Oracle Agile Engineering Data Management

Oracle Agile Engineering Data Management - MCAD Connector for SolidWorks - Version 2.9.0.0 User Manual

Part No. E12437-01

July 2008

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Preface

The Oracle documentation set includes Adobe® Acrobat™ PDF files. The Oracle Technology Network (OTN) Web site (http://www.oracle.com/technology/documentation/agile.html) contains the latest versions of the Oracle Agile EDM PDF files. You can view or download these manuals from the Web site, or you can ask your Agile administrator if there is an Oracle Documentation folder available on your network from which you can access the documentation (PDF) files.

Note	To read the PDF files, you must use the free Adobe Acrobat Reader™ version 7.0 or later. This program can be downloaded from the Adobe Web site (http://www.adobe.com).

Note	Before calling Agile Support about a problem with an Oracle Agile EDM manual, please have the full part number, which is located on the title page.

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Readme

Any last-minute information about Oracle Agile EDM can be found in the Release Notes file on the Oracle Technology Network (OTN) Web site
(http://www.oracle.com/technology/documentation/agile.html)

Agile Training Aids

Go to the Oracle University Web page
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Screen readers may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

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Chapter 1

Introduction

Documentation

This documentation is intended to be sufficient to use the integration. It does not give in-depth information on the concepts and usage of Agile e6 or the CAD system.

For more information on that refer to the respective documentation.

Note The information in this document is based on a standard installation.

Constraints

- Modification of the CAD structure and objects (e.g. create, move, delete, copy, etc.) is done in the CAD system. It represents the "Engineering Master".
- Agile e6 is the "Organizational Master" for managing CAD objects/structures with independent objects in the construction and release process of a company (e.g. single parts, drawings, 3D models) but not for individual CAD base elements (e.g. lines, surfaces, bodies, etc.).

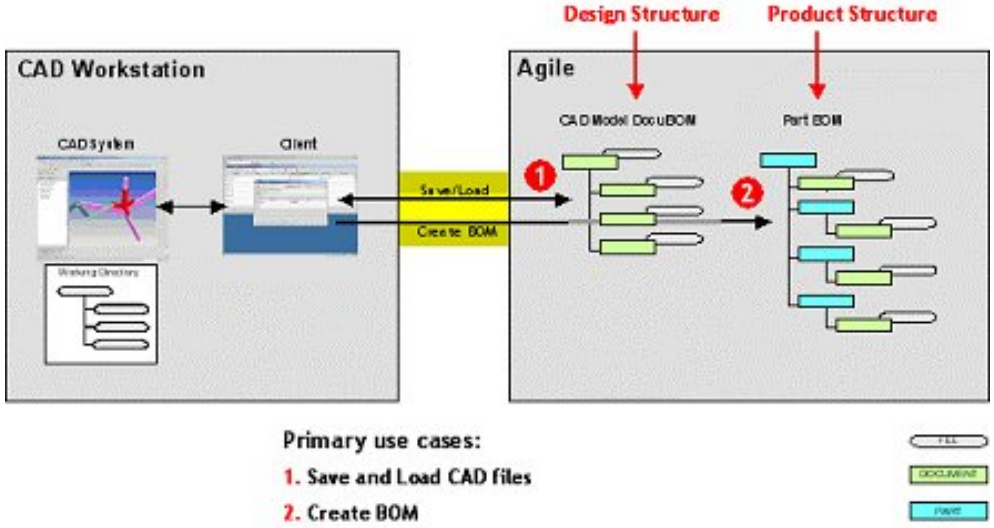
Agile SolidWorks Integration

This integration facilitates the management of SolidWorks parts, components and drawings and metadata information in Agile e6. Files created in SolidWorks will be checked into Agile e6 file vault and managed with additional meta information.

The main features of the CCM integration are:

- Save – Saves native CAD data from the current session into Agile
- Load – Loads native CAD data from Agile into the current CAD session
- Reserving objects – Reserves CAD objects
- Create item – Creates an item of a SolidWorks model
- Creating BOM – Creates a BOM structure of a SolidWorks assembly

Overview of the Basic Processes



Save and Load CAD Files

CAD designs (i.e. 3D objects and 2D drawings for as well parts as assemblies) are created within the CAD system environment, with files in a working directory (which may be local or network attached). The designer saves into Agile e6, which creates a design structure that mimics the structure of the CAD assembly. The native CAD files are attached to this design structure, which is used as the basis for loading and re-saving the CAD designs. Since Agile e6 manage a centralized repository (or alternatively Distributed File Management), all CAD designers in the enterprise have access to these files, subjected to the control of Agile e6 roles and privileges. Individual designers can set checkout reservations in Agile e6 when they load files into their CAD session. Additional files such as viewables (PDF, TIFF, etc.) can be attached to the Agile e6 document.

Create a BOM

Provided there exist the data for the particular involved items the designer may use the Create BOM command to create or update the Agile e6 BOM, representing the Product Structure either for all substructures or flat (i.e. only at the first level).

To avoid tedious manual entries of the BOM it is possible to merge items of Standard parts and items of Auxilliary parts as well.

This function is used when an item representing the Design Structure already exists.

Usually creating and updating of the BOM is running in the background. The BOM can also be updated with interaction. This enables to modify the appropriate information in Agile e6.

Chapter 2

Key Features

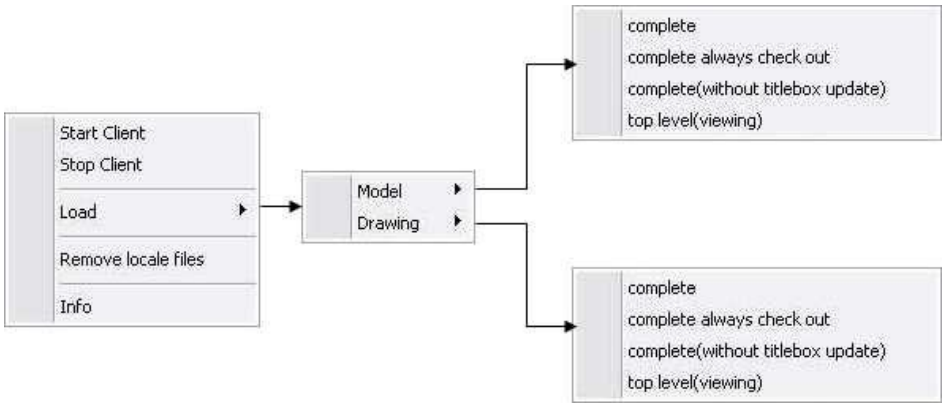
Menu

The Agile e6 SolidWorks integration (CCM) is an add-on module to the standard Agile e6 system. The integration functions are provided with additional and expanded menus in Agile e6 and SolidWorks. A main menu has been added for Agile e6 to the standard SolidWorks menu. This allows accessing the features of the integration. It is available within all modules of SolidWorks. The appropriate Agile e6 submenus are context-sensitive.

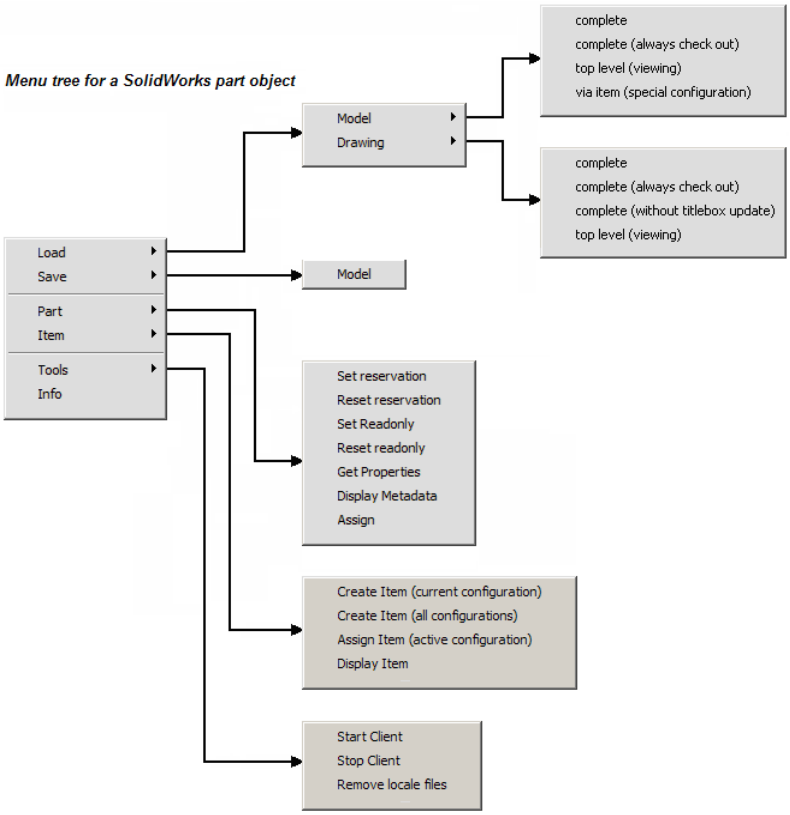
A brief description of each function is shown in the bottom line of the SolidWorks window.

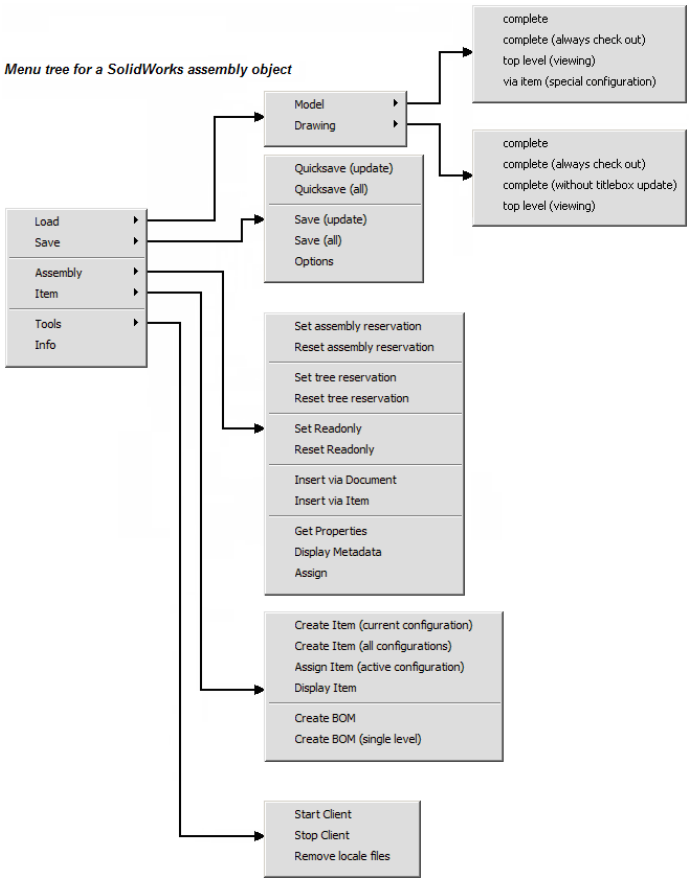
Agile e6 – SolidWorks Integration CCM 2.9.0.0

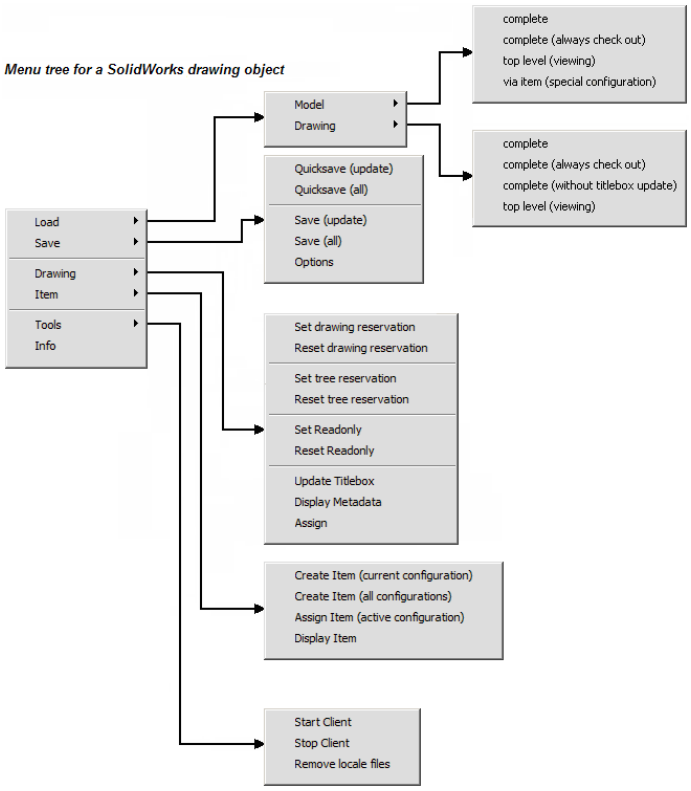
Initial state of the menu tree:



Note The official menu is this harmonized menu.


Menu tree for a SolidWorks part object
Load
Save
Part
Item
Tools
Info
Model
Drawing
complete
complete (always check out)
top level (viewing)
via item (special configuration)
complete
complete (always check out)
complete (without titlebox update)
top level (viewing)
Model
Set reservation
Reset reservation
Set Readonly
Reset readonly
Get Properties
Display Metadata
Assign
Create Item (current configuration)
Create Item (all configurations)
Assign Item (active configuration)
Display Item
Start Client
Stop Client
Remove locale files


Menu tree for a SolidWorks assembly object
Load
Save
Assembly
Item
Tools
Info
Model
Drawing
complete
complete (always check out)
top level (viewing)
via item (special configuration)
complete
complete (always check out)
complete (without titlebox update)
top level (viewing)
Quicksave (update)
Quicksave (all)
Save (update)
Save (all)
Options
Set assembly reservation
Reset assembly reservation
Set tree reservation
Reset tree reservation
Set Readonly
Reset Readonly
Insert via Document
Insert via Item
Get Properties
Display Metadata
Assign
Create Item (current configuration)
Create Item (all configurations)
Assign Item (active configuration)
Display Item
Create BOM
Create BOM (single level)
Start Client
Stop Client
Remove locale files


Menu tree for a SolidWorks drawing object
Load
Save
Drawing
Item
Tools
Info
Model
Drawing
complete
complete (always check out)
top level (viewing)
via item (special configuration)
complete
complete (always check out)
complete (without titlebox update)
top level (viewing)
Quicksave (update)
Quicksave (all)
Save (update)
Save (all)
Options
Set drawing reservation
Reset drawing reservation
Set tree reservation
Reset tree reservation
Set Readonly
Reset Readonly
Update Titlebox
Display Metadata
Assign
Create Item (current configuration)
Create Item (all configurations)
Assign Item (active configuration)
Display Item
Start Client
Stop Client
Remove locale files

Chapter 3

Save and Load CAD Files

The PLM system establishes Agile objects (parts/documents) for each CAD object. Its content derives from this object type (3D model, 2D drawing, item). Such Agile objects have a reference to at least one CAD file that can be stored in a dedicated vault or locally in the network.

Start and Stop the Agile e6 Client

1. From your SolidWorks main toolbar, select Agile > Start Client.
2. To stop the Agile e6 client, select Agile > Stop Client.

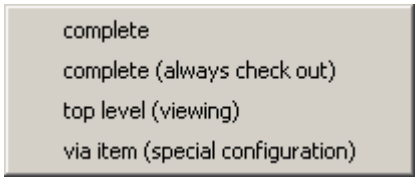
Note	Save updated files in Agile e6 (Check-in) before stopping the Agile e6 client. If the files are not saved, they will be stored only in the local work directory (CheckOutPath). When stopping the SolidWorks session you will be asked if the files should be deleted.

Load Model

A SolidWorks model is specified by at least one file (*.SLDPRT, *.SLDASM). Using the CCM integration, the usage of this files will be managed by Agile e6. Each file stored in the vault has a reference to a document metadata set.

1. Select Agile > Load Models > …

   The following options are available for loading models



Menu Entry	Description
complete	Opens in Agile e6 the Type List to searching for the document metadata sets. The respective document can be selected and the PLM system is prompted to make the SolidWorks object, belonging to that document metadata set, available. After copying the file(s) successfully from the vault to the local temporary directory (determined in the file 3DCADMapping.ini in section [CheckOutDisk] and [CheckOutPath]) it becomes a SolidWorks object. If a newer version of this file exists, a warning is displayed.
complete (always check	See description ‘complete’.

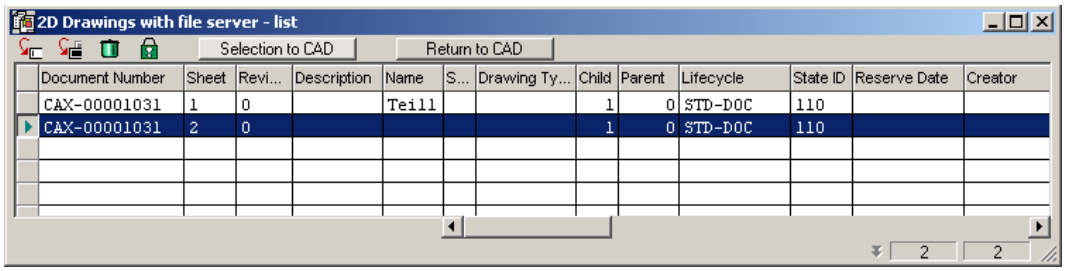
out)	If a newer version of this file exists, no warning is displayed.
top level (viewing)	Checks out the top level structure of an assembly for viewing. The SolidWorks Feature Manager design tree is blank. The object is in 'Read only' mode.
via item (special configuration)	Checks out a special configuration of the SolidWorks object because an item references to this special configuration.

Load Drawings

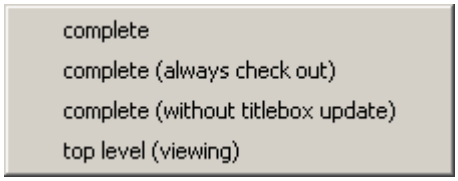
A 2D drawing (*.SLDDRW) can be generated from a SolidWorks object. This file is also stored in the vault and has also a reference to the corresponding document metadata set.

1. In Agile e6 open the 2D Drawing and the respective Type List.
2. Select the respective drawing.
3. Click Selection to CAD.

   The corresponding model is identified and checked out automatically.



The following options are available for loading:



Menu Entry	Description
complete	Opens in Agile e6 the Type List to searching for the document metadata sets. The respective document can be selected and the PLM system is prompted to make the SolidWorks object, belonging to that document metadata set, available. After copying the file(s) successfully from the vault to the local temporary directory (determined in the file 3DCADMapping.ini in section [CheckOutDisk] and [CheckOutPath]) it becomes a SolidWorks object. The title box of the drawing is automatically updated with the appropriate metadata. If a newer version of this file exists, a warning is displayed.
complete (always check out)	See description 'complete'. If a newer version of this file exists, no warning is displayed.
complete (without titlebox update)	See description 'complete'. To increase the performance, the titlebox update is avoided.
top level (viewing)	Checks out the top level structure of an assembly for viewing. The SolidWorks Feature Manager design tree is blank. The object is in 'Read only' mode.

Save a CAD Object

Two features are available for saving new or updated SolidWorks objects in Agile e6:

- Quicksave — The structure links will be checked in a faster way using a new SolidWorks programming tool. This is recommended to use.
- Save — This is the traditional way for saving. Several minor object properties are updated additionally.

Quicksave

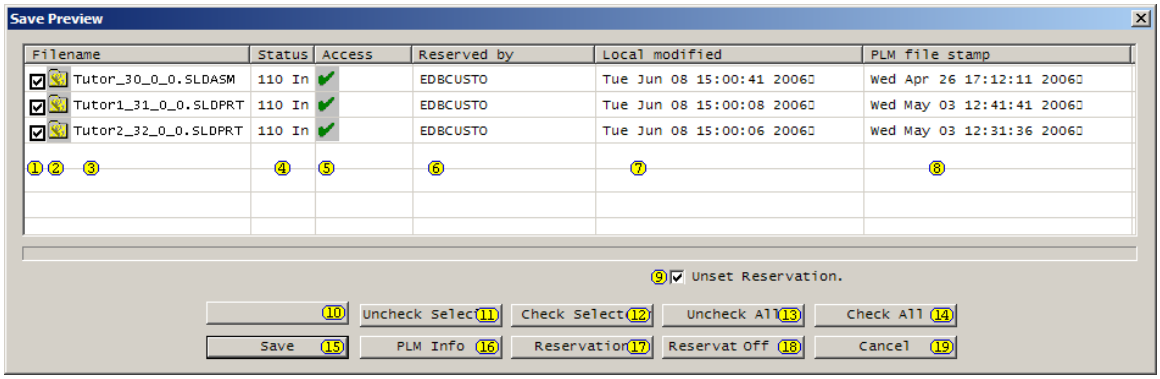
1. Select Agile > Save > Quicksave (update).

   Only updated objects are saved.

Note	It is also possible to save all objects related to the assembly (Agile > Save > Quicksave (all)).

   The Save Preview window is opened containing the respective SolidWorks objects.

2. Select the files that should be checked-in.



No	Description
1	Check box Activated = Intended for saving in PLM Highlighted = No effect It is also the select criteria when using button 12 or 13.
2	Icon for the respective file type (is the same for *.SLDPRT and *.SLDASM)
3	File name incl. extension.
4	Workflow status of the model.
5	Check result for sufficient access rights enabling a successful saving.
6	Clicking button 12 = Displays username Clicking button 13 = Cancels displaying user name
7	Date of the last file modification in the local user work directory.
8	Date of the last modification of the latest file version that was checked in to PLM.
9	Selected = After a successful saving the reservation of the objects will be cancelled. Unselected = After a successful saving the reservation of the objects will not be cancelled.
10	Not used
11	Deselects the checkboxes in the first column of those lines that have been selected if, e.g. button 14 has been used before.
12	Deselects the checkboxes in the first column of those lines that are not selected if, e.g. button 14 has been used before.
13	All selections from the checkboxes in the first column are removed.

14	All checkboxes in the first column are selected.
15	For the selected lines the process starts saving the SolidWorks files in the PLM vault and simultaneous updating of the metadata in the corresponding PLM-document data set
16	For all marked objects the corresponding metadata in the PLM-document data sets will be read out.
17	Enables a temporary access reservation during saving the entire assembly. This avoids an access conflict situation when an unintended load order for an involved document comes from an other user. The reservation is not permanently in PLM.
18	Disables a temporary access reservation during saving the entire assembly.
19	Cancel the planned saving in PLM a message in SolidWorks is displayed 

3. If an object is saved the first time, a type-specific form is opened in Agile e6.

   This form is already filled with data. In the standard dump there is only one mandatory field – the Document Number.

4. Save the form.

Save

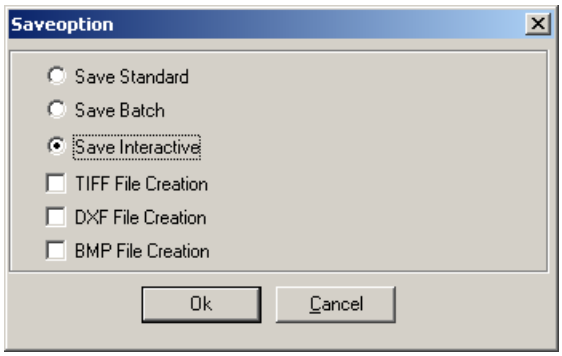
This is the normal way for saving.

Note	The menu entry Save is part of the menu because some older SolidWorks versions do not support the QuickSave feature.

Setting Save Options

When saving, several save options are available for saving a SolidWorks object to PLM (as an attachment to an Agile e6 document).

1. Select Agile > Save > Options



Note The save options can be changed at any time before saving is chosen. Generally, when starting the Agile e6 client, the option 'Save standard' is pre-selected. When saving in Batch mode it is necessary to ensure that all mandatory mask fields will be filled automatically (e.g. using a number generator).

Save Option	Description
Save Standard	If an object is saved the first time, it runs in interactive mode . Updates are saved in Batch mode.
Save Batch	Save is run in the background and the metadata set is updated.
Save Interactive	Allows to change entries manually in the updated Type mask.
TIFF File Creation	Saves file additionally in TIFF format and checks it in when active object is a drawing.
DXF File Creation	Saves file additionally in DXF format and checks it in when active object is a drawing.
BMP File Creation	Saves file additionally in BMP format and checks it in when active object is a model.

Chapter 4

Create BOM

If a CAD object is known in PLM than it is possible to create a PLM data set describing an associated item. Of course this does not work with generic objects but with each member of the family table that represents a physical part.

Create an Item

New items can be created in Agile e6 which are then linked to the current SolidWorks object.

1. Select Agile > Item >…
   - Create Item
     Creates an item metadata set in Agile e6.
     First, the model structure is analyzed to test if all involved models of the structure belong to an item. If this is the case, the metadata set is updated in the background.
     After this, Agile e6.0 is opened and the item form is in edit mode for each model that is not linked to an item yet. The default entries are already included. After completing the new item metadata set manually, save it.
     Finally, the item form for the active SolidWorks object is displayed in edit mode. Complete the new item metadata set manually and save it.
   - Create Item (current configuration)
     See also description for Create Item.
     Creates an item metadata set in Agile e6 that is linked to a current SolidWorks part in its current configuration.
     If the current SolidWorks object is already linked to an item in the database, an update will be performed in the background.
   - Create Item (all configurations)
     See also description for Create Item.
     Creates a separate item metadata set in Agile e6 for each configuration of the actual SolidWorks part.
   - Display Item
     Agile e6 is opened and displays the respective item form (default: EDB-ART-CFR).

Note	In a standard, out of the box installation, the item number is the same as the document number.

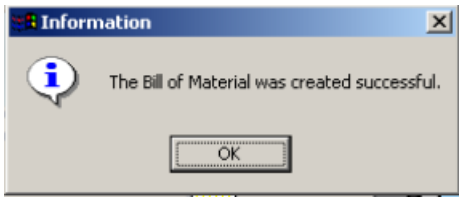
Create BOM

This function generates an item structure for the item linked to the active assembly model.

1. Select Agile > Item > Create BOM.

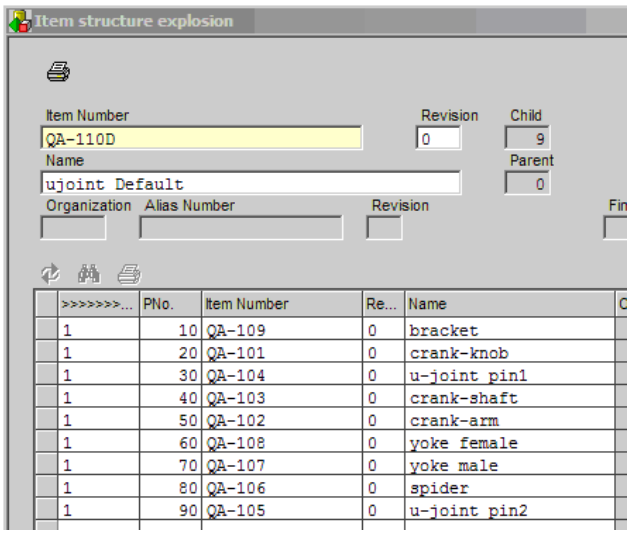
   First, the model structure is analysed. If no error is detected, the Bill of Material is generated in the background and added to the metadata set of the respective item.

If the Bill of Materials was created successfully, a message window is opened. The SolidWorks window remains in the foreground.

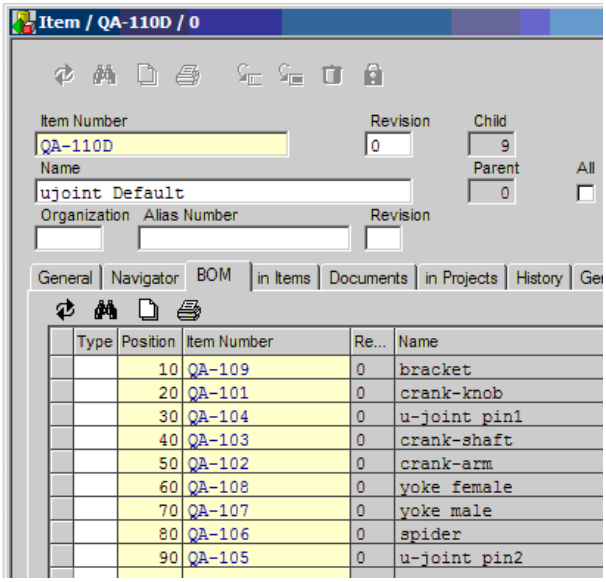


2. To see the BOM, select Agile > Item > Display Item .

The Agile e6 window is opened and displays the item form filled with the item metadata set. From the context menu of this form, select the menu for the multi level structure explosion.



Note The structure of this item is also displayed in the BOM tab of this form.


Item / QA-110D / 0
Item Number
QA-110D
Revision
0
Child
9
Name
ujoint Default
Parent
0
All
Organization
Alias Number
Revision
General
Navigator
BOM
in Items
Documents
in Projects
History
Type
Position
Item Number
Re...
Name
10 QA-109 0 bracket
20 QA-101 0 crank-knob
30 QA-104 0 u-joint pin1
40 QA-103 0 crank-shaft
50 QA-102 0 crank-arm
60 QA-108 0 yoke female
70 QA-107 0 yoke male
80 QA-106 0 spider
90 QA-105 0 u-joint pin2

Chapter 5

Additional Functions

For Parts, Assemblies, and Drawings

Get Properties

Assemblies

There are three possibilities to update the properties of assemblies:

1. The properties of the complete hierarchy are updated. Every configuration is considered and their properties are also updated.

   Select Agile > GetProperties > whole hierarchy

2. Only the properties of the top element are updated. Multiple configurations of the top element are also considered and their properties are also updated.

   Select Agile > GetProperties > top element, all configurations

3. Only the properties of the top element are updated. Only the currently active configuration is considered and its properties are also updated.

   Select Agile > GetProperties > top element, current configuration

Note Possibility 1 takes the longest, and possibility 3 is the fastest.

Parts

There are two possibilities to update the properties of parts:

1. The properties of all configurations are updated.

   Select Agile > GetProperties > all configurations

2. The properties of the current configuration are updated.

   Agile > GetProperties > current configuration

Display Metadata

1. Select Agile > Part|Assembly|Drawing > Display Metadata.

   The Agile e6 window is opened and displays the respective type from (2D Drawing, or 3D Models, etc.) which contains the metadata of the active object.

Assigning to an Existing Document Dataset

1. Select Agile > Part|Assembly|Drawing > Assign.

Assigns the current SolidWorks object to an existing Agile e6 metadata set.

Note	Of course it is only possible to assign a model to a 3D Model, and a drawing to a 2D Drawing.

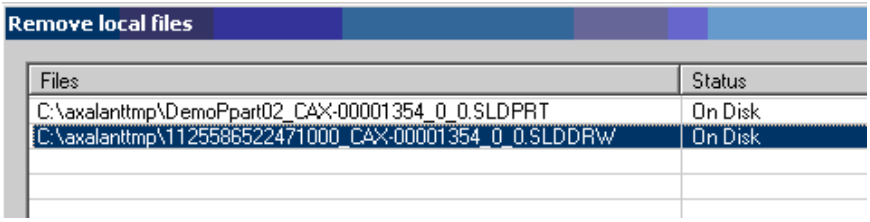
Remove Local Files

1. Select Agile > Tools > Remove local files.

   Removes copies of SolidWorks files (which are check-out) from your hard drive.

Note	Files can only be deleted when they are no longer used in the SolidWorks session. The files will be physically removed and cannot be recovered.

   The Remove local files list is opened, displaying all checked out files.



2. Select the required files and click Delete.

   The local copy of the file(s) is deleted. At the end of a SolidWorks session you will be asked if the local directory should be cleaned.

Reservation

Object Reservation

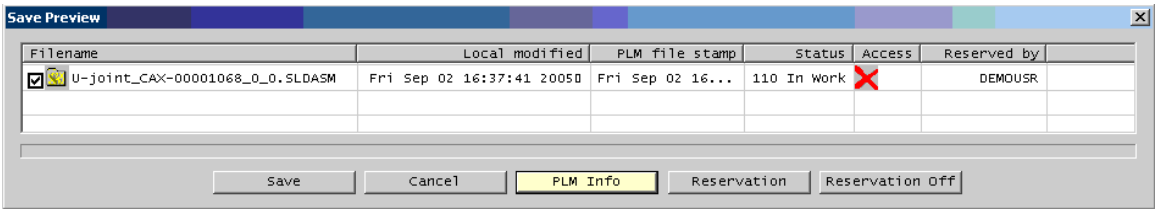
1. Select Agile > Part|Assembly|Drawing > Set '…' Reservation.

   In SolidWorks, it is possible to reserve objects which are then blocked for other users.

   The function runs automatically in the background and the reservation is stored in PLM.

   When another user tries to save the reserved object, a warning is displayed in the SolidWorks window. To avoid structure confusions, this warning should be answered with "No".

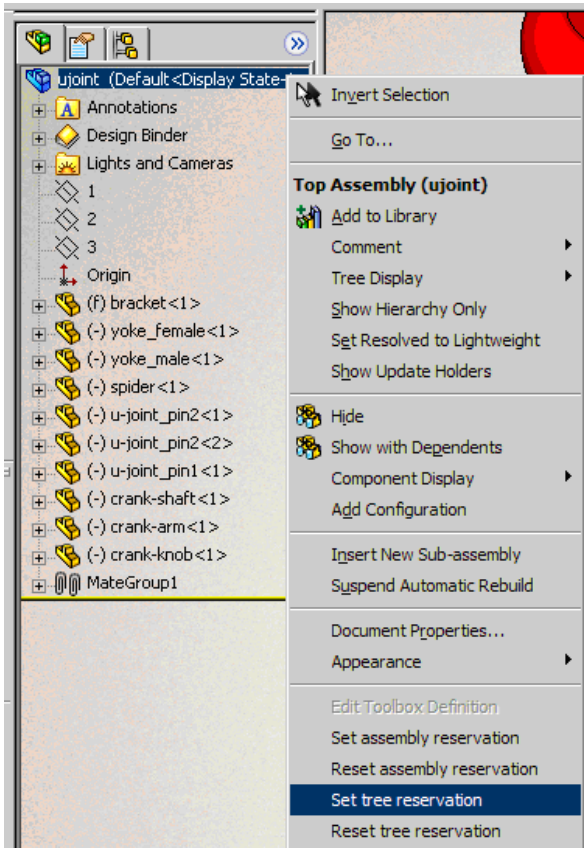
   The message window in Agile e6 displays the name of the user who reserved this object. The same information is displayed in the Save Preview window when clicking the PLM Info button.



2. With Agile > Part|Assembly|Drawing > Unset Reservation, the reservation is cancelled.

Tree Reservation

Note	For assemblies it is possible to reserve either a single part or a complete tree using the context menu of the FeatureManager design tree in Solid Works.



1. ‘Set tree reservation’ reserves an assembly tree.

   The function runs automatically in the background and the reservation is stored in PLM.

   When another user tries to save the reserved object, a warning is displayed in the SolidWorks window. To avoid structure confusions, this warning should be answered with “No”.

   The message window in Agile e6 displays the name of the user who reserved this object. The same information is displayed in the Save Preview window when clicking the PLM Info button.

2. With ‘Reset tree reservation’ the reservation is cancelled.