of the usage data such as code rules, labels, or sort index.

The name of the object on whose node you opened the table is displayed in the title bar. Gray columns cannot be edited. Table columns and rows can be increased or decreased.

	Process Name	Process Number	version number	Code Rule	Labels	Modified	Planning state	Code Rule	Labels	Sortindex	Planning Code	Visible Flag
🔍	P4	004	1			17.11.2003	Working			4		1
🔍	P5	005	1			17.11.2003	Working			5		1
🔍	Workplan A	00A	1			17.11.2003	Working			6		1
🔍	Workplan B	00B	1			17.11.2003	Working			7		1
🔍	Workplan C	00C	1			17.11.2003	Working			8		1
🔍	P1 Testplanning A	00A	1			17.11.2003	Working			9		1
🔍	P2 Testplanning B	00B	1			17.11.2003	Working			10		1
🔍	P3 Testplanning C	00C	1			17.11.2003	Working			11		1

Figure 131: Table View – Two Editing Blocks

Columns and rows are generally displayed in gray whenever they are write-protected for a certain reason.

Reasons for write-protection could include, for example:

- The attribute is set to read only.

- The user has no rights to this object
- The object is being edited by another user
- The row is invalid for this object because, for example, the attribute for this plantype has not been configured.

The attributes (columns) can be moved only within one of the two table blocks. It is thus impossible to move attributes between the two table blocks.

Columns can be moved only within a block.

	Process Name	Process Number	version number	Code Rule	Labels	Modified	Planning state	Line numbers	Planning code	Car Body Position
P1		001	1			17.11.2003	Working	10		
P2		002	1			17.11.2003	Working	11		
P3		New Process	1			17.11.2003	Working	12		
P4		004	1			17.11.2003	Working	13		
P5		005	1			17.11.2003	Working	14		
Workplan A		00A	1			17.11.2003	Working			
Workplan B		00B	1			17.11.2003	Working			CR
Workplan C		00C	1			17.11.2003	Working			L1
P1 Testplanning A		00A	1			17.11.2003	Working			IR
P2 Testplanning B		00B	1			17.11.2003	Working			L1
P3 Testplanning C		00C	1			17.11.2003	Working			

BOM Entries(subcompitem)

Figure 132: Example of a Table Block – Moving within Column is Possible

As of version PE 5.16 SP4 attributes with identical names which are used for different plantypes, such as component names for products that have been directly assigned to a plantype (assembly, component, accessory), are listed in the table view under a column header.

Component names, such as the plantypes assembly, component or purchased part, are shown in one column.

	Component Name	Component Number	Implicit Filter Behavior	Update Information	Planning State	Modi
	Support Material 013	21 00 2339	Normal Filtering		Working	16.03.2006
	Assembly	New Product	Normal Filtering	no change	Working	16.03.2006
	Part 01	71 60 7 669 756	Normal Filtering	updated	Working	16.03.2006
	Part 02	New Product	Normal Filtering	no change	Working	16.03.2006
	Installation Instruction English	P 236 999 200	Normal Filtering	updated	Working	16.03.2006
	Part 03	71 60 7 669 263	Normal Filtering	updated	Working	16.03.2006
	Part Grey 04	71 60 7 669 756	Normal Filtering	updated	Working	16.03.2006
	Assembly 02	210-06-4-10	Normal Filtering	updated	Working	16.03.2006
	Purchase Part	New Product	Normal Filtering	no change	Working	16.03.2006
	Purchase Part 02	13 60 6 669 963	Normal Filtering	updated	Working	16.03.2006
	Part 05	71 60 7 426 369	Normal Filtering	updated	Working	16.03.2006
	Purchase Part 03	71 60 7 215 967	Normal Filtering	updated	Working	16.03.2006
	Purchase Part Green 04	C 253 699 236	Normal Filtering	updated	Working	16.03.2006
	Assembly	New Product	Normal Filtering	no change	Working	16.03.2006
	Part 06	13 50 6 769 969	Normal Filtering	new	Working	16.03.2006
	Part Printed 07	71 60 7 769 969	Normal Filtering	updated	Working	16.03.2006

BOM Entry(ergocomproddefault)

Figure 133: Attributes with Identical Names Shown on one Page

8.2 Editing Attributes in the Table

A table consists of columns and rows, the cells of which contain the content. Various contextual menus are available for editing the table contents. You can, for example, search according to cell content, copy cell content, and insert it at another position, or you can hide entire columns, set cell, and column widths, and export the table to Excel.



Note

Changes to values in a table take effect only after the table is saved. This is because the editing of the contents of a table is a process in itself which is available only after saving for continuing work in other modules; for example for PPR components or for further users also working on this project.

If you enable the automatic updating of the sort index, the sort index is automatically updated according to the selected rows: the updating takes place only with the Mixed plantype view, when deleting rows and moving rows, Please refer to the [Figure 127](#).

Automatic update of sortindex: ☒

Figure 134: Activating Automatic Sort Index

Exporting Tables

Only the enabled page of the table is exported. You can export and print the tables via the contextual menu.

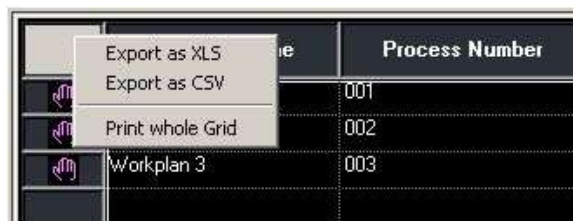


Figure 135: Export Table Contextual Menu

In order to open the contextual menu, first click left upper cell with the left mouse button, and the entire table is marked. Then open the contextual menu by clicking with the right mouse button.

Editing Rows

You can delete rows via the contextual menu, or you can set a uniform row height for all rows of the table.

- 1) Use the left mouse button to select a row.
- 2) Right-click to open the contextual menu.



Figure 136: Editing Context Rows

8.2.1 Third Party Components

PPR Navigator uses Objective Grid as the third party component.

The existing Objective Grid 10 has been migrated to Objective grid 12.0.1. The new libraries provided by Objective Grid 12.0.1 are:

- og1201au.lib
- RWUXThemeAU80.lib

8.2.2 Contextual Menu Functions

8.2.2.1 Contextual Menu Functions in Column Head



Note

For attributes of the columns displayed as write-protected in the table view, both context functions Find and Replace are displayed, but they cannot be executed.

The optimal column width is used to provide for a uniform size of all columns of the table, one that makes all contents visible.

- 1) Open the contextual menu by clicking the right mouse button in the column head of an attribute.

You can sort rows according to columns – either ascending or descending. Right click in the respective column head to do this.

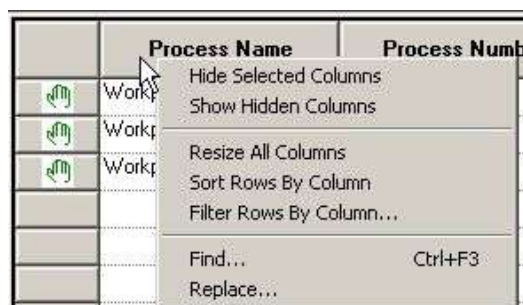


Figure 137: Opening the Contextual Menu in the Column Head

Columns Selected in the Column Head can be Hidden

- 2) Select one or several columns and select **Hide Select Columns**. In order to make a selection, simply click a column head. Select several columns by dragging the mouse pointer over these columns.
- 3) You do not need to select columns in order to show them; just right click a column head and select **Show Hidden Columns**. All hidden columns are displayed.

Finding Contents

- 4) Click **Find** to search for contents in a column according to specific criteria. You can select the direction of the search for a column value. You can search for values only within one column.
- 5) Enter the value to be searched for in the dialog. In the example, **Line number 114** is searched for (descending).
- 6) **After** you have entered the value, click **Find Next** in order to start the search.

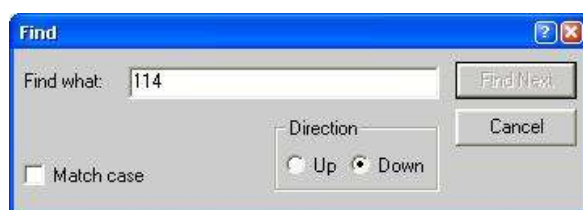


Figure 138: Enter Search Value Dialog

- 7) If the search value leads to a positive result, the cell is displayed.

Line numbers
1
10
13
114

Figure 139: Display with Result – Line Number 114

Filtering Rows of a Column

- 8) Click **Filter rows by column** to display table views according to specific selected filter criteria.

When filtering according to certain attribute values, the capitalization and lower case letters should be taken into account. If you use the capitalization and lower case letters and no corresponding attribute value is found, the table display can be empty.

- 9) Hidden rows can be shown again with the help of **Show Hidden Rows**. Please refer to the [Figure 139](#).

- 10) In order to hide rows, enter the corresponding filter criterion in the dialog.

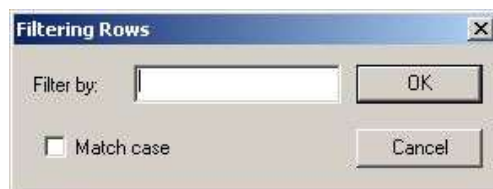


Figure 140: Dialog for the Filter Criterion



- 11) In order to show hidden rows, open the contextual menu by clicking the right mouse button. The icon in the upper left corner of the table view indicates that rows are hidden.

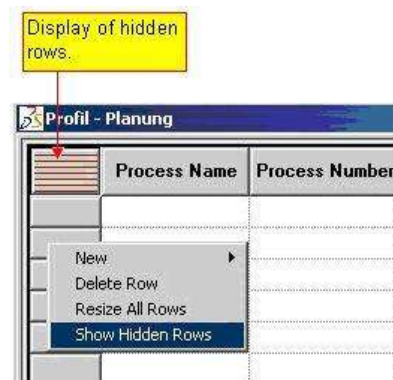


Figure 141: Showing Hidden Rows Again

Note

When editing the table view, hidden rows are taken into account if they are affected, as is the case, for example, when searching or replacing values or numberings of rows.

Example of Filtering Rows - without Match Case

In the example, the filter set is the attribute value **p**. The result is that the table is displayed without changes, and the lower case **p** is present in all three process names. The capitalization and lower case letters are not taken into account.

Process Name
P3
P4
P2

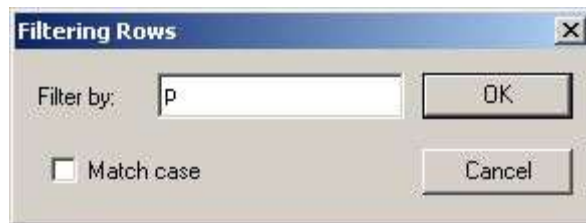


Figure 142: Filtering without Match Case

Example of Filtering Rows - with Match Case

If you use Match case, the result would look different. Again the filter set is the lower case **p**. None of the three process names has a lower case **p** in them. Since no attribute value corresponds to the filter criterion, an empty table is shown.



Figure 143: Filtering with Match Case

Example of Filtering Rows - according to Name

The lower case **p** is again used as the filter criterion. In this case the result is that the line with the process name **A2** is not shown.



Figure 144: Filtering according to Name

	Process Name	Process Number
	P3	010
	P4	011

Figure 145: Result of Filtering according to Name

Replacing Values

Attribute values of a column can be found with the help of **Replace** and can be replaced by other values. If you use Match case, only the corresponding values are replaced. The function **Find Next** leads to the search terms being searched for in every line. A found value can be replaced individually. All values are replaced with the help of **Replace all**.

12) Open the contextual menu by clicking the right mouse button in the column head of an attribute.

13) Click **Replace**.

Example - Replace Terms without Match Case

In this example, **C** is replaced by **P** in the process names.

14) In the field **Find what** type the value that is to be searched for.

15) In the field **Replace with** type the value that is to replace the search value.

Example

Process Name
P3
P4
C2

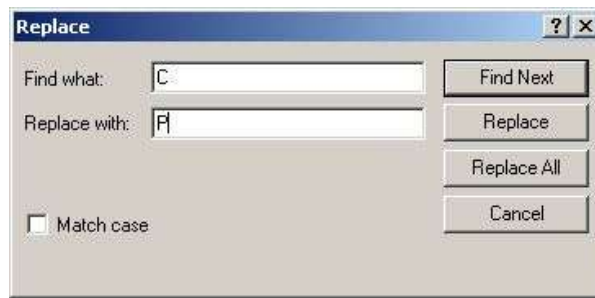


Figure 146: Replace Term

16) After entering the name click **Replace**.

Process Name
P3
P4
P2

Figure 147: Result – C is Replaced by P

Example - Replace all Terms without Match Case

In this example all **Ps** in the process names are replaced by **Cs**.

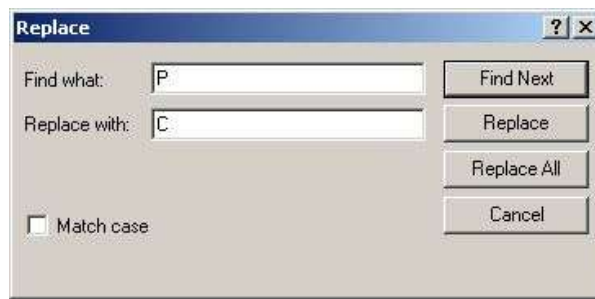


Figure 148: Replace all Terms

17) **After** entering the name click **Replace All**.

Process Name
C3
C4
C2

Figure 149: Result – all Ps are Replaced by Cs

Example - Replace all Terms with Match Case

In this example, all lower case **cs** in the process names are replaced by **Ps**. If Match case is switched on, no term is replaced in this example. The reason is that all Cs in the process names are capitalized.

Process Name
C3
C4
C2

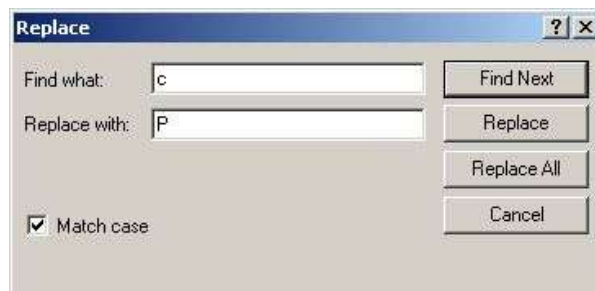


Figure 150: Replace Terms with Match Case

18) If you switch off **Match case**, C is replaced by P.

Process Name
P3
P4
P2

Figure 151: Result: C is Replaced without Capitalization and Lower Case Letters

Example - Replacing Line by Line – using Further Searching

In this example, **P** is to be replaced by **A** individually in the process name. The cursor is in the first line; click **Replace** and **P** is replaced by **A**. The cursor automatically jumps to the next line; this line should not be replaced in the example -- if you click **Find next**, the cursor jumps to the next line. If you click **Replace**, **P** is replaced by **A**.

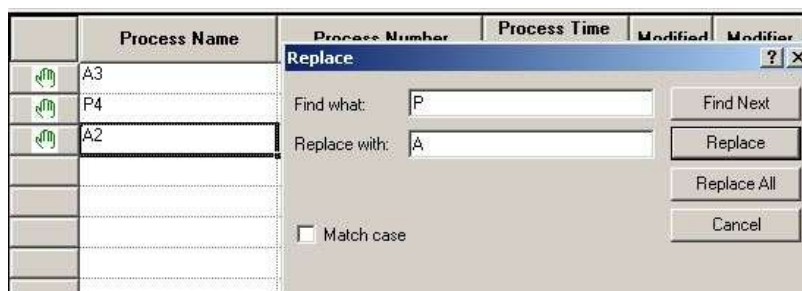


Figure 152: Using Find Next

8.2.2.2 Contextual Menu Functions in Cell

You can copy, cut, and paste the individual contents of a cell via the contextual menu of the cell. You can change the contents in this manner only within one column. This is because the formatting of the cells must always be the same for these values.

- 1) In order to open the contextual menu, right click in the cell.



Figure 153: Opening the Contextual Menu with the Right Mouse Button

Copying, Cutting, and Pasting Contents

- 2) In order to copy or cut contents, right click in the cell.
- 3) Select either cut or copy in the contextual menu.

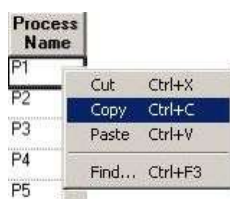


Figure 154: Cell Contextual Menu – Select Copy or Cut

- 4) In order to paste the contents in a cell, right click in the cell.
- 5) Select paste in the contextual menu. The new content is inserted.

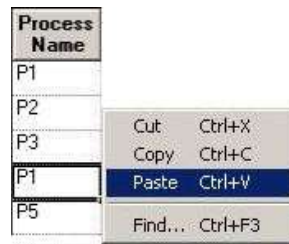


Figure 155: Pasting Cell Content

8.2.3 Editing Table Cell and Column Contents

You can easily edit not only functions of the individual contextual menus, but also the cell and column contents.

8.2.3.1 Copying Attributes at the Same Time

You can change attributes for several objects in one column simultaneously.

- 1) Click in the right corner of the cell whose attribute value you want to copy.
- 2) Drag the mouse pointer over the individual cells of the column. Release the mouse button
- 3) The new values are copied to the selected cells.

Process Name	Modified
P1	17.11.2003
P1	17.11.2003
P1	17.11.2003
P1	17.11.2003
P1	17.11.2003

Figure 156: Copying Attributes Simultaneously in Cells of a Column

8.2.3.2 Numbering Line Contents

By pressing the **ALT** key, you can number the line contents of columns in both directions.

- 4) Select the rows with the **ALT** key pressed. After making the selection, release the **ALT** key and the mouse button at the same time.

Example

Example – Numbering of the Line Contents Downward

The zero is not displayed in the first line.

Process Name
P
P5
P2

Figure 157: Rows are Numbered Downward

Example - Numbering with Numerical Values

In the example, the numbering of the rows is made downward with numerical values.

Process Number
8
1
4
+
Process Number
8
9
10

Figure 158: Rows are Numbered Downward

Example – Numbering with Numerical Values with Decimal Places

Process Number
3.8
3.2
3.18
+
Process Number
3.8
3.9
4.0

Figure 159: Rows are Numbered Downward

Example – Numbering Combined with Numerical Values and the Letter P

The zero is not shown in the first line. Both numerical values are replaced by P in the following rows. The line contents are marked accordingly with 1 and 2.

Process Number
P
10
13
+
Process Number
P
P1
P2

Figure 160: Rows are Numbered Downward – Combined Values

8.2.3.3 Setting the Date via Calendar

A calendar is available for certain cells for setting a date, just as in the cells for start and end date. The calendar is always available in the table view whenever an attribute is configured as a date value. You can enter the date directly or increase or decrease the date by steps with the spin control

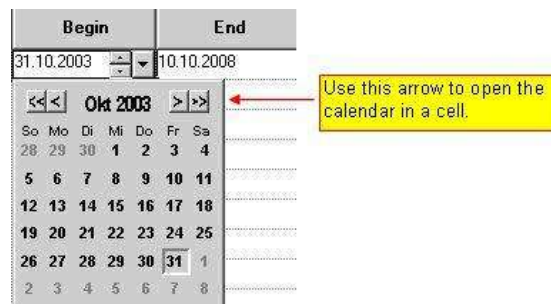


Figure 161: Setting the Date via Calendar

8.2.3.4 Arranging Values via Selection Lists

For certain attributes, you can arrange the values via a selection list, i.e. for car body positions or premises. The selection list is configured:

- Via a configured values list for the attribute
- Via a configured object list that dynamically offers the currently existing objects

Example for Premises

Premises are created in the project library. You can assign processes to premises in the table. You can assign premises only if you have created them.

5) Click cell and select the corresponding premises.



Figure 162: Assigning Premises via Selection Lists

8.2.3.5 Important Notes on Working with Table Views

The table view is an independent transaction in the Process Engineer. When editing the table, you should pay attention to the following important points:

- Changes that you make to table always take effect after saving – for example, when creating new objects in the table or moving lines with the activated sort index. These changes can be seen in the PPR navigator only after saving.
- If in the PPR navigator you create new objects in the structure while the table is open, they are visible in the table view only after you close the table and open it again.
- For example, you might create a new process in the process structure of the PPR navigator while the table is open. This new process is shown in the table only after you close the table and open it again.
- While the table is open, you can edit objects in the PPR navigator only to a limited extent:
 - You cannot edit the properties of an object or delete an object.
 - You can, however, copy and reference objects in the PPR navigator.

8.2.4 Error Messages While Editing a Table

The message text provides information about possible input errors. The messages can essentially be divided into two categories: the messages appear if the input type is **not** known to the Process Engineer, such as the token list does not know code rules, or if the format of a value does not correspond to the database type of a cell.

Error Message for Code Rules

Code rules can be assigned only if the code rule has been created in the token list of the project library.



Note

A code rule is a relation of usage statements. The individual usage statements are administered in the token list.



Figure 163: Message - Code Rule is not available in the Token List

Error Message for Attribute Value

This error message comes when the value of the Attribute is not Compatible, i.e. when the format of a value is not compatible to the database type of a cell.

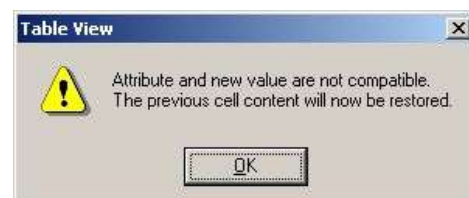


Figure 164: Message – Attribute Value cannot be Entered

Error Message for Unassigned Structure

This error message comes when no structure is available, i.e. if you open the table on a node to which no structure has been directly assigned, you cannot open the table, and a message will inform you of this.



Figure 165: Message - Table cannot be Opened

Error Message for Node not corresponding to PPR Navigator

A table can be opened only on PPR components on a node in the PPR navigator – on resources, process, or product nodes, or in the project library directly on a corresponding plantype. This message indicates that you have not taken this into account – for example, in the project library for labels, scripts, SA-codes etc.



Figure 166: Message – Node does not Correspond to a Resource, Process or Product

8.3 Drag and Drop Feature

8.3.1 Drag and Drop in Table View



In the open view you can use drag and drop on the objects for moving, copying, and referencing.

Note

Changes when moving, copying, or referencing take effect only after saving.

8.3.1.1 Moving Objects

In the table view it is sensible to move objects only if you have activated **Update sort index automatically** in the settings. *Please refer to the [Figure 132](#).*

If you do not activate the sort index, you can only move objects temporarily in the table view. You can therefore move objects in the table view individually or several objects at the same time

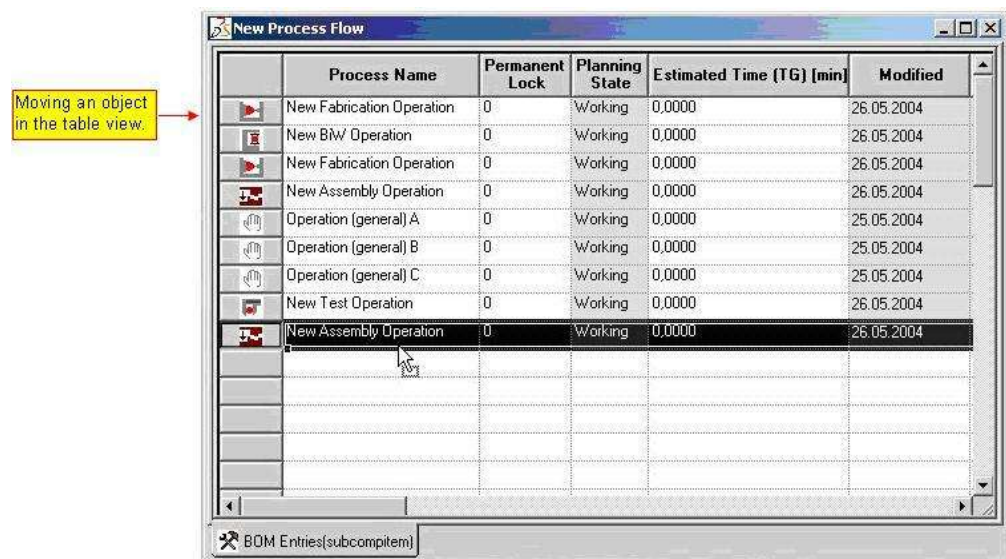


Figure 167: Moving an Object in the Table View

Moving Objects Individually

It is not possible to place objects in a completely free space in the table view. Objects that are moved must have a reference point between the objects and at the beginning and end of the objects in the table view.

- 1) Select the line in left column of the table view. The line is black after the selection.
- 2) Move the mouse pointer to the lower part of the selected line in the table view, for instance in the process name column.
- 3) The mouse pointer changes. Wait until the symbol for moving appears.



- Click the left mouse button. Move the mouse pointer then to the new spot and let go of the mouse pointer. The red mark indicates the line to which the object is moved. The object is placed at the new spot. *Please refer to the [Figure 165](#).*

Moving Several Objects at the Same Time

You can also move several objects at the same time in the table view.

- Select the lines that you want to move in the left column.
- After selecting the lines, continue in the same manner as with moving individual lines. *Please refer to the [Figure 166](#).*

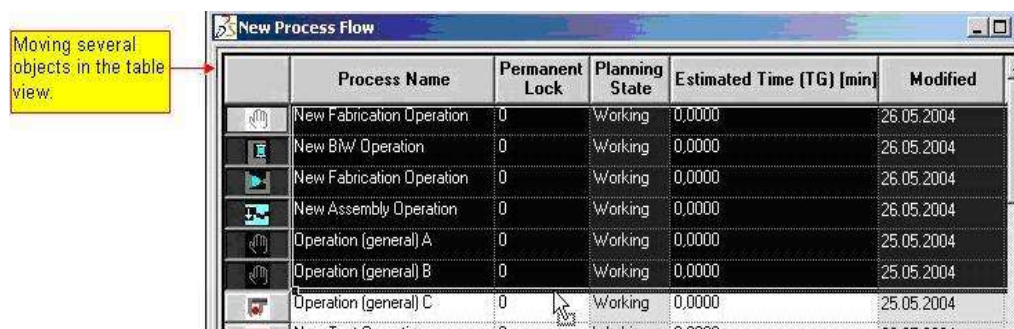


Figure 168: Moving Several Objects at the Same Time

8.3.1.2 Copying Objects

You can copy single or several objects at the same time in the table view. When copying several objects at the same time, select several lines in the table view as you do when moving objects.

To Copy Correctly

- Select the line for the object that you want to copy in the left column.
- Click in the column of the selected line, keep the mouse button pressed, and press the control key. Keep both the mouse button and control key pressed.
- The mouse pointer changes and takes on the form that indicates copying.

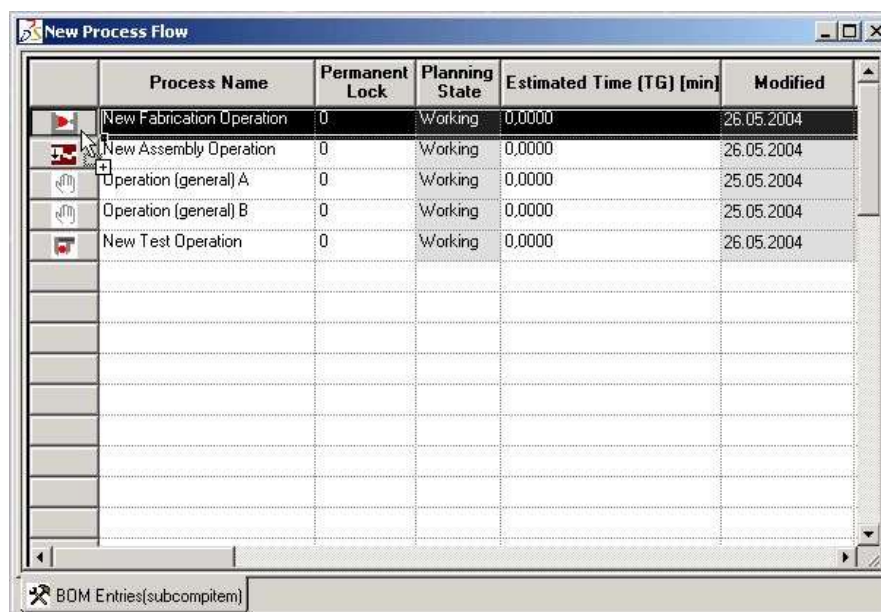


Figure 169: Copying an Object for a Line

- Now release both the key and the button.



Note

When copying objects a selection dialog may open for the type of linked object to be created, which is analogous to copying in the tree and list views in the PPR navigator.

Note that for many relations additional limitations which do not allow copying or referencing may be in effect. An example of such a limitation would be that only one relation of the same type may exist between the root components of the table view, which do not change, and a further component. If this limitation is in effect, then a copy operation with this relation is not possible.

- 5) Select the relation whenever this dialog appears.

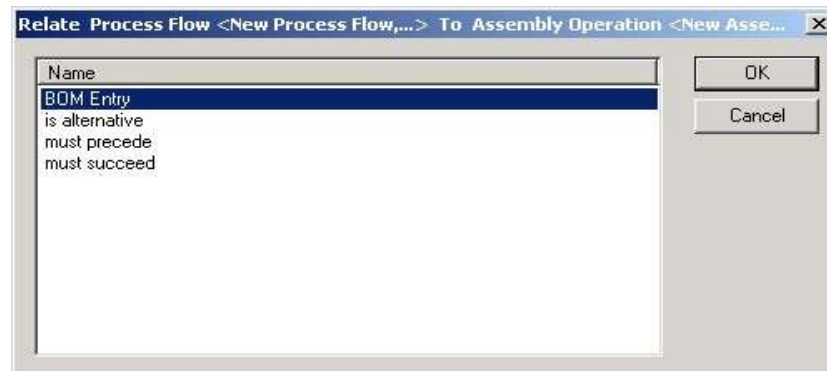


Figure 170: Dialog with Relations

- 6) After making a selection click **OK**.
- 7) Click the menu item **Paste** and select the copy option.



Figure 171: Select the Option for Copying

- 8) Click **Advanced** to enter the attribute values per planttype basis. The [Figure 170](#) apperas:



Figure 172: Expanded Copy Options Dialog

- Select the option deep if the object to be copied has a substructure with further objects.
- Select the option Normal for all other objects.

9) Select the plantype names of the copied objects from the drop-down list.

Based on the selection either Normal or Deep the drop-down menu gets populated with the plantype names of the copied objects on which enhance copy can be performed.

You can select either of the plantype, based on the plantype selection the column **Available attributes** is populated with those attributes whose property “Extended copy” is set to dynamic value. *Please refer to the [Customization](#).*

In the column **Set to dynamic value** you can enter the value. You can perform one of extended copy options for a attribute. *Please refer to the [Extended Copy Options](#).*



Note

The Advance >> button is provided to differentiate between Enhanced Copy and the Existing default Copy mechanism so that your does not get confused.

*If your does not click **Advanced** >> button then the existing default copy mechanism will work fine when user click Normal or Deep button.*

Customization

In customization a new property for attribute is added for **Extended Copy**. When copy operation is performed, the rules defined in the configuration are applied to the resultant object.

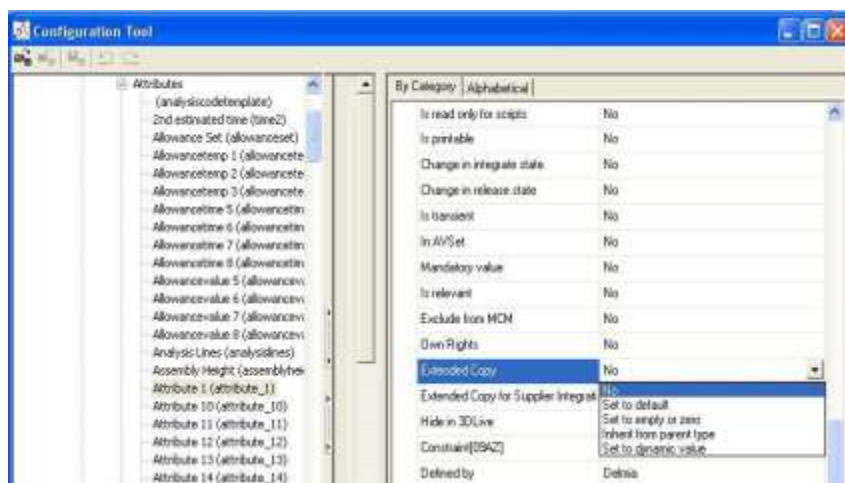


Figure 173: Customization in the Configuration Tool

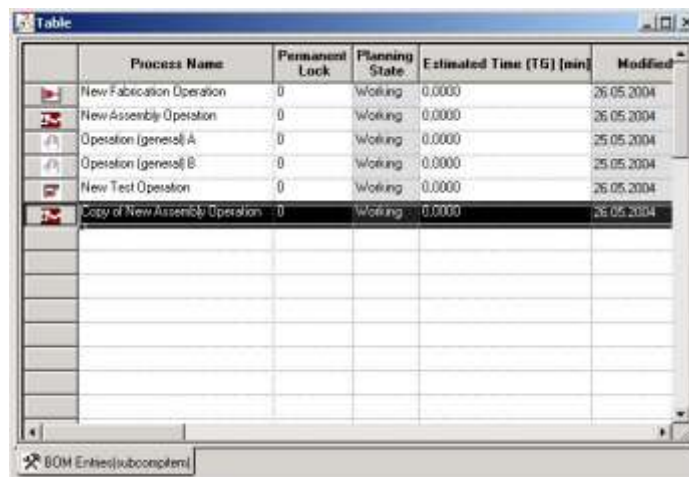
Extended Copy Options

- **Inherit from Parent Type:** The attribute value of the resultant object/s is be inherited from its target object attribute. If the parent attribute does not exist then the existing default copy mechanism works for that attribute. If a user-defined attribute property “Extended copy” is set to “Inherit from parent type” and you did not enter any value for that attribute, then when you copy this object the parent object’s attribute value is not copied into this attribute. Because user-defined attributes are created only when some value is entered, when the value is cleared, it is removed from the data-base. So if you do not enter any value in user-defined attributes, the parent object value will not be copied.
- **Set to default:** The attribute value of the resultant object/s is set to default value.

- **Set to empty or zero:** The attribute value of the resultant object/s is set to blank/zero. For data types that are neither "String" nor "numeric" the effect is blank (empty). Except for Date\Time type the effect it displays is Current System Date\Time.
- **Set to dynamic value:** The attribute value of resultant object/s is set to the dynamic value. When copy operation is performed, the rules defined in the configuration are applied on the resultant object.

10) After selecting the copy option, the copied object is always added at the end of the objects in the table view.

- Copied objects are indicated by *Copy of ...* in the standard version. This prefix can be individually configured.



	Process Name	Permanent Lock	Planning State	Estimated Time (TG) [min]	Modified
	New Fabrication Operation	0	Working	0,0000	26.05.2004
	New Assembly Operation	0	Working	0,0000	26.05.2004
	Operation (general) A	0	Working	0,0000	25.05.2004
	Operation (general) B	0	Working	0,0000	25.05.2004
	New Test Operation	0	Working	0,0000	26.05.2004
	Copy of New Assembly Operation	0	Working	0,0000	26.05.2004

Figure 174: Copied Object is Added at the End

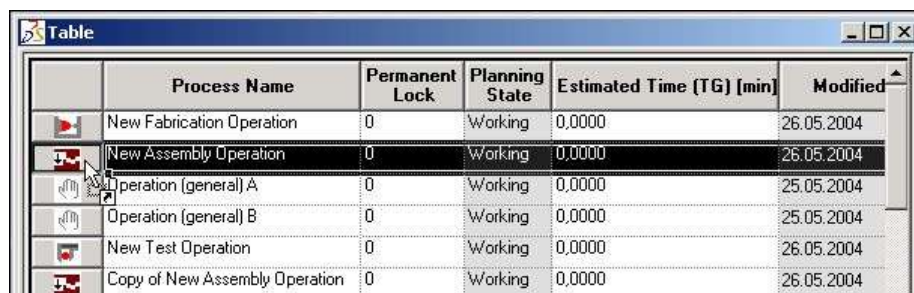
8.3.1.3 Creating References

You can reference single and several objects simultaneously in the table view. When referencing several objects at the same time, select several lines in the table view (just as you would while moving objects).

Referencing an object is helpful if, for example, you want to use multiple instances of a single object at the same time. All referenced objects have the same properties, and if you change the properties, the change takes effect for every referenced object.

To Reference Correctly

- 1) Select the line in the left column for the object that you want to reference.
- 2) Click left column of the selected line and keep the mouse button pressed.
- 3) The mouse pointer changes and takes on the form that indicates referencing.

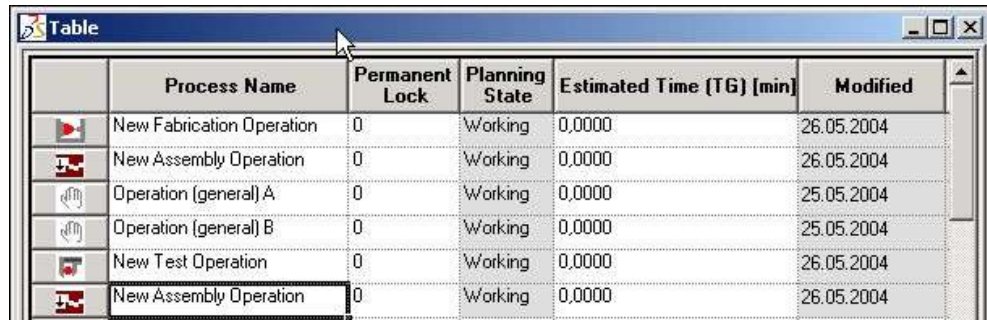



	Process Name	Permanent Lock	Planning State	Estimated Time (TG) [min]	Modified
	New Fabrication Operation	0	Working	0,0000	26.05.2004
	New Assembly Operation	0	Working	0,0000	26.05.2004
	Operation (general) A	0	Working	0,0000	25.05.2004
	Operation (general) B	0	Working	0,0000	25.05.2004
	New Test Operation	0	Working	0,0000	26.05.2004
	Copy of New Assembly Operation	0	Working	0,0000	26.05.2004

Figure 175: Referencing an Object in the Table View

- 4) Now let go of the mouse button anywhere on the screen.

- 5) Select the relation in the dialog. *Please refer to the [Figure 168](#).*
- 6) After you have selected the relation and have closed the dialog with **OK**, the referenced object is added under the same name at the end of the objects in the table view.



	Process Name	Permanent Lock	Planning State	Estimated Time (TG) [min]	Modified
	New Fabrication Operation	0	Working	0,0000	26.05.2004
	New Assembly Operation	0	Working	0,0000	26.05.2004
	Operation (general) A	0	Working	0,0000	25.05.2004
	Operation (general) B	0	Working	0,0000	25.05.2004
	New Test Operation	0	Working	0,0000	26.05.2004
	New Assembly Operation	0	Working	0,0000	26.05.2004

Figure 176: Referenced Object is Added at the End

8.3.2 Drag and Drop between Browser and Table View

You can copy and reference objects between the table view and different browser views (for example, tree and list view in the PPR navigator). In addition, it is possible to copy and reference objects between any numbers of open table views.

You can copy and reference single objects as well as several objects at the same time.



For more information on drag and drop, *please refer to the [General Introduction Manual](#).*

You might use drag and drop to use processes, resources, or products of the open table between the table view and browser in order to add them to an existing structure or to use them in a newly created structure.

Drag and drop is possible in both directions: You can copy and reference objects from the browser or the list view into an open table.

8.3.2.1 Assigning Objects in the Table to a Structure



You can assign objects in the table to a structure using drag and drop. The basic procedure is demonstrated in the following example:

Initial Situation

- A new process structure is created in the PPR navigator. Processes already in the table are used for the new structure. All processes should be references of the existing processes. Several processes are assigned at the same time.

To Assign Objects in Table to a Structure

- 1) The first step is to create the new process structure in the PPR navigator. The plantype **New Sequence** is created in the process structure for the example.
- The processes in the table are assigned to this new plantype by drag and drop. *Please refer to the [Figure 175](#).*
- 2) Open the table view.
- 3) Select the objects in the table view (the processes in the example).

- 4) Drag the selected objects into the process structure and to the object, New Sequence in the example. If you want to copy the objects, you must keep the control key pressed when dragging.

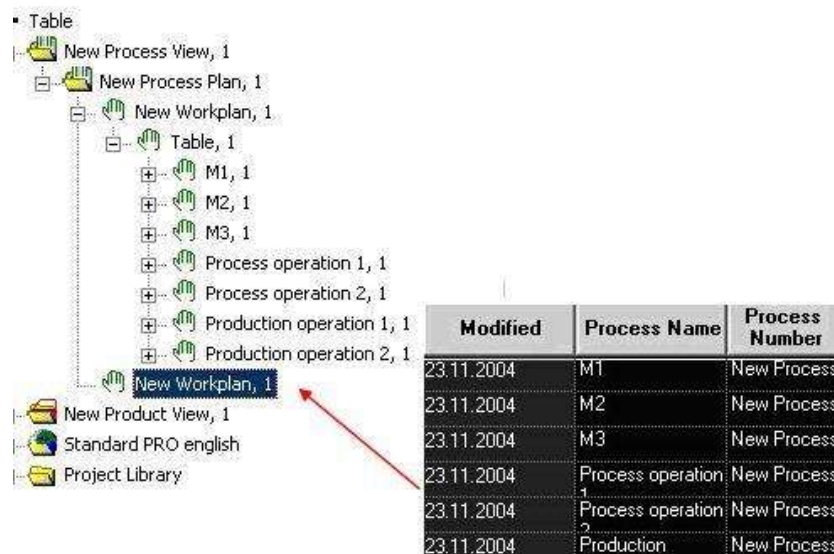


Figure 177: Linking Objects in the Browser by Drag and Drop

- 5) Release the mouse button and select the relation for the linked object from the dialog.

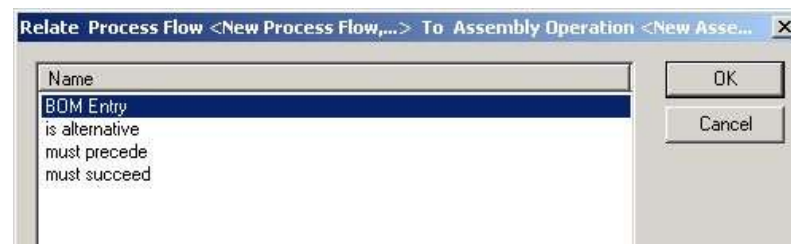


Figure 178: Select Relation in Dialog for Linked Object

- 6) Save the procedure. These processes have been added to the process structure under New Sequence.

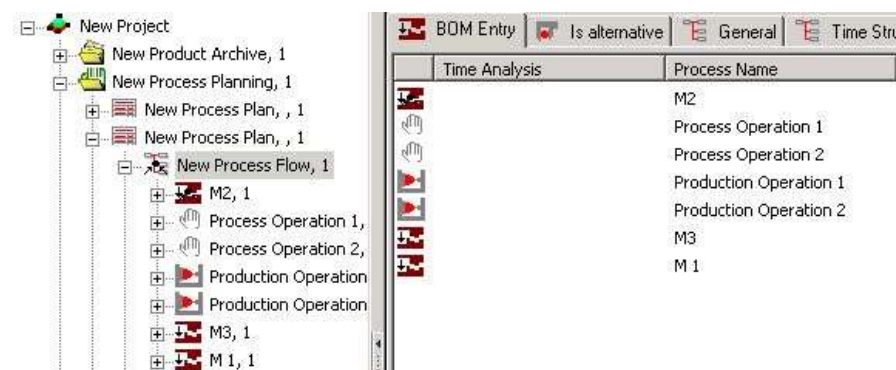


Figure 179: Objects Added to New Structure

8.3.2.2 Assigning Objects to the Table using Drag and Drop

You can assign objects to the table using drag and drop. In this example, processes in the list view are assigned to the table. If you copy and reference several objects at the same time, you must always select them in the list view. You can copy and reference single objects from the respective structure in the PPR navigator.

Initial Situation

- Processes **M2** to **M6** are to be assigned to the open table **New Sequence** from the list view of the process structure **Assembly Processes**.

To Assign Objects to the Table

- 1) Open the table to which you want to assign processes. In the example, this is the table of the process structure New Sequence.
- 2) In order to select the processes in the list view, click hierarchical level in the structure in the PPR navigator. In the example this is the process structure Assembly Processes.
- 3) Select the processes in the list view. To do this, press **Shift** Key.
- 4) Now move the selected processes to the table using drag and drop. Select the relation in the dialog.
- 5) Confirm the selection with **OK**. The processes are assigned to the table.

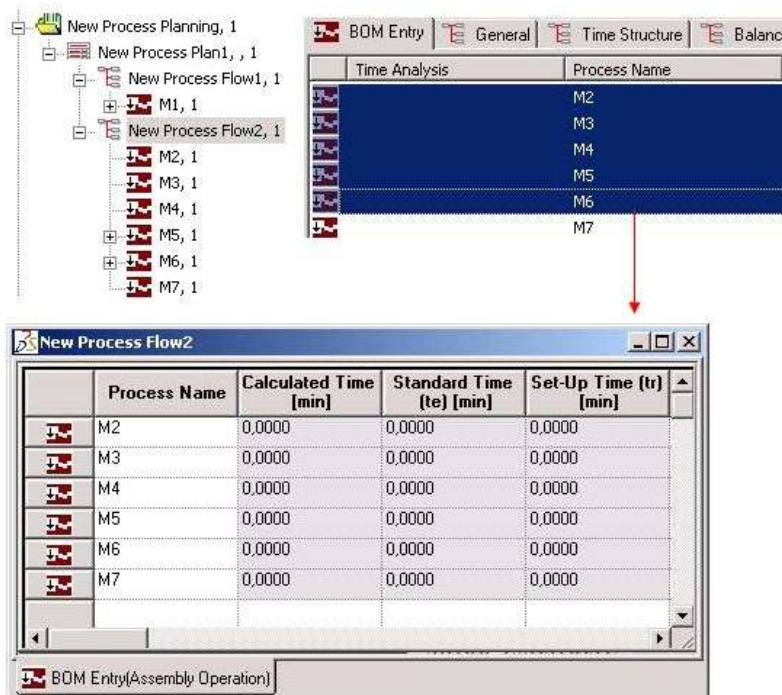


Figure 180: Assigning Processes in the List View to the Table

8.4 General Features

8.4.1 Creating New Objects

The context function for creating new objects in the table view is available **only** for table views opened via the structure in the PPR navigator.

You can open a table only on a node, which has been assigned a further hierarchical structure. This structure can be made up of different plantypes which are independent of the plantype set used in the project. In the contextual menu of the table view (contextual menu for a line), the configured plantypes for which you can create new objects are shown. *Please refer to the [Figure 179](#).*

You can create new objects in the table for all three structures: product, process, and resource structures. You can edit these new objects as usual in the structure and with the table functions.



- 1) You can open a table either via the menu **Edit < Open in Table View** or via the icon in the tool bar.

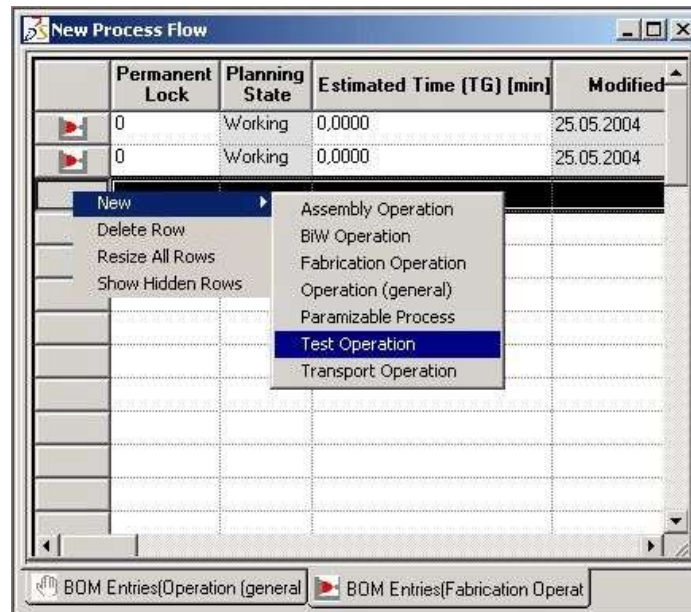


Figure 181: Create New Object – with Configured Plantypes



Note

New objects are applied only after a table is saved and then they are shown in the PPR navigator and in the list view in the respective structure.

- 2) In order to create a new object in the table, click with the left mouse button in the left column and then open the contextual menu with the right mouse button.
- 3) Select **New** and then select the corresponding plantypes. In [Figure 179](#), the plantype Test and measuring operation is shown. The new object is immediately shown in the table.
 - The plantype Test and measuring operation is not available in the table or in the structure. A new page for the plantype on which the new object is displayed is added to the table. This is shown only if the setting **Assign plantypes to several pages** is active.
 - If you create a new object for a previously existing plantype, it is shown on the corresponding page for the respective plantype. This prerequisite also applies to the setting Show plantypes mixed. There is only one page per child list for BOM entries and different relations.
 - This is irrelevant to the procedure; open the contextual menu and select the corresponding plantypes; either a new page for the plantype of the table is added or the new object is added to the previously existing page for the plantype.
- 4) When you save the table, the new objects are applied to the respective structure.

The screenshot shows the 'New Process Flow' dialog box in SAP. It contains a table with three columns: 'Process Name', 'Planning State', and 'Estimated Time (TG) [min]'. The first row has been populated with 'New Test Operation', 'Working', and '0,0000'. A red arrow points from a yellow callout box to the value '0,0000'. At the bottom, there are three tabs labeled 'BOM Entries(Opera...', 'BOM Entries(Asse...', and 'BOM Entries(Test ...'.

	Process Name	Planning State	Estimated Time (TG) [min]
[Icon]	New Test Operation	Working	0,0000

BOM Entries(Opera... BOM Entries(Asse... BOM Entries(Test ...

New object – test & measuring operation - is shown on the new page for the plantype.

Figure 182: New Object Created in the Table View with additional BOM Entry

8.4.2 Moving Lines and Columns

You can move several columns and lines at the same time in the table. Whenever moving lines, you are simply changing the form in which they are presented in the table view. Whenever you move lines (objects) and the **Auto-matically update sort index** is activated, you permanently change the arrangement of the lines. These objects are placed in a new position in both the table and browser after saving.

Moving Columns

- 1) Move the mouse pointer to the head of the column. If the mouse pointer changes to an arrow, click the head of the column and drag the mouse pointer over the columns whose position you want to change.
- 2) The columns are now selected and can be moved. After selecting, release the mouse pointer.
- 3) Click head of the column on one of the selected columns and move the columns to the new position.
- 4) Release the mouse button. The selected columns are now in a new position.









Assembly operations		
	Process Name	Process Number
	M2	New Process
	M3	New Process
	M4	New Process
	M5	New Process
	M6	New Process
	M7	New Process

Figure 183: Moving Several Columns at the Same Time

Moving Lines

- 1) Move the mouse pointer to the left column of the line. If the mouse pointer changes to an arrow, click in the column and drag the mouse pointer over the lines.



- 2) The lines are now selected and can be repositioned. After selecting, briefly release the mouse pointer.
- 3) Move the mouse pointer to the lower part of the selected line. Now click here and move the lines to the new position. *Please refer to the [Drag and Drop](#).*

	Process Name	Process Number	Plan State
	M2	New Process	Working
	M3	New Process	Working
	M4	New Process	Working

Figure 184: Moving Several Lines at the Same Time

8.4.3 Finding an Object

You can have the objects from the PPR navigator and from the list view displayed in the table view in the open table view of a structure.

- 1) Open the table view in the PPR navigator on the corresponding hierarchical level.
 - 2) Select the object to be searched for either in the tree or list view in the PPR navigator - a multiple selection for displaying is not possible.
 - 3) Click icon **Find** in table view in the tool bar. The object searched for is displayed in the table view.
- The icon is active only after the object has been selected.



The screenshot illustrates the workflow for finding an object in the Table View. It shows the PPR Navigator on the left with a tree structure. A yellow box highlights 'Table, 1' under 'New Workplan, 1' with the text 'Select the object in the PPR navigator.' Below this, the 'New Workplan' table is shown with columns: Planning State, Assigned MTM Analysis Code, Estimated Time [min], Calculated Time [min], Modified, Process Name, and Process Number. A yellow box highlights the first row (M1) with the text 'The selected object is displayed in the table.' To the right, a 'BOM Entries' table is shown with columns: Assigned MTM Analysis ..., Process Name, Process Number, and Estimated Time [min]. A yellow box highlights the first row (M1) with the text 'Select the object in the list view.'

Figure 185: Display Object in the Table View

8.4.4 Project Search

Tabellensicht

In the project search, you can search for objects displayed in the result list of the project search. The table view is available only for PPR components. The table view is not available for objects linked via relations or BOM entries.

The results of the selected objects from the result list are shown in the table view. You can select single objects or several objects in the result list and have them displayed in the table view.

All editing functions are not available for the table views opened via the project search:

- You can copy and references objects in this table view and add them to a node in the tree and list view using drag & drop in the PPR navigator.
- Copying and referencing from the PPR navigator to the table view is not possible.
- The reason for this is that copying and referencing require an unique assignment of these objects (parent-child relations). In general copying and referencing means creating a link to a reference point – i.e. between a parent and root component. The objects displayed in the result list do not have such a reference point, and for this reason copying and referencing using drag & drop from the PPR navigator to the table view is not allowed in this case.
- For this reason, new objects cannot be created in this table view.



Note

Be careful when dealing with the delete option!

It is possible to delete objects in a table view which are opened via objects of the result list of the project search. There are several points to take into account when deleting objects: Since there is no clear reference point for these objects, deleting an object means that all usages of this object are also deleted. If you select the option Deep when deleting the object, children of this object are also deleted.



For more information, please refer to the [Finder Manual](#).

Opening a Dialog using the Contextual Menu

- 1) Select the project node in the project and open the contextual menu.
- 2) Select **Find** in the contextual menu.



Figure 186: Opening the Project search Using the Contextual Menu

Switching to the Table View

- 3) In order to switch to table view, you have to select objects in the result list. You can open the table view for single or several selected objects.

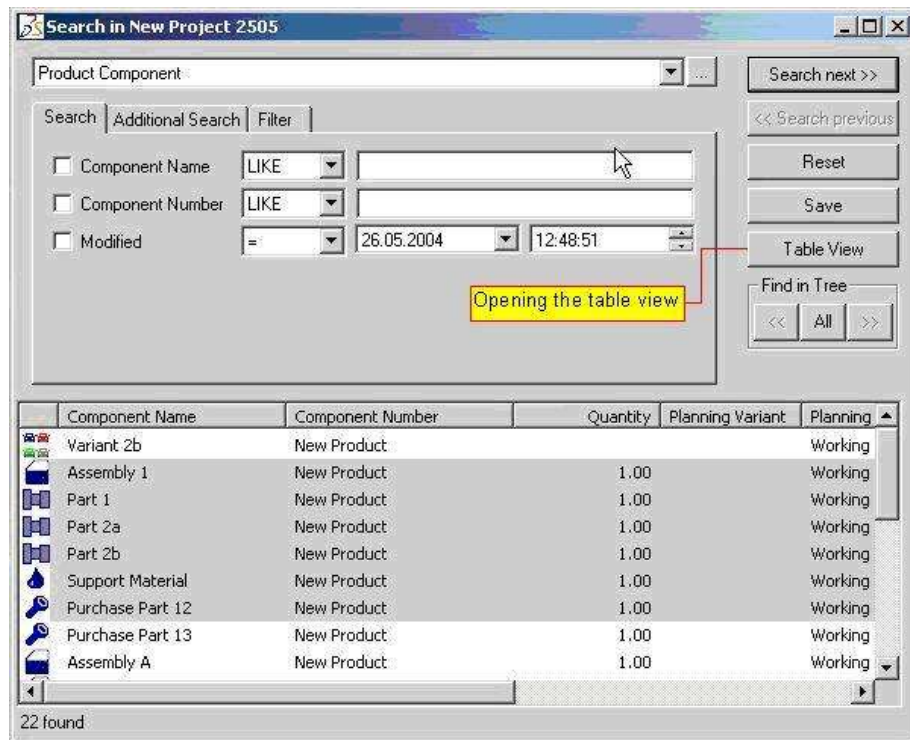


Figure 187: Result List with found Product Components in the Project

4) In order to open the table view, click **Table View** button.

- In the example, the setting **Assign plantypes to several pages** has been selected for the display. Please refer to the [Displaying the Table](#).

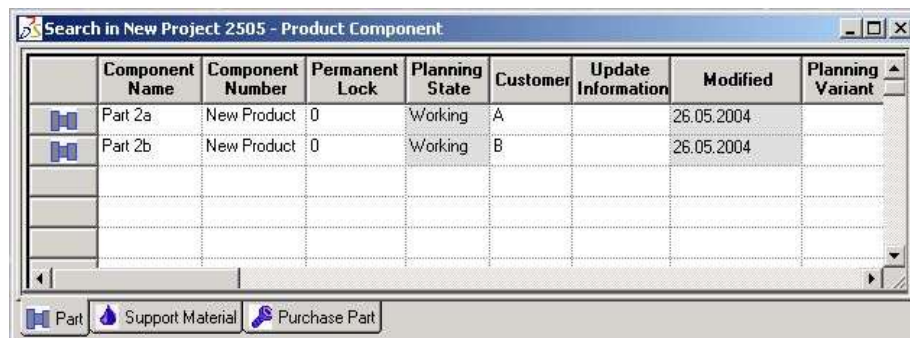


Figure 188: Showing the Table View using the Project Search

8.5 Profiles for Table View

If you do not use a profile, the attributes are shown as they are set in the **browser listview** in the table view for a plantype or relation. Please refer to the [Figure 202](#).

You can considerably refine the table view for members of a group with the possibility of creating profiles. Only the attributes that the employees of the group essentially need for their work are displayed in the table. In addition, every member of a group can derive an unlimited number of individual user profiles from one created for the group.

With the help of **Table view profile** (Please refer to the [Figure 189](#)) you can create profiles for user groups on a plantype set. Profiles are created separately for every plantype and every relation. Please refer to the [Figure 201](#).

A profile can be assigned to an unlimited number user groups.

A profile can be created only if it can execute the function permission **table views profiles**.

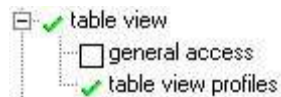


Figure 189: Function Permission Table Views Profile

Created group profiles are shown under the menu item **Tools < Settings < Maintenance Tools < Global < Table View Profiles**. Group profiles can be deleted only by users with the function permission **table view profiles**.



Figure 190: Display of Profiles

8.5.1 Creating and Editing Profile

A profile is always created in the system library. After a profile is created for a plantype or a relation, it can be assigned to a single or multiple user group(s). The profile is only available if you are a member of the group.

- 1) Open the table view. Select the plantype set and open the contextual menu.
- 2) Click **Table view profiles** in the contextual menu.

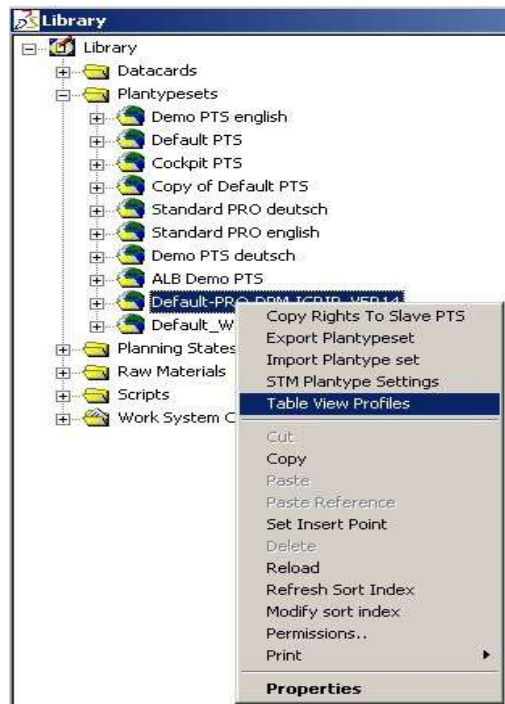


Figure 191: Open the Contextual Menu on the Plantype Set

All plantypes and relations are shown in the dialog **Select plantypes**. Please refer to the [Figure 192](#). When profiles already exist for the plantype is shown with the help of a tool tip.

- The groups to which the profile is assigned is shown for plantypes and relations with profiles: In the example, the profiles for the plantype *Testop-*

eration and for the relation *relationship_nodes* are assigned to the user groups *Indust* and *Redesign*.

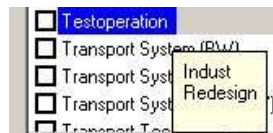


Figure 192: Tool Tip with the User Groups for Planttype – PPR Components



Figure 193: Tool Tip with User Groups for Relation – usage Data

- 3) Click in the box in order to create a profile. A profile is to be created for the planttype **Workplan** in the example.
- 4) You can create a profile for several planttypes and relations.

You can edit previously created profiles; the procedure for doing so is the same as that for creating a new profile.

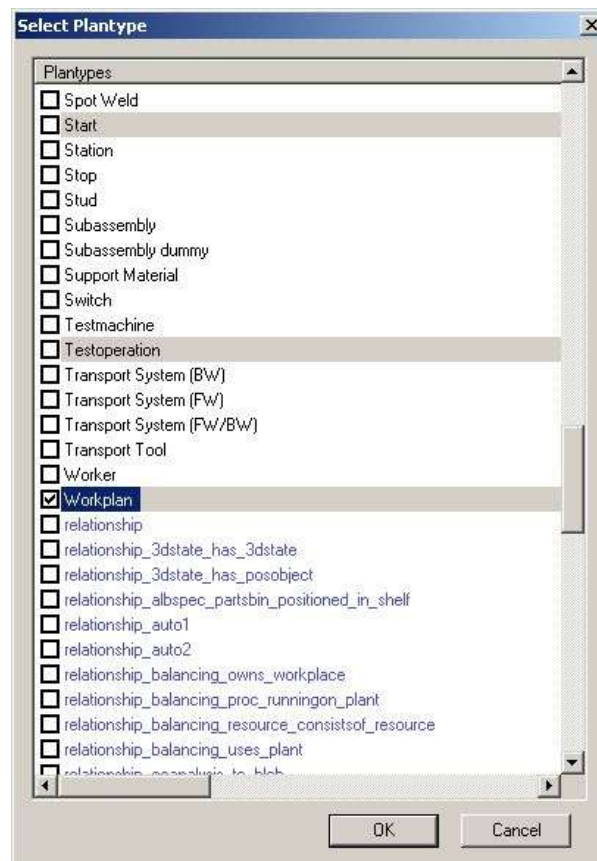


Figure 194: Dialog Select Planttype

All attributes of the selected planttypes are shown in the table view at the start. Hide the attributes that should be available to the user of the group in the table view for the profile. In order to create the profile you can use the menu items of the contextual menu:

- 5) If you select the menu item **Hide unselected columns**, all attributes that are not selected (columns) are hidden.
- 6) If you select the menu item **Hide selected columns**, all selected attributes (columns) are hidden.

- 7) If you select **Show all attributes selection list...**, all existing attributes of the plantypes are displayed in a window. If you select an attribute, it is shown for the profile. *Please refer to the [Figure 194](#).*

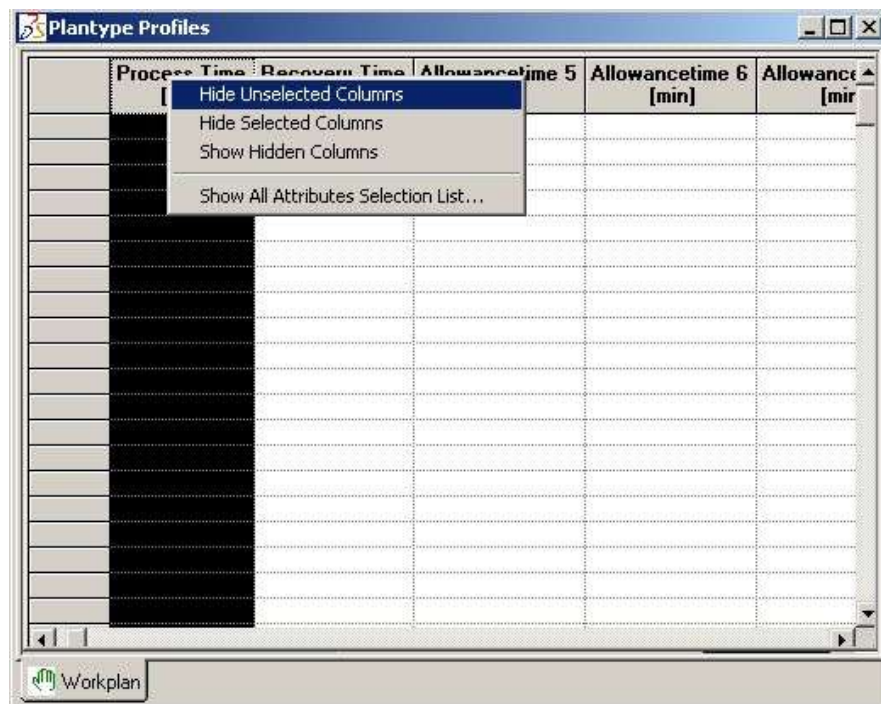


Figure 195: Table View with Attributes of the Plantype Workplan

- 8) In order to show an attribute for the profile, click in the box next to the attribute.

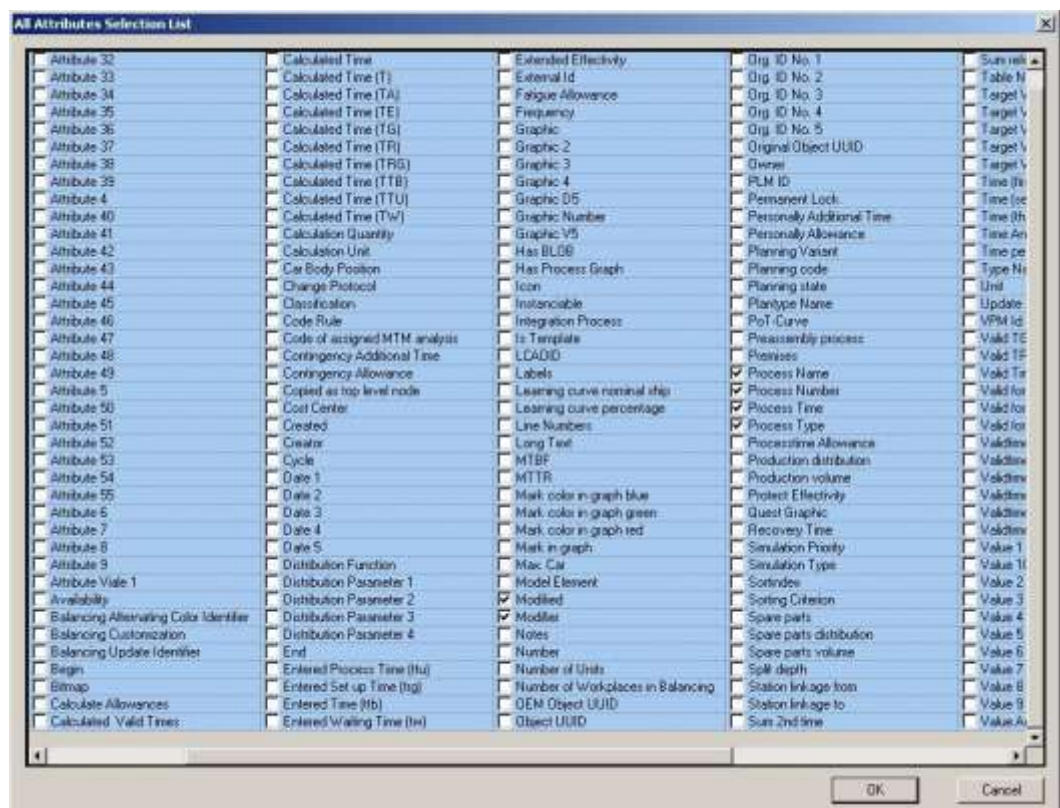


Figure 196: Window with all Attributes of the Plantype

- 9) After you have shown the attributes for the profile, you can set the column width and the sequence of the attributes for the profile. *Please refer to the [Moving Lines and Columns](#).*

No Group Profile Available

For plantypes or usage data for which no profile has been created, the table view is shown with the attributes of the **browser listview** for which the field **Display in browser** is activated. You can change the table view and save it as its own user profile. Please refer to the [Editing User Profile](#).

<input type="checkbox"/> Display and Position	
Display in editor	Yes
Display in browser	Yes

Figure 204: Properties of the Attribute - Activate Show in Browser

8.5.2.2 Profile with Table Plantype Mixed

If you open the table view in mode **Table plantype mixed**, the individual plantypes are displayed as they are set in the group profile for the plantypes.

The example shows a table view with the group profile **Redesign**. The group profile is defined differently for the two plantypes **Testoperation** and **Start**.

- The attribute **Process name** is shown for both plantypes in the group profile.
- The attribute **notes** is defined in the group profile only for the plantype **Start**. Therefore, the attribute *notes* for the plantype **Testoperation** has a gray background.



Note

If you work in the mixed display and the sequence of the display of the attributes is defined differently in the profiles for the individual plantypes, the sequence of the display is random - depending on the sequence of the line display at the start.

	Process Name	Notes
	Testoperation	
	Testoperation	
	Testoperation	
	Start	Takt 1

BOM Entry(ergocompprocessdefault)

Figure 205: Different Attributes on One Page

8.5.2.3 Creating a Personal User Profile

Create a personal user profile if you do not want to use all of the attributes of a group profile in the table view for a certain activity.

Every member of a group has the opportunity of saving and editing the profile of the group as a personal user profile under another name.

Saving the User Profile

- 1) In order to save the user profile, first open the profile and then select **Save current profile as...**

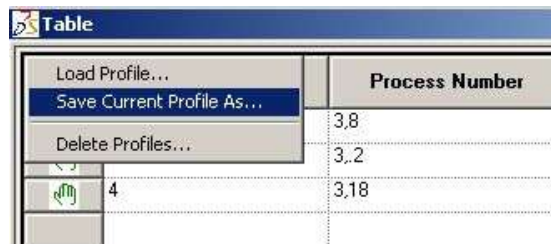


Figure 206: Saving the User Profile

- 2) Set the name of the user profile in **Profile name**.



Figure 207: Set User Profile

- 3) Click **OK**. The user profile is saved and it can be edited.

Editing User Profile

You can edit a user profile. You can, for example, change the sequence or column width of the attributes, or you can hide the attributes.

8.5.2.4 Loading the User Profile

- 1) In order to open the table view with the user profile, select **Load profile**.

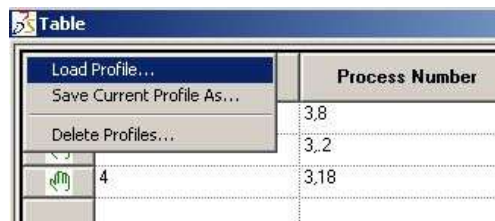


Figure 208: Loading the User Profile

- 2) Select the user profile in **Load Profile** dialog.



Figure 209: Select User Profile

Example of User Profile before Changes

The user profile corresponds to the profile of the group **Redesign**.

	Process Name	Process Number	Process Time [min]	Modified	Modifier	Estimated T
	P	001	0.00000	16.03.2006	admin	2.0000
	P1	002	0.00000	16.03.2006	admin	1.0000
	P2	003	0.00000	16.03.2006	admin	1.5000

Figure 210: Example of User Profile before Changes

Example of User Profile after Changes

In this example the attributes **Process time**, **modified** have been hidden, and the sequence and column width have been changed for the attribute **Process number**.

- 1) Save the user profile after you have changed it. You can save the changed user profile under the same name or under a new name.

	Process Number	Process Name	Modified	Estimated Time [min]	Sortindex	Visible
	001	P	admin	2.0000	1	TRUE
	002	P1	admin	1.0000	2	TRUE
	003	P2	admin	1.5000	3	TRUE

Figure 211: Example of a User Profile after Changes

8.5.2.5 Deleting User Profiles

You can delete user profiles using the contextual menu. Several user profiles can be deleted at the same time.

- 1) Open the contextual menu. Select **Delete profiles**.



Figure 212: Open Contextual Menu – Delete Profile

- 2) In the dialog **Delete profile**, click in the field next to the displayed user profile.
- 3) Click **Delete** and the user profile is deleted.



Figure 213: Select Profile to Delete Dialog

9. Relations and Autorelations

9.1 Overview - Relations

You are already familiar with the creation of planning views. Planning views display objects separated by their respective basic types, i.e. as a product, process, or resource. The following section illustrates how you can relate the technical objects of different standard views to each other.

This allows you to assign objects to each other. For example, you can assign processes and resources to a specific subassembly installation. [Table 6](#) demonstrates the possible relations.

Table 6: Possible Relations

Process – product Product – process	Description (internal name)	
Process first processes product product is first processed by process.	proc_firstprocesses_prod proc_firstprocesses_prod_reverse	
Process processes a product product is processed by process.	proc_processes_prod proc_processes_prod_reverse	
Process removes product product is removed by process.	proc_removes_prod proc_removes_prod_reverse	
Process creates product product is created by process.	proc_creates_prod proc_creates_prod_reverse	
Product has weldingpoint	weldpoint_on_prod_reverse weldpoint_on_prod	
Process – Resource Resource – Process		
Process running on plant Resource runs Process	Proc_runington_plant Proc_runningon_plant_reverse	
Process uses plant Resource is used by Process	proc_uses_plant proc_uses_plant_reverse	
Resource – Product Product - Resource		
Resource provides product Product is provided by resource	plant_provides_prod plant_provides_prod_reverse	
Process – Process		
Process is fed by a process	proc_feedby_proc	
Process feeds another process	proc_feedby_proc_reverse	
Must succeed Must precede	process_mustprecede_process_reverse process_mustprecede_process	
Runs before Runs after	process_runsbefore_process process_runsbefore_process_reverse	
Is alternative Is alternative (reverse)	process_isalternative_process process_isalternative_process_reverse	



Note

It is easier to create relations if you open the project twice with only the object structure displayed.

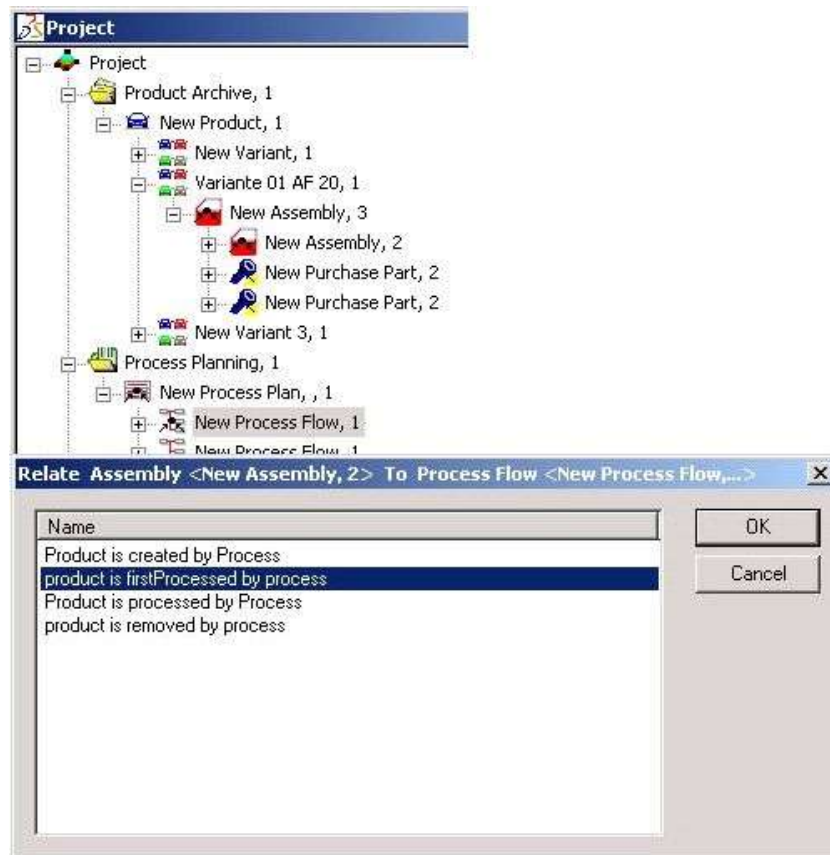


Figure 214: Example of the Structure of a Relation between Process and Product

To Create the Relation

- 1) Select an object and drag it to the object with which you want to build up the relation while holding down the mouse button.
- 2) The subsequent query enables the relation type to be determined, which is required for the two objects. For production processes, you need to choose the **Product is processed by Process** option. For assembly processes, you need to select the **Product is processed by Process** option and confirm it with **OK**. The Product is first Processed by process relation relates to the first usage of a product by a process. Thus, the product at a conveyor, for example, must be provided in a bin. You receive a similar query when creating process-resource relations.

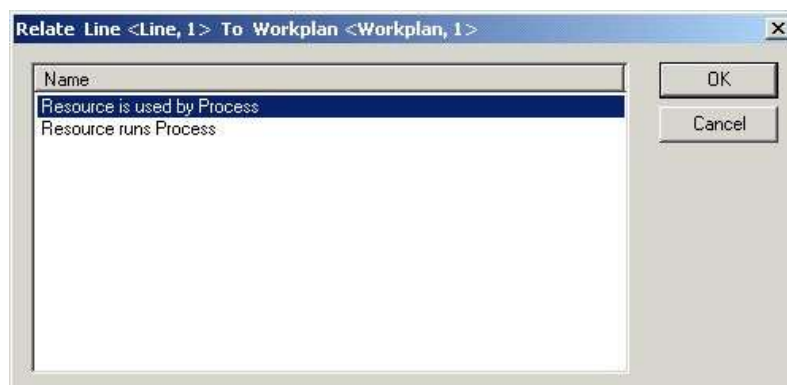


Figure 215: Relations between Process and Resource (plant)

Here you need to reply to the query in the same way as when determining the relation type. The reason behind this query is the possibility of separate planning valuations for manufacturing and assembly relations.

A new tab is created in each display area of the two objects. As a result, you can view the object for which the relation has been created.

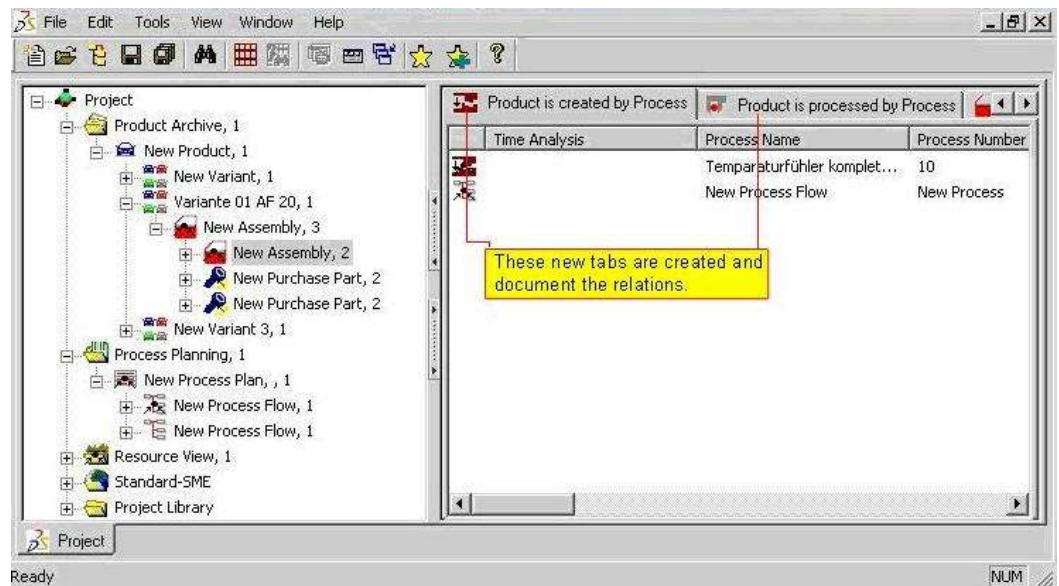


Figure 216: Creating a Product-Process Relation

Here, we would like to point out an important fact. The same queries may lead to different results in different views.

If you evaluate the production time in the process view, the result shows the sum total of all process times.

However, if you evaluate the production time in the production view for all assigned processes, the result shown takes the time of the assigned work plans into account. Consequently, the result depends significantly on the question as to which valuation is to be performed for which view.



Note

Valuations in the sense of displayed results are implemented via the print preview, as print forms can be freely configured. This allows you to create your own valuation forms. (Please refer to the [Administration Manual](#)).

For a better overview, the icons of linked objects are marked by an additional icon ("overlay bitmap").



Figure 217: Additional Icon using a Technical Process Object as an Example

9.2 Overview - Autorelations

Autorelations are automatic assignments of objects (resources: tools, parts bins) based on existing relations between:

Processes and resources, Processes and products, and Products and resources

Consequently, autorelations are relations (relationships) that have been automatically created from other parent-child relations and which are continuously updated. Autorelations can connect any object. The [Figure 216](#) depicts the purpose of autorelations.

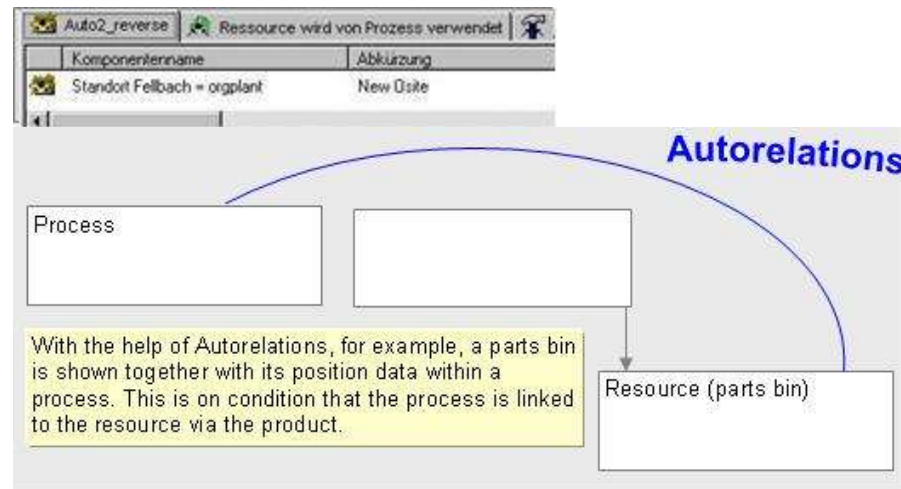


Figure 218: Autorelations

To view Autorelations

- As a tab in the object list: Auto1, Auto1_reverse, Auto2, Auto2_reverse.

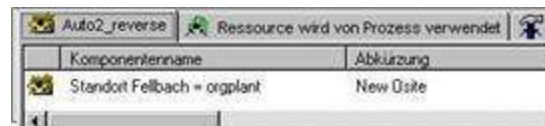


Figure 219: View Autorelations



Note

For an automatic update of autorelations you must enable the Automatically synchronize autorelations option in the Settings. To do this, simply checkmark the required box (Please refer to the [Figure 212](#)). If you have not enabled this function, the update begins when you have started the Update function by selecting the "Updating autorelations" item from the menu.

- **Synchronous update of autorelations:** The synchronization can be immediately executed when a "possible autorelations path" (either a PPR link or a BOM entry has a connection) is created, deleted, or moved.
- **Asynchronous update of autorelations:** Autorelations can only be synchronized manually. The update cannot be executed unless the update is started via the "Updating autorelations" menu item.

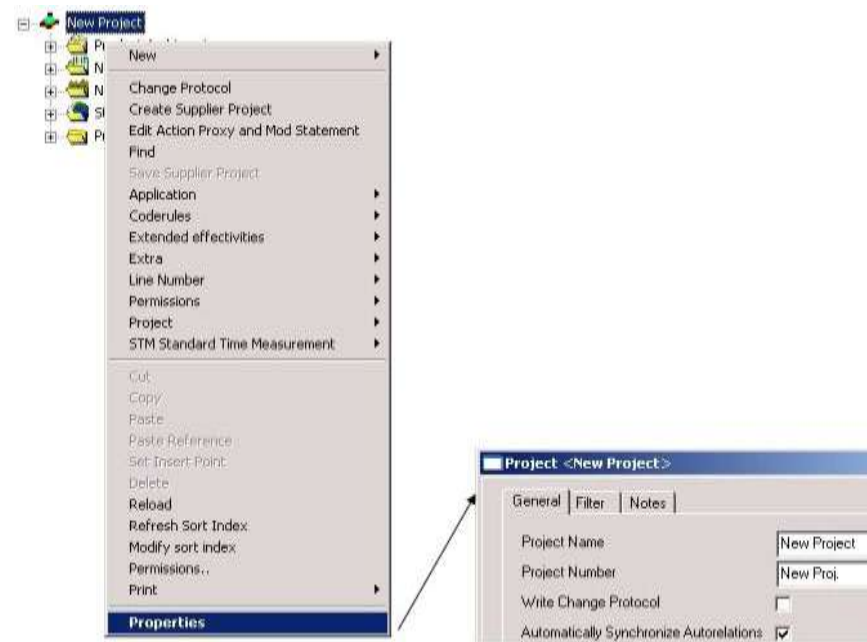


Figure 220: Calling Properties on the Project Level

To Start the Update

- 1) Click **Update Autorelations** item to start the update. *Please refer to the [Figure 219](#).*
If the automatic synchronization is **not** enabled in the settings. *Please refer to the [Figure 6](#).* With this setting, you always have to execute the update
- 2) If you want to view the results of the update: This process does not depend on the selected setting.

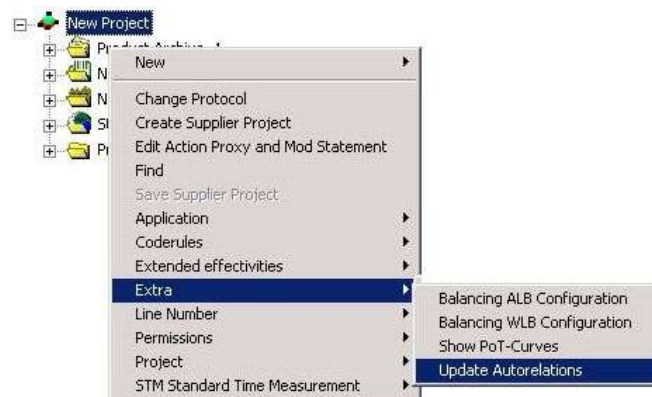


Figure 221: Starting the Update on the Project Level

To Show Update Results

To display the results of autorelation updates, the **Show autorelations update results** menu item in the settings menu must be enabled. *Please refer to the [Figure 220](#).* If you do not enable this menu item, the update of autorelations will still be executed, but it will run in the background.



Figure 222: Settings Menu – Showing Update Results



Note

Updating autorelations is a time-consuming process. Therefore, it is advisable to execute this update in the evening. Another way to save time is to disable the menu item while executing the update.

Two displays, A flowchart of updated autorelations and a list, always appear. Both displays show the current status. Please refer to the [Figure 221](#).

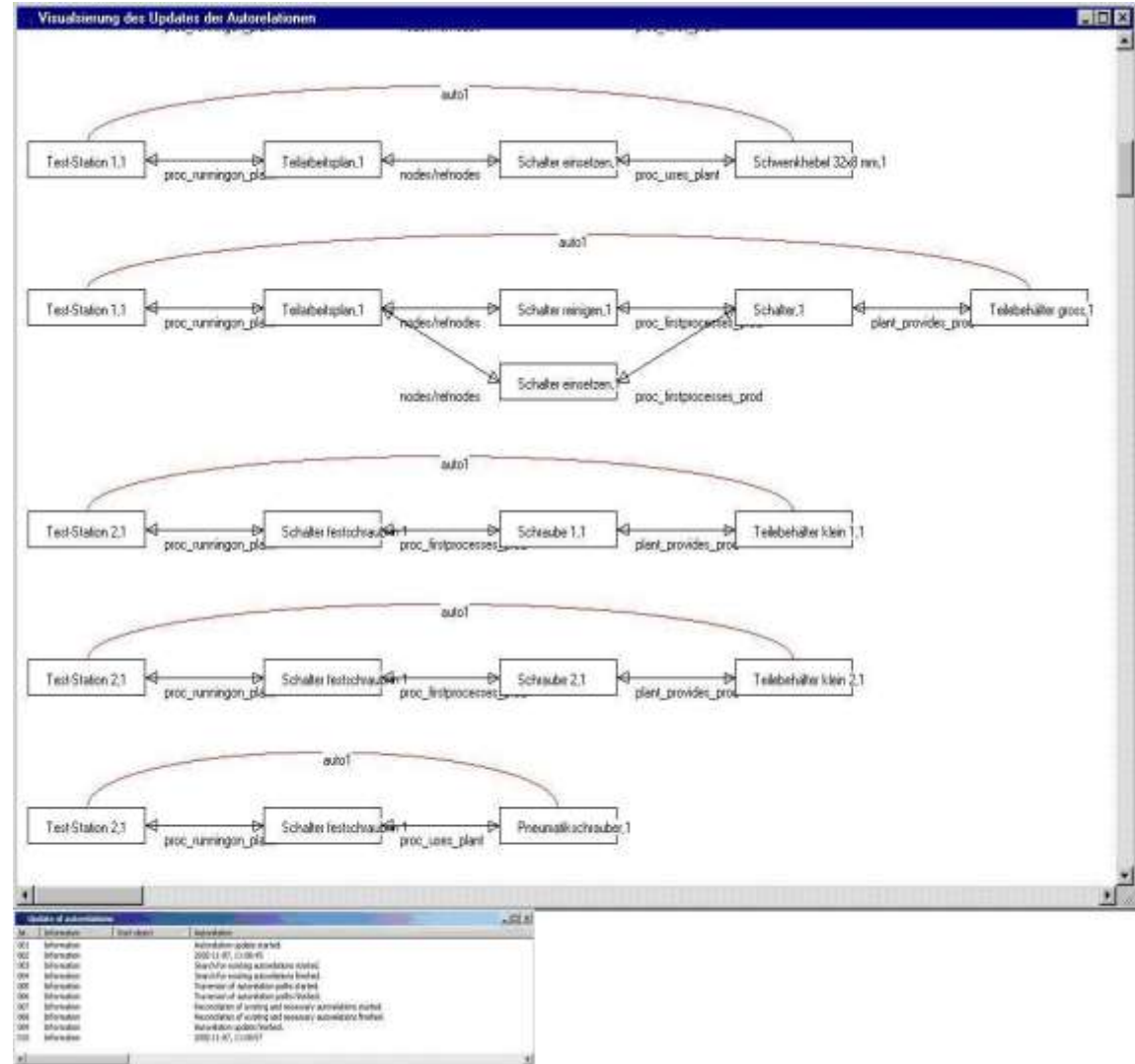


Figure 223: Display of the Updated Autorelations

10. Versioning Concept

The versioning function helps to obtain a clear overview when managing different planning states. The versioning concept requires that each object (for example, products, processes, ...) receive an individual version number. Additionally, a planning state can be assigned to each version.

If a version reaches a certain ("high") planning state, it can no longer be processed. In this case, you need to create a new version with a lower planning state before you can continue your work.

The following section describes the theoretical principle of versioning. The practical application in the DELMIA Process Engineer is also discussed.

10.1 Theory of Versioning

Versions

Initially, versions are simply copies of their predecessors. They are generated by copying their preceding objects. Thus, each version receives the complete data and not just the updates that have been made since the last version. .

Each object can have multiple versions. These versions usually have a predefined sequence when created and the DELMIA Process Engineer can specify for each version whether it has a predecessor or successor.

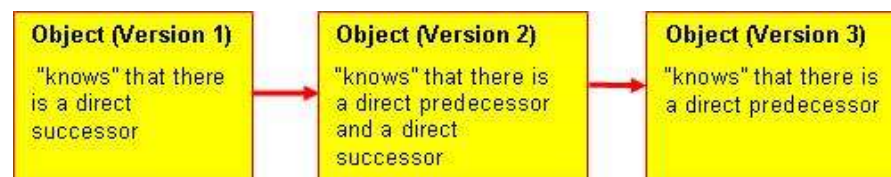


Figure 224: Sequence of Versions

Parallel Versions

Generally, you can generate multiple successors for each object. However, this is only possible, if it is explicitly allowed in the respective properties dialog of the project, since parallel versions can easily cause very complex project structures.



Figure 225: Allowing Parallel Versions in the Properties Dialog of a Project

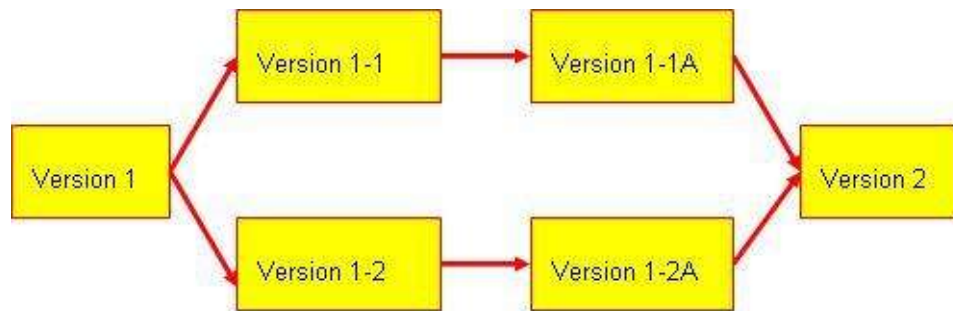


Figure 226: Basic Scheme of Parallel Versions

Version Numbers

Whenever you create a new version, the DELMIA Process Engineer® automatically assigns uniquely identifiable version numbers.

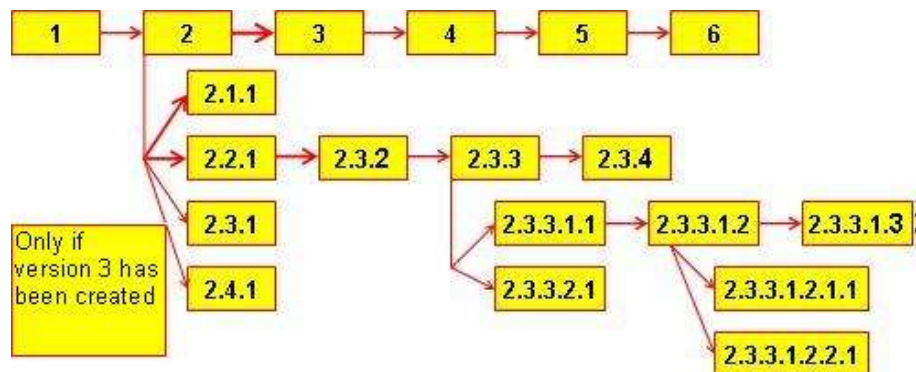


Figure 227: History of Automatically assigned Version Numbers

However, users can also change version numbers.

Caution

When assigning user-defined version numbers, please ensure that each number is uniquely identifiable within the history of an object.

Example

Let us assume you changed version number 2.3.1 of the above example to version number 7. You would then generate a succeeding version from version 7 and version 6 resulting in the following history:

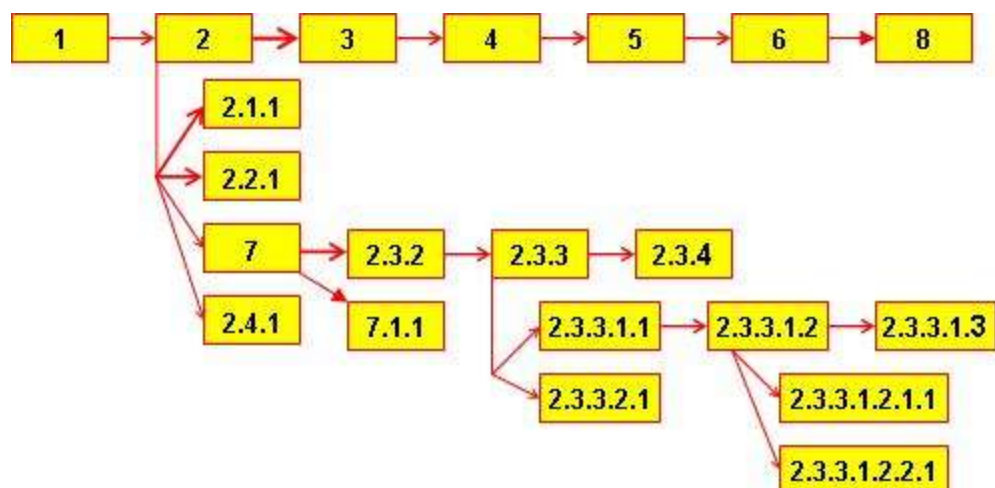


Figure 228: Manual History Manipulation

Validity of Versions

Versions can have defined validities. A date filter allows you to filter objects with versions for a defined time of validity. Thus, you can also have different versions of one object with the same validity period.

10.2 Versioning in Practice

This section demonstrates how to put the theory of versioning into practice.

Creating and using New Versions

The following versions can be generated for any object at any time. The current planning state does not make any difference when doing this.

- 1) You have two options to create new versions:
 - A new version of the selected object
 - A new version of the selected object and simultaneously of all sub-objects (children, if any)
- 2) Once you have created a new version, you must specify the version with which you want to continue your work.



Note

Versions must be explicitly used if you want to edit them. This enables you to have multiple object versions of a object while editing only one of these versions.

To Create a New Version of an Object

- 1) Select **Versions** from the contextual menu of an object (i.e. subassembly).
 - The **Subassembly 1 Version: 1** list appears. This dialog lists all existing versions for this object (*Please refer to the [Figure 227](#)*).

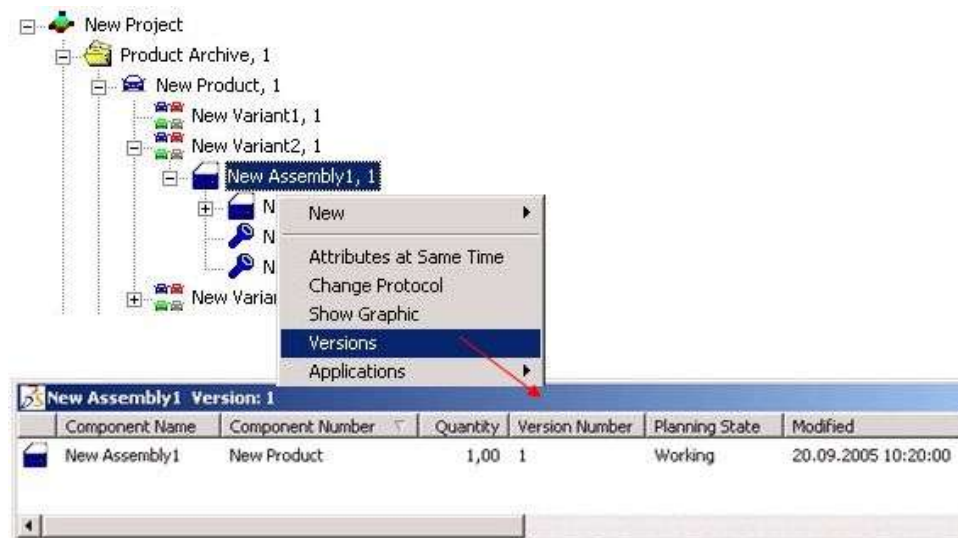


Figure 229: Calling the “Versions” Dialog

- 2) Select the entry from which you want to create a succeeding version and call the contextual menu of the required object by a right click of your mouse. The following contextual menus must be considered (*Please refer to the [Figure 228](#)*).

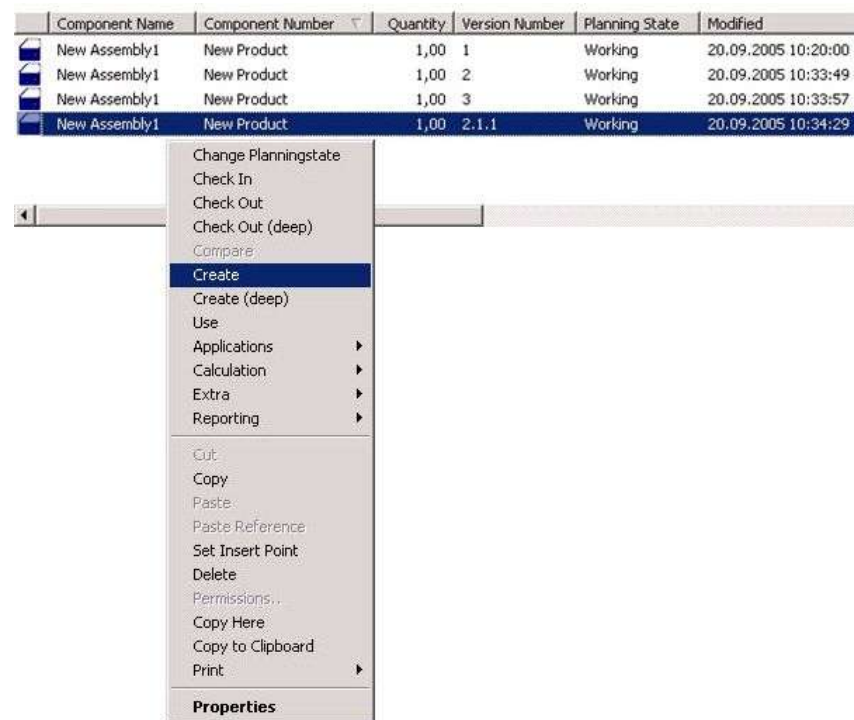


Figure 230: Contextual Menu for Versioning

Versioning Contextual Menu Description

- **Create:** Use this entry to create new versions. This version still does not have any defined usage.
 - **Check In:** Use **Check In** to assign the planning state for the selected version.
 - **Check Out:** Use this entry to create a new version of the selected object for immediate use.
 - **Check Out (deep):** Use this entry to create - like when checking out - a new version of the selected object as well as a new version of all sub-objects (children). At the same time define the usage for these versions.
 - **Compare:** Use this **entry** to compare two versions with each other. To do this, you must first select the two versions.
 - **Create (deep):** Use this entry to create a new version - as with "Create" - with the difference **that** here all sub-objects (children) also receive new versions. This version still does not have any defined usage.
 - **Change Planningstate:** Use **Change planning state** to assign the planning state for the selected version.
 - **Use:** Use this entry to specify which versions you want to use in the future.
- 3) Select **Create** from the menu. You have created a new succeeding version. However, this is not yet active and therefore can be displayed in the project library below the appropriate plantype.
 - 4) If you want to edit the new version, you must use it. To do this, select **Versions** from the contextual menu of the relevant object. Then select the version you want to use and click **Use** entry in the contextual menu.
 - 5) **α:** If you know for sure that a new version is to be used immediately, you may also perform the two steps of creating and using a version in a single

step. To do this, select **Check Out** entry from the contextual menu of the object for which you want to create a new version.

β: If you select **Check Out (deep)** entry, you get a new version of the selected object plus a new version of each sub-object (child).



Caution

Generally only the version of an object that is in use is displayed in the tree view of the PPR navigator under the project nodes. The current (last) versions, on the other hand, are displayed in the project library. Therefore multiple versions could be displayed in the project library. This is shown in the [Figure 229](#).

Versions of a supported material



Versions in the project library

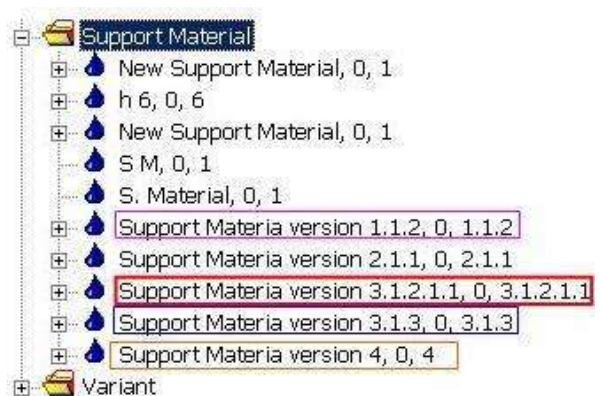


Figure 231: Version in the Project Library



Note

The Filter tab allows you to specify whether you want to view all versions of “top-level components” (Please refer to the [Administration Manual](#)) In this case, you can view multiple versions of an object in the tree structure.

If you create a new version, this version appears immediately in the project library using the update function and, in the case of a top-level component; it also appears below the relevant project. By default, a top-level version behaves in the same way as a version in the project library, i.e. you always view the latest version.

However, you can also determine that all versions are viewed rather than just the latest ones. This can be defined in the project settings for top-level components.

Of course, this change is effective after the project has been updated by pressing the **F5** key (alternatively, select **Reload** from the contextual menu) or after closing or reopening a project.

To Create Parallel Versions

In the same way as the above procedure, you can also create parallel versions. However, this must be explicitly allowed within the project (Please refer to the [Figure 223](#)) Otherwise, the following message appears.



Figure 232: Error Message for Parallel Versions that are not Allowed

- 1) Call the **Versions** entry from the contextual menu of the object of which you want to create a new version and then either click **Create**, **Check Out**.
- 2) Create (deep) or Check Out (deep) in the “Versions” dialog.
If you have **not** chosen the most recent version, you can create a parallel version.
- 3) When checking out (deep) or generating (deep) the program may want to generate parallel versions although no parallel versions are permitted. The reason for this is that a sub-object has several versions and the last version is **not** used.



If, for example, you want to generate a new version in this manner when checking out (deep), you get a message that no parallel versions are permitted. The reason for this is that this sub-object has several versions itself, and the program would have to generate parallel versions, which are not permitted.

To Delete Versions

Note

If you want to delete a current version, you must first use a previous version (Use entry from the contextual menu). If you delete the currently used version, the node and its children (if any) can be completely deleted from the object structure. However, this version can be still available in the project library and can be restored if required. You can only delete a version that has no successors.

- 1) Select the object you want to delete and call a contextual menu using the right mouse button. Select **Delete** or press the **Delete** key on your keyboard (**DEL**).
- 2) The object is deleted once you have acknowledged the delete confirmation. If the requirements are not met, you get a corresponding error message.





Figure 233: Deleting a Version

10.3 Assigning a Planning State to a Version



The planning state is defined in the project library or in the system library.

For more information on how to create a planning state, *Please refer to the [Project Library Manual](#) and [System Library Manual](#).*

Each version has an assigned planning state. Planning states are divided into three categories: **In work**, **Integrate**, and **Released**. These states have a special order within the categories (according to the so-called sorting index).

If you create a new version, this version is automatically **assigned to the first planning state**.

Each project can be automatically assigned the **in work** planning state.

The semantics of the various planning status categories affect above all the ability to change attributes. The editing state allows you to change all attributes of a version, whereas the completed state and released state only allow you to change attributes that have been labeled accordingly in the configuration (changeable or integrate state = true).

The planning state is implemented as an Ergoitem. The sequence within a state is set via the sort index.

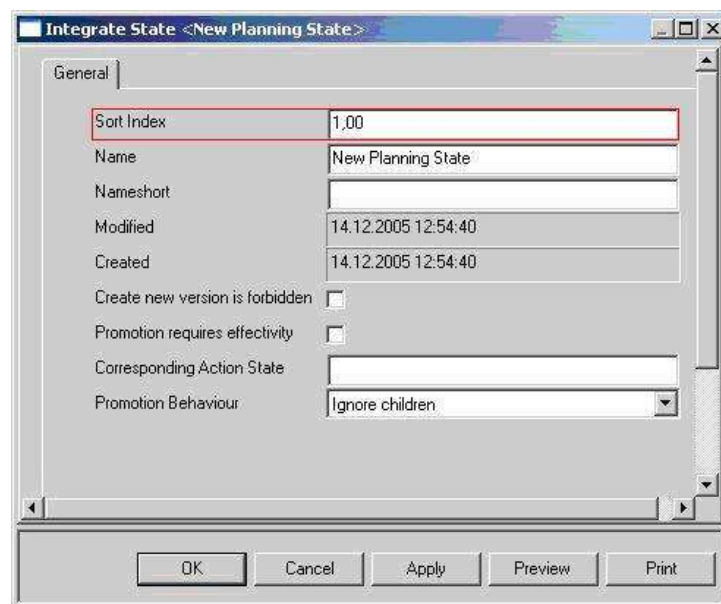


Figure 234: Properties Dialog – Planning State

Create new version is forbidden

This field decides whether you can create successor versions for that state.

Mapping of ENOVIA Action States to DPE Planning States

The string attribute 'ENOVIAplanningstatename' at type planningstate allows to directly map an ENOVIA Action State to a DPE planning state.

Change Planning State/Promotion Requires Effectivity

This field decides whether an effectivity is required for promotion to that state.

If you deactivate this field, *Please refer to the [Figure 232](#)*, the availability of an **extended effectivity** is checked when a higher planning state is switched to – extended effectivities are either set directly for PPR-components or an MCM project for an effectivities range.

Activate the field only for the higher planning state – i.e. for the target planning state to which you want to switch.

If this field is activated for a higher planning state, you can only switch to this planning state if an extended effectivity is available for the PPR component. For example, if there is a switch from planning state **Working** to the higher planning state **Integrate**, and the extended effectivities should be checked for all PPR components that have this planning state.

Taking the Planning State of the Children into consideration when Promoting the Parent Node

Use this option when switching the planning state of the parent node to a higher planning state to set whether the planning state of children are taken into consideration.

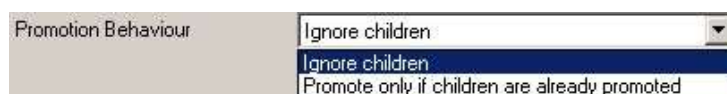


Figure 235: Promotion Behavior

- 1) If you select **Ignore children**, the planning state of the parent node is promoted, and the planning state of the children is not taken into consideration.
- 2) If you select **Promote only if children are promoted**, then the programs checks whether the children of the parent node already have target planning state or a higher planning state when the planning state of the parent node is promoted. If this is not the case, the planning state for the parent node cannot be promoted. A message bring this to your attention.

Planning states are usually divided into project-specific and project-independent (global) states. Project-specific planning states are defined in the project library whereas global planning states are defined in the system library.

As a rule, versions should only be assigned a “higher” planning state, while simultaneously observing a fixed sequence. For this purpose, the **Versions** dialog provides the **Check In** option from the contextual menu.

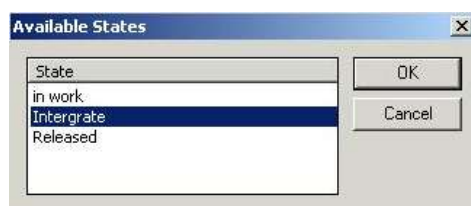


Figure 236: Available States

When you have selected **Check In**, a dialog appears showing all available planning states that are rated “higher” than the currently assigned state for the relevant object. The states are displayed according to your defined sequence. The top entry is the next available which is usually assigned. However, you may also skip a planning state during assignment. If the suggested sequence is always observed, this will result in the following pattern.

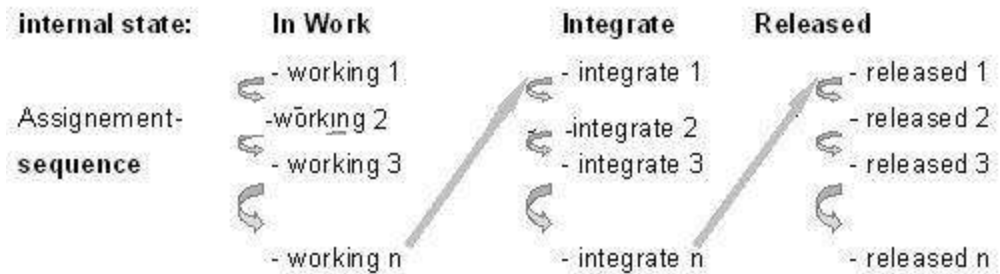


Figure 237: Assignment Pattern of States

Freely Changing a Planning State of a Version

Irrespective of the recommendation to assign planning states only according to a defined sequence or not to assign “lower” states, you can use the **Change Planningstate** option to call a dialog where you can view all available states of a particular object. You can now freely assign states. This can be only done if you have the required function right.

Select **Change Planningstate** from the **Versions** dialog in the contextual menu of the object you want to change.

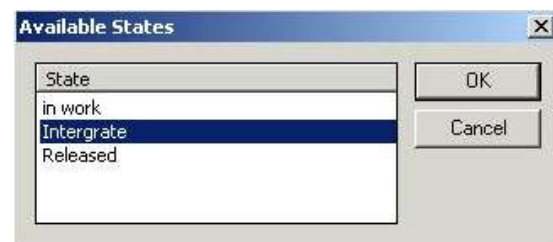


Figure 238: All Available States

This option also offers “lower” states for selection. You can now select one and assign the required state by left-clicking **OK** button.

10.4 Comparing Versions

To compare two versions proceed as follows:

- 1) Call the **Versions** entry from the contextual menu of the object with the versions you want to compare.
- 2) Select two versions (hold down **Ctrl** key for non-adjacent versions) and click **Compare** in the contextual menu.
The **Properties** dialog of both versions is displayed side by side. Different entries are marked by *.

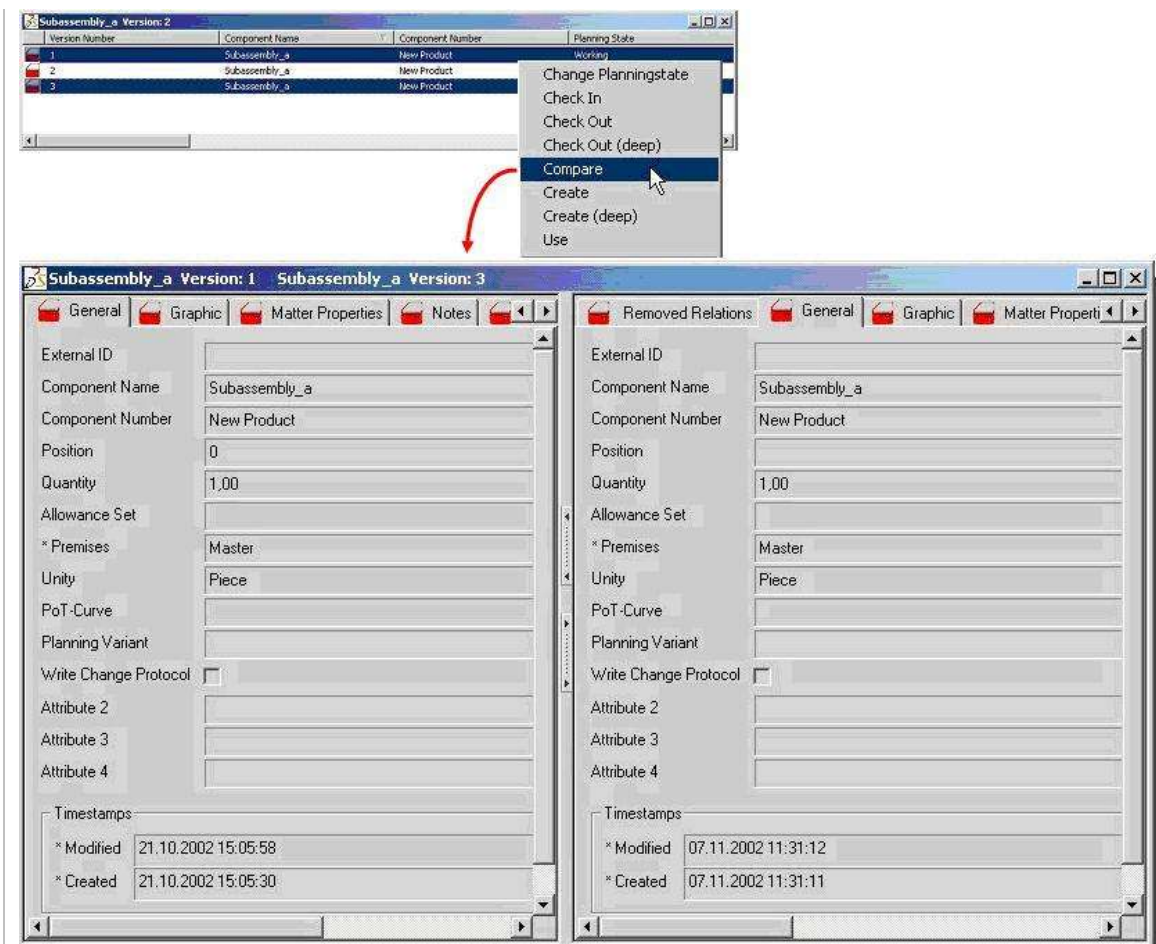


Figure 239: Comparing Versions

10.5 Assigning/Changing Planning State

The planning state is defined in the project library or in the system library. How to assign a planning status to a version is described in the section [Assigning a Planning State to a Version](#).



For more information on how to create a planning state, *please refer to the [Project Library Manual](#) and [System Library Manual](#)*. For more information on how you can use a planning state in MCM projects, *Please refer to the [Manufacturing Change Management Manual](#)*.

Change Planningstate

All objects have the planning status **Edit** in the standard configuration. You can assign a higher planning status to a component via the contextual menu.

- 1) Open the contextual menu and select the menu entry **Change Planning Status**.



Figure 240: Change Planning Status via the Contextual Menu

- 2) In the dialog that opens select the planning status that you want to assign and terminate the dialog with the **OK** button. In order to be able to make a

selection, at least one additional planning status must be available in the project library.

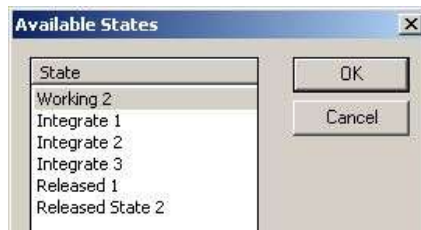


Figure 241: Change Planning Status via the Contextual Menu

The selected planning status is now assigned to the object.



Note

*You can change the a planning status only if you have the function permission **Change planning status**.*

10.6 Release Table wrt SFI

To support Shop Floor Integration (SFI) a Release Table is provided for each object version. The release table is populated by the shop floor software, and contains the information for which effectivities (line numbers, dates,...) the object has been released to the shop floor.

The release table contains for each entry a flag, enabling shop floor software to mark if for an effectivity in the release table an PDXML-File has been created. This has an impact on a versioning consistency check run in DPM Work. For more information on PDXML-File, *Please refer to the [Scripting Manual](#)*.

Consistency Checks

Based on the planning states creation of a new version is only possible if flag [.createneversionforbidden](#) is false for the current planning state. *Please refer to the [Figure 232](#)*.

Based on Release Table entries create and CheckOut of a new version is only possible if the actual selected mod statements effectivity has no overlap with any entry in the "release tables" of all its predecessor versions.

Promotion of a Version to a higher planning state is only possible if there are no overlaps between the object version (release table entries or the selected mod statement) and the release table entries of predecessor versions.

11. Contextual Menu Functions

11.1 Project Contextual Menu Functions

Most functions are called via the contextual menu of an object (node). The contextual menu depends on the selected object. The contextual menu structure can be different for individual objects. Since contextual menus are also configurable, this may lead to a different structure as well. The section below describes functions that are integrated by default.

In addition to the three basic types, we explain the contextual menu of the “project” top object in the structure tree.

To Open Project Contextual menu

Right-click **Project** object to view the contextual menu.

Some of the menu entries must be explained in detail, while others (for example, finding target values) can be explained only in the context of other functions of library entries.

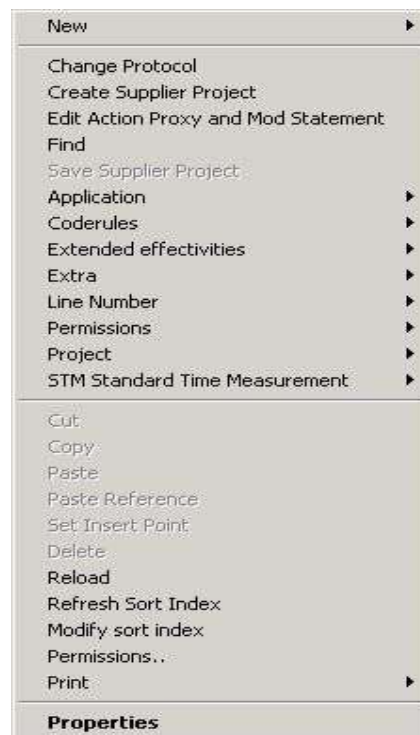


Figure 242: Project Contextual Menu

11.1.1 Change Protocol

Use the **Change protocol** item from the menu to historize all changes to an object, i.e. you can log all changes. The historizing process is performed automatically by the system, if the **Log changes** checkbox has been activated in the **Properties** dialog and if additional settings have been made on the type and attribute levels of the configuration.

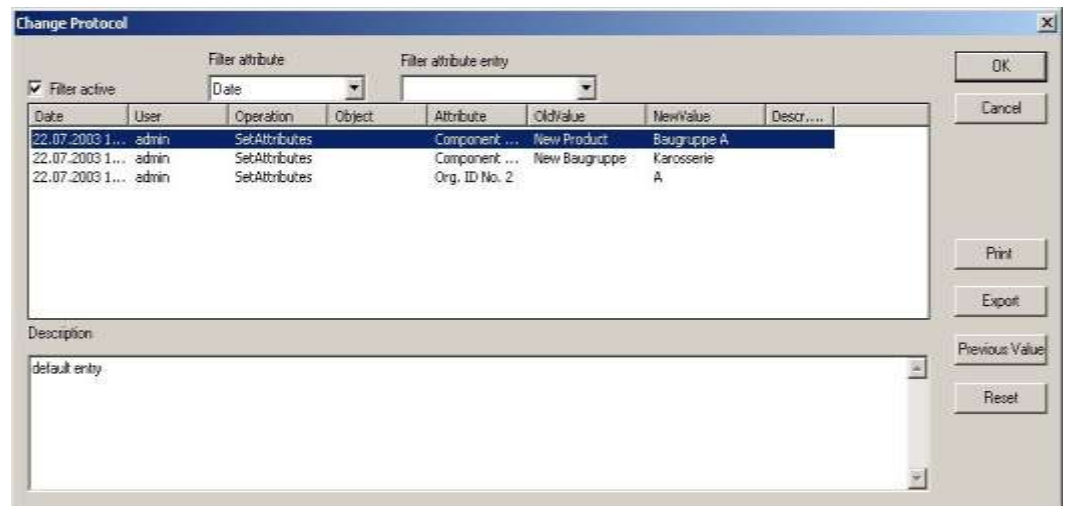


Figure 243: Change Protocol

You can read the date, the user, the attribute, the original value, and the modification. Select an entry and you can enter remarks into the description field if you are the person who made the changes.

Click **Reset** button resets the note text to the condition it had when you opened the dialog.

Left-click **Previous value** allows you to switch between the entered note text and the note text which is available when opening. Click **OK** to quit the dialog and to save your entries.

The **Export** button generates an Excel file (.csv). You can set a path for a location to save these data under **Tools < Settings**.

To Change Description

For changed data, which is shown in the dialog **Change Protocol** you may write notes or edit existing notes in the description field. An asterisk in the field Description exclusively marks these changed descriptions during the current session (as long as the dialog is opened and has not been closed).

- For changed descriptions, the asterisk can also be used as a filter attribute, but exclusively during this current session.

Once you close the dialog, the changed data is displayed when the dialog is reopened, but an asterisk could no longer mark them.

To Set Filter Attributes

A differentiated display of the changes is shown if you use the **Filter active** function for the display of the changes. Filter attributes that allow an additional refined display are used for the function. The **filter attribute entries** are provided according to the selected filter attribute. The dialog must not be closed if you want to set a filter. All changes are listed if you do not set a filter.

- Click Filter active in the Change Protocol dialog.
- Select the corresponding filter under **Filter Attribute**. The date is selected in the example.

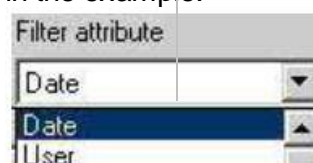


Figure 244: Select Filter Attribute – Date in the Example



Exclusively during the current session, the changes are marked by an asterisk in the field *Description changed*.



- 3) Set date and time in **Filter attribute** entry. All changes which were executed on this date and at this time are displayed. (*Please refer to the Figure 244*).

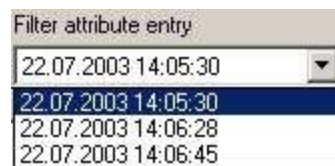


Figure 245: Selecting Date and Time

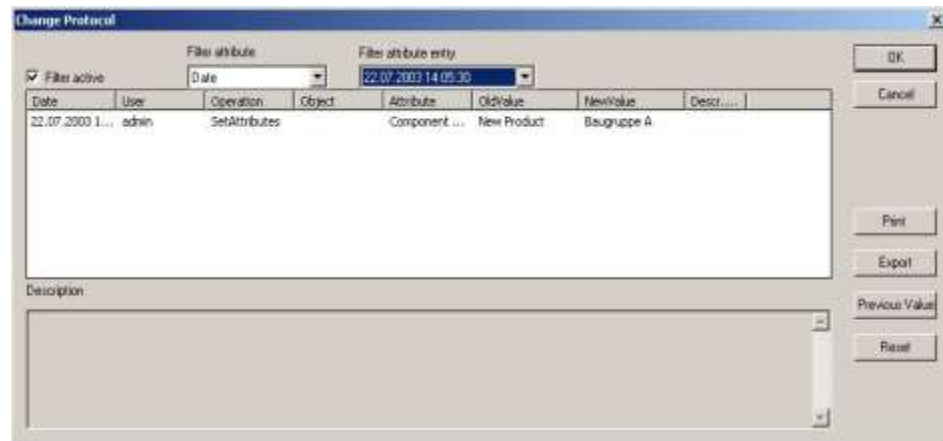


Figure 246: Change Protocol Dialog – Date and Time

Deleting Change Protocol Entries

You can delete the list of entries in Change protocol either through DPE Scripting API or CAA interface methods.

Deleting Change Protocol Data using DPE Scripting API

- 1) Create the project structure as shown below.

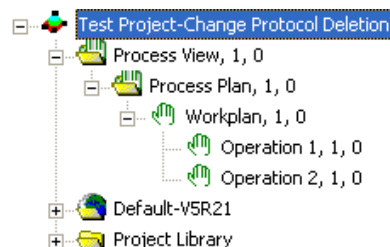


Figure 247: Project Structure for Change Protocol Entries

- 2) Open configuration tool and expand Attributes under ergocompprocessdefault type, change the property **Is relevant** to **Yes** for both "Process Name" and "Process Number" attributes as shown below.

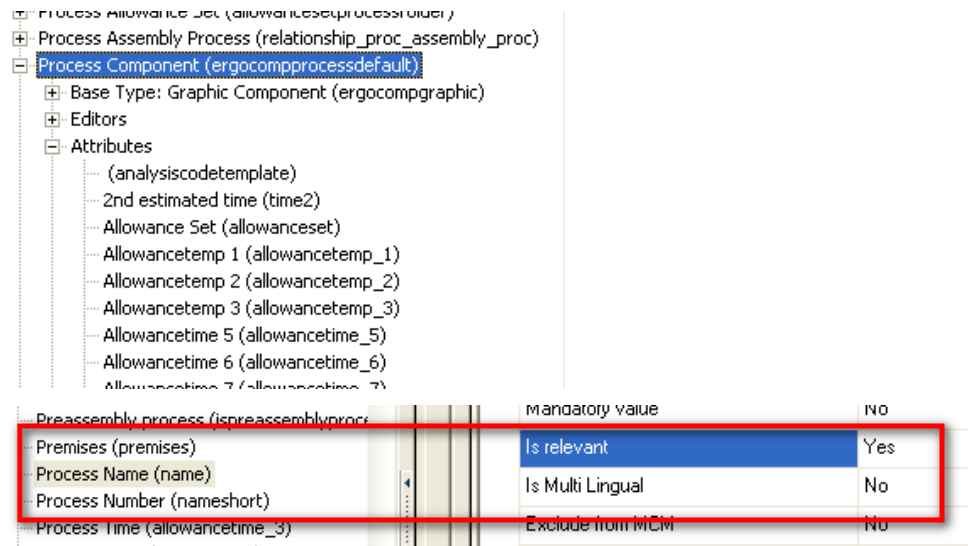
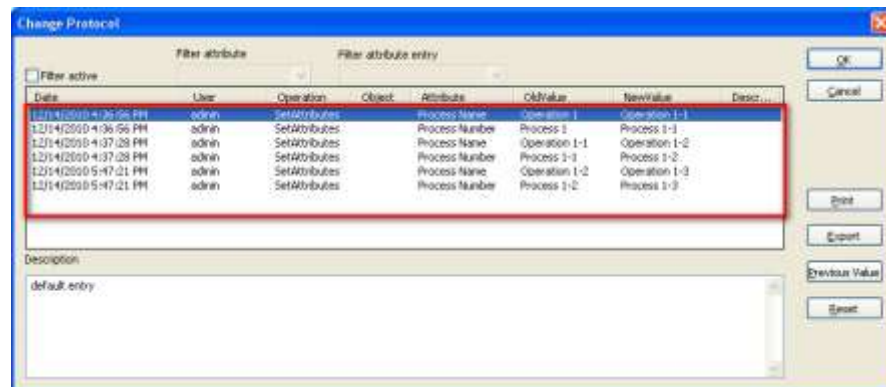


Figure 248: Changes in Configuration Tool

- Right click on "Operation 1 and 2 and select **Write Change Protocol** check box.
- Right-click Operation 1 and change the attribute Process Name from "Operation 1" to "Operation 1-1" and change the attribute Process Number from "Process 1" to "Process 1-1". Similarly, for "Operation 2" change the attribute Process Name from "Operation 2" to "Operation 2-1" and Process Number from "Process 2" to "Process 2-1". Repeat this step for 2 to 3 times by giving different attribute values for Process Name and Process Number.
- Right click "Operation 1 and 2" and select **Change Protocol**. The **Change Protocol** dialog box for "Operation 1" has 6 entries. (The number of change entries is changed depending on how many times these attributes was changed).



- Create and run the following Script. This deletes the change entries belonging to the user "admin" irrespective of the project, on which the script is called.

```
sub main (id)
call Query.ResetSearch
Query.SetQuery "ChangeEntry", "username", "=", "admin"
vArrayChangeEntries = Query.GetChangeEntryResultEx("oid")
outArray = data.ExecuteServerMethodEx (id, "delete_changeentries_forced", vArrayChangeEntries)
end sub
```

**Note**

The search criteria was specified only on the attribute "username" however it is possible to set the search criteria on other attributes available on change entry type.

Deleting Change Protocol Data using CAA Interface Methods

- 1) Perform the steps 1-6 as discussed in [Deleting Change Protocol Data using DPE Scripting API](#).
- 2) Build the CAA code to generate CAA test application.
Change the DPE user name, password, and project id in CAA code, if required.

```
// TestDeleteChangeProtocol.cpp : Defines the entry point for
the console application.
//
// #include <afx.h>
#include "stdafx.h"
#include "afxstr.h"
#include <atlbase.h>
#include <iostream>
#include <EPIPDCClient.h>
#include <ObjectQuery.h>
#include <ErgoplanDOImpl.h>
#include <BaseDataObj.h>
#include <dpf/xconvert/epcomvariant.h>
int main(int argc, _TCHAR* argv[])
{
    CoInitializeEx(NULL, COINIT_MULTITHREADED);

    HRESULT hr = CoInitializeSecurity ( NULL, -1, NULL, NULL,
    RPC_C_AUTHN_LEVEL_CONNECT, RPC_C_IMP_LEVEL_IMPERSONATE, NULL,
    EOAC_NONE, NULL );

    CComPtr<IEPIPDCClient> pIPDCClient;
    hr = CoCreateInstance ( __uuidof(EPIPDCClient), NULL,
    CLSCTX_ALL, __uuidof(IEPIPDCClient), reinterpret_cast<void*>
    (&pIPDCClient) );

    hr = pIPDCClient->SetLoginInfo ( CComBSTR(L"admin"),
    CComBSTR(L"admin") );

    /* This Module authentication ID must be added to pooling server
    configuration file, for successful Application authentication.
    */
    //hr = pIPDCClient->SetClientModuleAuthenticationId(
    CComBSTR(L"{5B0B1AC1-A14D-4061-B83B-EEBBD6503DD0}") );

    long lClientID;
    hr = pIPDCClient->GetNewClientId(&lClientID);

    CComPtr<IEP_Query> m_ptrQuery;
    hr = pIPDCClient->GetServerCOMObject( lClientID,
    __uuidof(EPGenericQuery), __uuidof(IEP_Query), reinterpret-
    cast<void*>(&m_ptrQuery) );

    hr = m_ptrQuery->SetSearchTable( CComBSTR(L"changeentry") );

    hr = m_ptrQuery->SetSearchAttribute( CComBSTR(L"username"),
    SO_Equal, CComVariant(L"admin"), 0);
    BSTR* bstrIDs = 0;
    long lCount = 0;
```



```

hr = m_ptrQuery->GetSearchResultAttributes( CComBSTR(L""),
&lCount,&bstrIDs);
SAFEARRAYBOUND rgsabound[1];           //One dimension
rgsabound[0].lLbound = 0;
rgsabound[0].cElements = lCount;       //Number of objects to
be deleted

SAFEARRAY *pSafeArray = SafeArrayCreate(VT_VARIANT, 1, rgsa-
bound);

for (long lPos = 0; lPos < lCount; ++lPos)
{
XEPComVariant vId;
vId.Attach(bstrIDs[lPos]);

hr = vId.SafeArrayPutElement(pSafeArray, &lPos);
}

/* Here Project ID is hardcoded. Make sure you provide valid
project ID*/
CComPtr<IUnknown> pUnknown_1;
hr = m_ptrQuery->GetObjectById ( CComBSTR (L"$id$(0:0-238710#0,
168)"), static_cast<IUnknown*> (&pUnknown_1) );
if (hr != S_OK && !pUnknown_1)
return -1;

CComQIPtr<IEP_BaseDataObject> ptrProject = pUnknown_1;

SAFEARRAY *pSafeArrayOut = 0;
hr = ptrProject->ExecuteServerMethodEx(
CComBSTR(L"delete_changeentries_forced"), &pSafeArray,
&pSafeArrayOut );

hr = ptrProject->CommitTransaction ();

hr = pIPDClient->Disconnect ();
CoTaskMemFree(bstrIDs);

```

- 3) Run the CAA application on the project “Test Project-Change Protocol Deletion” to delete change entries.
All the change entries belonging to the user “admin” get deleted irrespective of the project, on which the CAA application is executed.

11.1.2 Project

11.1.2.1 Creating Customer Data

- 1) Open the contextual menu of a project node and click **Project < Customer**.
The **Customer** dialog opens. *Please refer to the [Figure 248](#).*
- 2) To create a new customer, click **New** in the left column first. Then select the newly created customer in the left column. *Please refer to the [Figure 247](#).*
- 3) Click **New** in the right column after having made your selection. You can now edit each input field. To edit an input field, left-click in the corresponding field. You can now type the entry.

By entering customer data you create specific details relating to a particular customer.

	Delivery Site	Lead Time	Delivery Batch Size	Delivery Frequency	Packaging	Enabling Prod	Local co
1	Berlin	5 days	125000,000000	weekly	palette		100,000000

Figure 249: Entering Customer Data in the Dialog

Customer Data Dialog Description

Note

You can assign as many customer lines to a customer as you like, for example, if there are several locations for one customer. You can correct data in the input field, i.e. by using the Delete or Backspace key.

- **Nomination:** Enter a customer's name in this field. A customer can be assigned several delivery points with the corresponding data.
- **Delivery Site:** Enter a specific customer site for delivery in this field.
- **Lead Time:** Lead time is the time taken to manufacture a part. This time needs to be taken into consideration in order to avoid idle times in the manufacturing process at the customer. Supply and demand must be phased. This change affects the manufactured batch size and the delivery times. The lead time is a safety factor.
- **Delivery Batch Size:** The delivery batch size is the number of pieces that the customer agreed upon in order to cover a certain demand per time unit. You can only enter numbers in the input field.
- **Delivery Frequency:** The delivery frequency specifies the delivery terms.
- **Packaging:** Enter the type of packaging in this field.
- **Enabling Procedure:** Enter the enabling (release) date and notes on the procedure.
- **Local Content:** Enter the percentage of the goods to be manufactured inland in the **Local content** field. The percentage must correspond to the minimum percentage of the respective country. However, it can even be higher. The legal regulations of the respective country apply. If the goods are manufactured in India, the percentage may be higher than zero. If the goods are manufactured in Germany, the percentage equals zero in most cases. The values are given in percent. You can only enter numbers in the input field.
- **Comment:** Enter information on each customer in this field.
- **Delete:** Use this function to delete highlighted areas.
- **OK Button:** Click **OK** button to save and close an entry. Please refer to the [Figure 247](#).

11.1.2.2 Creating a Project Team

When starting a new project, the project areas and respective project team members are specified. You have to specify project goals and clarify competences and responsibilities for each project. You also have to enter the following data when specifying a project team.

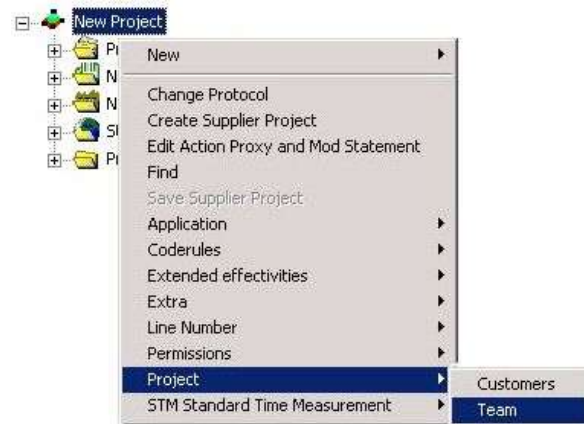


Figure 250: Creating a Project Team

To make entries, you need to open the **Project Team** dialog. To open the dialog, *Please refer to the [Creating Customer Data](#) and [Figure 248](#)*. To make an entry in this dialog, you must double-click the corresponding field.



Figure 251: Entering Data for the Project Team

11.1.3 Extra

11.1.3.1 Showing PoT Curves

Different PoT curves can be compared to one another in Version PE 5.12 in the **Show pot-curves** dialog. The previous impractical methods (i.e. printing out various PoT curves) of earlier versions have been omitted.

All of the PoT curves created in the project library are provided for comparison in the dialog itself. Any PoT curve you would like to compare can be shown in color. Apart from the standard colors you can also define customized color combinations.

The comparison is always executed for the current selection. After closing the dialog, you must again select the PoT curves for comparison. The PoT curves cannot be edited in this dialog. The menu entry **Snow pot-curves** is available only in the contextual menu of a project node.

To Open Show pot Curves

- 1) Open the project node contextual menu and select **Extra < Show Pot-Curves**. The **Show Pot Curves** dialog appears.

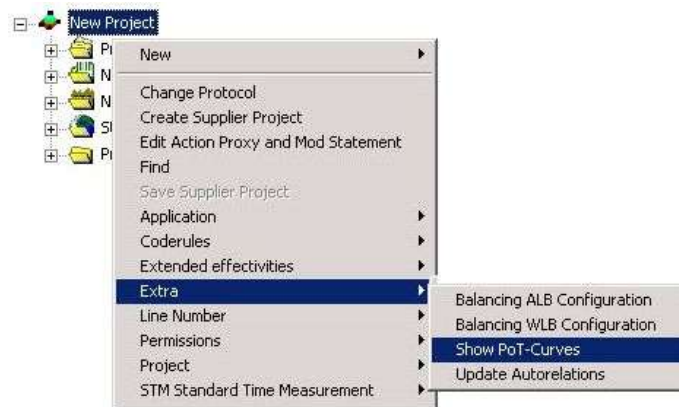


Figure 252: Project Contextual Menu – Show Pot-Curves

Move the PoT curves to the right window in order to compare them. You can move any number of available PoT curves to the right window for comparison.



- 2) Select the PoT curve in the left window. Then click the button with the double arrow pointing right.

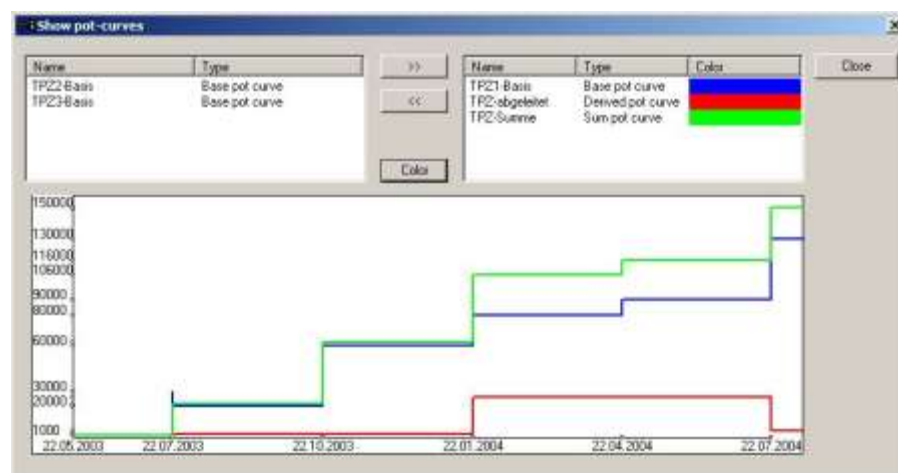


Figure 253: Show Pot-Curves Dialog and Compare

- 3) In order to show a PoT curve in color, select the PoT curve in the right window and click the button **Color**. The **Color** dialog appears.



Figure 254: Select Colors for PoT Curves Dialog

- 4) **Select** color in the **Color** dialog. Confirm the selection with **OK**.



- 5) You can define customized colors by clicking button **Define colors**.
- 6) You can move selected PoT curves back to the left window with the button with the double arrow pointing left.

11.1.4 Permission



Using this menu item you can pass on rights of a selected hierarchical level to the corresponding structure (children). You can use this function on every hierarchical level of a project and you can individually determine the rights for a user on every hierarchical level. You have three possibilities to determine the rights of children:

- **Remove Rights:** Using this menu item you can remove previously assigned user rights that a user has for a structure. This change affects all children of the selected hierarchical level to which the user has been assigned rights.
- **Add Rights:** Using this menu item you can add user rights that a user has for a **structure**. This change affects all children of the selected hierarchical level to which the user has been assigned rights.
- **Overwrite Rights:** Using this menu item all rights of the existing user are transferred to the selected structure to its children, even if an individual **user** did not previously have any rights to certain children of the structure.

Transferring Access Rights to Children

Children are automatically transferred the access rights of their parent nodes. The existing rights are only inherited if a **new** child object is created for this object. If you open the contextual menu of the node, you can find two entries that refer to rights.

To Assign Access Rights

- 1) Click **Permissions..** in the contextual menu of an object.
- 2) The **Data Object Permission** window opens, where you can assign user rights for this object.

If you do not have a “user management” function right you can only read access rights, but you cannot change them.

- 3) The **Rights** shows the user right of the selected entry.

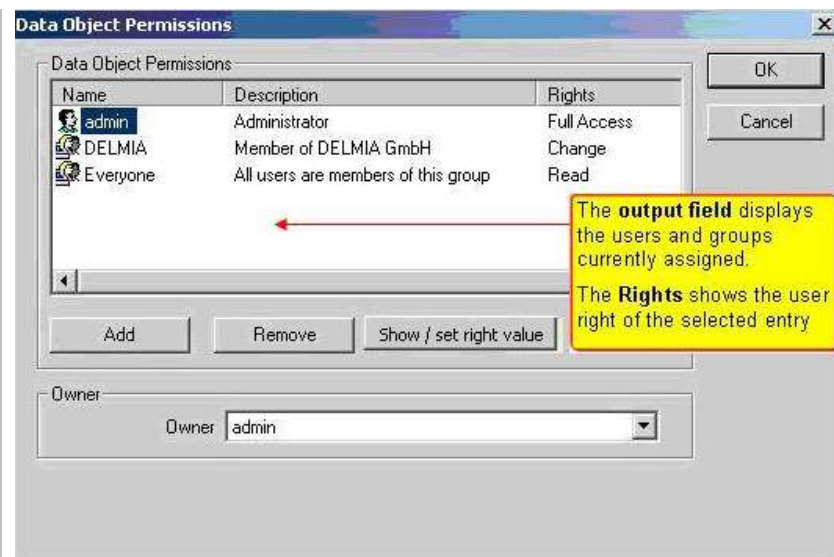


Figure 255: Data Object - Permissions Dialog

Changed View for Nodes

The view of parent nodes with children changes if children cannot be displayed because of missing access rights.

If you assign **user 2** read rights to **process plan 1** and **user 2** has no access to **process plan 2**, only **process plan 1** is displayed to **user 2** in the process view. If no additional process plans have been created in the process view to which the user, however, has no access right, the process symbol in the process view will be marked with an exclamation mark. The process view only displays process plans to which the user at least has read rights.

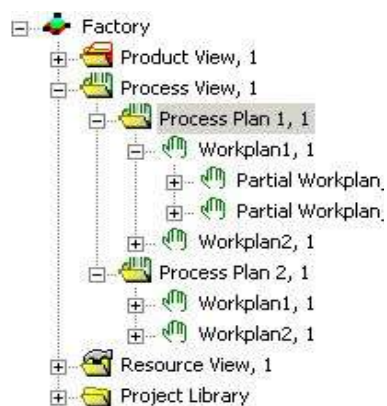


Figure 256: Process View without any Access Restrictions

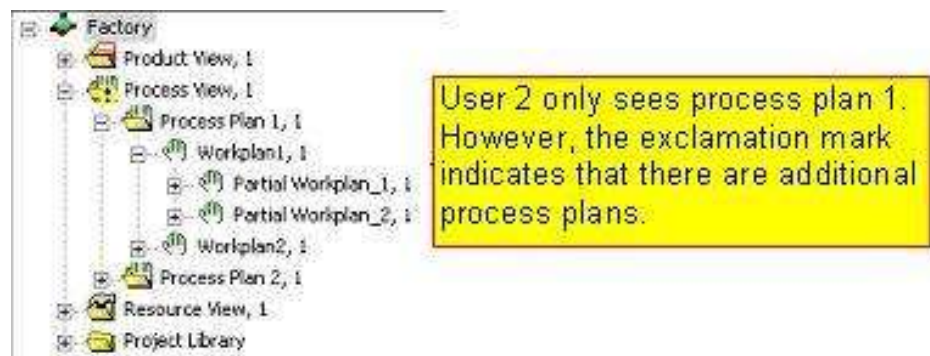


Figure 257: Process View with Access Restrictions

11.1.5 Execute Script



Caution

The menu item "**Execute Script**" is not displayed in the standard view, and it should be displayed only in certain special situations. (In order to display contextual menu entries please refer to the [Administration Manual](#)).

The **Execute Script** menu item leads you to a selection list, from where you can choose a script. However, such a script must have been created in the project library. This is not the only possibility to call up and start scripts, though. If any script actions have been previously created, you can find the **Scripts** entry in the contextual menu (Please refer to the [Figure 240](#) from where you start scripts that are only valid for the node from where they are called).

Scripts are created in the project library or system library. Script actions are created in the project plantype set or in the corresponding plantype set of the system library.

A description of individual scripts and script actions would exceed the scope of the PPR Navigator and is not the actual subject of this manual because scripts can be only created by a specifically trained user who has the required access rights.



For more information on the creation and edition of scripts Please refer to the [Scripting Manual](#).



Figure 258: Selecting a Script

Saving as a Template

As you already know from text processing, you can create and edit a pattern (known as a template) and reassign it to your project. The created templates are saved in the system library together with the corresponding plantype set. For more information on how to handle templates, Please refer to the [System Library Manual](#).



11.1.6 General Search

The **Find** item from the menu allows you to start the search for project-specific contents. This means that you can search for objects which are used in the project.



For more information on how to handle the Finder, Please refer to the [Finder Manual](#).

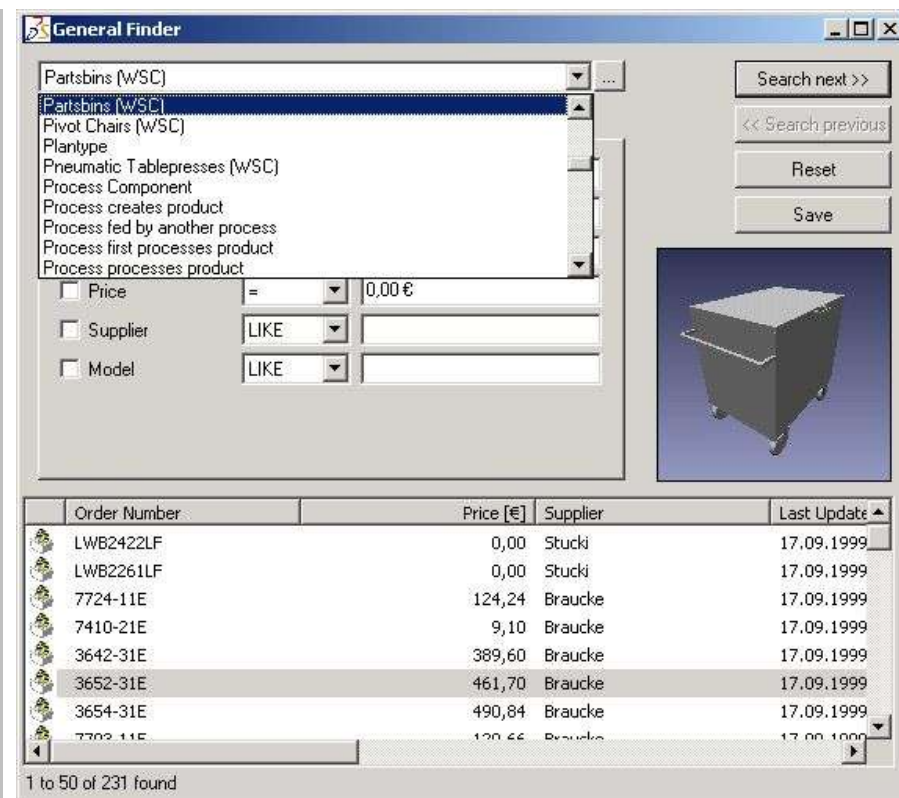


Figure 259: Finder Dialog Box

11.1.7 Refresh Sort Index

Using the **Refresh Sort Index** and **Set Insert Point** items from the menu you can determine the order of the sub-objects displayed in the object list.



Note

Only if in menu Tools < Settings < Change < Browser and Menu Items the entry Restore sorting in listviews is activated, the last sort order remains after restart of the Process Engineer.

- 1) You have a plant with five stations below and wish to insert a new station after the 4th station. Select the 4th station from the object list and select **Set Insert Point** in the contextual menu.

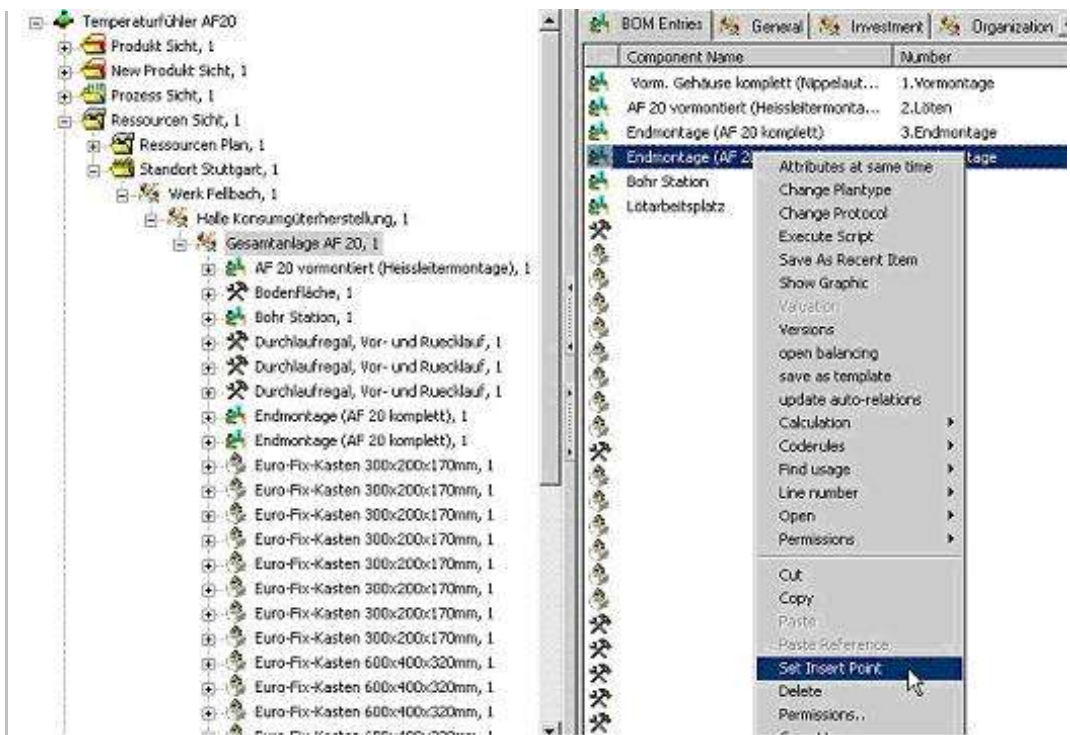


Figure 260: Set Insert Point Menu Tem

- 2) You can now create a new station in the object structure. This structure first appears at the very bottom of the object list and has sort index 4,1. You can sort the stations in the object list by clicking **Sort Index** column heading.

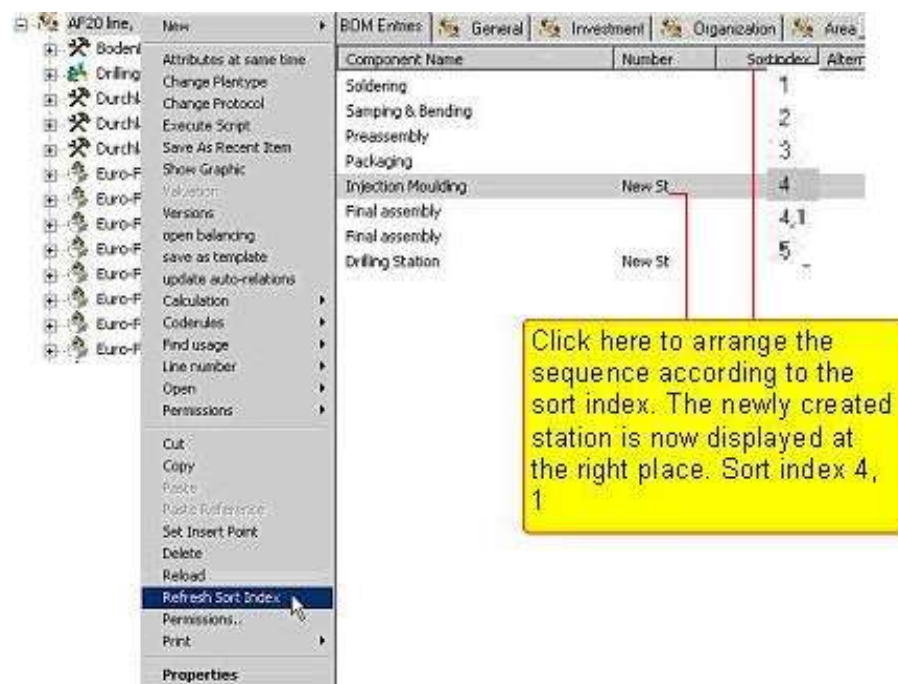


Figure 261: Refresh Sort Index Menu Entry

- 3) Select the required plant from the object structure and choose **Refresh Sort Index** from the contextual menu. When you have refreshed the sort index, the object list displays six stations with an ascending index 1 to 6.



Note

The sort index refreshment always depends on the current sequence of entries. The index value is irrelevant for the refreshing process. For this

reason, you must first establish the required order by clicking the column heading in the object list. In this case, the sort index is the sort criterion.

11.1.8 Modify Sort Index

The **Modify Sort Index** dialog allows you to specify a new sort order of objects manually. Basically, the sort order can be modified for all hierarchical levels that exist in the PPR Navigator. A sort order that has been modified manually will not be changed when refreshing sort indexes. The dialog displays all objects of the selected hierarchical level which are shown in the PPR Navigator display area.

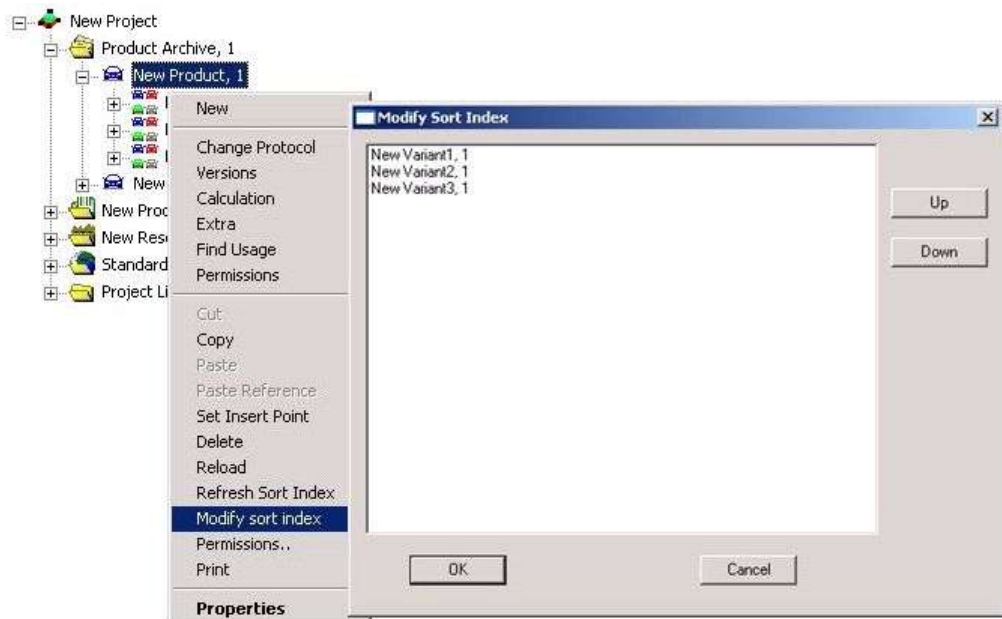


Figure 262: Manual Editing of the Sort Index

- 1) To open a sort order manually, select the required hierarchical level from the PPR Navigator and open the contextual menu.
- 2) Click **Modify Sort Index** in the contextual menu.
- 3) The dialog allows you to move the displayed objects line by line either **upwards** or **downwards**.
- 4) Select the object from the dialog that you want to move. Click either the **Up** or the **Down** button to move the selected object either upwards or downwards.
- 5) Confirm the modified sort index with **OK**.

11.1.9 Reload

The **Reload** menu item prompts the DELMIA Process Engineer to read the object structure starting with the selected node and to display the refreshed version.

11.1.10 Bookmark for PPR Tree Component

You can bookmark the PPR tree component in Project window and later navigate to the corresponding component with bookmark dialog.

To Bookmark a Component:


- 1) Right click a component in project's PPR tree structure.
- 2) Go to **Extra> Add to Bookmark**. OR
Click **Ctrl + K**, OR
Click  in main toolbar.
- 3) The **Add Bookmark** dialog box appears



Figure 263: Add Bookmark


- 4) Enter bookmark name. Through this you can change the bookmark name also.
By default the bookmark name is same as component name.
- 5) Click **OK**.
The component entry goes to the bookmark list and all related information is stored into the user database.
- 6) Bookmark is supported by PPR tree components only, it is not supported by list view .
If you try to bookmark any list component it actually bookmark the associate tree component only, instead of that component, which is bookmarked in list view.
- 7) Bookmark is applicable only for project window not for windows as “process engineer” or “recent -item window” in OPD.



Note

Bookmark is only applicable for PPR tree component in Project window and not for system elements.

To View Saved Bookmarks:

- 1) Go to **Edit > Open Bookmark**.
OR
Click **Bookmark**  button from the toolbar.
OR
Use short cut key “**Ctrl+B**”.
- 2) The **Bookmark** dialog box comes.

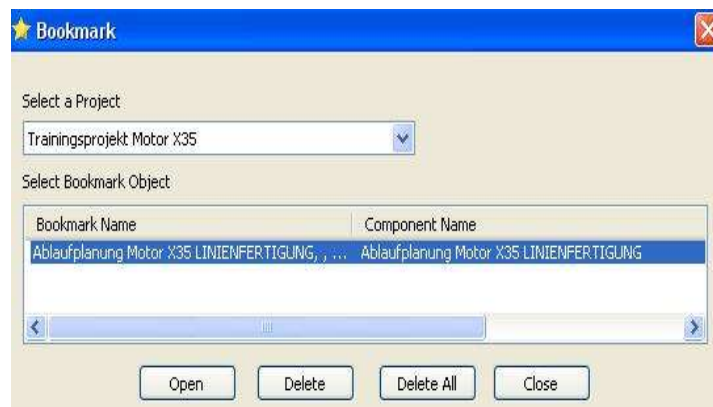


Figure 264: Bookmark Dialog Box

- 3) Select the project in which you want to perform operations, from the combo box **Select a Project**. The combo box lists only those projects which has some bookmarked entries.
- 4) You can rename the bookmark in **Bookmark** dialog box.
- 5) After selecting the project the corresponding bookmark entries appear in **Select Bookmark Object** along with the related **Component Name**.

To Open the Bookmark in PPR Tree

- 6) Select the bookmark entry
- 7) Click **Open** button, then it open the bookmarked component in the corresponding project by traversing through the tree path of the component's parent. If the corresponding project is not open it first opens the project and then navigates to the component.
- 8) Multi selection is available in bookmark dialog only to delete multiple bookmark entries. For open bookmark component multi selection is not available.



Note

Time taken to propagate the bookmarked component list for a project is directly proportional to the number of bookmarked component.

Time taken to navigate to a bookmarked component depends on how deep the component is in the project tree. As it moves through the whole tree path of the bookmarked component, if the tree path is long then it takes comparatively more time to navigate to the bookmarked component.

To Delete Bookmarks

- 9) Select the component name and click **Delete**.
- 10) Click **Delete All**, to delete all bookmark entries for any project. The confirmation message comes.
If you delete all bookmarks for a project, then the project no more appears in the **Select a Project** combo box.

To Rename Bookmarks

- 11) You can also rename the bookmark component name in **Bookmark** dialog.



Note

Adding, removing, and renaming bookmark component does not require saving of any transaction.

To Limit the Bookmark Components

- 12) Go to **Tools < Settings < Change < Browser and Menu** tab.
- 13) Enter the value in "**Number of Book Mark Items on project**".
By default the value is set to "1000". Please refer to the [Settings Manual](#).

To Enable/Disable Bookmark in Contextual Menu

- 14) The contextual menu "**Extra > Save as Bookmark Items**" can be enabled or disabled by setting property "**Browser on single select**" to Yes or No in the configuration tool.
By default it is set to "**Yes**".

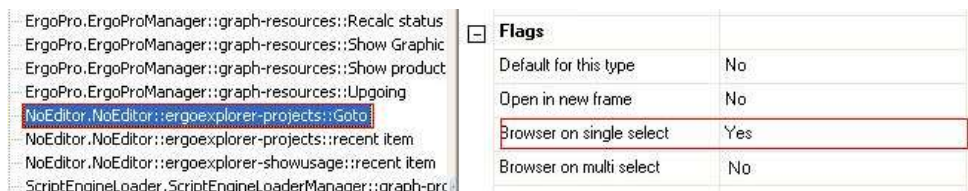


Figure 265: Customization

Limitations

- When the bookmark component is filtered, then bookmark is not visible for project window but it is visible in **bookmark** dialog and when you tries to open the bookmark component it traverse the tree till last visible parent component.
When the component was bookmarked its related entries were stored into database and component's entry still exist as the component's entry was not deleted from database. When you tries to open it traverse the PPR tree according to tree path but when the desired component is not found it stop traversing till its last visible parent.
- When you book mark a component, book marked component id and its parent id till the root (i.e. project node) gets stored as a tree structure (path) in user database. This information is used to expand the tree structure when you select book marked component and click **Goto** button in **Bookmark** dialog box.
In case if the PPR tree structure containing bookmarked components is modified by cut and paste, versioning move, and re-order, then bookmarked information stored in user database is not valid because of the modification done to PPR tree structure. When you select book marked component and click **Goto** button, it only expands the tree structure till it finds the path.

11.1.11 Create Supplier Project

You can have plan sections of the main project of suppliers planned with supplier projects. Resources and processes are edited in supplier projects. The supplier projects are always created from a main project.

The main projects refer to the projects created from the supplier project. This means that main projects also include supplier projects from which other supplier projects have been created. Supplier projects are edited by the supplier; in order to arrange for this, imports and exports are necessary. Supplier projects are re-integrated into the main project after completion.

Some important technical comments with regard to procedures:

- It is technically possible to create an unlimited number of supplier projects from one main project.

Note

You can plan the same plan section of a main project only once in a supplier project. In order to plan several alternatives of the same plan section in one supplier project, you have to create a new main project with the same plan sections, for example by copying the plan sections into the new main project.

- Plan sections planned in the supplier project are marked as locked plan sections in the main project and cannot be edited in the main project until the supplier project is re-integrated. A lock is marked by a symbol in the shape of a lock in the structure.



- In order to display the lock with the lock symbol, set **yes** in the configuration manager for **Types < Version < Attributes < Permanent Lock < Display in browser**. (Please refer to the [Administration Manual](#))
- Supplier projects are created only if you save the supplier project expressly as a supplier project. The typical saving you are most likely accustomed to is not sufficient in this case. The assignment to the main project is made when the supplier project is saved as a supplier project, and only then are all editing steps saved in the supplier project. Typical saving does not have any effect on the assignment to the main project.

To Create a Supplier Project

- 1) Create the supplier project via the contextual menu in the main project.
- 2) Insert the three project structures (product, resources, process) into the supplier project from the main project by drag and drop. Take the plan sections into account when inserting the process and resource structures.
- 3) All three project structures must be present in the supplier project. The product structure cannot be changed, but relations between processes and resources can be created in the supplier project.
- 4) When inserting the project structures into the supplier project, all nodes of the plan sections which are directly linked to one another in a hierarchy are created. Parallel structures in the main project which are not planned in the supplier project as a plan section are not created in the supplier project.
- 5) During the creation of the supplier project (creation mode), you are not allowed to create, modify, and delete objects.
- 6) Saving as a supplier project via the contextual menu in the supplier project.
- 7) Supplier projects must be exported or imported with all project data and plantype sets.
- 8) Supplier projects are re-integrated into the main project after processing.

Access Rights to Supplier Projects

- 9) Both the rights to plantypes and rights to PPR components from the OEM project are transferred whenever a supplier project is created.
- 10) The rights to PPR components are also transferred whenever the OEM project and the supplier project are merged.
- 11) If access rights are not to be granted to suppliers, this can be specified in the **PtlmEx** when exporting the supplier project.

Planning Supplier Projects

Proceed in the following sequence when creating a supplier project.

To Create a Supplier Project via Contextual Menu

- 1) Open the contextual menu on the project node in the main project.
- 2) Select **Create Supplier Project**. The supplier project is created. The supplier project creation mode appears in the title bar.

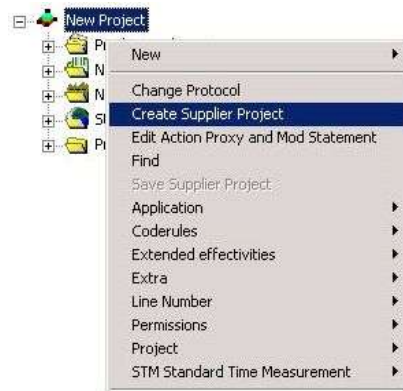


Figure 266: Opening the Supplier Project

To Create Project Structures by Drag and Drop

- 1) Consecutively drag all three project structures to the project nodes in the supplier project.
- 2) Ensure for the resources and processes that you drag only the hierarchy levels and drop them on the project nodes which are to be edited in the supplier project; this applies also to the product structure.

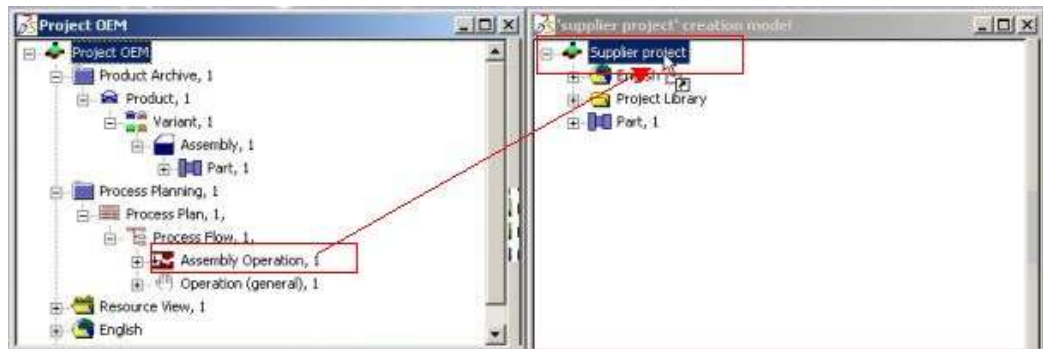


Figure 267: Scheme - Dragging and Dropping Plan Hierarchies onto the Supplier Project

11.1.11.1 Saving the Supplier Project

You can save a supplier project as a supplier project only if all three project structures are available in the supplier project.

- 1) Open the contextual menu on the project node in the supplier project.
- 2) Select Save Supplier Project.

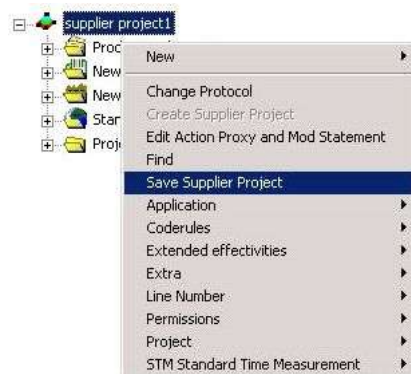


Figure 268: Saving Supplier Project as a Supplier Project

You can save the supplier project in three ways:

- 3) As a supplier project **without** codes with project structures and relations. This type of saving is used if the OPT codes, labels, and line numbers created in the main project are **not** needed in the supplier project.
- 4) As a pure information project. An information project cannot be edited. The plan sections in the main project are not locked in an information project.
- 5) As a supplier project with project structures, relations, and the OPT codes of the main project, labels and line numbers. This type of saving is used if these codes are to be used in the supplier project.



Figure 269: Dialog – Saving the Supplier Project

- 6) Select the type of saving. Then click **OK**.



Figure 270: Message – Supplier Project Created

- 7) All three project structures of the plan sections are created in the supplier project according to the project structures present in the main project.
- You can edit only the structures which are not locked (indicated by a lock symbol).
- 9) The hierarchy levels of the product structures are always marked with a lock symbol. This means nothing more than that you cannot make changes to it (i.e. create new products).

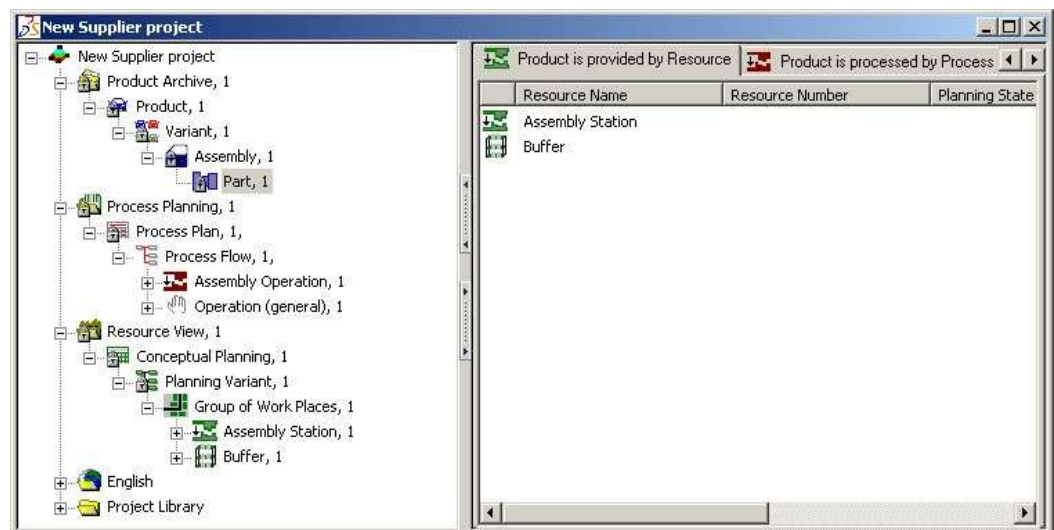


Figure 271: Project Structures in the Supplier Project are Created after Saving

- 10) The plan sections unlocked for the supplier project are marked as locked in the main project. (Please refer to the [Figure 270](#)).
- 11) You can immediately recognize which plan sections in the supplier project can be edited on the locked hierarchy levels in the main project.
- 12) The product structures can be edited in the main project.

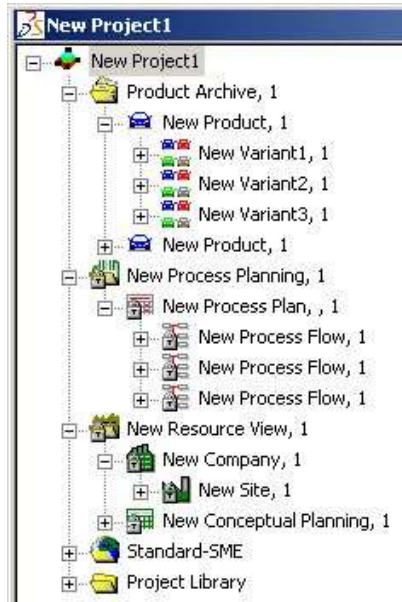


Figure 272: Plan Areas in the Main Project Marked as Locked

11.1.11.2 Editing Project Structures in the Supplier Project

In the supplier project you can edit both unlocked process and resource structures. You can, for example, add new resources and processes. Create relations to products.

All processing steps are saved and accepted into the main project after integration.

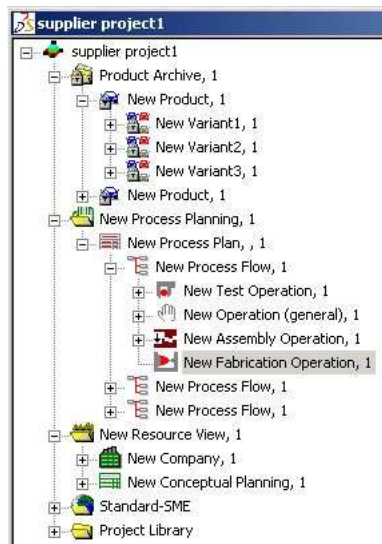


Figure 273: Editing Supplier Projects – Example: New Name

Exporting Supplier Projects

Note



Before exporting the edited supplier projects, you should rename the supplier project on the server of the supplier in order to ensure that no two supplier projects have the same name on the server of the main project. The main project is usually on a different server to that of the assigned supplier project.

Open the properties dialog of the edited supplier project and enter a new name.

11.1.11.3 Merging Supplier and Main Projects

After the supplier project has been exported and imported onto the server of the main project, you can merge the supplier project and the main project.

- 1) Select the **Merge Tool...** under **Tools**.

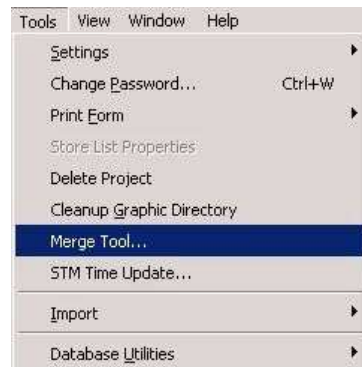


Figure 274: Merging the Supplier Project with the Main Project

- 2) All existing assignments of main projects and supplier projects are listed in the **Merge Tool** dialog.
- 3) Select the assignment of the main project/supplier project to be merged in the dialog.

Adjusting Links into Supply Structure

You can accelerate the combination of the main and supply project with the use of this function.

- 4) This function is active in the standard configuration. If this option is activated, all of the links are adjusted after the combination of the supply project and main project.
The option can be deactivated in order to **accelerate** the combination.
- 5) If this option is **not** activated, the links of the process and resource structures processed in the supply project that were previously created in the main project for other structures are lost. If, for example, there were links to parallel structures or parent components before the combination, these are lost.

☒ Adjust links into supplier structure



Note

In projects in which there are no links between different structures it is recommended to deactivate this function.

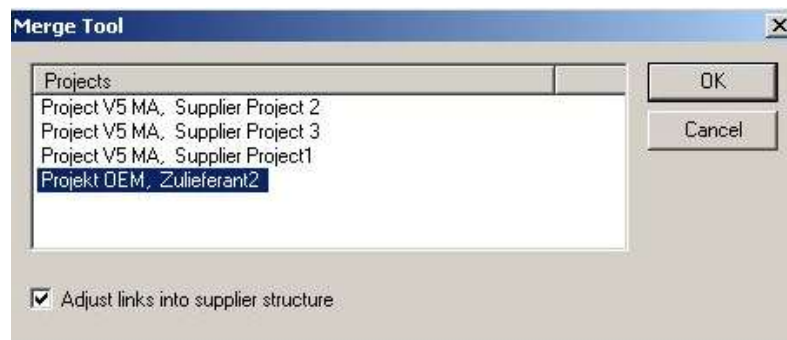


Figure 275: Merge Dialog

6) Click **OK**.

The supplier project is integrated into the main project and can be edited.
The locked areas are unlocked.

Example

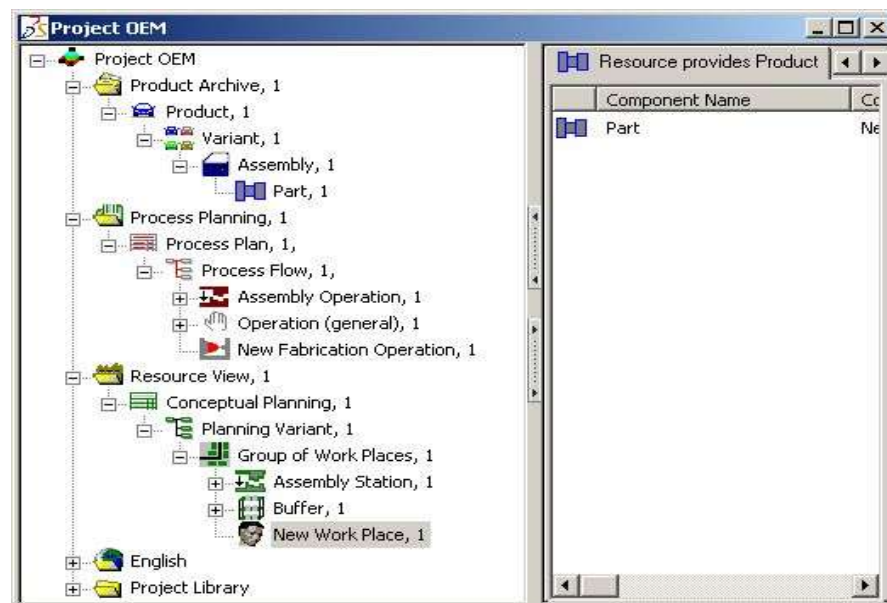


Figure 276: Both Projects are Merged – no Lock

11.1.11.4 Resource-centric Supplier Projects

To enable resource-centric supplier project behavior, set the global `supplier_integration/resource_centric` key to 1, as shown below:

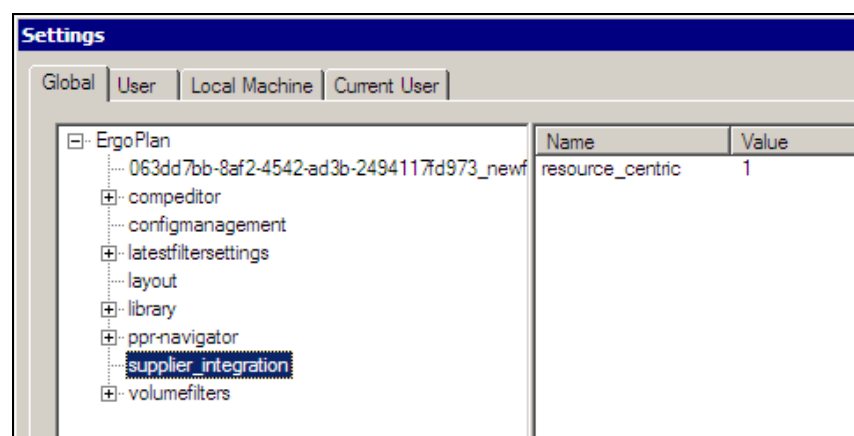


Figure 277: Settings Dialog

Customizing the export scope, merge scope and replace scope

The following four browsers are included to support resource-centric supplier projects:

- rsi-export-scope
- rsi-extend-scope
- rsi-merge-scope and
- rsi-replace-scope

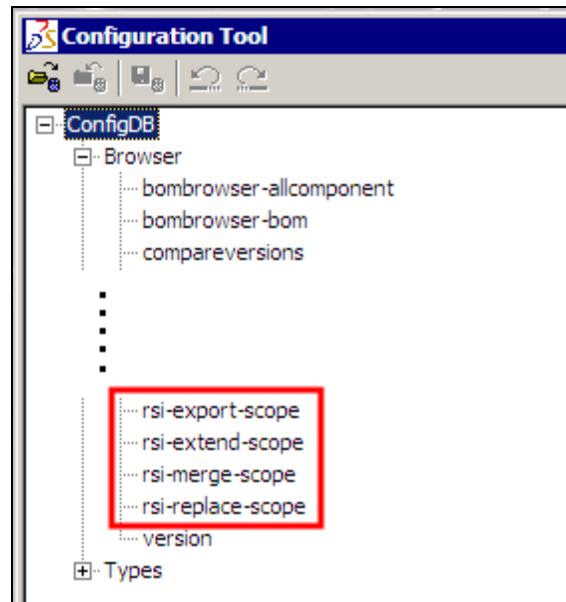


Figure 278: Config Tool Dialog

By adding these browsers as pc-infos to pc-relations and setting “Is in treeview” to “Yes”, the pc-relations can be assigned to a specific scope.

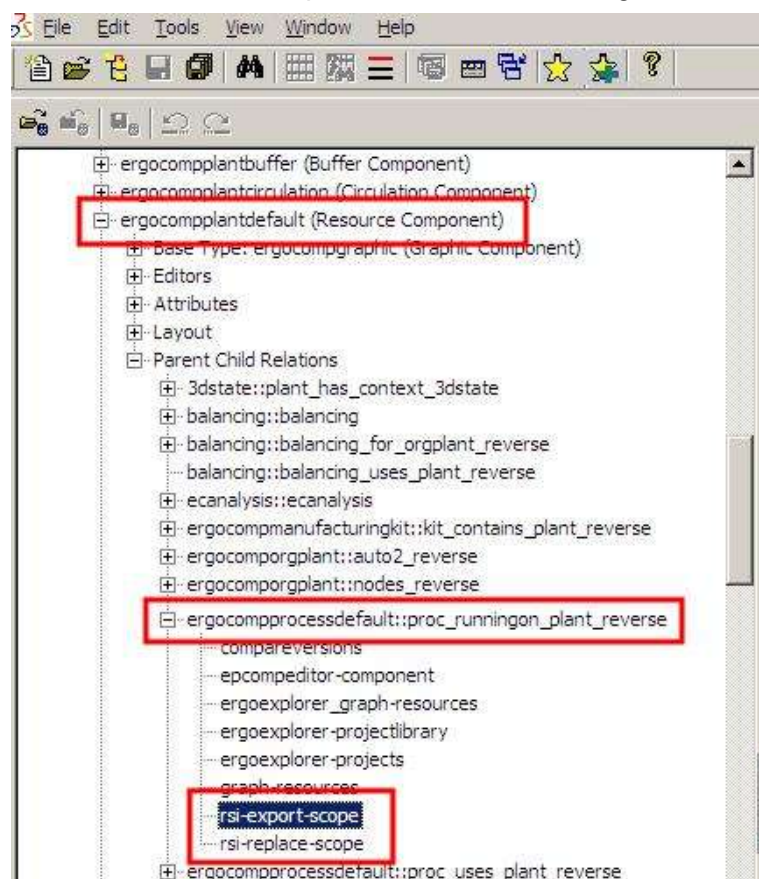


Figure 279: Config Tool

By Category Alphabetical	
<input type="checkbox"/> Basics	
Browser ID	rsi-export-scope
Program ID	
Folder name	
Description	
<input type="checkbox"/> Flags	
With a 'new' entry in menu	No
Is read only	No
Is in treeview	Yes
Is in listview	No
Default relation	No
Defined by	Delmia

Figure 280: Config Tool Settings

11.2 Product Contextual Menu Functions

Right-click a product object to open the contextual menu. Product objects are divided into technical and organizational objects.

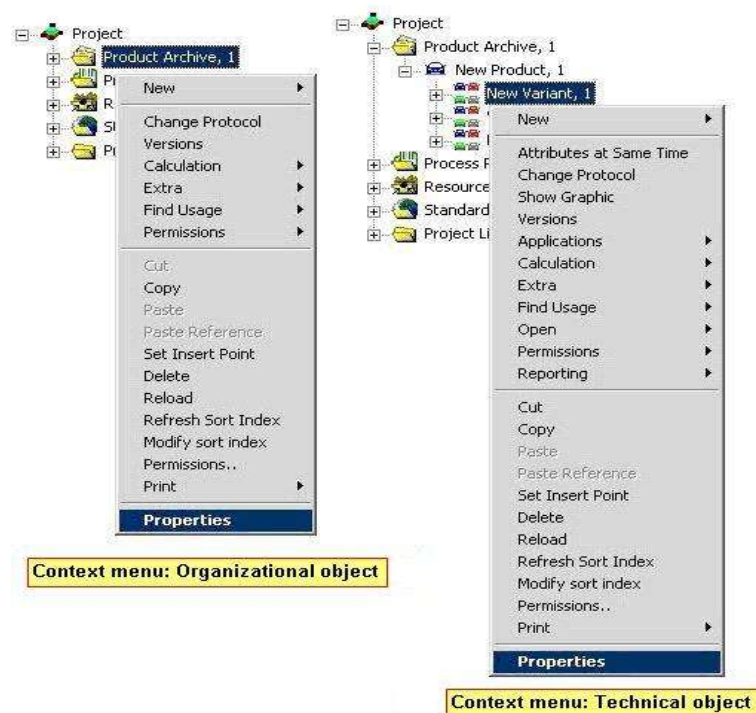


Figure 281: Organizational and Technical Object – Contextual Menu

- 1) The **Extra < Save As Recent Item** option from the menu prompts the DELMIA Process Engineer to define the selected object as “insert point” for a subsequent restart of your software. This enables you to load exactly the part of the structure tree that you have edited. This has the following advantages:
 - The program start is quicker because only the parts required have been read from the database instead of reading all of them.

- This starting point helps you to obtain a better overview especially when you are working with large structure trees.
- 2) The **Extra < Change Plantype** item from the menu is used to start a dialog box where you can assign a different plantype to a selected object.

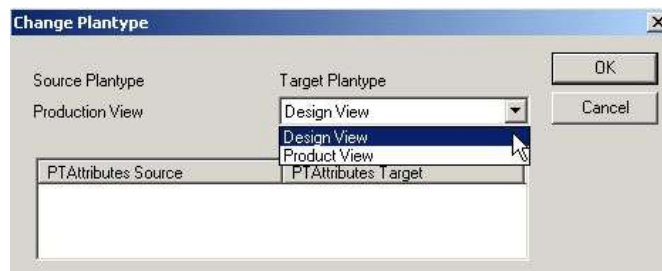


Figure 282: Change Plantype Dialog

The dialog box displays the previous plantype and offers possible alternative plantypes for selection. The **PTAttributes Source** or **PTAttributes Target** display area displays self-defined attributes which does not exist in the source or target object. If you selected “ignore”, the “self-defined in part” attribute would not be transferred to the subassembly attributes. Once you have made your selection and confirmed with **OK**, the object structure displays a different icon which is plantype-specific.

- 3) The **Permissions** items to define rights and access rights as well as the **Execute Script** item from the menu were already described in the [Contextual Menu Functions](#).
- 4) The **Find Usage Data** item from the menu prompts the DELMIA Process Engineer to search for all superordinated objects where the selected object is used. Furthermore, you can view all locations of usage where the object was created as a link or for which a relation was created. The result is displayed within a separate window in the object structure. This window also allows you to display usage data of further objects.



Figure 283: “Find Usage Data” Dialog

- 5) The **Refresh Sort Index** and **Set Insert Point** items from the menu have been explained in the [“Contextual Menu Functions”](#).
- 6) The **Target Inputs** menu item is explained in the [Project Library Manual](#).
- 7) The **Versions** menu item is explained in the [“Versioning”](#) chapter.
- 8) The **Calculation < Recalculate costs** menu item can be used to start the accumulation of values. Each object may have multiple sub-objects. Such sub-objects can contain cost values. The **Calculation/Recalculate costs** function triggers the totalling of values. The result is displayed in the properties dialog.

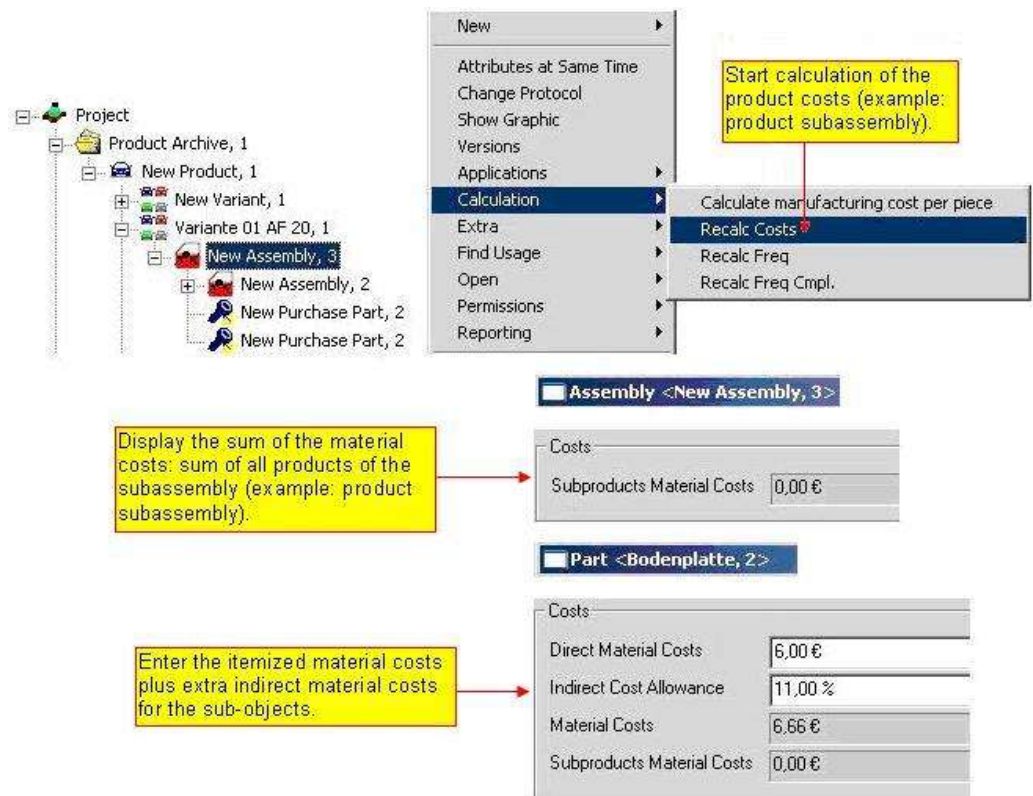


Figure 284: "Properties" Dialog, "Costs" Tab

- 9) The **Reload**, **Permissions**, **Access Rights** and **Print** items have already been explained in the [Contextual Menu Functions](#).
- 10) The **Edit Usage Data** item from the menu allows you to make entries in the **BOM entry** dialog. You can also find these entries in the technical object's properties. This option enables you to distinguish between two almost identical objects by means of their code rule, plan code, and effectivity time.
- 11) The **Show Graphic** menu item allows you to show a CAD-graphic for a specific product component. To view the graphic, you must enter the path and the designation of the required graphic file in the properties dialog. The file must be available in one of the following formats: CGR, MODEL, CATProduct, CATPart, or VRML. CGR and VRML formats can be displayed by the internal viewer. MODEL, CATProduct, CATPart or CGR formats can be displayed by CATIA or the DMF Navigator.

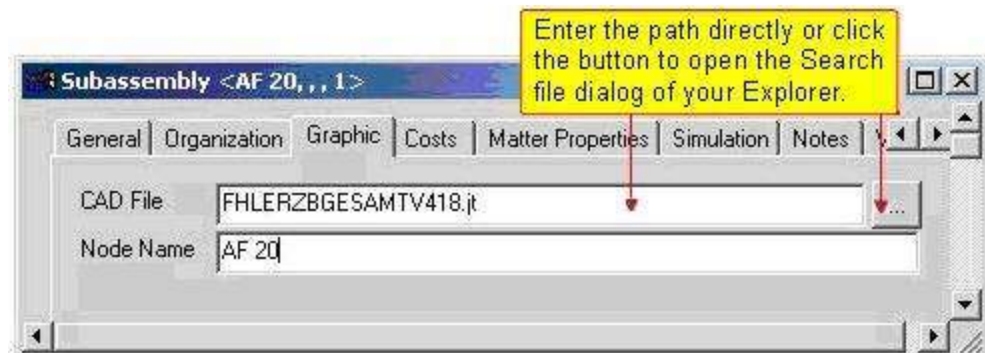


Figure 285: Input Field to link Graphic Files

- 12) The menu items below the **Coderules** are explained in the [Project Library Manual](#).

- 13) The **Open < Open Viewer** item from the menu starts an external viewer to display assigned CAD files. To view these files, a start call must be set in the settings (**Tools < Settings** menu item) to call the external viewer.
- 14) **Revision Product** and **Revision File** Commands: The customizable contextual menu entry “**Revision Product**” and “**Revision File**” is available on “Product” and “Resource” components to launch the Workinstruction composer (WKC) client.

To Launch WKC via “Revision File” command

- 1) Perform the customization settings in configuration tool to show “Revision Product” and “Revision File” commands on Product and Resource components. See [Customization](#)
- 2) Click “**Revision File**” in contextual menu of “Product” and “Resource” components.
The **Revision File** dialog box comes in view. It displays the full old smgXml file/path of the graphic attribute of component(Example: PartA) on which revision file command is invoked.

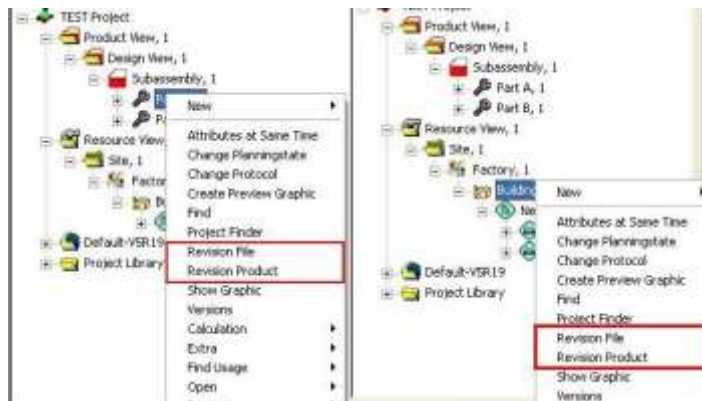


Figure 286: “Revision Product” and “Revision File” Contextual Menu Entries on Product and Resource Components

- 3) Click **New File** browse button in **Revision File** dialog box to select the smgXml file path.

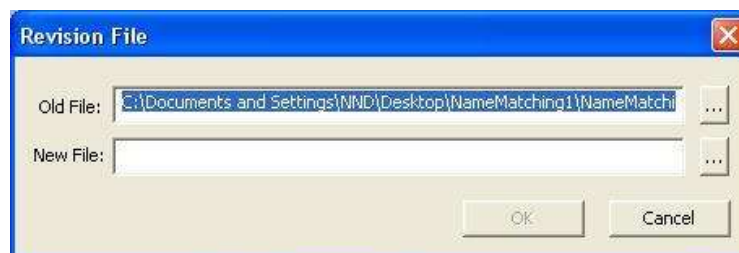


Figure 287: Revision File Dialog Box

“**Old File**” value is pre-populated. It contains the value of the WKC (smgXml) graphic attribute. The name of the attribute is controlled by an environment variable: “MH_3DVIA_SMGGRAPHIC”. If this environment variable is not set, the attribute is “attribute_25”.

- 4) Click **OK** to launch WKC application.

To Launch WKC via “Revision Product” command

- 1) Perform the customization settings in configuration tool to show “Revision Product” and “Revision File” commands on Product and Resource components. See [Customization](#)
- 2) Right-click “Part A” and select **Revision Product** command.



Figure 288: Revision Product Command in Contextual Menu

3) Click **Search next>>** in **Finder** dialog box.

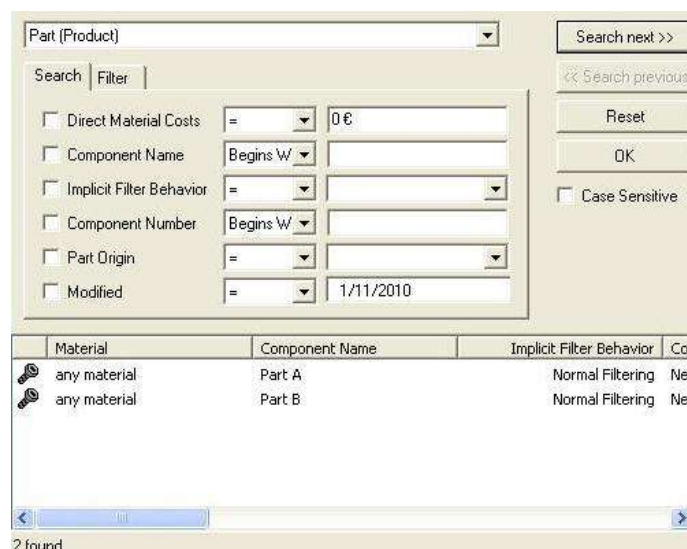


Figure 289: Finder Dialog Box

The Plantype in the **Finder** dialog box is the same one on which the **Revision Product** command is launched. In this case the **Revision** command is launched from the **Part** component and **Part** plantype is selected in **Finder** dialog plantype combobox.

In case if the “Is Searchable” property is set to “No” for the Part plantype in configuration, then plantype at the first position gets selected in the finder plantype combo box. See [Display Plantypes in Finder dialog Plantype Combo box](#)

4) Select **Part B** from the finder search result and click **OK** to launch the WKC application.

Environment variables set in the shell where DPE is launched for the WKC client

The following environment variables would be set in the shell where DPE is launched for the WKC client. WKC clears these variables as soon as it reads them.

Generic (Common for both “Revision Product” and “Revision File” commands)

- Login user name: `"/username:"`
- Login password If SSO is disabled: `"/userpwd:"`

- Instead of environment variable `"/userpwd:"` use `"/usercred"` If SSO is enabled.
- Projects filter information: `"/currentfiltersettings:"`
- Project ID: `"/projectID:"`

Revision Product (for “Revision Product” command)

- Ergocompbase id on which Revision Product command is executed: `"/idPartA:"`
- Ergocompbase id on which WKC is launched: `"/idPartB:"`
- Mode Flag or Command: `"/WKCVersionCommandMode:"` = “RevisionProduct”

Revision File (for “Revision File” command)

- Ergocompbase id on which Revision File command is executed: `"/idPartA:"`
- Old smgXml file path: `"/FileOld:"`
- Full smgXml file path selected by user from selection dialog: `"/FileNew:"`
- Mode Flag or Command: `"/WKCVersionCommandMode:"` = “RevisionFile”

Customization

Perform the below customization in configuration tool to show “Revision Product” and “Revision File” commands on Product and Resource components.

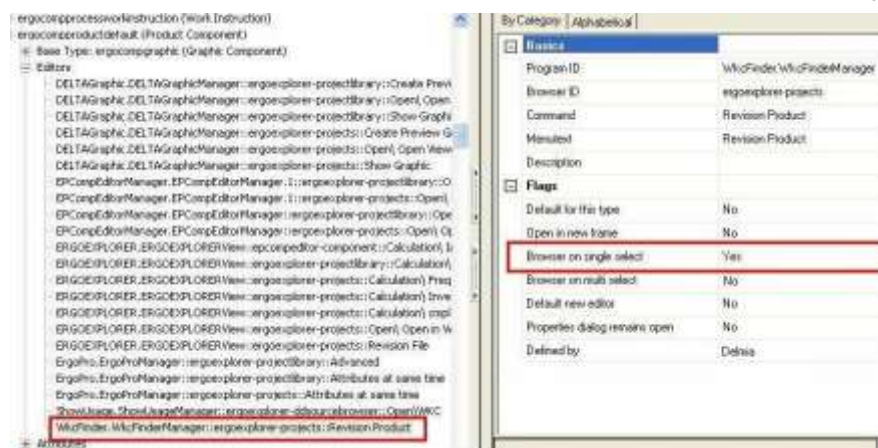


Figure 290: Configuration Settings to display “Revision Product” Command in Contextual Menu of Product Components

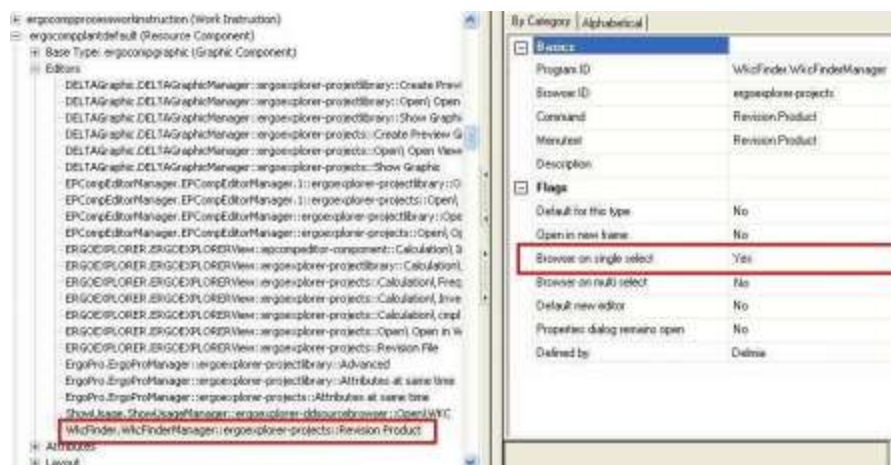


Figure 291: Configuration Settings to display “Revision Product” Command in Contextual Menu of Resource Components

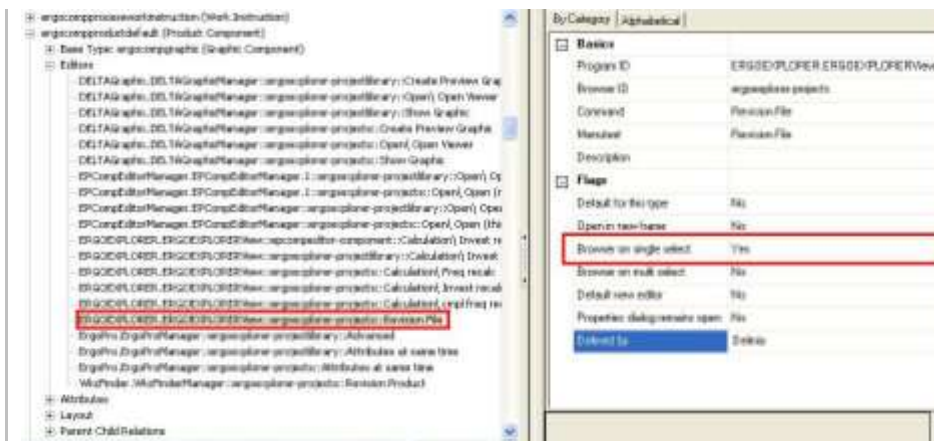


Figure 292: Configuration Settings to display “Revision File” Command in Contextual Menu of Product Components

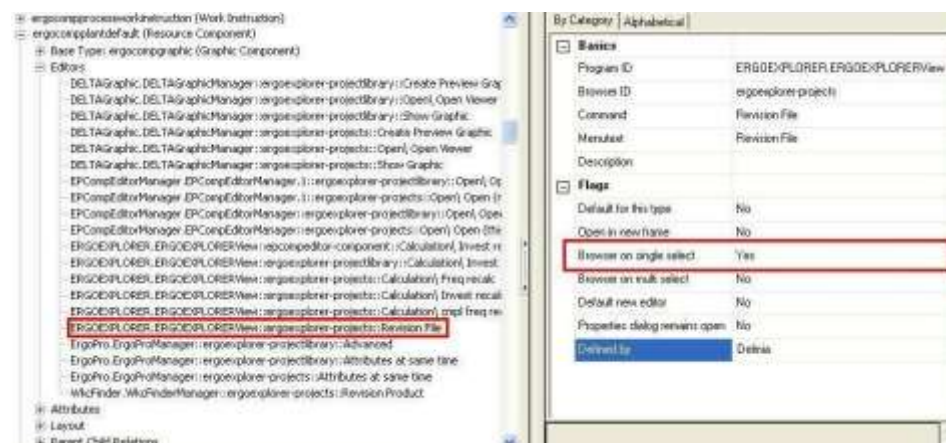


Figure 293: Configuration Settings to display “Revision File” Command in Contextual Menu of Resource Components



Note

By default above customization is made available in standard database provided with E5 setup. You have to set only the property “Browse on single select” to Yes. If you are not using the standard database provided with the E5 setup then you require to configure it.

Display Plantypes in Finder dialog Plantype Combo box

To display plantypes in **Finder** dialog plantype combo box open plantype editor on any plantype (example: subassembly) of plantypeset (Default-V5R19) and set the “Is searchable” property of plantype to “Yes”.

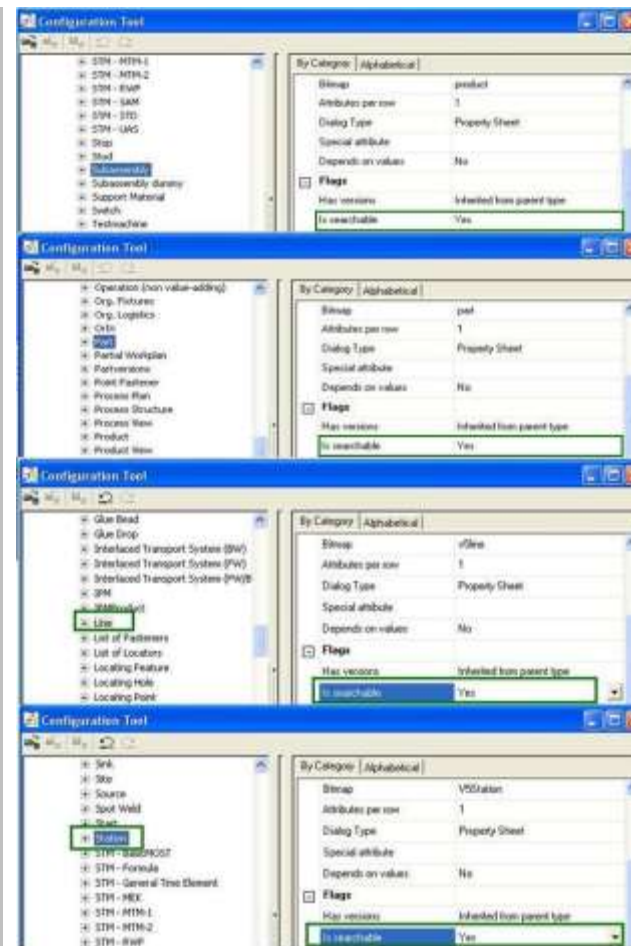


Figure 294: Customization to Display Plantype in Finder Dialog

11.2.1 Assignment of Organizational IDs



Caution

The assignment of organizational IDs is deactivated in the standard version of DELMIA Process Engineer. (In order to display contextual menu entries, attributes, pages, and groups please refer to the [Administration Manual](#)).

Organizational identification numbers can be assigned to the technical and organizational objects in the following way. Please refer to the [Figure 294](#).

11.2.1.1 Assigning Organizational IDs Automatically

- 1) If **Automatic assignment by OrgIDs** is enabled (set a checkmark) in the properties dialog on the project node, the technical components can be automatically linked with the corresponding organizational nodes during the assignment of OrgIDs. Please refer to the [Figure 160](#).

Example

- 2) In the product view, you have two different organizational nodes with the **1** and **2** OrgIDs which have each been assigned to other technical objects. If you change the **OrgID** of one of the technical objects, the new **organizational node** is assigned this technical object.
- 3) If, for example, a technical object with **OrgID 1** is assigned **OrgID 2** then the **organizational node 2** is automatically assigned to this object.



Figure 295: Assigning Project Node Properties Dialog – Assigning OrgIDs

- 4) Ergocomponents are only **automatically reassigned** to the organizational node if the **Automatic assignment by OrgID's** checkbox has been activated.

The following actions prompt the reassignment of Ergocomponents to organizational nodes:

- **The OrgIDs of an organizational node have been changed:** No automatic reassignment
 - **The OrgIDs of an Ergocomponent have been changed**
- 5) The Ergocomponent will be removed from the parents (organizational node) if OrgIDs are not identical for parent and child or if there are no identical OrgIDs.
 - 6) The Ergocomponent will be added as a child to organizational nodes where all OrgIDs set for both parent and child are identical.
- **Ergocomponent was added to organizational node as a child:** No automatic reassignment
 - **Ergocomponent has been removed from organizational node:** No automatic reassignment
- 7) Children can be reassigned at an organizational node using the **“Assign children by OrgIDs”** in the pop-up menu.
 - 8) The Ergocomponent can be removed from the parents (organizational node), if OrgIDs are not identical for parent and child or if there are no identical OrgIDs.
 - 9) The Ergocomponent can be added as a child to organizational nodes where all OrgIDs set for both parent and child are identical.

The OrgIDs can be assigned to all children at an organizational node using the **“Assign OrgIDs to children”** in the pop-up menu. The children then have the same OrgIDs as the organizational node afterwards.

11.2.1.2 Assigning Organizational IDs via Contextual Menu



Note

OrgIDs can only be assigned via the contextual menu if the “Automatic assignment by OrgIDs” is disabled. On the project node level, the contextual menu is not available.

You can use the contextual menu on all organizational nodes of the three views (product, resource, and process view). In the contextual menu you can

find two entries – **Assign children by OrgIDs** and **Assign OrgIDs to children** – these are used to assign OrgIDs. *Please refer to the [Figure 294](#).*

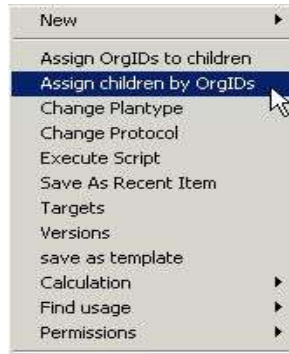


Figure 296: Assigning Children by OrgID – Contextual Menu

Assigning Children by OrgID

With this function, the child components are moved to the corresponding (correct) node. *Please refer to the [Figure 294](#).*

Example

If the process plans **A** and **B** have the **OrgID 1 (A)** and the **OrgID 2 (B)**, you will need to proceed in the following way:

If you assigned **OrgID 2** to a technical project in **process plan A**, the technical object would be directly assigned to the ID2 organizational node in the case of automatic assignment.

However, you can only notice this context function when **automatic assignment** is disabled. This means: you have to manually assign the technical object with the changed OrgID to the **OrgID 2** organizational node using the **Assigning children by OrgID** context function. In the example given, the node corresponds to **process plan B**.

Assigning OrgIDs to Children

With this context function, you can manually assign an OrgID to each single child.

11.2.2 Attributes at Same Time

The **Attributes at the same time** function allows you to access and edit all attributes of the selected object and all attributes of their children (first level).

11.2.2.1 Opening via Contextual Menu

The **Attributes at the same time** item from the contextual menu is available in each of the three views: product, resource, and process view. However, this entry is not available on every hierarchical level.

Example

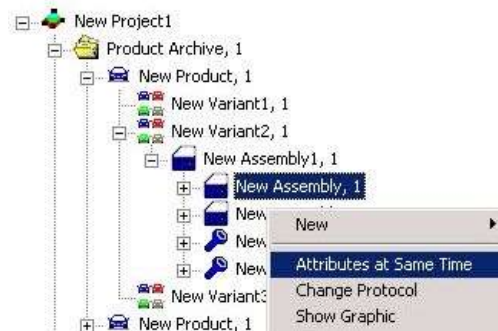


Figure 297: Example of a Contextual Menu- Opening attributes at the Same Time

11.2.2.2 Editing of Attributes

The following example illustrates the editing process of multiple components. You want to change the unit to **piece** or **pc.** in the product view.



Figure 298: Change Unit

- 1) Open the contextual menu from the level (i.e. subassembly) from where you want to change the unit and select the **Attributes** at the same time entry. The **Filter** dialog appears.

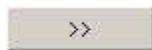
In the **Filter** dialog you can decide according to which criteria attributes are made available for editing.

- **Using the Project Filter for Children:** Whenever you use attributes for either BOM entries or components of the respective plantype are shown in the **Select Attributes** dialog. *Please refer to the [Figure 298](#).*
- **Selection of components:** All attributes of the selected plantype with a corresponding set filter (coderule, line number) are shown (a product subassembly in the example).
- **Selection of BOM entries:** All attributes of the selected plantype for which BOM entries were defined via attributes are shown (name, abbreviation, planning code).
- **Not using the Filter:** If you do not use the filter all attributes are shown – even the attributes of the respective plantype for which no filter is used.



Figure 299: Query Dialog for Filters

- 2) You can use project filters by marking the field and selecting either components or BOM entries.
The left window in the **Select attributes** dialog shows all attributes of the plantype and its children while the right window displays the attributes to be edited.
- 3) Choose the Unit entry from the left part of the dialog and activate the arrow button to transfer the entry to the right window. If you have made a typing mistake when making the transfer or if you would now prefer to change a different attribute, you can remove the attribute from the right window by selecting the required entry from this window. Then you simply need to confirm your choice by clicking the **Remove** button.



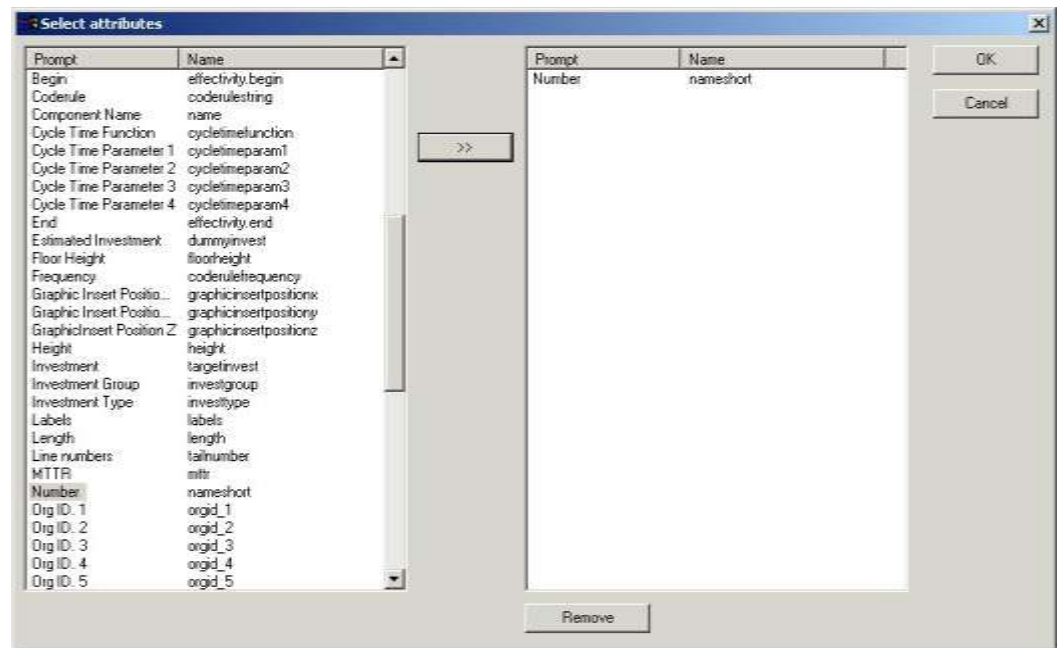


Figure 300: Selecting Attributes Dialog

- 4) Click **OK** to close the dialog.



Note

The attributes at the same time function only allows you to edit one structure level. To edit more hierarchical levels you must call and edit them in a further process.

- 5) You can now edit the attributes for each component in the **Edit attributes** table that appears.

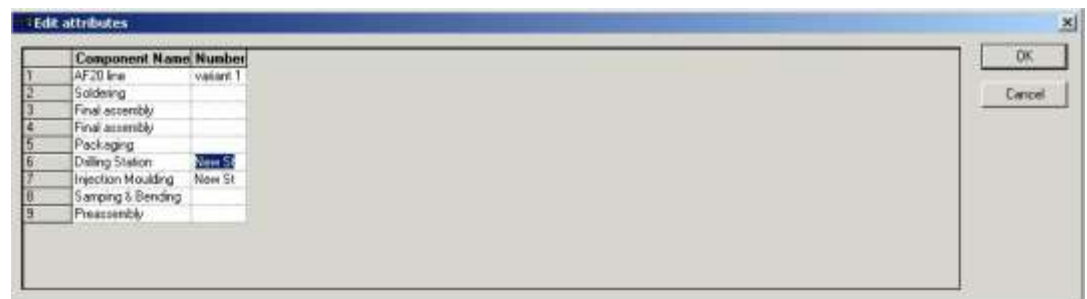


Figure 301: Edit Attributes Dialog

- 6) Click **OK** to save all entries and close the dialog.

Editing Attributes using File

Attributes being edited can be saved in a file and retrieved again at any time for editing. Choose this approach, for instance, if you always want to edit several attributes of an object at the same time in a context that you set up so that you can simultaneously edit attributes for calculation purposes.

- 1) You get a quick overview of which attributes have previously been edited for this object. You can remove or edit the combined attributes in the file at any time, or add new attributes. Therefore, combine the meaningful attributes for an object.

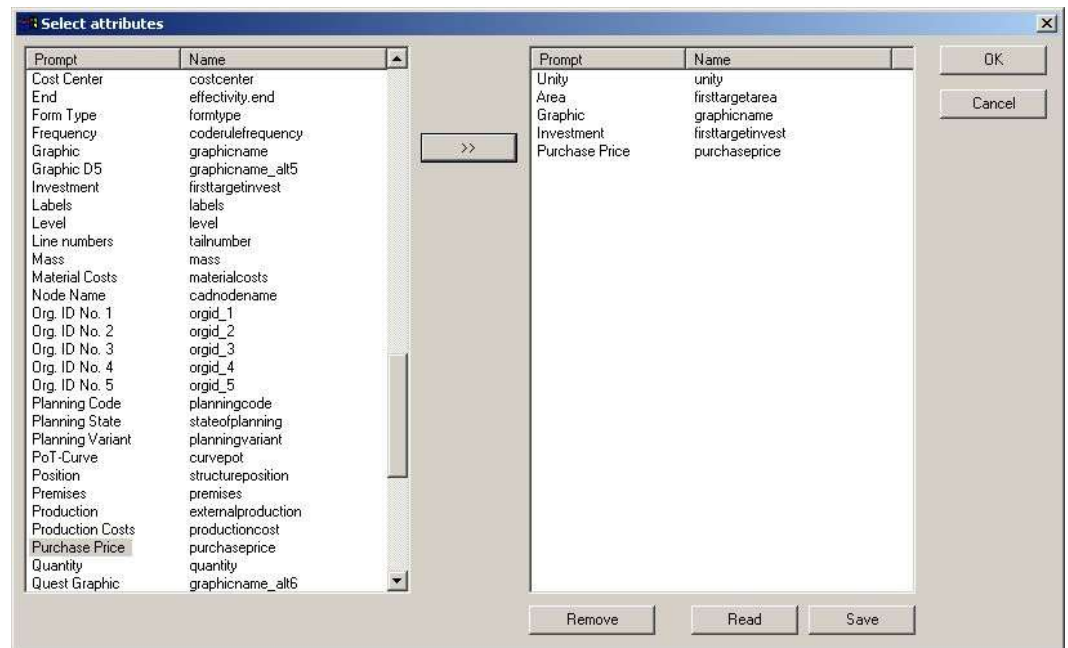


Figure 302: Assemble the Attributes for Editing a File

- 2) Click **Save**. Give the file a meaningful name.
- 3) Click **Read**, to open a file with attributes you have created. All attributes of the opened file are available in the right window of the **Edit Attributes** dialog and can be re-edited.

Editing Relations at the Same Time in the Attributes Dialog

Both attributes and relations can be edited for existing relations between products, processes, and resources.

The attribute **pass through** is available for products linked to the relation *process processes product*. The attribute **pass through** is used to label the relation *process processes product* for resources and products, as **Quest** data from the process / resource structure simulate. This label indicates that the product is both an input as well as output product.



For more information, please refer to the [Process Graph Manual](#).

You can quickly edit several existing relations or attributes (i.e. processes and resources) at the same time in a dialog using **Attributes at same time**. The essential procedure is described in a few examples.

Example

Editing Attribute Pass through for Processes

In order to edit the attribute **pass through** in the dialog you must create a relation between products and processes.

A process structure with six processes has been generated for the following example. These six processes are then related to a product in the product structure by the relation *process processes product*.

- 1) Open Attribute at same time from the contextual menu on the process structure.
- 2) Select the relation process processes product in the dialog.

Editing the attribute **pass through**.

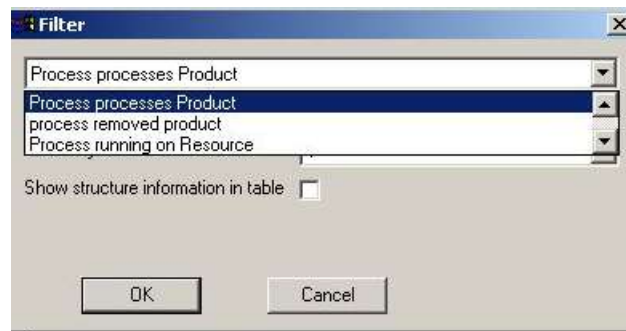


Figure 303: Selecting Relation in the Filter Dialog

- 3) Click **OK**.
- 4) Select the attribute **pass through**. All further configured attributes which you can provide for editing are displayed in the dialog.
- 5) Click the button with the double arrow to provide the attribute pass through for editing.

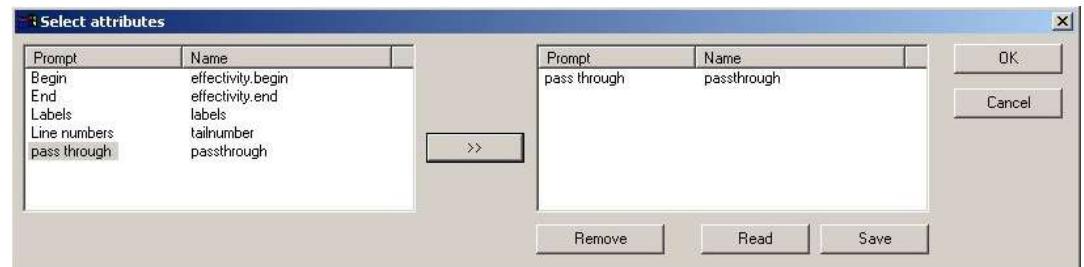


Figure 304: Providing the Attribute Pass through for Editing

- 6) Click **OK**.
- 7) The related processes and products are displayed in the dialog **Edit attributes**; you cannot edit these fields.
- 8) Pass through is labeled via the selection window. **Yes** indicates that the product has been further supplied under the same name. **No** indicates that a new product is generated.
- 9) The set labels are saved and displayed again when the dialog is opened.

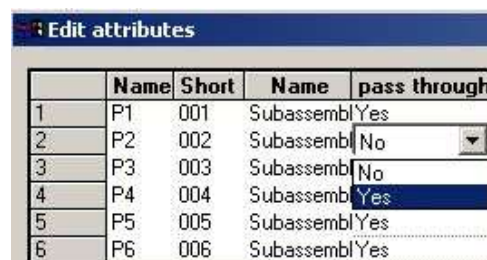


Figure 305: Edit Attributes Dialog - Process Level

Editing Attributes for Resources

A resource structure and a Manufacturing Concept have been generated for the following example. The Manufacturing Concept was created on the basis of the Process Graphs, and the previously generated process structure (example of assembly processes).

In this way, it comes full circle: products, processes, and resources are related to one another. In this example, both the attributes **relevant** and **part at same time** are edited.

- 1) Open Attributes at same time from the contextual menu on the resource structure.

Editing the attributes **relevant** and **part at same time**.

Example

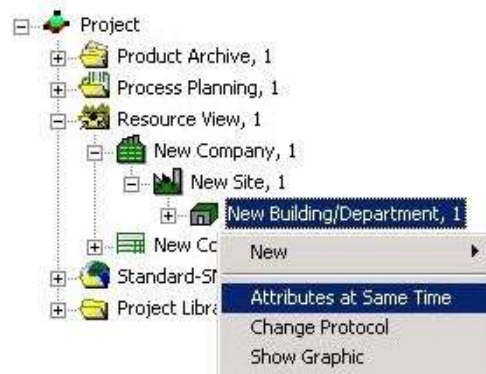


Figure 306: Opening Attributes at same Time on the Resource Structure

- 2) In the Filter dialog select the relation process uses resource.
- 3) Supply both attributes for editing in the **Select Attributes** dialog.
- 4) You can edit both attributes in the **Edit Attributes** dialog.
- 4) You can label the attribute **relevant** via the selection window. Relevant indicates whether a process is relevant for the pass through time.
- 5) Type in the required number for the attribute **part at same time**. The attribute specifies the number of same parts that can be manufactured in one cycle.
- 6) The set labels are saved and displayed again when the dialog is opened.

Edit attributes						
	Name	Short Name	Name	Short Name	Relevant	Parts at same time
1	P1	001	lines	New Plant	Yes	1
2	P2	002	lines	New Plant	Yes	1
3	P3	003	lines	New Plant	Yes	1
4	P4	004	lines	New Plant	Yes	1
5	P1	001	M:P1	New Plant	Yes	1
6	P2	002	M:P2	New Plant	No	1
7	P3	003	M:P3	New Plant	Yes	1
8	P4	004	M:P4	New Plant	Yes	1
9	P5	005	M:P5	New Plant	Yes	1
10	P6	006	M:P6	New Plant	Yes	1

Figure 307: Edit Attributes Dialog – Resource Level

Editing Attributes for Relations

The attribute **time** is edited in the following example.

With regard to supplying data for the simulation, attributes for all objects linked via a relation can be displayed and edited at the same time in the **Edit attributes** dialog.

Example

The example is shown for both relations *Resource used by process* and *Resource runs process*.

Six processes were related to one resource – four processes with the relation *Resource used by process* and two processes with the relation *Resource runs process*.

- 1) Open Attributes at same time from the contextual menu on the resource structure.
- 2) Select Related processes in the **Filter** dialog.
- 3) Supply the attribute for editing in the **Select Attributes** dialog. The attribute estimated time is used in the example.
- 4) The relations and processes are displayed in the **Edit Attributes** dialog. The attribute **time** can be edited for all relations.

- 5) All times entered are set in the properties dialog of the processes after the dialog is closed.

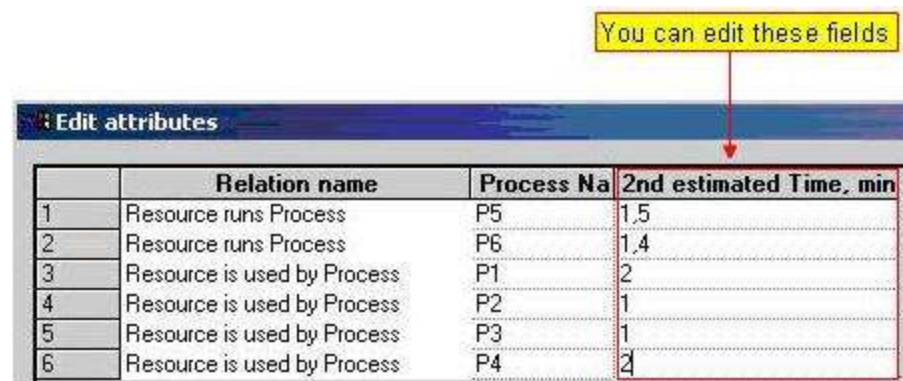


Figure 308: Edit Attributes Dialog - Relations

11.2.3 Displaying Hierarchy Levels for Attributes at Same Time

In the table for **Attributes at same time** you can display the hierarchy levels and the assignment of the attributes to the hierarchy levels. The display of the hierarchy levels depends on two things; firstly on which hierarchy level you open the **Attributes at same time** function, and secondly, how many hierarchy levels you want to display. This setting can be made in **Tools < Settings < Change**.

In addition, you can also open the Attributes at same time (as of Version PE 5.14) via the contextual menu in the process graph and the manufacturing concept. You can selectively edit the attributes in the table via the **Replace** function.

Setting Hierarchy Levels in the Settings Dialog

You can set a maximum of 99 hierarchy levels for the display. For the number you should enter a realistic value, which as a rule corresponds to the number of possible hierarchy levels you will use for the structures in the PPR navigator.

- 1) Make the setting under **Tools < Settings < Change < Miscellaneous < Attributes at same time**, max. number of hierarchy level.
- 2) Open Attributes at same time via the contextual menu.
- 3) If you open Attributes at same time in the manufacturing concept or process graph. Click in a free field. Select Attributes at same time in the contextual menu.

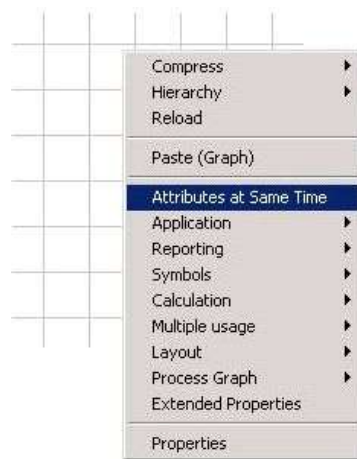


Figure 309: Open Attributes at Same Time – Free Field in the Graph

- 4) In order to display the hierarchy levels, click in the field for Show structure information in table in the **Filter** dialog.

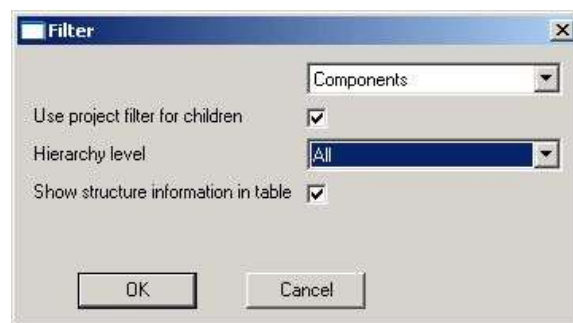


Figure 310: Filter Dialog

- 5) In the selection list you can either set a set number for the display of the hierarchy levels, or you can select All. If the setting All is selected, all assigned hierarchy levels are displayed in the table
- 6) If you select a set number, this number is maximum number, which can be displayed in the table.



Figure 311: Selection List - Setting the Number of Hierarchy Levels

- 7) Confirm the entries with **OK**.
- 8) Then set the attributes that you want displayed in the table in the **Select Attributes** dialog. *Please refer to the [Figure 298](#).*
- 9) The selected attributes are displayed with hierarchy levels in the table, and you can edit the values in the table. *Please refer to the [Figure 310](#).*

11.2.4 Replace Function in a Table

You can selectively edit the values of the attributes displayed in the columns with the **Replace** function. You can replace values for all lines in a column all at once or individually. For certain attributes there are pull down menus available; you can use them to change the values, for example, for PoT-curves or premises.

For attributes for which there is no pull down menu available, enter the changed values directly into the lines in the **Change attributes simultaneously** dialog. The hierarchy levels under structure number cannot be edited. There are limitations to attributes with numeric fields. *Please refer to the [To Edit Numeric Fields](#) and [Figure 312](#).*

Display for hierarchy levels. In the figure, four hierarchy levels are displayed under structure number.

In the example, the premises plant Stuttgart are assigned via Replace for the empty lines in Attribute premises.

Columns with selected attributes

	Structure number	Resource Name	Premises	Attribute 1	Attribute 10	Attribute 11	Attribute 12	Attribute 13	Begin	Class Name	Attribut
4	1.1.1.1	Montagestation 01		0							
5	1.1.1.2	Montagestation 02		0							
6	1.1.1.3	Montagestation 03		0							
7	1.1.1.4	Montagestation 04		0							
8	1.1.1.5	Montagestation 05 Berlin		0							
9	1.1.1.6	Montagestation 06 Berlin		0							
10	1.1.2	Vorlenkung Spitzel Berlin									
11	1.1.2.1	Hilfsarbeiter Putzer Berlin									
12	1.1.2.2	M:New Phil & Mes Berlin		0							
13	1.1.2.3	M:Spritzgießen Ein Berlin		1							
14	1.1.2.4	M:Spritzgießen Geh Berlin		1							
15	1.1.2.5	M:Gehäuse entgrat Berlin		0							
16	1.1.2.6	Verpackplatz für Ei Berlin		0							
17	1.1.2.7	M:Spritzgießen Ha Berlin		1							
18	1.1.2.8	M:Spritzgießen De Berlin		1							
19	1.1.2.9	M:Biegen Befestigung Berlin		1							
20	1.1.2.10	M:Spritzgießen Bod Berlin		1							
21	1.1.2.11	M:Haube umpack Berlin		0							
22	1.1.2.12	M:Deckel umpack Berlin		0							
23	1.1.2.13	M:Bodenplatte ump Berlin		1							
24	1.1.2.14	M:Transport zur Mo Berlin									
25	1.1.2.15	M:Transport zur Mo Berlin									
26	1.1.2.16	M:Transport zur Mo Berlin									
27	1.1.2.17	New Transportmitte Berlin									
28	1.1.2.18	Verpackplatz für Ei Berlin		0							
29	1.1.2.19	Verpackplatz für Ei Berlin		0							
30	1.1.2.20	Verpackplatz für Ei Berlin		0							
31	1.1.2.21	Hilfsarbeiter Verpac Berlin									

Figure 312: Table with Selected Attributes

To Edit Value of Attributes

- 1) In order to open the **Change attributes simultaneously** dialog, click **Replace**. *Please refer to the [Figure 310](#).*

Change attributes simultaneously

Attribute: Premises

New Value: Stuttgart

☒ Change only

OK Cancel

Figure 313: Dialog Change Attributes Simultaneously

All selected attributes of the table are displayed in the selection list for **Attribute**.

- 2) In order to edit an attribute, select the attribute from the **Attribute** selection list.
 - 3) The value to be changed is set in **New Value**. Depending on which attribute you edit, there is either a selection list available, or you can enter the value directly into the line.
- In the example, the premises of the plant Stuttgart are to be assigned to all empty lines in the table for Attribute Premises.

- 4) The field **Change only** should be activated only if the attribute is to be changed only for certain values. If you do not activate this field, all values of this attribute are overwritten with the new value.
 - In the example, the premises plant Stuttgart is to be assigned only to the empty lines. To do this, activate the field and leave the selection for **Change only** empty.
 - To stick to the example, if you later want to change the new assignment to **plant Stuttgart**, for example, to premises plant Berlin, set premises **plant Berlin** for the **New Value** and premises **plant Stuttgart** for **Change only**.
 - In this way, you can edit the columns of the attributes in any way you want via the Replace function; all new values are accepted, i.e. for the properties.
 - Changes to one line can be executed directly in the respective line.

Result

The premises plant Stuttgart is assigned for all empty lines.

Edit attributes			
	Structure number	Resource Name	Premises
4	1.1.1.1	Montagestation 01	Stuttgart
5	1.1.1.2	Montagestation 02	Stuttgart
6	1.1.1.3	Montagestation 03	Stuttgart
7	1.1.1.4	Montagestation 04	Stuttgart
8	1.1.1.5	Montagestation 05	Berlin
9	1.1.1.6	Montagestation 06	Berlin
10	1.1.2	Vorfertigung Spritze	Berlin
11	1.1.2.1	Hilfsarbeiter Putzer	Berlin
12	1.1.2.2	M:New Prüf- & Mes	Berlin
13	1.1.2.3	M:Spritzgießen Ein	Berlin
14	1.1.2.4	M:Spritzgießen Geh	Berlin

Figure 314: Replace Function Example – Assigning Premises Plant Stuttgart To Edit Numeric Fields

Attributes for i.e. time units or work heights are numeric fields in integer or float format. Certain limitations apply to these attributes with regard to the Replace function. You must always specify a numerical value in the field **New Value**; even a zero is acceptable. Even if you change the numerical values directly in the line, you must type a new value in the line.

The values are all set to zero for the attribute **estimated time**. In the example, these values are replaced by 100 using the Replace function.

- 1) Type **100** for new value. Since all values are replaced by one hundred, you do not need to activate the **Change only** field. Please refer to the [Figure 313](#).

Change attributes simultaneously

Attribute: Estimated Time (TG)

New Value: 100

☐ Change only

OK Cancel

Figure 315: Specifying a New Value

- 2) The result of this procedure is that all fields now have a value of 100. Please refer to the [Figure 314](#).

Estimated Time (TG), min	Estimated Time (TG), min
0	100
0	100
0	100
0	100
0	100
0	100
0	100
0	100
0	100

Figure 316: Result of the Replace Function

- 3) If you forget the entry, the program warns you with this type of message, for example:

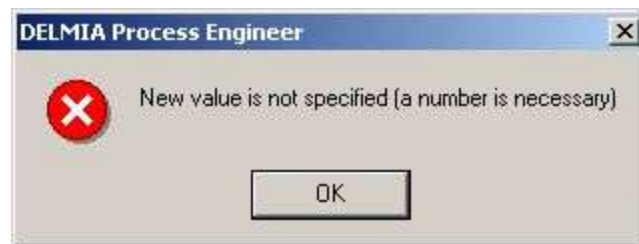


Figure 317: Example of a Message if a Numerical Value is Specified

11.3 Deleting Option

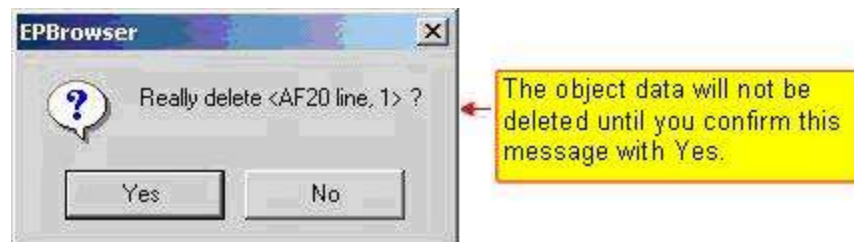


Figure 318: Delete Confirmation

An alternate option for deleting an object:

- 1) Select the object to be deleted with a left click of your mouse and press the **DEL** key. Confirm this question with **Yes**.

Delete Options for Components

You can set the delete options in the settings. (Please refer to the [Settings Manual](#)) There are three possibilities:



Figure 319: Delete Options

If no dialog should appear, you have the possibility to specify further deletion options. (Please refer to the [Settings Manual](#))

11.4 Printing Option

Once you have chosen the **Print** option, the **Output-Settings** dialog opens.
Please refer to the [Printing Manual](#))

By selecting Preview”for the marked element, the **Print Selection** window is opened. You can specify the print format in this window. In this way, you can verify on the monitor that the generated document meets your requirements. Any necessary corrections can be made before printing.

12. Ergonomics Analyses

The Process Engineer uses the Ergonomic Analysis function to create ergonomic analyses.



Note

Please also read the [ERGOCheck Manual](#) to create ergonomic analysis. It contains a detailed description of all functions. This manual provides you with a short description on how to start the ERGOCheck program module in the Process Engineer.

- 1) Open the scene contextual menu and select **New < Ergonomic Analysis** options. The “Ergonomic Analysis” module opens.

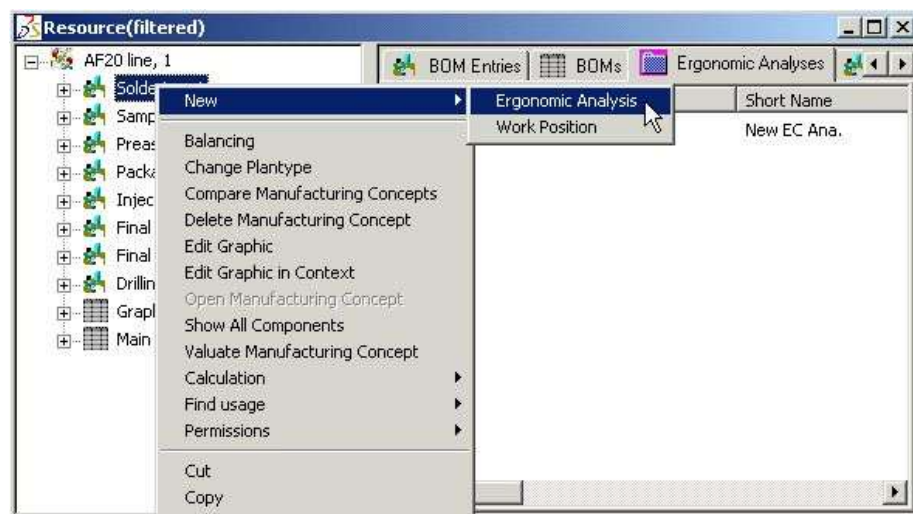


Figure 320: Starting the Ergonomic Analysis

- 2) The **Ergonomic Analyses** selection window opens (Please refer to the [Figure 319](#)).

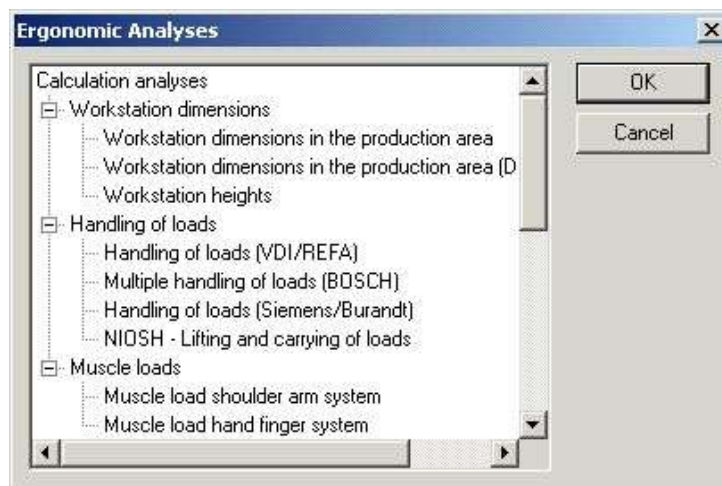


Figure 321: Ergonomic Analyses Selection Window

- 3) This window allows you to select calculation analyses and checklists. In our example, a calculation analysis has been selected. Checklists and calculation analyses follow the same procedure:
- 4) Select the required analysis from the window and confirm your selection using the **OK** button.

- 5) This opens a dialog where you can enter the name and a short description of the respective ergonomic analysis. When you have closed the dialog, you find the required analysis in the **Ergonomic Analyses** tab. Then call the **Edit Analysis** entry from the contextual menu.

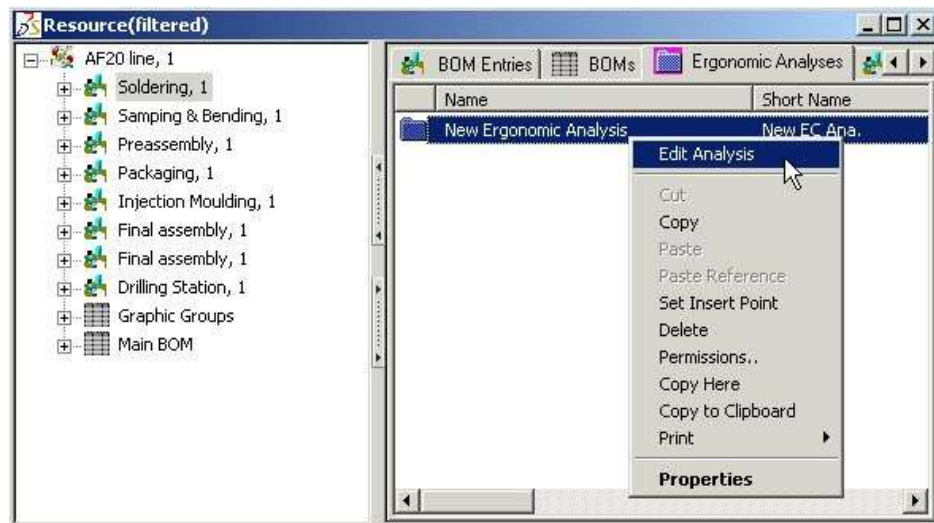


Figure 322: Starting a Calculation Analysis.

- 6) This opens a calculation analysis for work station dimensions.

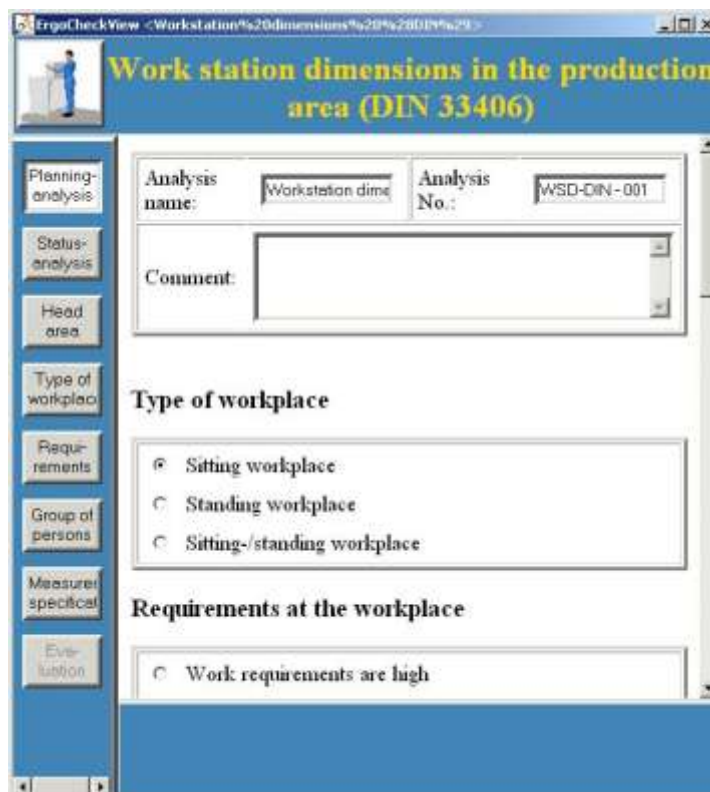


Figure 323: Work Station Dimensions in the Production Area (DIN 3406)

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