



PDM Workbench NX

PDM Workbench NX Release 19.0 for Aras Innovator

User Manual

Version 1

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This edition 19.0 obsoletes all previous editions.

Your Comments are Welcome

Please feel free to tell us your opinion; we are always interested in improving our publications. Mail your comments to:

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Preface

About this Manual

This manual describes the main functionality delivered by the PDM Workbench NX. The functionality of the PDM Workbench NX as described in this manual uses Aras Innovator as backend PDM system for Siemens NX. This manual is intended for end users of the PDM Workbench NX. It assumes that the reader is familiar with the NX application and with Aras Innovator.

Related Documents

The following manuals contain information about installation, administration, usage, and customization of the PDM Workbench NX:

| Manual Title | Version |
|--|---------|
| <i>PDM Workbench NX Installation & Administration Manual</i> | 19.0 |
| <i>PDM Workbench NX User Manual</i> | 19.0 |

This edition 18.0 of the manual obsoletes all previous editions.

Organization

This manual contains the following chapters:

Chapter 1 provides basic information about the PDM Workbench NX and describes some features of this application.

Chapter 2 describes the supported data model.

Chapter 3 describes the functionality which is implemented in the PDM Workbench NX.

Glossary contains the PDM Workbench NX terminology.

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CHAPTER 1

Overview

This chapter provides basic information about the *PDM Workbench NX* and lists some features of this application.

Introducing PDM Workbench NX

The PDM Workbench NX is developed by T-Systems as a high-end integration between the CAD system NX and the PDM system Aras Innovator which can also be customized.

How PDM object types are presented in dialogs as well as functionalities within the PDM Workbench NX are defined in a configuration file (called *PDM Workbench NX Schema File*).

There are different locations where you can access functionalities of the PDM Workbench NX:

- PDM Workbench NX menu (always)
- Part context menu
- “Query” dialog window

The PDM Workbench NX is integrated in the menu of NX where you can access general functionality of the PDM Workbench NX like create a file or update the changes to the PDM system. The functionality of the menu and the toolbar is the same.

A “Query” dialog (accessible through menu and toolbar) allows you to search for existing files on the PDM system. The “Query” dialog provides all functionality for an already existing file on the PDM system like deleting the file on the PDM system or loading the file from the PDM system into NX for working on it.

For files, already loaded from the PDM system into NX, additional context menu PDM functions are accessible through the Assembly Navigator.

CHAPTER 2

Supported Data Model

The PDM Workbench NX supports the CAD Document Structure Data Model and the BOM Part Structure Data Model.

CAD Document Structure Data Model

In the *CAD Document Structure Data Model* the PDM structure is represented by CAD Documents. The relation "CAD Structure" is used to describe the assembly structure.

Each CAD Document includes the NX file.

Additionally, to this, for each CAD Document item (not necessarily all of them) a Part item can be associated.

BOM Part Structure Data Model

In the *BOM Part Structure Data Model* the PDM structure is represented by Parts (Part/Assembly). The relation "Part BOM" is used to describe the assembly structure.

To each Part a CAD Document is related, which references the NX Part file.

CHAPTER 3

Getting Started


This chapter describes the functionality of the PDM Workbench NX.

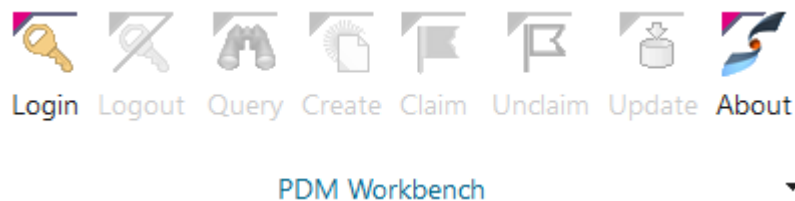
We suppose that you have installed NX on your computer. All configurations for the PDM Workbench NX (including the configurations for the PDM systems) have been done.

Note: the following examples and figures are for NX 2406, but they are also accessible in other NX versions.

Login

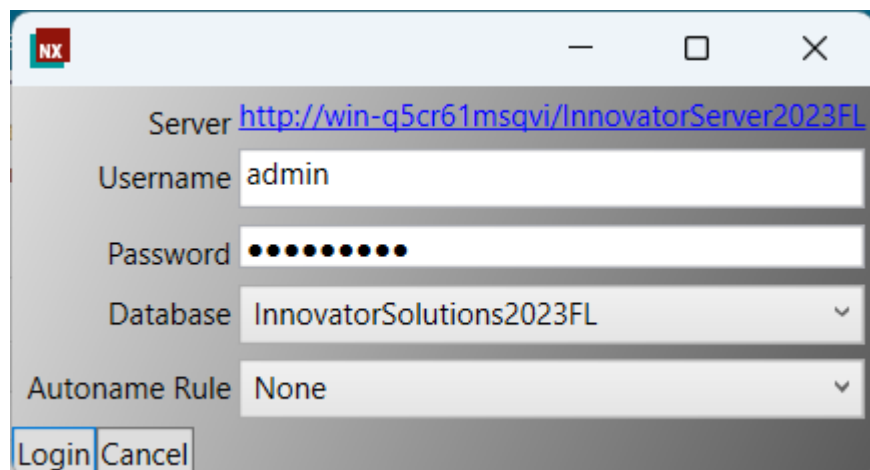
In order to access the PDM Workbench NX functionality you must login to the PDM system.

You select the “Login” button  within the PDM Workbench NX menu or in the menu under “PDM Workbench” (see *Picture 1: The PDM Workbench NX menu before login*). The other PDM Workbench NX buttons remain deactivated until you are logged in.



Picture 1: The PDM Workbench NX menu before login

The following dialog (see *Picture 2: "PDM Login" dialog*) prompts you for all necessary information to identify yourself in the PDM system. In our example you are asked to enter your “User”, “Password”, and “Database”. The identification items are defined as necessary for Login in the PDM Workbench NX configuration file.



Picture 2: "PDM Login" dialog

Click the “Login” button.

Once the “Login” action was successful the buttons in the PDM Workbench menu will turn active (see *Picture 3: The PDM Workbench NX menu after the login*).



PDM Workbench

Picture 3: The PDM Workbench NX menu after the login

Query

You can query for any model, part or family template stored in the PDM system. Once you click the “Query” button within the PDM Workbench NX menu the “Query” dialog opens. On the left side of the dialog you can define the criteria for your query (see *Picture 4: “Query” dialog*). On the right side you will see the query results. These are all objects which are stored in the PDM system that correspond with the entered criteria.



Picture 4: “Query” dialog

The displayed query criteria depend on the PDM object type (Part/Model) of the NX file and the attributes for this type. A default type is selected (Model) and its attributes are shown (see *Picture 5: “Query” dialog – enter query criteria*).

You can change the type in the selection list at the top. The attributes will be shown automatically.

Specify your selection criteria in the fields below.

You can use the wildcard “*” in this dialog. All attributes visible in this dialog are attributes of the PDM system for the selected object type. (These attributes as well as their adherence to the “Query” dialog of this type are defined in the PDM Workbench NX configuration file).

PDM Object attributes:

| | |
|-----------------|----|
| Document Number | Cr |
| Major Rev. | A |
| Generation | |
| Name | |

Picture 5: "Query" dialog – enter query criteria

Some attribute values can be typed in as free text while for others a value can be selected from a list.

When you have specified the selection criteria you can start the query for PDM objects with a click on the "Query" button (see *Picture 6: "Query" dialog – send query*).

Query

Type: Model

PDM Object attributes:

- Is Assembly: undefined
- Has Drawing: undefined
- Has 3D File: undefined
- Is Standard: undefined
- Doc. Number:
- Major Rev:
- Generation:
- Name:
- State:
- Description:
- Created on:
- Modified on:
- Created by ID:
- Modified by ID:
- Locked by ID:

Columns: PDM Object Type, Is Assembly, Has Drawing, Has 3D File, Is Standard, Doc. Number, Major Rev., Generation, Name, State, Description, Created on, Modified on, Created by ID, Modified by ID, Locked by ID

Buttons: Query, Load, Reset Filter

Picture 6: "Query" dialog – send query

The columns for the query result on the right side of the dialog are also defined in the configuration file of the PDM Workbench NX.

The found objects will be presented on the right side of the dialog. Right click on an object to open a context menu (see *Picture 7: "Query" dialog – context menu*) that shows you the available options:

| PDM Object Type | Is Assembly | Has Drawing | Has 3D File | Is Standard | Doc. Number | Major Rev. | Generation |
|-----------------|-------------|-------------|-------------|-------------|-------------------|------------|------------|
| | 1 | 0 | 0 | | ARR_20110628_AB | A | 1 |
| | 0 | 0 | 1 | | ARR_20110628_AB_1 | A | 1 |
| | 1 | 0 | 0 | | ARR_20110628_FG | A | 1 |
| | 0 | 0 | 1 | | ARR_20110628_FG_1 | A | 1 |
| | 1 | 0 | 0 | | ARR_20110628_GP | A | 1 |
| | 0 | 0 | 1 | | ARR_20110628_GP_1 | A | 1 |
| | 1 | 0 | 0 | | ARR_20110628_RS | A | 1 |
| | 0 | 1 | 1 | | ARR_20110628_RS_1 | A | 1 |
| | 1 | 0 | 0 | | ARR_20110628_S | A | 1 |
| | 1 | 0 | 0 | | ARR_20110628_SS | A | 1 |
| | 0 | 1 | 1 | | ARR_20110628_SS_1 | A | 1 |
| | 1 | 0 | 0 | | | | 1 |
| | 1 | 0 | 0 | | | | 1 |
| | 0 | 1 | 1 | | | | 1 |

- Expand
- Load Structure
- Unclaim
- Delete
- Open In Aras

Picture 7: "Query" dialog – context menu

Expand

You can expand an object which means the structure of this object is shown in the "Query" dialog (like subassemblies or parts of this object).

Once you have expanded an object, the icon plus is shown on the right of this object which helps you to navigate through the structure of objects (see *Picture 8: Action "Expand" – navigate through relations*).

| PDM Object Type | Is Assembly | Has Drawing | Has 3D File | Is Standard | Doc. Number | Major Rev. | Generation | Name | State | Description |
|-----------------|-------------|-------------|-------------|-------------|-------------------|------------|------------|------|-------------|-------------|
| | 1 | 0 | 0 | | ARR_20110628_AB | A | 1 | | Preliminary | |
| | 0 | 0 | 1 | | ARR_20110628_AB_1 | A | 1 | | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_FG | A | 1 | | Preliminary | |
| | 0 | 0 | 1 | | ARR_20110628_FG_1 | A | 1 | | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_GP | A | 1 | | Preliminary | |
| | 0 | 0 | 1 | | ARR_20110628_GP_1 | A | 1 | | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_RS | A | 1 | | Preliminary | |
| | 0 | 1 | 1 | | ARR_20110628_RS_1 | A | 1 | | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_S | A | 1 | | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_SS | A | 1 | | Preliminary | |
| | 0 | 1 | 1 | | ARR_20110628_SS_1 | A | 1 | | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_TOP | A | 1 | | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_S | A | 1 | | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_ZS | A | 1 | | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_AB | A | 1 | | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_RS | A | 1 | | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_GP | A | 1 | | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_FG | A | 1 | | Preliminary | |

Picture 8: Action "Expand" – navigate through relations

For using this functionality select the object which you want to expand and open the context menu by clicking on the right mouse button. Select the context action "Expand" which opens a sub menu for the "Expand". This sub menu offers three ways for the expansion (see *Picture 9: "Query" dialog – options for expand*)

1) Expand as Saved

Expand the structure of the object exactly as it was saved the last time in the PDM system, even if newer versions were created for some relations in the meantime.

2) Expand Current

Expand the structure of the selected object with the current versions of the contained relations in the PDM system.

3) Expand Released

Expand the structure of the selected object with the last release of the relations on the PDM system.

4) Attached CAD Documents

Expand related CAD Document of the selected Part item.

5) Attached BOM Part Children

Expand related BOM Part Children of the selected Part item.

6) Attached Family Members

Expands Family Members of the selected item.

| PDM Object Type | Is Assembly | Has Drawing | Has 3D File | Is Standard | Doc. Number | Major Rev. | Generation Name | State | Descrip |
|-----------------|-------------|-------------|-------------|-------------|-------------------|------------|-----------------|-------------|---------|
| | 1 | 0 | 0 | | ARR_20110628_AB | A | 1 | Preliminary | |
| | 0 | 0 | 1 | | ARR_20110628_AB_1 | A | 1 | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_EG | A | 1 | Preliminary | |
| | 0 | 0 | 1 | | | | | | |
| | 1 | 0 | 0 | | | | | | |
| | 0 | 0 | 1 | | | | | | |
| | 1 | 0 | 0 | | | | | | |
| | 0 | 1 | 1 | | ARR_20110628_RS_1 | A | | | |
| | 1 | 0 | 0 | | ARR_20110628_S | A | 1 | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_SS | A | 1 | Preliminary | |
| | 0 | 1 | 1 | | ARR_20110628_SS_1 | A | 1 | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_TOP | A | 1 | Preliminary | |
| | 1 | 0 | 0 | | ARR_20110628_ZS | A | 1 | Preliminary | |
| | 0 | 1 | 1 | | ARR_20110628_ZS_1 | A | 1 | Preliminary | |

Picture 9: "Query" dialog – options for expand

Load Structure

It is possible to load an object or a whole structure from the PDM system into the native NX window for working on it, e.g. perform geometric transformations, geometry changes and so on.

If a file already exists on the PDM system, always use the "Load" functionality of the PDM Workbench NX to load the file for editing. If you open a local copy of this file from your machine, you cannot update the changes to the PDM system later on. In this case PDM Workbench NX does not know in the "Update" process that the file already exists on the PDM system. It would try to create a new object in the PDM system which fails because this object already exists.

With the „Load Structure“ functionality an object is loaded with its structure from the PDM system into the native NX window for working on it. That means that also related files to the selected object like subassemblies or parts (if there are any) are downloaded from the PDM system.

Load Structure - CAD Document Structure Data Model

For loading the CAD Document structure, query the CAD Document object in the “Query” dialog, select the object which should be downloaded and click right to open the context menu. Click the action “Load Structure” which opens a sub menu that offers three possibilities for loading the structure (see *Picture 10: "Query" dialog – action "Load Structure"*):

1) Load Structure As Saved

The option “Load Structure As Saved” loads the structure from the PDM system exactly as it was saved the last time on the PDM system, also if newer versions for some files were created in the meantime.

2) Load Structure Current

The option “Load Structure Current” loads the current version of the structure in the PDM system into NX.

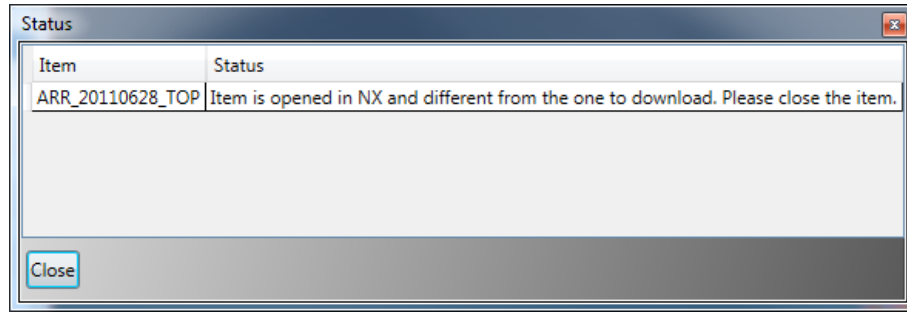
3) Load Structure Released

The option “Load Structure Released” loads the released structure in the PDM system of the selected object into NX.

| PDM Object Type | Is Assembly | Has Drawing | Has 3D File | Is Standard | Doc. Number | Major Rev. | Generation | Name |
|-----------------|-------------|-------------|-------------|-------------|-------------------|------------|------------|------|
| | 1 | 0 | 0 | | ARR_20110628_AB | A | 1 | Pre |
| | 0 | 0 | 1 | | ARR_20110628_AB_1 | A | 1 | Pre |
| | 1 | 0 | 0 | | | | 1 | Pre |
| | 0 | 0 | 1 | | | | | |
| | 1 | 0 | 0 | | | | | |
| | 0 | 0 | 1 | | | | | |
| | 1 | 0 | 0 | | | | | |
| | 0 | 1 | 1 | | ARR_20110628_RS_1 | A | 1 | Pre |
| | 1 | 0 | 0 | | ARR_20110628_S | A | 1 | Pre |
| | 1 | 0 | 0 | | ARR_20110628_SS | A | 1 | Pre |
| | 0 | 1 | 1 | | ARR_20110628_SS_1 | A | 1 | Pre |
| | 1 | 0 | 0 | | ARR_20110628_TOP | A | 1 | Pre |
| | 1 | 0 | 0 | | ARR_20110628_ZS | A | 1 | Pre |
| | 0 | 1 | 1 | | ARR_20110628_ZS_1 | A | 1 | Pre |

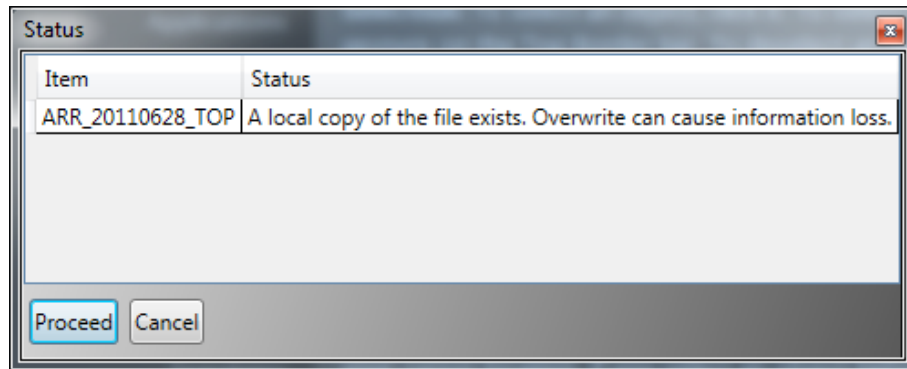
Picture 10: "Query" dialog – action “Load Structure”

This action is only possible if at loading time a local copy of the object is not opened in NX. Otherwise, you are asked to close these files (see *Picture 11: Action "Load" – items opened*).



Picture 11: Action “Load” – items opened

If a local copy had already been downloaded from the PDM system before, you will be asked if you really want to download, because local changes which had been done could get lost (see *Picture 12: Action “Load” – information loss*).

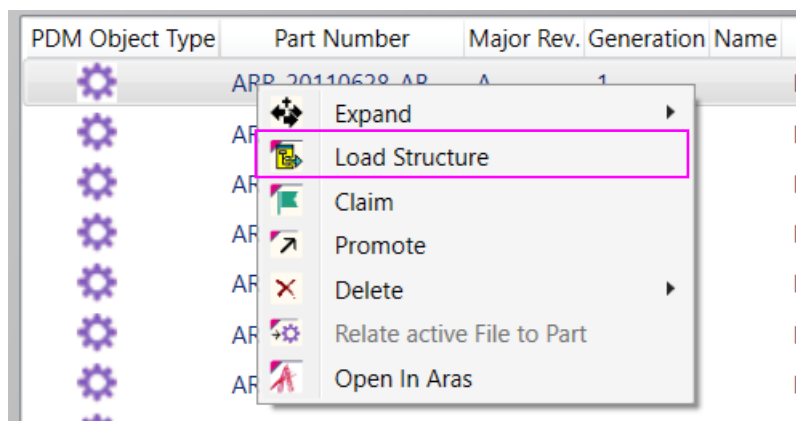


Picture 12: Action “Load” – information loss

The PDM Workbench NX downloads the file into the Exchange Map on your local machine. The Exchange Map is defined within the local configuration file (“PWBSchema_Aras_NX.xml”). If the download for some reason fails, check if another file or an older version of this file exists in the path of the Exchange Map, and delete it.

Load Structure - BOM Part Structure Data Model

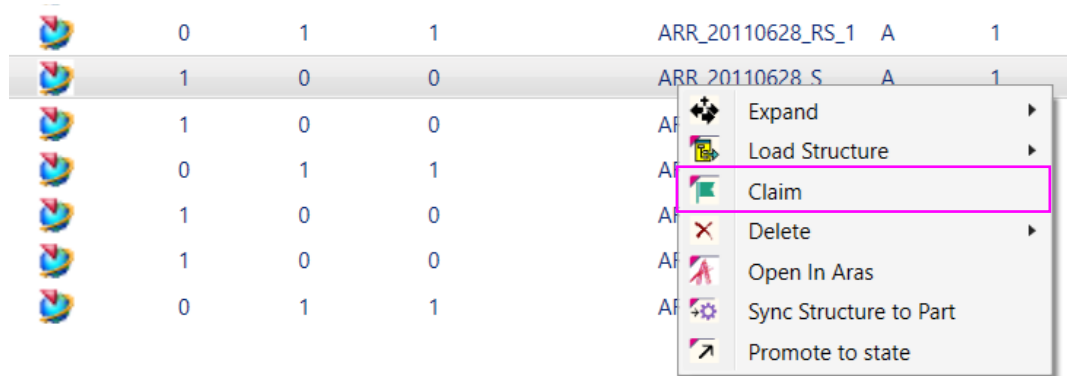
For loading the BOM Part structure, query the Part object in the “Query” dialog, select the object which should be downloaded and click right to open the context menu. Click the action “Load Structure”. In this mode, if there is any substructure it is always loaded as “Current”. *Picture 13: “Query” dialog – action “Load Structure Current”*



Picture 13: “Query” dialog – action “Load Structure Current”

Claim

You have to lock the PDM objects to change and update them so no other user can do changes to the same objects in the meantime. For locking, right click on the object you want to lock in the query window and click the action “Lock” in the context menu (see *Picture 14: "Query" dialog – action "Lock"*). The action “Lock” is only activated in the context menu when it is possible for the selected object. Otherwise, it will be deactivated.



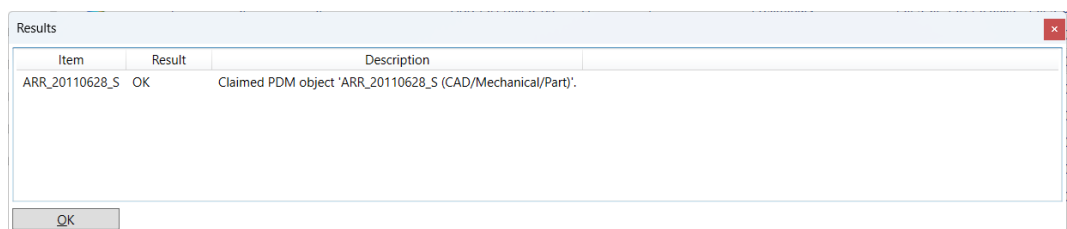
Picture 14: "Query" dialog – action “Lock”

In the Query window you can also see if the objects are locked and who has locked them (column “Locked by ID”), who has created them (column “Created by ID”), and who has modified them (column “Modified by ID”) (see *Picture 15: "Query" dialog – claim information*).

| Document Number | Major Rev. | Generation Name | State | Description | Created on | Modified on | Created by ID | Modified by ID | Locked by ID | Authoring |
|------------------|------------|-----------------|-------------|-------------|---------------------|---------------------|-----------------|-----------------|-----------------|-----------|
| ARR_20110628_AB | A | 1 | Preliminary | | 2014-07-17T08:03:08 | 2014-07-17T08:03:15 | Innovator Admin | Innovator Admin | | NX |
| ARR_20110628_FG | A | 1 | Preliminary | | 2014-07-17T08:04:01 | 2014-07-30T14:42:20 | Innovator Admin | Innovator Admin | Innovator Admin | NX |
| ARR_20110628_GP | A | 1 | Preliminary | | 2014-07-17T08:03:45 | 2014-07-17T08:03:51 | Innovator Admin | Innovator Admin | Innovator Admin | NX |
| ARR_20110628_RS | A | 1 | Preliminary | | 2014-07-17T08:03:28 | 2014-07-17T08:03:33 | Innovator Admin | Innovator Admin | Innovator Admin | NX |
| ARR_20110628_S | A | 1 | Preliminary | | 2014-07-17T08:02:24 | 2014-07-17T08:02:31 | Innovator Admin | Innovator Admin | Innovator Admin | NX |
| ARR_20110628_SS | A | 1 | Preliminary | | 2014-07-17T08:02:18 | 2015-01-19T14:07:25 | Innovator Admin | Innovator Admin | Innovator Admin | NX |
| ARR_20110628_TOP | A | 1 | Preliminary | | 2014-07-17T08:04:10 | 2014-07-17T08:04:23 | Innovator Admin | Innovator Admin | Innovator Admin | NX |

Picture 15: "Query" dialog – claim information

After locking objects, a message box (see *Picture 16: Result dialog for*) shows whether they have been locked successfully (Result = OK) or not (Result = Error). In case of Error an error description is shown in the window.

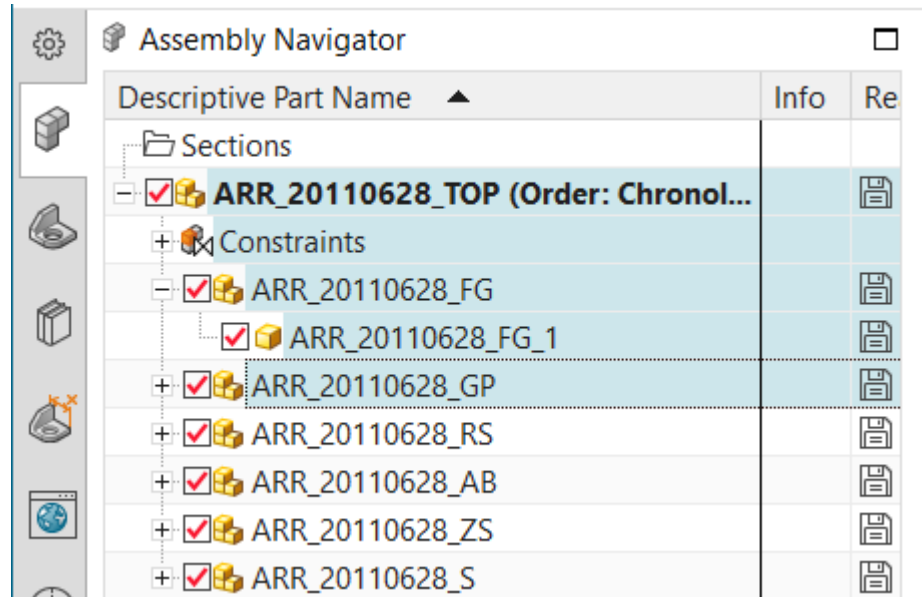


Picture 16: Result dialog for claiming

You can also reach the “Lock” functionality in the PDM Workbench NX menu by the

“Claim” button .

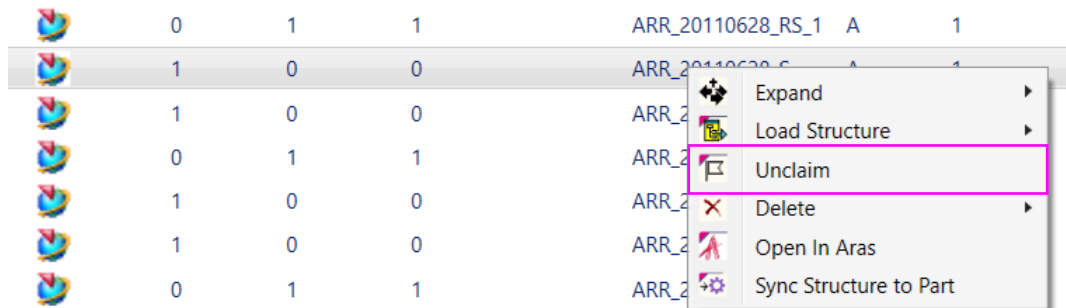
With this button all currently selected objects in the Assembly Navigator of NX are claimed if they are not locked by another user. After claiming the same result information is shown as for claiming in the query dialog (see *Picture 17: Assembly Navigator – selected items to “Claim” or “Unclaim”*).



Picture 17: Assembly Navigator – selected items to “Claim” or “Unclaim”

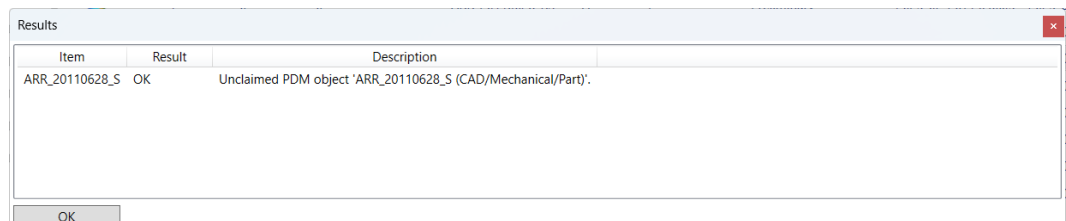
Unclaim

When an object is locked by you, it has to be unlocked in the PDM system in order to make it available for other users. The functionality to unlock an object is similar to the locking. For unlocking an object select it in the “Query” dialog and right click to open the context menu. Click the action “Unclaim”. The action “Unclaim” is only activated in the context menu when it is possible for the selected object. Otherwise, it will be deactivated (see *Picture 18: “Query” dialog – action “Unclaim”*).




Picture 18: “Query” dialog – action “Unclaim”

After unlocking objects, a message box (see *Picture 19: Result dialog for*) shows whether they have been unlocked successfully (Result = OK) or not (Result = Error).



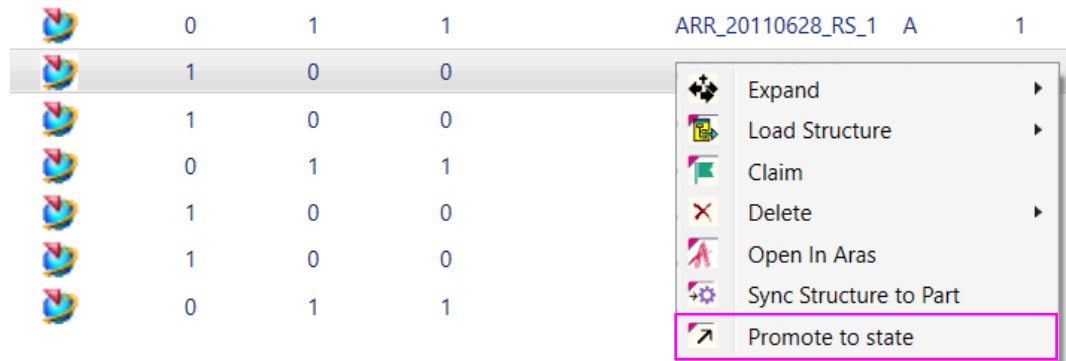
Picture 19: Result dialog for unclaiming

Alternatively, you can also unlock objects by the “Unclaim” button  in the PDM Workbench NX menu. Multi-selection is also supported there. With a click on the “Unclaim” button all selected objects in the Assembly Navigator are unlocked.

Promote

A PDM object can be promoted to the next life cycle state which is defined in the PDM system in the life cycle map, e.g. if the object has the status “Preliminary” it is promoted to the status “In Review” if this is the next status in the life cycle map.

To promote an object right click on the object in the “Query” dialog and click the action “Promote” in the context menu (see *Picture 20: “Query” dialog – action “Promote”*). If the object is unlocked you are able to promote it, otherwise you have to unlock it first.



Picture 20: “Query” dialog – action “Promote”

After promoting a result dialog shows if it was successful or not. If successful, the objects are promoted to the next life cycle state defined in the life cycle map in the PDM system. In this example from the life cycle state “Preliminary” to the state “In Review”.

In the PDM system several life cycle maps can be defined. For each life cycle map users can be added who have the rights for this life cycle. Correspondingly users can be added for each transition in a life cycle map.

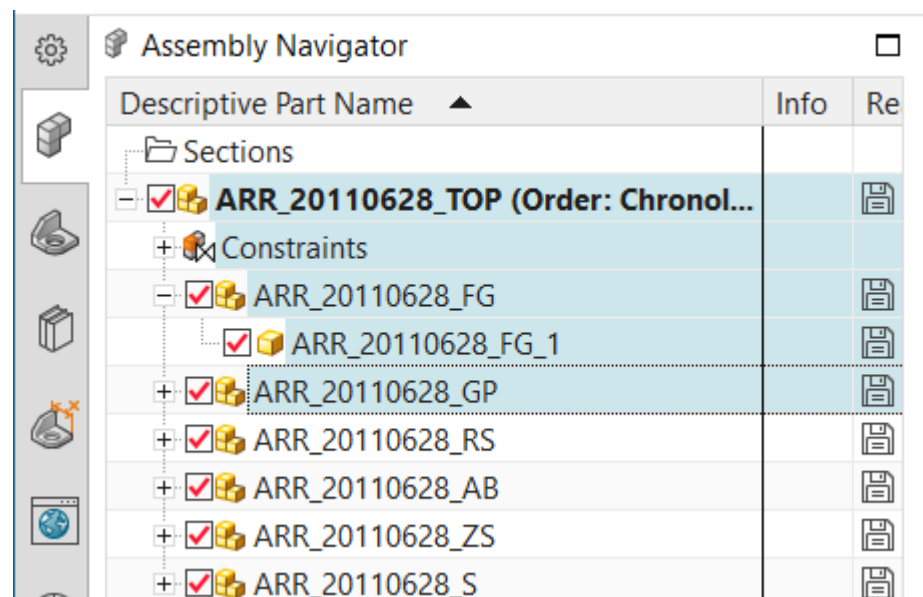
Note: If promote does not work even though you have unlocked the object, ask your administrator to check if the user you logged in to the PDM Workbench NX has the rights to promote.

Alternatively to the “Query” dialog you can promote objects with the “Promote” button



in the PDM Workbench NX menu. Objects have to be unlocked in order to be promoted.

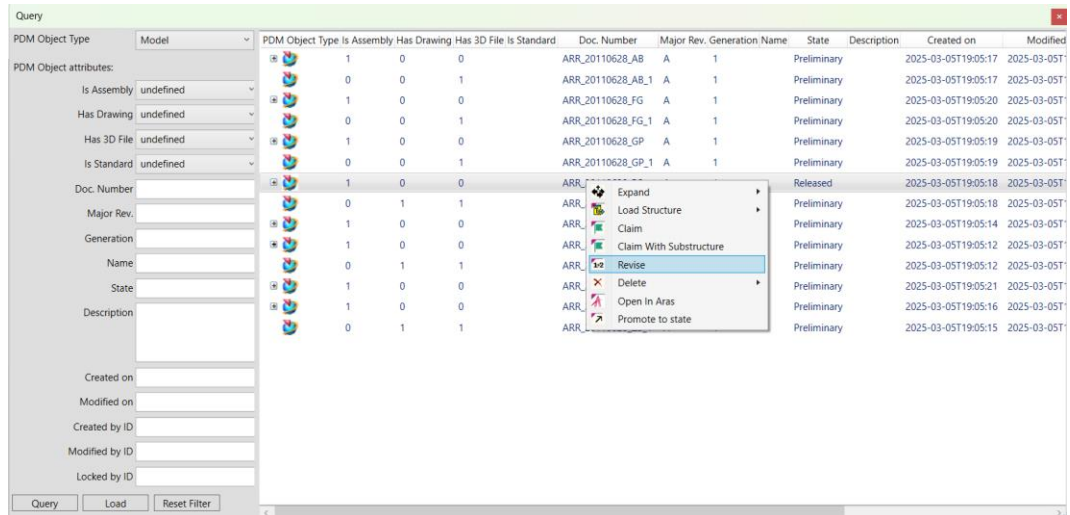
All selected objects in the Assembly Navigator of NX are then promoted if possible, similar to the unlocking/locking of an object.



Picture 21: Assembly Navigator – selected items to “Revise” and to “Promote”

Revise


The PDM objects can be revised. For using this functionality right click on the object you want to revise in the “Query” dialog (see *Picture 22: “Query” dialog – action “Revise”*). If the object is unlocked you are now able to revise the object with a click on the action “Revise”, otherwise you have to unlock it first.



Picture 22: “Query” dialog – action “Revise”

After Revising a message box is shown with the status OK (Result = OK) if the object was revised successfully or failed (Result = Error) if the object could not be revised.

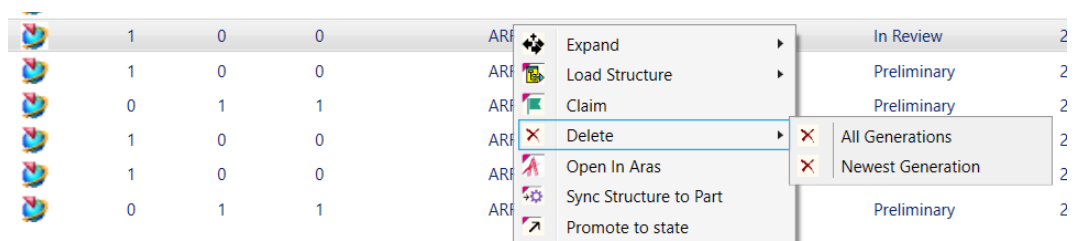
Note: The user you have logged in to the PDM Workbench NX must have the rights to revise. If the “Revise” function does not work even though your object was unlocked, ask your administrator to check if you have the rights to revise.

Alternatively, you can revise objects with the “Revise” button  in the PDM Workbench NX toolbar or the menu. All selected objects in the Assembly Navigator of NX are then revised if possible, similar to the promoting of an object.

The revise is done on the Aras Innovator, but the new version is not loaded locally. To change the version of an object in NX, use the “Update Structure Relation” functionality.

Delete

Existing PDM objects can be deleted from the PDM Workbench NX and from the PDM system. To delete objects from the PDM system, query for the objects in the “Query” dialog and select the objects to delete. Then do a right click on the objects and select the action “Delete” from the context menu which opens a sub menu (see *Picture 23: “Query” dialog – action “Delete”*):



Picture 23: “Query” dialog – action “Delete”

For deleting an object you have two options:

1) Delete all versions

With this option you delete the object completely from the PDM system. This object will also be removed from the “Query” dialog without a refresh.

2) Delete newest version

With this option you delete the newest version of the file if there is more than one version, e.g. if you do not need this version anymore because you want to design the geometry a different way. Note that if there is only one version of the file, it will be removed completely from the PDM system. You see the version number of the file in the “Query” dialog under the column “Generation” (see *Picture 24: “Query” dialog – generation*).

| Document Number | Major Rev | Generation | Name | State | Description | Created on | Modified on | Created by ID | Modified by ID | Locked by ID | Authoring Tool |
|------------------|-----------|------------|------|-------------|-------------|---------------------|---------------------|-----------------|-----------------|-----------------|----------------|
| ARR_20110628_AB | A | 1 | | Preliminary | | 2014-07-17T08:03:08 | 2014-07-17T08:03:15 | Innovator Admin | Innovator Admin | | NX |
| ARR_20110628_FG | A | 1 | | Preliminary | | 2014-07-17T08:04:01 | 2014-07-30T14:42:20 | Innovator Admin | Innovator Admin | Innovator Admin | NX |
| ARR_20110628_GP | A | 1 | | Preliminary | | 2014-07-17T08:03:45 | 2014-07-17T08:03:51 | Innovator Admin | Innovator Admin | Innovator Admin | NX |
| ARR_20110628_RS | A | 1 | | Preliminary | | 2014-07-17T08:03:28 | 2014-07-17T08:03:33 | Innovator Admin | Innovator Admin | Innovator Admin | NX |
| ARR_20110628_S | A | 1 | | Preliminary | | 2014-07-17T08:02:24 | 2015-01-19T14:54:49 | Innovator Admin | Innovator Admin | | NX |
| ARR_20110628_SS | A | 1 | | Preliminary | | 2014-07-17T08:02:18 | 2015-01-19T14:08:13 | Innovator Admin | Innovator Admin | Innovator Admin | NX |
| ARR_20110628_TOP | A | 1 | | Preliminary | | 2014-07-17T08:04:10 | 2014-07-17T08:04:23 | Innovator Admin | Innovator Admin | Innovator Admin | NX |
| ARR_20110628_ZS | A | 1 | | Preliminary | | 2014-07-17T08:02:45 | 2014-07-17T08:02:50 | Innovator Admin | Innovator Admin | Innovator Admin | NX |

Picture 24: “Query” dialog – generation

Sync Structure to Part

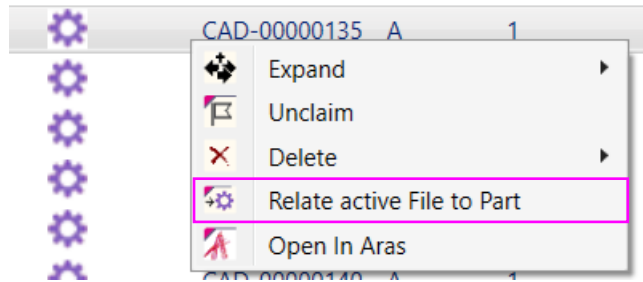
If the CAD Rev mode in Aras is used, the CAD Document in Aras contains the Structure. It is possible to Synchronize the current structure to the BOM Structure. Prerequisite it that in the CAD Mode, parts are created. It is possible to turn on this feature in the Schema file via the attribute “createparts” = true.

| PDM Object Type | Model | PDM Object Type Is Assembly | Has Drawing | Has 3D File | Is Standard | Doc. Number | Major Rev. | Generation | Name | State | Description | Created on | Modified on | Created by ID | Modified by ID |
|------------------------|-----------|-----------------------------|-------------|-------------|-------------|-------------------|------------|------------|------|-------------|-------------|---------------------|---------------------|-----------------|----------------|
| PDM Object attributes: | | | | | | | | | | | | | | | |
| Is Assembly | undefined | 0 | 0 | 0 | 0 | ARR_20110628_AB_1 | A | 1 | | Preliminary | | 2025-02-26T14:40:03 | 2025-02-26T14:40:20 | Innovator Admin | Innovato |
| Has Drawing | undefined | 1 | 0 | 0 | 1 | ARR_20110628_FG_1 | A | 1 | | Preliminary | | 2025-02-26T14:40:10 | 2025-02-26T14:40:20 | Innovator Admin | Innovato |
| Has 3D File | undefined | 0 | 0 | 0 | 1 | ARR_20110628_RS_1 | A | 1 | | Preliminary | | 2025-02-26T14:40:09 | 2025-02-26T14:40:20 | Innovator Admin | Innovato |
| Is Standard | undefined | 0 | 0 | 0 | 1 | ARR_20110628_GP_1 | A | 1 | | Preliminary | | 2025-02-26T14:40:07 | 2025-02-26T14:40:20 | Innovator Admin | Innovato |
| Doc. Number | ARR* | 1 | 0 | 0 | 0 | ARR_20110628_RS | A | 1 | | Preliminary | | 2025-02-26T14:40:05 | 2025-02-26T14:40:20 | Innovator Admin | Innovato |
| Major Rev. | | 0 | 1 | 1 | 1 | ARR_20110628_RS_1 | A | 1 | | Preliminary | | 2025-02-26T14:40:05 | 2025-02-26T14:40:20 | Innovator Admin | Innovato |
| Generation | | 1 | 0 | 0 | 0 | | | | | In Review | | 2025-02-26T14:39:59 | 2025-02-27T15:22:41 | Innovator Admin | Innovato |
| Name | | 1 | 0 | 0 | 0 | | | | | Preliminary | | 2025-02-26T14:39:57 | 2025-02-26T14:40:20 | Innovator Admin | Innovato |
| State | | 0 | 1 | 1 | 1 | | | | | Preliminary | | 2025-02-26T14:39:55 | 2025-02-26T14:40:20 | Innovator Admin | Innovato |
| Description | | 1 | 0 | 0 | 0 | | | | | Preliminary | | 2025-02-26T14:40:11 | 2025-02-26T14:40:20 | Innovator Admin | Innovato |
| Created on | | 1 | 0 | 0 | 0 | | | | | Preliminary | | 2025-02-26T14:40:01 | 2025-02-26T14:40:20 | Innovator Admin | Innovato |
| Modified on | | 0 | 1 | 1 | 1 | | | | | Preliminary | | 2025-02-26T14:40:01 | 2025-02-26T14:40:21 | Innovator Admin | Innovato |

Picture 25: “Sync Structure to Part” dialog


RelateActiveFileToPart

Existing PDM Part objects can be associated with the active CAD Document. To associate Part items from the PDM system, query for the items in the “Query” dialog and select the objects to associate with the active CAD Document. Then do a right click on the Part item and select the action “RelateActiveFileToPart” from the context menu (see *Picture 26: “Query” dialog – action “RelateActiveFileToPart”*):

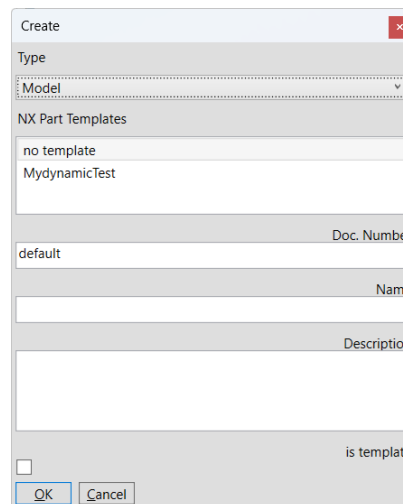


Picture 26: "Query" dialog – action "RelateActiveFileToPart"

Create File

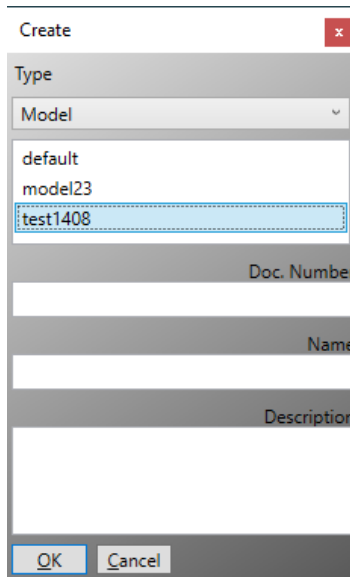
You can create a new file in the PDM system and open it in the CAD System NX for editing. Click in the PDM Workbench NX menu the "Create File" button .

A "Create" dialog (see *Picture 27: "Create" dialog*) opens where the information for the file can be selected such as the type (Model/Part) or the Document Number, which is the name of the assembly or the part.



Picture 27: "Create" dialog

With the option "no template" a new empty Model/Part is created. It is also possible to create a new Model/Part with a Template. You have to select the Template Item instead of "no template" (see *Picture 28: "Create" dialog with Templates*).



Picture 28: "Create" dialog with Templates

Templates are only visible in the PDM Workbench NX "Create" dialog if the items are marked as Templates in Aras Innovator:



Picture 29: Templates in Aras Innovator

After creating the file on the PDM system, it is immediately opened in NX.


Alternatively, it is also possible to create a file in NX using the native user interface and update it to the PDM system later. If the object does not already exist in the PDM system, the file is created during the update progress.

Update

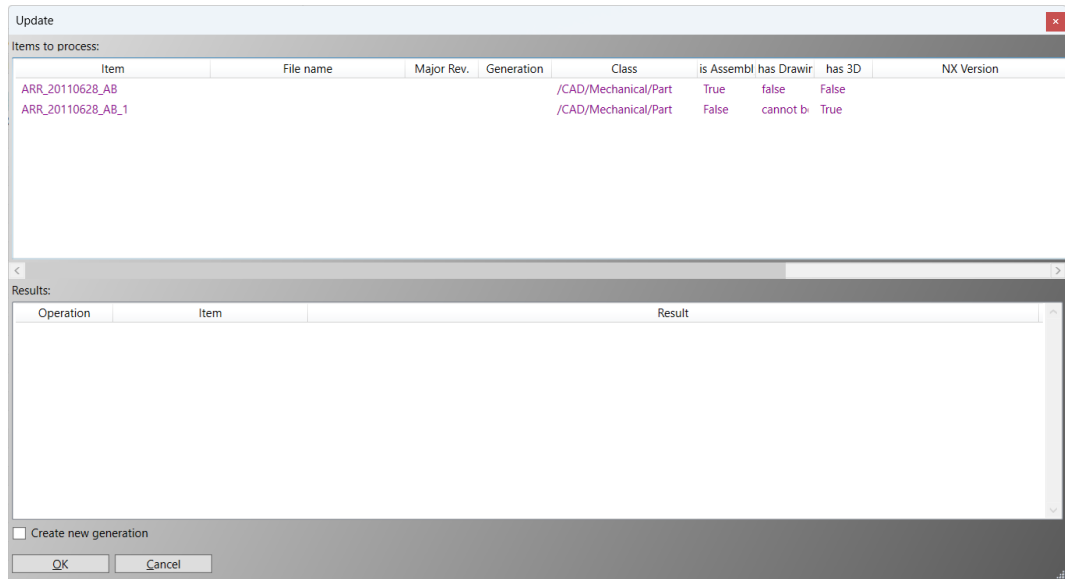
The "Update" functionality can be used to create, to complete, or to update the product structure in the PDM system based on the geometry in the NX window.

Important: It is not supported to upload broken, incomplete or only partially loaded structures in NX to the PDM system. If you do not want to update the complete structure, you can make the root object, you want to update, as display part in NX and update. Then only this substructure which is display part is updated. Nevertheless, this structure must be complete.

The PDM Workbench NX always updates the object that is the current work part in NX and its related objects. E.g. if the assembly CAD_000000_01 is the current work part then this object and all its related objects like subassemblies and parts are updated to the PDM system, but no other objects that are open.

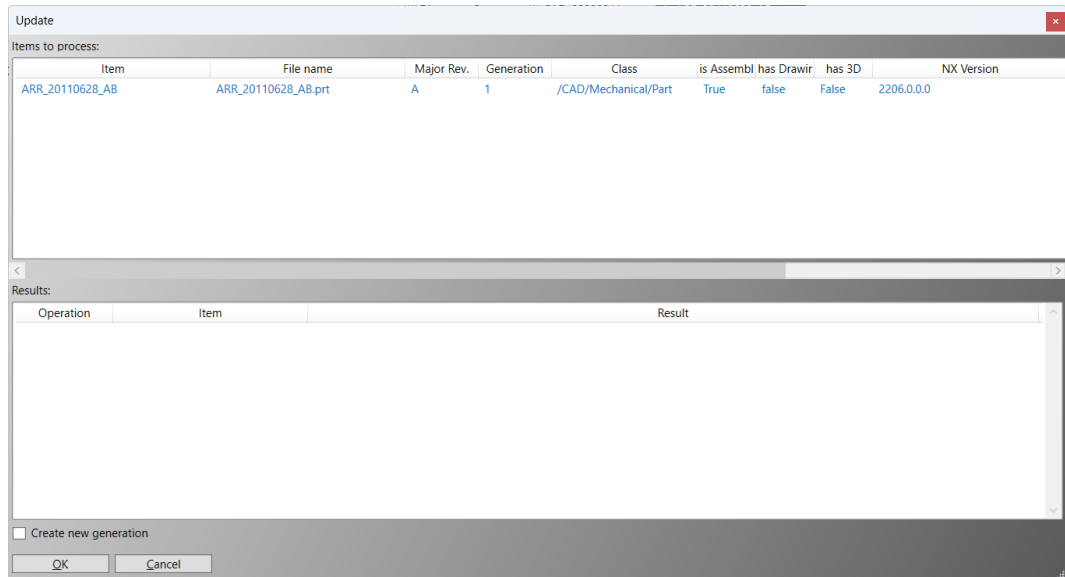
You can start the "Update" process by clicking on the "Update" button .

A dialog opens with the objects shown that will be updated (see *Picture 30: "Update" dialog – action "Create"*), and some general information about them like the generation or the class. It also shows the operation which is done. In this example the document will be created because it does not yet exist in the PDM system.



Picture 30: "Update" dialog – action "Create"

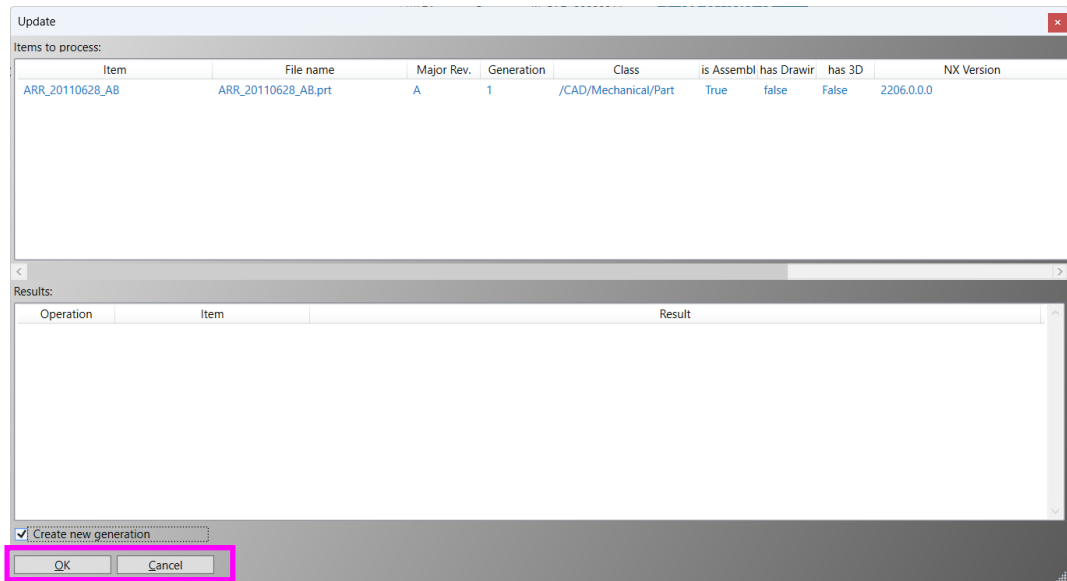
If objects have been loaded from the PDM system and they have been modified, the changes are updated. In this case the operation of these objects is "Update" (marked with the color blue). If no changes have been done to them they are not shown in the Update pre dialog (see *Picture 31: "Update" dialog – update and skip operations*).



Picture 31: "Update" dialog – update and skip operations

If changes are updated to the PDM system, a new generation of the file can be created in the PDM system if the checkbox "Create new generation" is checked. The generation of an object is shown in the "Update" window at the column "Generation" (see *Picture 32: "Update" dialog – "Create new generation"*). If an object is created the first time in the PDM system the generation 1 is created without the need of selecting the checkbox.

If configured, the creation of a new generation is performed only once per claim. In this case the new generation is created during the first update after the "Claim" action.



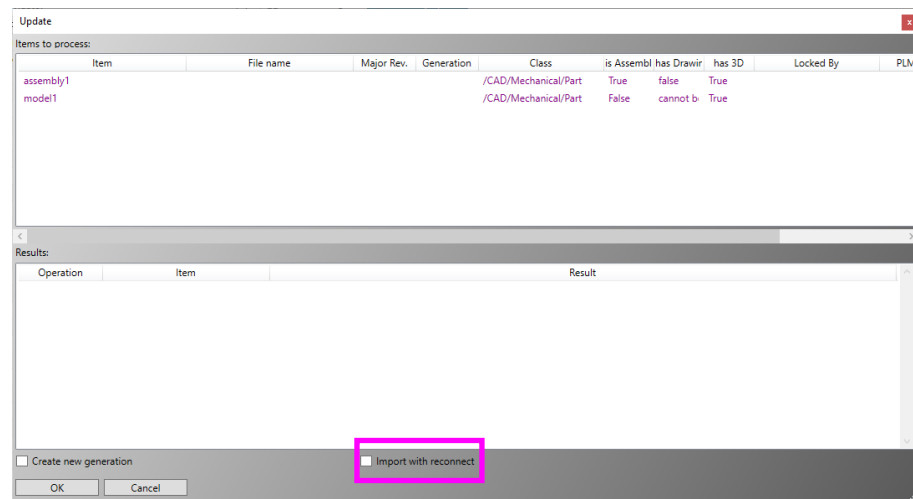
Picture 32: "Update" dialog – "Create new generation"

If configured, the option "import with reconnect" is available. (see *Picture 33: "Update" dialog – "Import with reconnect"*)

NX parts might be reconnected during update to existing items on server then.

It is possible to reconnect NX parts inside a structure loaded from disc to already existing CAD Documents in Aras Innovator even if the NX files in Aras Innovator were renamed (rule based) during the first import. When a NX part is reconnected, the external file is not saved to Aras Innovator.

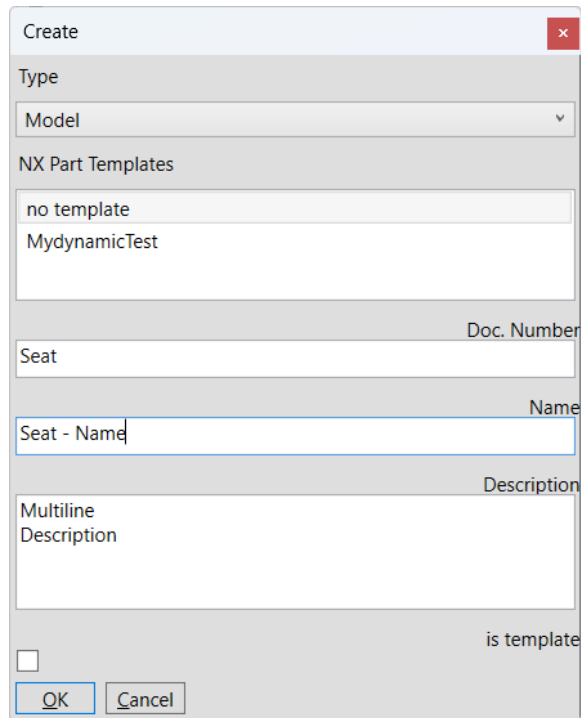
After reconnection of NX parts to items on server, the NX data needs to be reloaded from server.



Picture 33: "Update" dialog – "Import with reconnect"

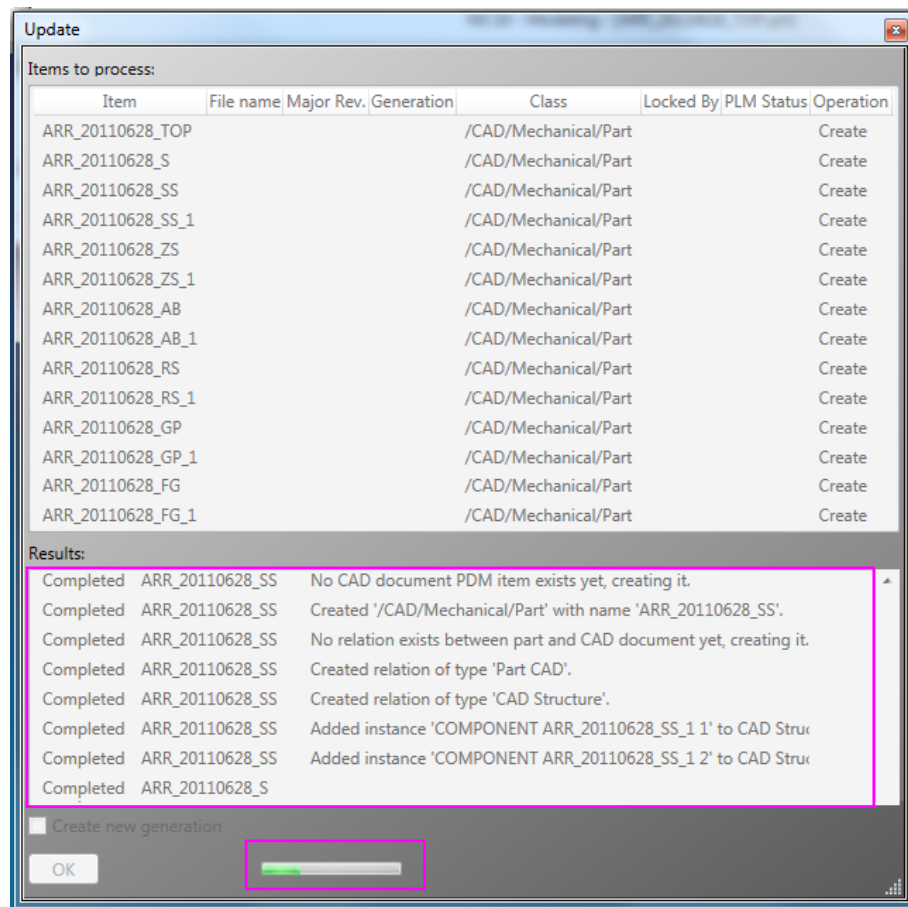
During update the window shows the actions which have been done in the result field at the bottom (like creating the object or new relationships). A progress bar indicates the status of the update (see *Picture 35: "Update" dialog – result and progress*).

Depending on the configuration a "Create" dialog can be shown to the user where it is possible to enter values of PDM attributes, like Document Number or description:



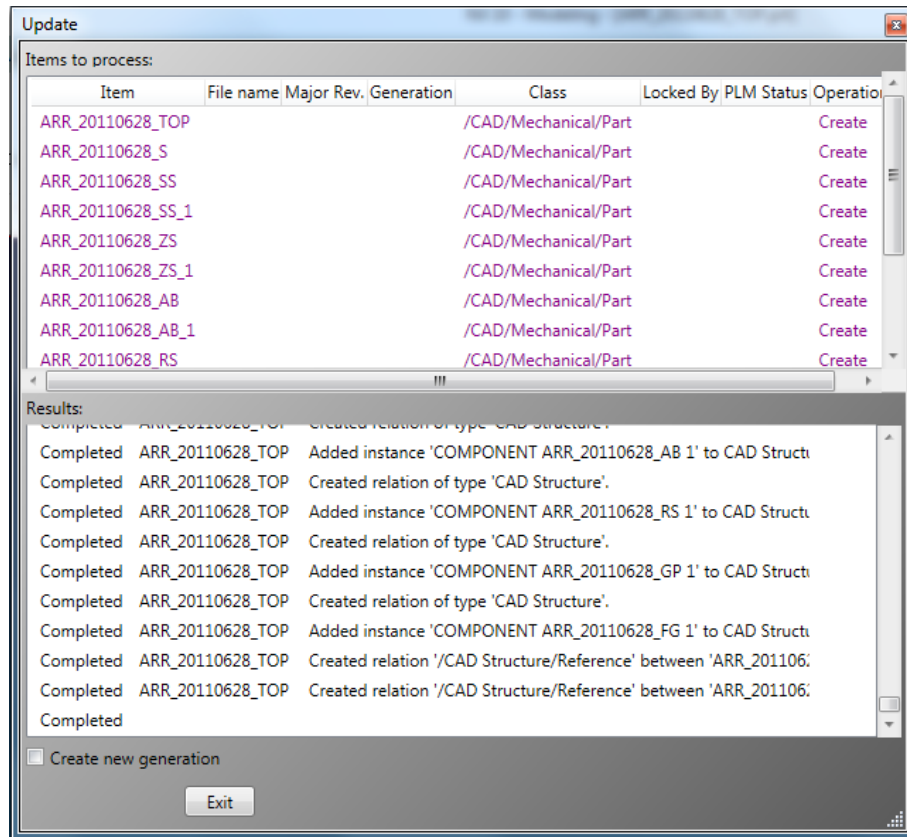
Picture 34: "Create" dialog of a new model file

The values in the dialog will be written into the attributes of the newly created CAD Document in PDM.



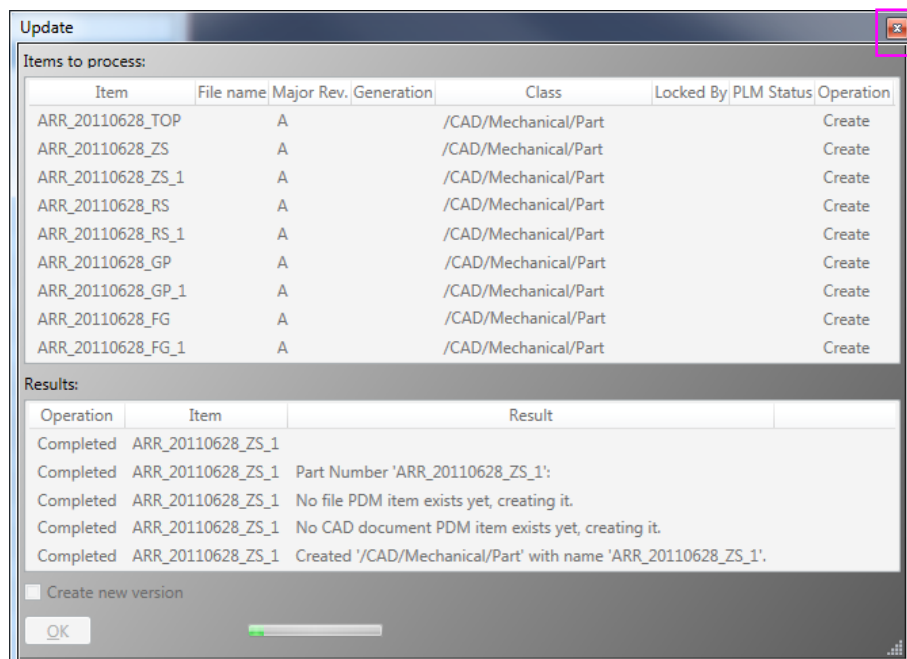
Picture 35: "Update" dialog – result and progress

When the update has finished the progress bar disappears and an “Exit” button appears (see *Picture 36: "Update" dialog – finished*). Click the “Exit” button to close the “Update” dialog.




Picture 36: "Update" dialog – finished

If the update has started and you decide you do not want to follow through with the update you can cancel. Click the “Close” button in the title bar of the “Update” dialog to cancel the update (see *Picture 37: "Update" dialog – cancel*). Note that already updated or created objects remain in the PDM system. If necessary go to the “Query” dialog and delete unwanted objects.




Picture 37: "Update" dialog – cancel

Claim

This functionality is accessible through the "Claim" button  in the PDM Workbench NX menu. All selected objects in the Assembly Navigator of NX are claimed.


Alternatively, you can claim an object through the "Query" dialog or the part context menu from the Assembly Navigator. For more information on claiming an object and the differences of the "Claim" functionality in the PDM Workbench NX menu and in the "Query" dialog see section *Query*.

Unclaim

This functionality is accessible through the "Unclaim" button  in the PDM Workbench NX menu. All selected objects in the Assembly Navigator of NX are unclaimed.


Alternatively, you can unclaim an object in the "Query" dialog or the part context menu from the Assembly Navigator. For more information on unclaiming an object and the differences of the "Unlock" functionality in the PDM Workbench NX menu and in the "Query" dialog see section *Query*.

Promote

This functionality is accessible through the "Promote" button  in the PDM Workbench NX menu. All selected objects in the Assembly Navigator of NX are promoted.

Alternatively, you can promote an object in the "Query" dialog or the part context menu from the Assembly Navigator. For further information about the promoting and the differences of the "Promote" functionality in the PDM Workbench NX menu and in the "Query" dialog see section *Query*.

Revise

This functionality is accessible through the "Revise" button  in the PDM Workbench NX menu. All selected objects in the Assembly Navigator of NX are revised.

Alternatively, you can revise an object in the "Query" dialog or the part context menu from the Assembly Navigator. For further information and the differences of the "Revise" functionality in the PDM Workbench NX menu and in the "Query" dialog see section *Query*.

Logout

Once you finished your work in the PDM Workbench NX you can do a “Logout” from the

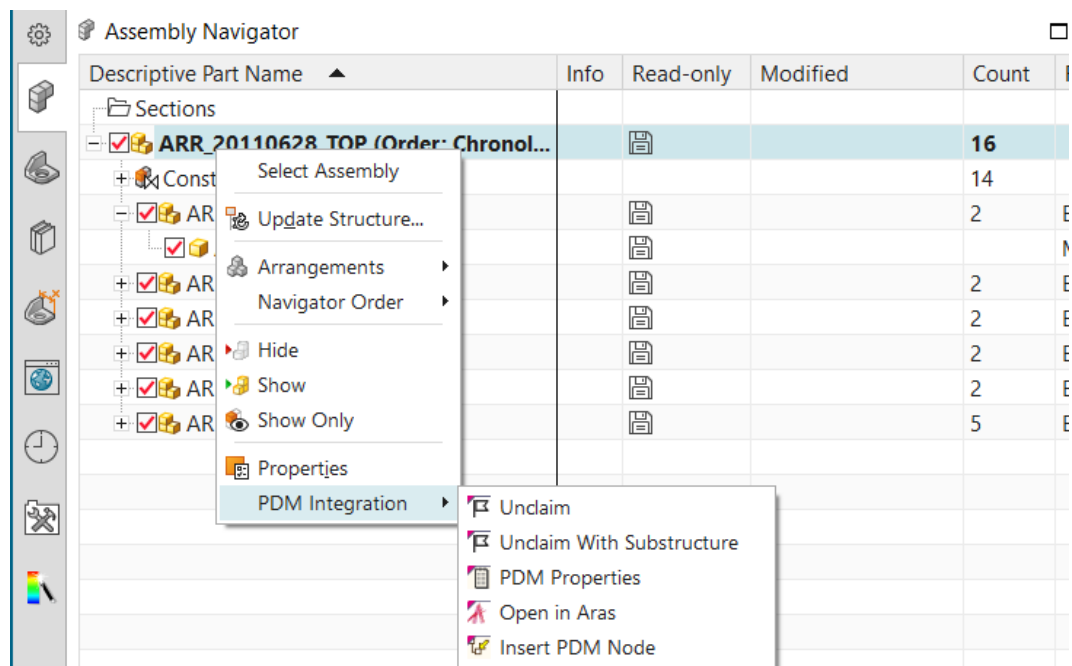
PDM system. You select the “Logout” button  within the PDM Workbench NX menu and the session in the PDM system will be closed.

All PDM Workbench NX windows get closed. Please note that NX native windows resulting from a “Load” or “Open File” PDM Workbench NX context action remain opened but are no longer connected to the PDM system. So, we recommend you to close them.

Contextual Functions

From NX 9.0 on, in addition to the PDM Workbench NX menu the Assembly Navigator provides contextual functions for the NX part documents (see *Picture 38: Assembly Navigator – contextual menu for assembly document*).

The displayed context menu depends on the document type and the document state.



Picture 38: Assembly Navigator – contextual menu for assembly document

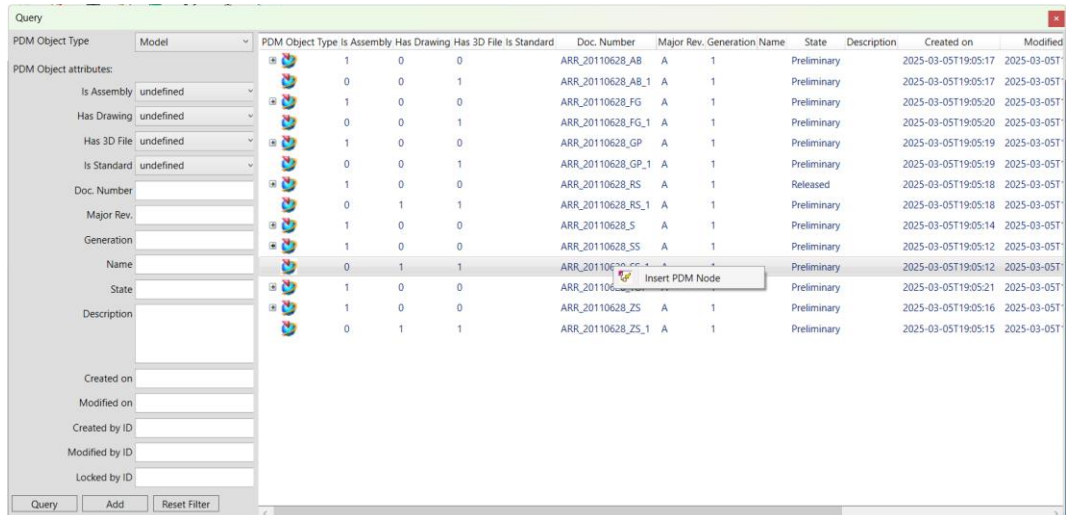
Insert PDM Node

The context function “Insert PDM Node” adds parts from the PDM system as component to the selected assembly.

Once you have selected “Insert PDM Node”, the “Query” dialog for the PDM object selection starts.

The “Query” dialog is described in detail in section *Query*.

Right click the desired PDM object in the query results and click “Insert PDM Node” in the context menu to add the selected object to the assembly (see *Picture 39: “Query” dialog for add component purpose*).



Picture 39: “Query” dialog for add component purpose

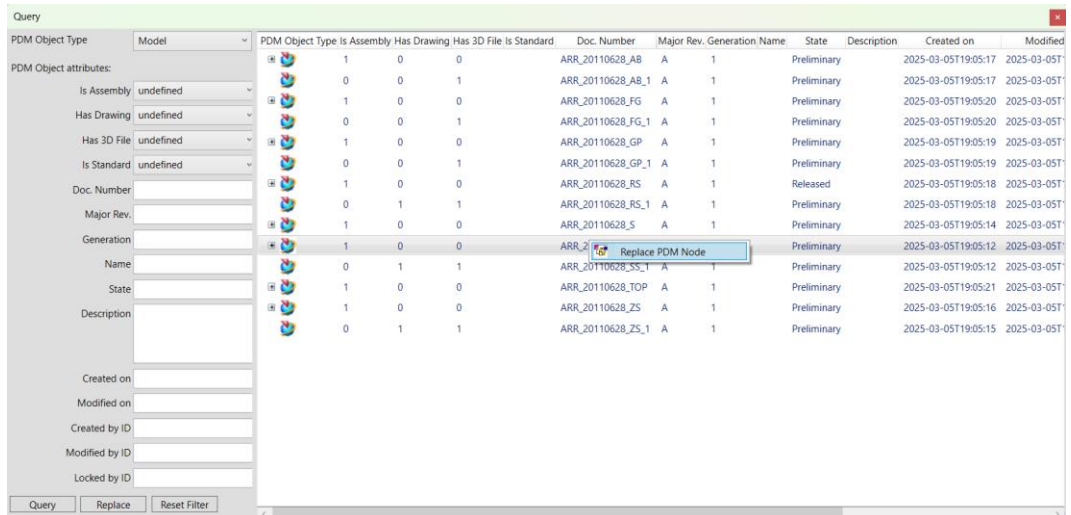
Replace PDM Node

This functionality replaces one selected component with another object from PDM.

Once you have selected “Replace PDM Node”, the “Query” dialog for the PDM object selection starts.

The “Query” dialog is described in detail in section *Query*.

Right click the desired PDM object in the query results and click “Replace” in the context menu to replace the selected object in the assembly (see *Picture 40: “Query” dialog for replace purpose*).

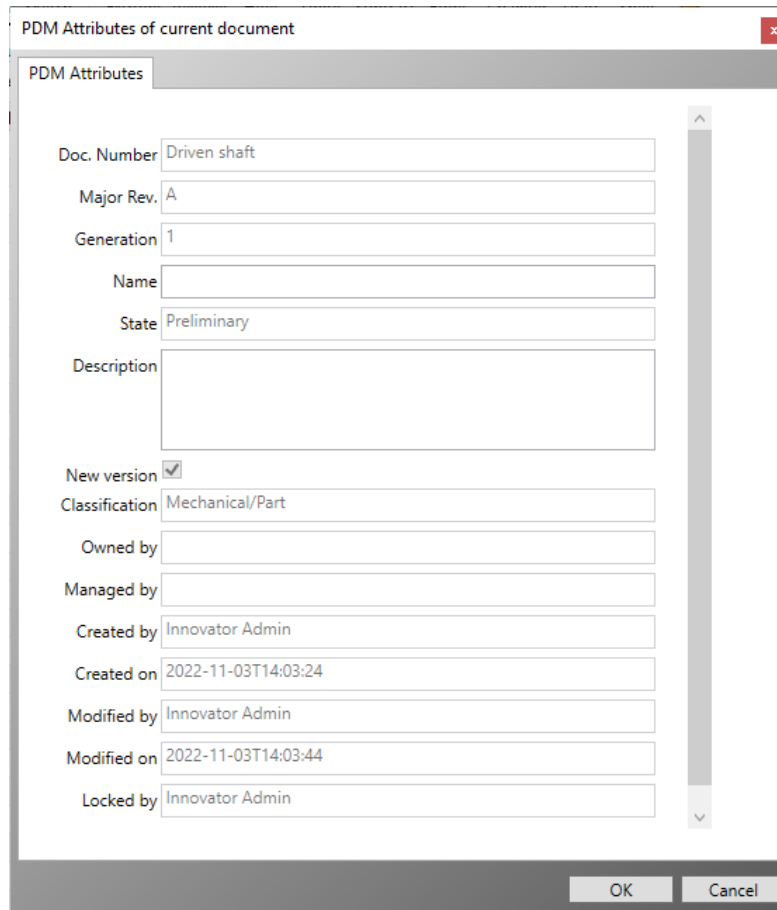


Picture 40: “Query” dialog for replace purpose

PDM Attributes

The context function “PDM attributes” shows the PDM attributes of the selected objects.

Once you have selected “PDM attributes”, the PDM attributes for the selected document are shown.

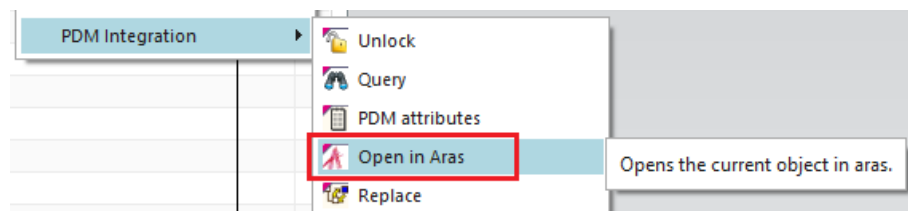


Picture 41: “PDM attributes” dialog

Open in Aras in the NX Client

Single CAD items can be loaded in the Aras Innovator web client from NX.

The existing Aras Innovator web client session of the default browser will be used to open the object. If there is no session running, the action will open the “Login” dialog first.



Picture 42: “Open in Aras” context action

Aras Innovator Web Client Functions

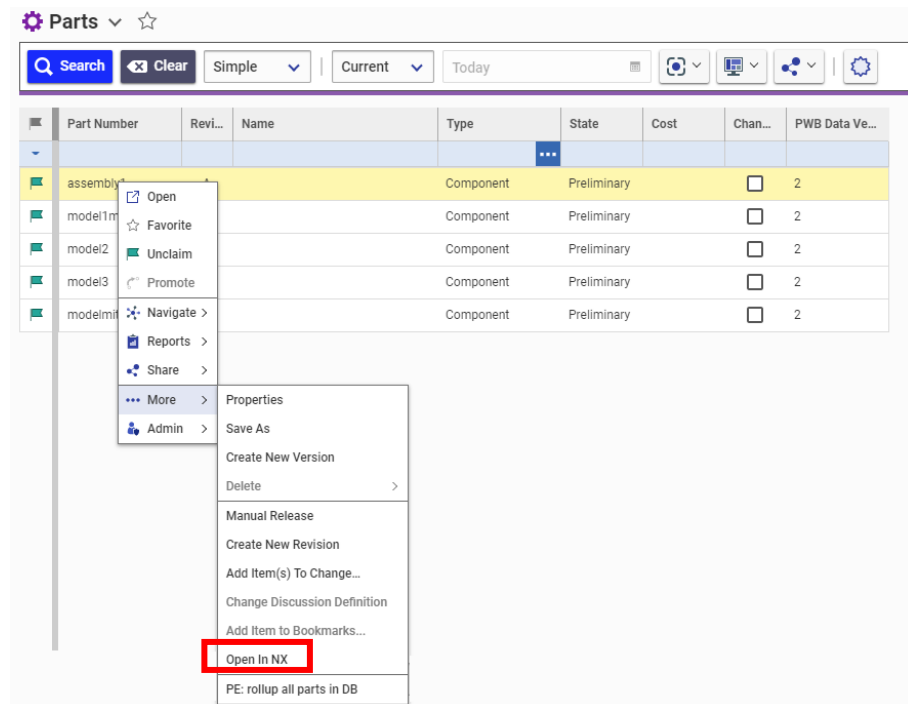
The PDM Workbench NX also provides additional Aras Innovator Web Client functions.

Open in NX

To be able to open a NX document from the web client, a running NX session is necessary and one needs to be logged in to the PDM Workbench NX.

The “Open in NX” functionality is accessible then through the context menu of an item within the Aras Innovator Web Client.

Depending on the data model (CAD Document Structure Data Model or BOM Part Structure Data Model) the function is called through the context menu of the CAD Document or the Part item.

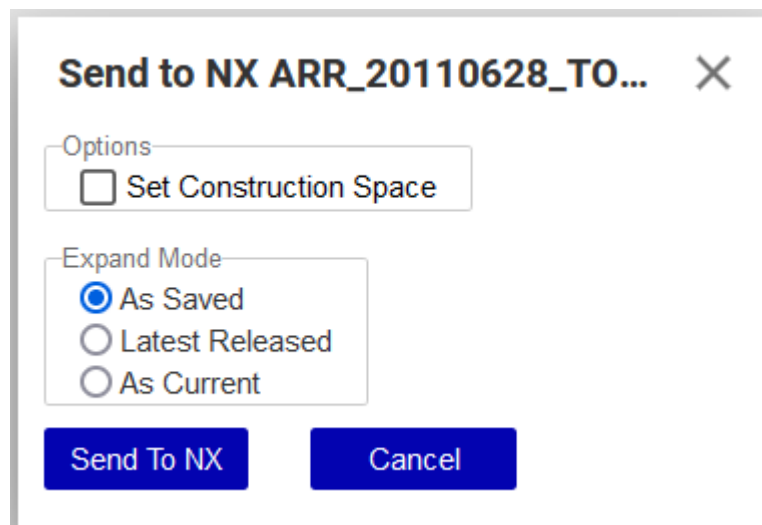


Picture 43: “Open in NX” Aras Innovator Web Client function

Once the “Open in NX” function is selected, the “Open in NX” dialog is shown.

Optionally a construction space might be defined. Then the assembly structure, that will be send to NX, is filtered with respect to the construction space. Only those components are taken into account for which the bounding box overlaps the construction space.

Moreover the load option might be selected, and the document will be send to NX after pushing the “Send To NX” button.

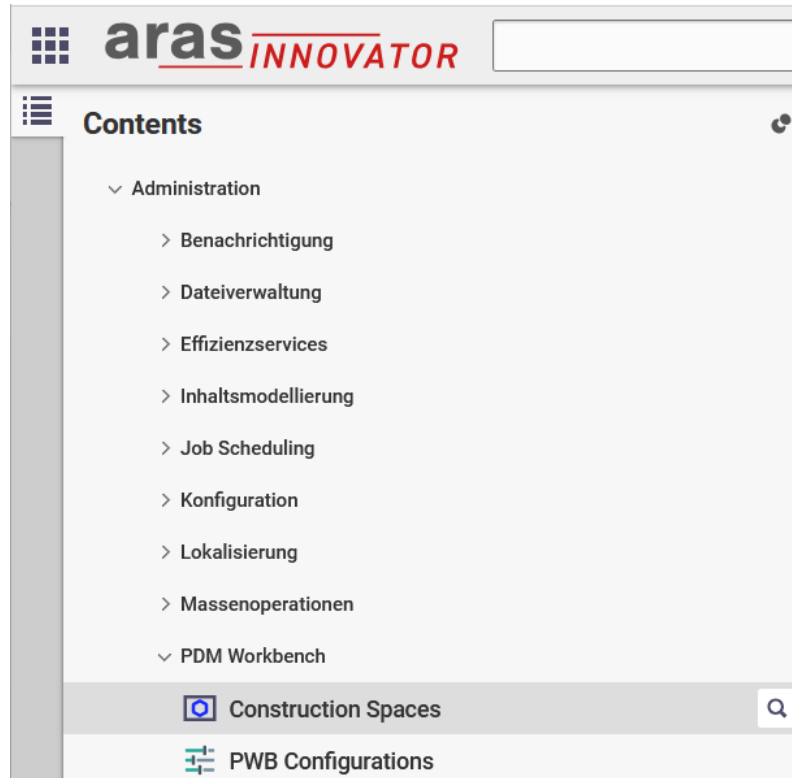


Picture 44: “Open in NX” dialog

Construction Space Definition

Construction spaces are used to filter assembly structures in context of the “Open In NX” method.

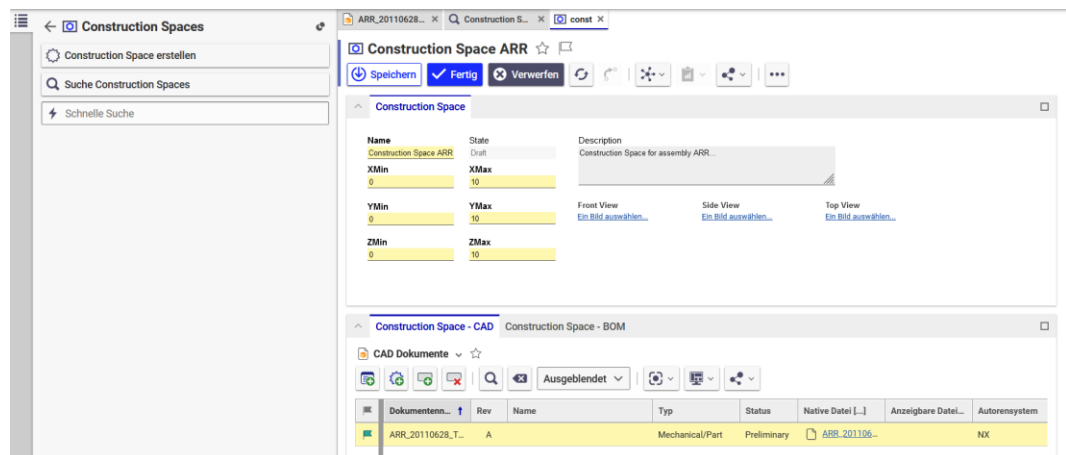
The construction spaces may be created and edited for an assembly within the aras innovator client through the “Construction Spaces” menu.



Picture 45: Menu entry “Construction Spaces”

For each construction space minimal and maximal x, y and z coordinate values are specified, defining the relevant space.

Construction spaces are related to CAD documents or Part items, for which the space should be used.



Picture 46: Defining a “Construction Space”

CHAPTER 4

More detailed Information

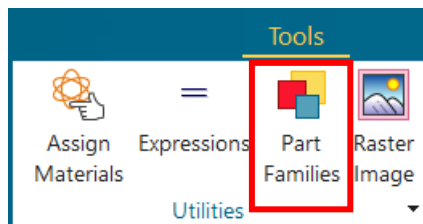
This chapter gives more detailed information about how to work with the PDM Workbench NX.

Special Use Cases are described.

Family Parts

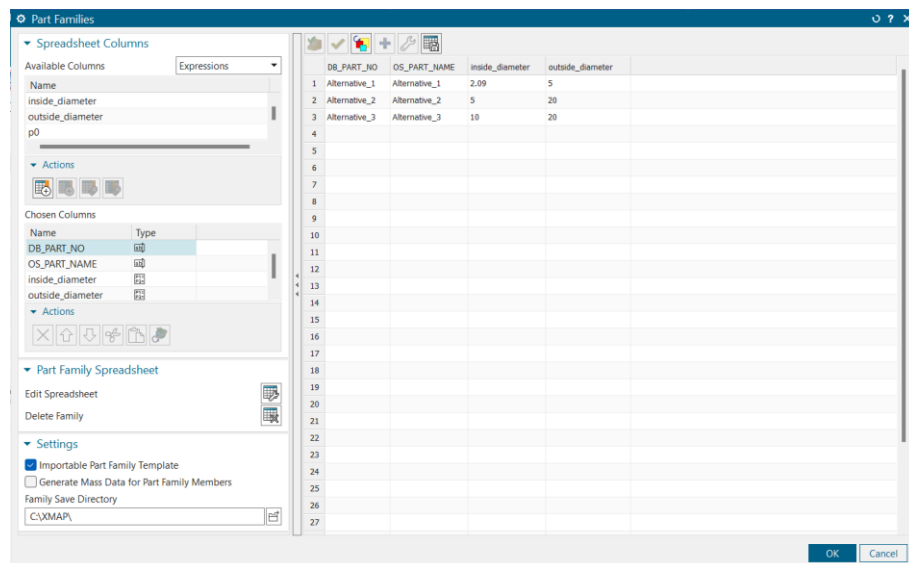
NX Part Families templates are used to store and manage alternatives of a parametrized model given in an NX part.

To create a Part Family for an NX part, the “Part Families” command is selected from the “Tools” menu.



Picture 47: “Tools” menu with “Part Families” button

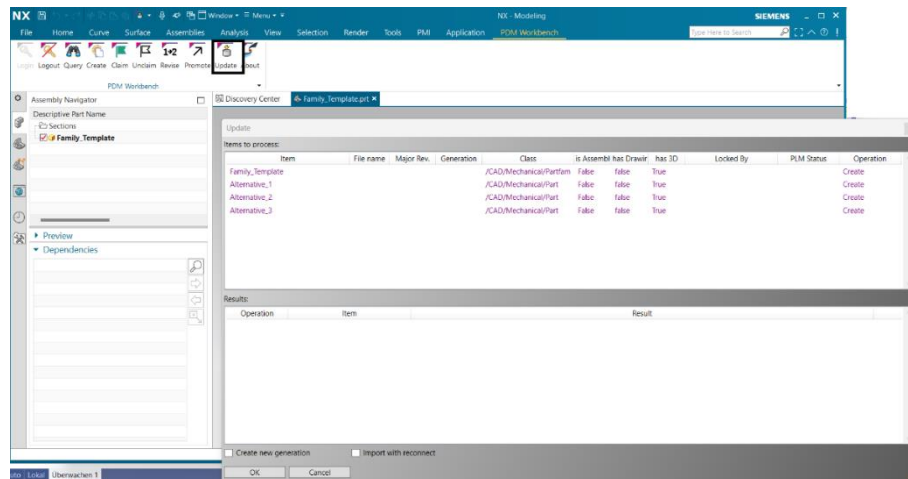
With help of the “Part Families” dialog, different alternatives might be defined. For each alternative the parameter values of the driving attributes are determined.



Picture 48: “Part Families” definition dialog

Whenever a Part Family template is transferred to PDM, all related alternatives are created in PDM, too.

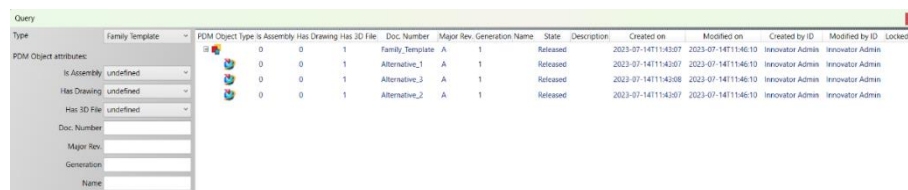
A Part Family template is stored in PDM using the common update mechanism.



Picture 49: “Update” dialog – Part Family templates

The Part Family template is represented in PDM as /CAD/Mechanical/Partfamily item then. And the Part Family alternatives are represented as /CAD/Mechanical/Part items.

To query the Part Family the “Family Template” type is set as query criteria. With help of the “Expand Family Members” context function the associated family members might be shown in the following.



Picture 50: “Query” dialog - Family templates

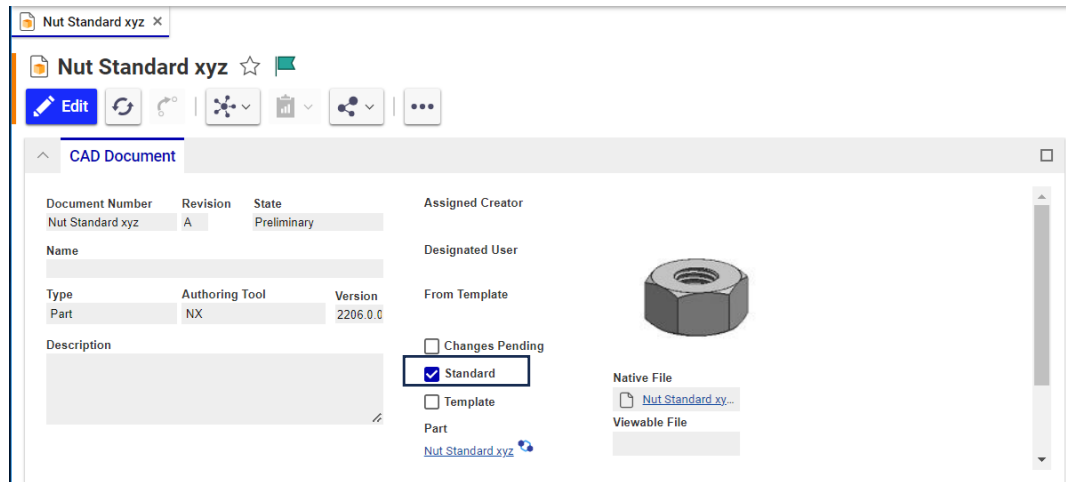
All operations (lock, unlock, promote or revise) concerning the part family alternatives need to be performed over the family template.

Apart from this Part Family members are loaded in NX or added to a NX assembly structure as any other CAD Document item.

Standard Parts

Parts, which are used in many different contexts might be defined by the standard part administrator as standard parts.

For the standard parts the *is_standard* attribut of the CAD Document item is set to true and the corresponding Part item has the classification */Part/Standard*.

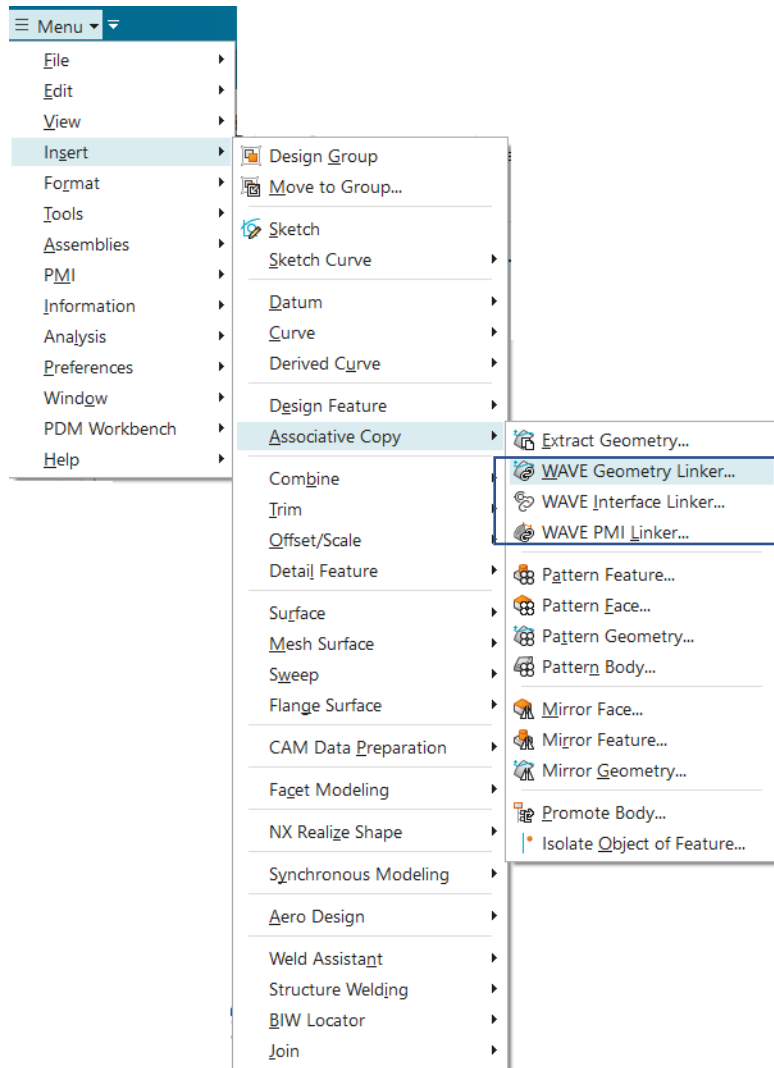


Picture 51: “Standard” attribute of the CAD Document item

Standard parts are recognized in NX through the NX attribut *IsStandardPart = 1*.
 For those parts a reconnect to a given standard part in PDM is always tried during update.

Associative Relations between Components

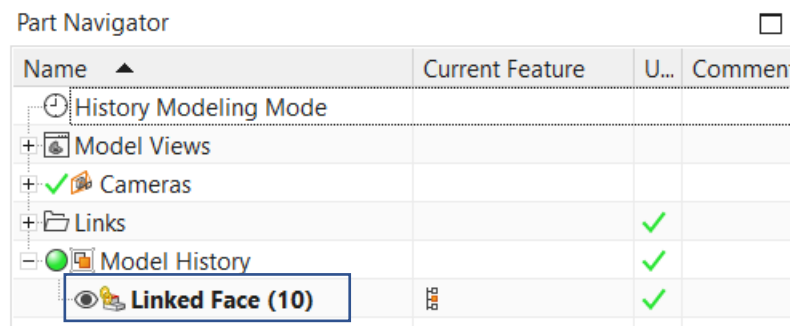
NX supports the associative construction between components within the assembly context. Associative links between components are created for example using the WAVE linkers. Wave linkers are available for geometry, interface or PMI features.



Picture 52: Menu Associative Copy – WAVE Linker

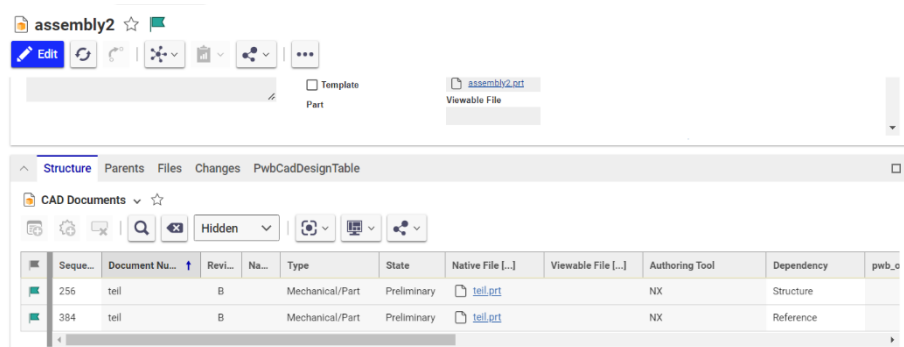
Links can be defined between an assembly and its child component or between different components in an assembly context.

The associative (WAVE) linked feature is added as “Linked” feature to the structure tree of the Part Navigator.



Picture 53: Part Navigator – structure tree with linked feature

The relation between CAD Document items, for which associative (WAVE) links are existing, is written by the PDM Workbench NX to Aras Innovator as CAD Structure / Reference relation.



Picture 54: CAD Document item with CAD Structure / Reference relation

If a CAD Document item is loaded from PDM to CAD, all related documents, also those items referenced through the CAD Structure / Reference relation, are downloaded to the exchange directory, too.

Glossary

Unclaim

Action withdrawing the right to update a work item. Normally this corresponds with publishing the work item to a larger number of people getting read access on this object.

Claim

Action giving the user the exclusive right to update a work item.

Context Menu

The menu that appears when the user selects an *icon* and holds the right mouse button pressed.

Dialog Window

Window in which the user enters information.

PDM System

PDM system is the Aras Innovator.

Object

An item or a relationship.

Query

To search the database for *objects* that match specific criteria.