

Installation & Administration Guide

Siemens Solid Edge integration
for
SOLIDWORKS PDM

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Contents

Legal information.....	ii
Glossary.....	6
1 General information.....	7
1.1 Introduction.....	7
1.2 How the integration works.....	8
2 System requirements.....	9
2.1 Operating system support.....	9
2.2 Supported SOLIDWORKS PDM releases.....	9
3 Installation.....	10
3.1 Pre-installation information.....	10
3.2 Installing integration.....	10
4 Initial setup.....	12
4.1 SOLIDWORKS PDM.....	12
4.1.1 Add-in registration.....	12
4.2 Additional information.....	13
5 Configuration.....	14
5.1 SOLIDWORKS PDM.....	14
5.1.1 Setup tasks in SOLIDWORKS PDM add-in.....	14
5.1.2 Improving check in performance.....	15
5.1.3 Configuration files.....	16
5.1.4 Property mapping.....	19
5.1.5 BOM creation.....	20
5.1.6 Enabling logging.....	20
5.2 Solid Edge.....	21
5.2.1 Configuration files.....	21
6 Update.....	23
6.1 Modifying installation.....	23
6.2 Repairing installation.....	24

6.3	Updating installation.....	25
7	Uninstallation.....	28
7.1	Removing installation.....	28
8	Troubleshooting.....	29
8.1	Common troubleshooting procedure.....	29
8.2	License error codes.....	29
9	References.....	30
9.1	Using overlay packages.....	30
9.2	Silent-mode installation.....	32

Glossary

Application Programming Interface (API)

Defines a set of routines, communication protocols and tools for building software. In general, they are clearly defined methods for communication between different components.

Bill of Materials (BOM)

Defines a list of assemblies, sub-assemblies, parts and their quantities needed to produce a final product.

BOM position

Defines a position in the BOM with unique identification, name, quantity and other characteristics.

Component Object Model (COM)

Defines a binary-interface standard for software components introduced by Microsoft.

Connector

Defines a central interface component of each Dassault integration. The integration uses connectors for each participating application to exchange data via their API.

Datamodel

Defines objects and their relationships in a PLM system that are managed by the integration to store data from an authoring application.

Dynamic Link Library (DLL)

Defines a file with a library of functions and other information that can be accessed by a Windows program.

Payload

Defines the data contained within an API request. The description is borrowed from the transportation industry, where a truck carries its cargo (its payload) to a location. The truck, as with the API request, is always the same, but the payload changes with each request.

Product Lifecycle Management (PLM)

Defines systems and processes for managing data during the development of a product from creation through manufacturing to maintenance and disposal.

Revision

Defines a released object state in SOLIDWORKS PDM that cannot be modified.

Script engine

Defines the central component in each integration. It contains the integration logic for processing and forwarding the information and data coming from the connectors.

User Interface (UI)

Defines a (usually) graphical interface through which a user interacts with the computer.

Version

Defines an incremental counter of each object modification in SOLIDWORKS PDM on check-in.

x86/x64

Defines the processor architecture in a computer and thus also the performance of applications. x86 corresponds to 32-bit and x64 corresponds to 64-bit.

1 General information

1.1 Introduction

The Solid Edge integration for SOLIDWORKS PDM provides functions to save and load design data to and from SOLIDWORKS PDM.

Concurrent engineering is supported through the use of reservation of individual objects and structures.

The integration uses the API from both applications. It is designed to extend existing Solid Edge and SOLIDWORKS PDM functionality.

The handling of Solid Edge structure and objects is done in Solid Edge itself. Solid Edge is the technical master application, whereas SOLIDWORKS PDM is the organizational master application. SOLIDWORKS PDM manages Solid Edge objects and structures that are important in the design and approves a possible workflow for individual design objects.

Functionalities of the integration are available via additional toolbars or extended menus in Solid Edge. They access both the available functions of Solid Edge and SOLIDWORKS PDM.

1.2 How the integration works

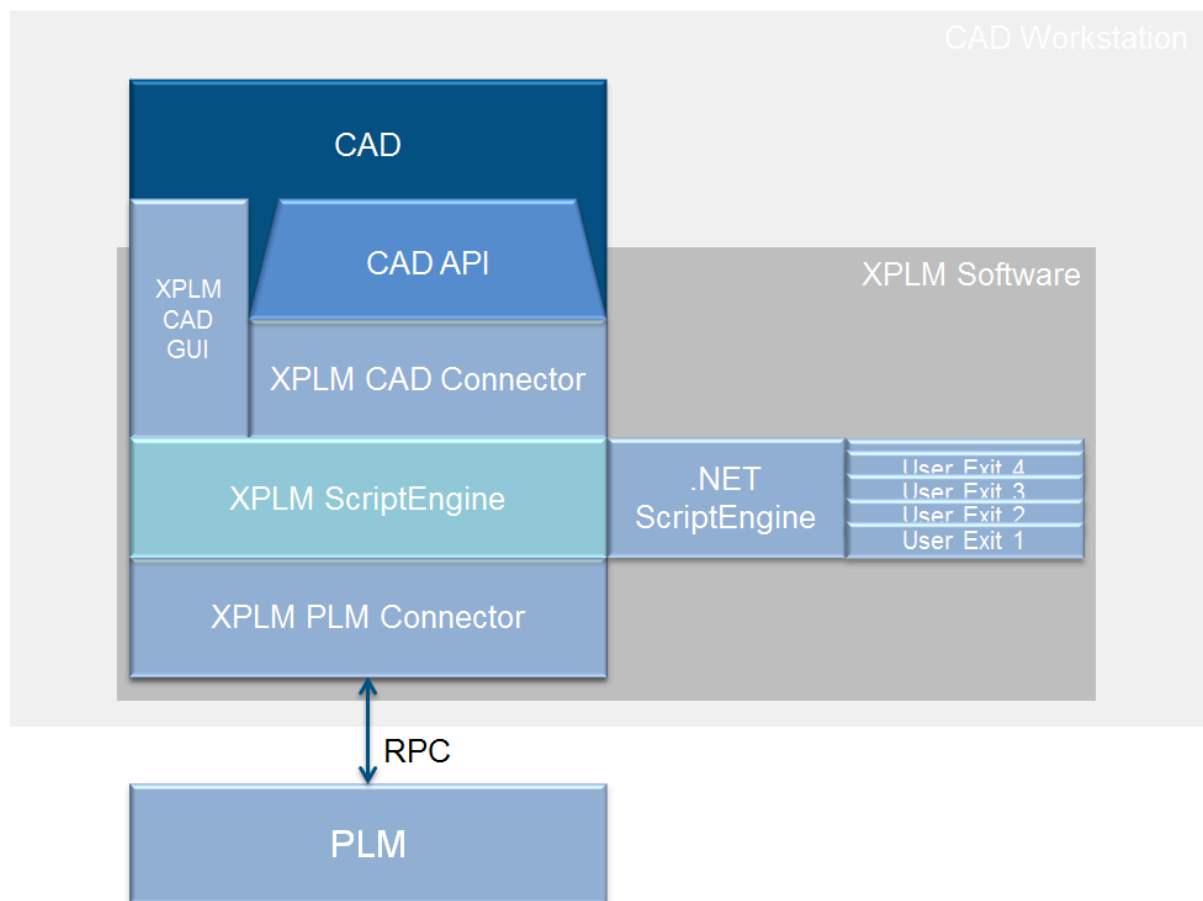
The integration is the interface between Solid Edge and SOLIDWORKS PDM and allows a consistent data exchange between the applications.

The Solid Edge connector encapsulates the CAD specific API into Dassault's standard methods to access and manipulate CAD data. Examples: retrieve structure and parameter information, update parameters, change object names.

The SOLIDWORKS PDM connector encapsulates the SOLIDWORKS PDM specific API into Dassault's standard methods to access and manipulate SOLIDWORKS PDM data. Examples: create and update CAD object metadata.

The script engine contains the integration logic between Solid Edge and SOLIDWORKS PDM. Some of the transactions are exposed in user exits. The user exits receive the full document information at the moment of the execution. The information is passed in a complex data structure. They allow the read access to all document properties and context information as well as the possibility to modify these. The user exits are executed within an embedded VB.NET script engine.

Figure 1: Integration architecture



2 System requirements

2.1 Operating system support

Integration for	Version	Microsoft Windows (x64) 10 11 ¹
Siemens Solid Edge	2021-24 Limited support: ST9-10 2019-20	X

Support of specific operating system version might be limited by support from specific CAD system.

2.2 Supported SOLIDWORKS PDM releases

Name	Version
Dassault Systèmes SOLIDWORKS PDM Professional	2017-24

¹ Not all CAD systems support Windows 11

3 Installation

This chapter provides information around the installation of the integration.

3.1 Pre-installation information

Data cards

To ensure that the integration works properly, select the data card **Solid Edge** in dialog *Select configuration details* during the creation of a new vault.

Optional preview application

For data formats supported by eDrawings, the integration can use the eDrawings viewer as visualization tool for previewing Solid Edge files.

3.2 Installing integration

Make sure that all installation media and licenses are available, and then start the installation.

About this task

With this unified installer, you can install Dassault products in the same installation directory and use them in parallel. You can update all components individually without affecting the functionality of other installed products.





The following procedure applies to a new installation. To update an existing installation, see [Updating installation](#) (p. 25) for more information.



You can install, modify, repair, or uninstall also in silent-mode. See [Silent-mode installation](#) (p. 32) for more information.


Procedure

1. Copy the installer archive ***.7z.exe** to the client computer running Solid Edge.
2. Close all open applications related to the integration.
3. Extract the archive and start **Setup-*.exe** with administrator rights.
4. Install any Visual C++ runtimes that you are prompted for.
→ The runtimes are installed, and the installation wizard appears.
5. Click **Next** to start the wizard.
→ The step *License agreement for end-users* appears.
6. Accept the license agreement and click **Next**.
→ The step *Installation path* appears.

7. Check the installation directory. It must point to the directory **CAD Integration** in the SOLIDWORKS PDM installation directory, for example `C:\Program Files\SOLIDWORKS Corp\SOLIDWORKS PDM\CAD Integration\CAD Integration`. Click **Next**.
 - **Optional:** To overwrite the installation files with an overlay package after completion, enable the option **Apply custom files after installation**. If an overlay package from Dassault Systèmes is delivered as a ZIP file, unzip it first.
 -  When unzipping, often a "double" directory structure is created, for example `custom_files\custom_files\xml`. Always select the directory that corresponds to the installation directory that contains the configuration.
 - **Optional:** To backup the existing installation, enable the option **Backup current installation**.
 -  Always create a backup copy when you update or change an installation. This makes it easier to compare and merge the files later.

→ The step *MCAD components* appears.
8. Select the application(s) to be integrated. If required, select additionally a version or other settings. Click **Next**.

→ The step *Tool components* appears.
9. Select additional helper tools or add-ons that you can use in the scope of this installation and click **Next**.

→ The step *Ready to install* appears.
10. To start installation, click **Install**.
 -  During the installation process, a CMD window appears showing the progress of the installation. Do not click into this window or the installation will not continue. If you clicked in by mistake, press **Enter** or **Esc** to continue.
11. To close the wizard after installation, click **Finish**.

Result

Installation is complete and the environment variable `xPlmRootDir` points to the installation directory. You can find log files for all installed components in the directory `C:\ProgramData\XPLM Solution GmbH\logs`.

Related links

[Using overlay packages](#) (p. 30)

4 Initial setup

4.1 SOLIDWORKS PDM

In the following, SOLIDWORKS PDM-related post-installation steps are described.


4.1.1 Add-in registration

Register the add-in as described in the following chapter.

Before you start

The required files for 32-bit SOLIDWORKS PDM are located in the installation directory under `<SWPDM INSTALL DIR>\CAD Integration\bin\x86\SolidWorksPDM<version>` and for 64-bit under `<SWPDM INSTALL DIR>\CAD Integration\bin\x64\SolidWorksPDM<version>`.

Procedure


1. To register the add-in, open the SOLIDWORKS PDM *Administration* tool, navigate to the desired vault. Right-click *Add-ins* and select **New Add-in...**
 If the integration should only be active on one test workstation, register the add-in on this workstation as a *Debug Add-in*.
2. Go to `<SWPDM INSTALL DIR>\CAD Integration\bin\x86\SolidWorksPDM<version>` or `<SWPDM INSTALL DIR>\CAD Integration\bin\x64\SolidWorksPDM<version>` and select the files
 - EPDM.Interop.epdm.dll
 - SOLIDWORKSPDMPAddin.dll
 - Interop.MSXML2.dll
3. After confirming, a warning message appears. Confirm the message.

Result

Now navigate to the selected vault in the the SOLIDWORKS PDM *Administration* tool and check if the add-in *SOLIDWORKSPDMADDIN* is available under *Add-ins*. It might be possible that the explorer process needs to be restarted first.

Next steps

For 64-bit and 32-bit installations: 32-bit and 64-bit components have to be installed in 64-bit environment to give all clients access to the installation. Errors could occur if the SOLIDWORKS PDM Administration misses rights. Run SOLIDWORKS PDM as Administrator. If a second add-in should be registered, perform the steps described in [SOLIDWORKS API Help](#).

-  On work stations with the SOLIDWORKS PDM client which does not use the integration and where no installation should be carried out, the Visual C++ Runtime library has to be installed (vcredist_x86.exe, additionally vcredist_x64.exe at 64-bit), otherwise the start of the client causes an error message.

4.2 Additional information

Language settings

The language of the integration can be changed using the XML tag `<Language>` in the `<SWPDM INSTALL DIR>\CAD Integration\xml\XPlmConnector.xml` file. The following languages are supported:

Table 1: Available languages

Language	Value to enable the option
English	EN
German	DE

5 Configuration

5.1 SOLIDWORKS PDM

In the following, further SOLIDWORKS PDM-related configuration possibilities are described.

5.1.1 Setup tasks in SOLIDWORKS PDM add-in

With tasks, Solid Edge files can be converted by right-clicking a file and selecting a convert command.

About this task

To setup the tasks defined in `<SWPDM_INSTALL_DIR>\CAD Integration\xml\PDMPSolidEdgeAddin.xml`, do the following:

Procedure

1. Open SOLIDWORKS PDM *Administration* tool.
2. Navigate to the desired vault and then to *Tasks*.
3. Perform a right-click and select **New Task...**
4. Enter a name for the new task (e.g. Convert PDF).
5. For *Add-in* select the *PDMP Addin* and click **Next**.
6. Within the *Execution Method* screen, the computer is shown in the *Computers supporting the task* list. If not perform a right-click on the SOLIDWORKS PDM icon in Windows hidden icons and select **Task Host Configuration**.
 - a) On the top right hand side, select **File Vault**.
 - b) In the table, set the **Permit** flag for the SOLIDWORKS PDM add-in and click **OK**.
7. Now click **Refresh List** in the task UI.
Computer is now visible in the table.
8. Enable the computer and click **Next**.
9. In the *Scheduling* section, the execution time for the task can be defined. In this example we use **This task is not scheduled**. So just click **Next**.
10. In the *Converter Configuration* section, the data from the `ScriptEngine` is defined. Make sure that the values for *Menuitems* and *Targetformat* are set correctly and click **Next**.
Possible values for *Targetformat* are:
 - For the conversion of drawings to the PDF format use: PDF
 - For the conversion of drawings to the IGES format use: IGES_2D
 - For the conversion of 3D models to the PDF format use: PDF
 - For the conversion of 3D models to the IGES format use: IGES
 - For the conversion of 3D models to the JT format use: JT
 - For the conversion of 3D models to the STEP format use: STEP
11. In *Permissions*, *Success Notification* and *Error Notification* no changes have to be made. So click **OK**.

Result

Now start an explorer, go to the SOLIDWORKS PDM vault and check if the menu entries are available in the context menu. It might be possible that the explorer process needs to be restarted first.

Next steps

Do the above described process for all desired tasks and close the *Administration* tool.

5.1.2 Improving check in performance

About this task

SOLIDWORKS PDM can automatically include drawings referencing a part or assembly when the latter is checked in. The available options in SOLIDWORKS PDM manage this functionality. Including drawings may make the check in command slower. To prevent this, perform the following steps.

Procedure

1. Start the *Administration* tool of SOLIDWORKS PDM.
2. Double-click the vault in question.
3. Double-click **Users** and then double-click current user.
→ *Admin - Properties* dialog opens.
4. Click **Settings** (on the lower left hand side).
→ *Settings* dialog opens.
5. Select **Check In**.
→ Option **Look for drawings in the entire vault is enabled**.
6. Disable this option to improve the performance.
7. Furthermore, it is recommended to switch of tracing. Open following configuration files and set value of listed options to `false`.

Table 2: Tracing configurations

File	Option	Value
XPlmFileFormat PluginConnector.xml	EnableFileFormatPluginLogging	false
PDMPConnector.xml	EnablePDMPLogging	false
XPlmSolidEdge ​ Connector.xml	EnableSolidEdgeLogging	false

8. To avoid a full traverse of the assembly structure, set `RefGetAllUsesPreTraversing` to `true` in `PDMPSolidEdgeConnector.xml`. Refer to chapter [Configuration files](#) (p. 16) for more details.

Result

Check in performance is improved.

5.1.3 Configuration files

The SOLIDWORKS PDM integration for Solid Edge is configured mainly using following configuration files:

- `PDMPConnector.xml`: Base configuration of the SOLIDWORKS PDM connector
- `PDMPSolidEdgeConnector.xml`: Contains mostly Solid Edge related settings
- `PDMPSolidEdgeTransaction.xml`: Contains the configured transactions for the save, load and update processes.

PDMPConnector.xml

Table 3: Settings and values


Setting	Purpose and available values
Settings for SOLIDWORKS PDM logging	
EnablePDMPLogging	<p>If set to <code>true</code>, logging is enabled. Refer to chapter Enabling logging (p. 20) for more information.</p> <p>It is recommended to set this setting to <code>false</code>, because the logging can negatively affect the performance of the integration.</p> <p>Default: false</p> <p>Possible values: true false</p>
PDMPLogFile	<p>Is the definition of the destination of the log file.</p> <p>Important is that the destination is a folder for which the user has write permissions.</p> <p>It is recommended to set the file extension to <code>*.xml</code>.</p> <p>For example C:\Users\User1\PDMPLog.xml</p>
PDMPLogLevel	<p>Definition of the granularity of the log messages.</p> <p>Possible values for the log level are <code>1</code> to <code>10</code>.</p> <p>Levels between <code>1</code> and <code>4</code> are reserved for logging in the business components, while levels <code>5</code> to <code>9</code> include logging information with respect to the data exchange with SOLIDWORKS PDM.</p> <p>Level <code>10</code> provides the maximum number of log messages.</p> <p>The higher the level, the more data is generated.</p> <p>Default: 5</p> <p>Possible values: 1-10</p>
PDMWorksCancel OnError	<p>If set to <code>true</code>, any process is aborted on error.</p> <p>Default: true</p> <p>Possible values: true false</p>

Setting	Purpose and available values
PDMLogIncludeDate	<p>If set to <code>true</code>, every log entry contains date and time. If set to <code>false</code>, date and time are not written into the log file. This allows comparing two log files.</p> <p>Default: <code>true</code></p> <p>Possible values: <code>true</code> <code>false</code></p>
Settings for help	
PDMWorksHelpFile	<p>Currently not used.</p> <p>Defines the name of the helper file.</p> <p>For example: UserGuide.chm</p>
PDMWorksHelpTitle	<p>Currently not used.</p> <p>Defines the title of the helper file.</p> <p>For example: UserGuide</p>
Settings for connector	
PDMWorksUndoWorkaround	<p>This workaround setting is for SOLIDWORKS PDM 2019, starting with SP0.</p> <p>To avoid that files are missing when using function Undo Check Out, set this setting to <code>true</code>.</p> <p>Default: <code>true</code></p> <p>Possible values: <code>true</code> <code>false</code></p>
Settings for events	
Callback_*	<p>The callbacks are transferred from the SOLIDWORKS PDM API. Please obtain further information there.</p> <p>If set to <code>true</code>, it is activated. If set to <code>false</code>, it is deactivated.</p>

PDMPSolidEdgeConnector.xml

Table 4: Settings and values

Setting	Purpose and available values
Settings for main script engine	
ActivePDMPScriptEngine	<p>Do not change.</p> <p>Script engine to contain and perform the connector process layer.</p> <p>Default: <code>PDMPSolidEdgeScriptengine.CScriptEngine</code></p>
Settings for Solid Edge Add-in Files	

Setting	Purpose and available values
SolidEdgeMenuFiles	<p>Do not change.</p> <p>Name of add-in xml file.</p> <p>Default: PDMPSolidEdgeAddin.xml</p>
Menu definition of the context menu entries within SOLIDWORKS PDM UI	
PDMWorksMenuFiles	<p>Do not change.</p> <p>Name of add-in XML file.</p> <p>Default: PDMPSolidEdgePDMPAddin.xml</p>
Setting for using timestamps	
PDMWorksUsePDMTimestamp	<p>Changing this setting may causes instability.</p> <p>Defines, if SOLIDWORKS PDM uses time stamp from the SOLIDWORKS PDM data set or the local file when determining the metadata. It is deactivated by default.</p> <p>Default value: false</p> <p>Possible values: true false</p>
Settings for conversion	
ConvertExitSolidEdge	<p>Defines if Solid Edge is closed after conversion. It is deactivated by default.</p> <p>Default value: false</p> <p>Possible values: true false</p>
Setting for pre-traverse first level on large structures	
RefGetAllUsesPreTraversing	<p>If set to <code>true</code>, integration checks check out status of 2nd level elements of assembly structures before check in. If no files of 2nd level are checked out, a full traverse of the assembly structure can be avoided. The actual assembly structure from SOLIDWORKS PDM is displayed in <i>Check In</i> dialog.</p> <p> For drawings the 3rd level of structure elements is essential to avoid a full scan.</p> <p>If set so <code>false</code>, complete structure is traversed and displayed in <i>Check In</i> dialog anyway.</p> <p>Default value: true</p> <p>Possible values: true false</p>

PDMPSolidEdgeTransaction.xml

Table 5: Transactions

Transaction	Description
getAttribGetStructureCollection	See chapter Property mapping (p. 19).
getAttribSetStructureCollection	

5.1.4 Property mapping

This chapter describes settings for property mapping in configuration file

`PDMPSolidEdgeTransaction.xml`.

getAttribGetStructureCollection

The function **AttribGet** reads the properties from the Solid Edge file and transfers them to SOLIDWORKS PDM.

The mapped variables in the data card are filled with properties.

The purpose is to prepare properties so that SOLIDWORKS PDM can use them.

Therefore, a parameter list with block and attribute names of the common mapping is created after the intermediate mapping with transaction `getAttribGetStructureCollection`.

The transaction contains all Solid Edge standard property blocks with its standard properties. These properties can be mapped here to some data card properties as required.

```
<Structure>
  <Name>SummaryInformation</Name>>  <!-- block name in file card -->
  <FieldCollection>
    <Field>
      <Name>nøgleord</Name>  <!-- attribute name in file card -->
      <Type>XPlmDocument</Type>
      <Subtype>StructureCollection</Subtype>
      <Structurename>SummaryInformation_EN</Structurename>
      <Attribut>Keywords</Attribut>  <!-- attribute name in Solid Edge -->
    </Field>
  </FieldCollection>
</Structure>
```

The transaction can be extended if desired. But Solid Edge attribute names are fix, except names at the custom block. There it is possible to use own attribute names.

Troubleshooting is supported by log messages.

getAttribSetStructureCollection

The function **AttribSet** saves variable values from SOLIDWORKS PDM into the CAD file properties of Solid Edge (changes via data card).

Data coming from SOLIDWORKS PDM must be converted into a compliant format for updating file properties.

The mapping looks as following example:

```
<StructureCollection>
  <Structure>
    <Name>SummaryInformation</Name>
    <FieldCollection>
      <Field>
        <Name>nøgleord</Name>  <!-- attribute name in file card -->
        <Value>Keywords</Value>  <!-- attribute name in Solid Edge -->
      </Field>
    </FieldCollection>
  </Structure>
</StructureCollection>
```

Customizing property mapping

If property mapping has to be customized, please follow these steps:

1. Copy file `PDMPSolidEdgeTransaction.xml` to `Customer_PDMPSolidEdgeTransaction.xml`
2. It is recommended removing all transactions from the new file that should not be modified, so that the file `Customer_PDMPSolidEdgeTransaction.xml` contains the two transactions `getAttribGetStructureCollection` and `getAttribSetStructureCollection`.
3. Define the property mapping in the new configuration file.

5.1.5 BOM creation

This chapter describes settings for bill of materials in configuration file `PDMPSolidEdgeTransaction.xml`.

- The SOLIDWORKS PDM-BOM is configurable (see transaction `updateCADBOMs` in transaction file `PDMPInventorTransaction.xml`, properties BOM name, type etc.).
- The SOLIDWORKS PDM-BOM has eight default columns (Filename, Dir, IDs, Configuration, TreeLevel, Qty, Version) which are always created by the connector.
- Further columns can be added depending on the CAD (property `BOMColumnDefinition` in transaction `updateCADBOMs`).
- The content of BOMLines is configurable (see transaction `updateCADBOMPosition`, the fields in BOMLine must match default and custom columns, the name is crucial).



`updateCADBOMPosition` is the transaction for standard components. The transaction for special components is called `updateCADBOMPosition_[name of the component]`, e.g. `updateCADBOMPosition_virtualComponent`.

5.1.6 Enabling logging

If required, you can activate logging for the components used in the integration. Logging should not run permanently, as a large amount of log messages are generated and performance is affected. Deactivate logging again, after the issue is solved.

Execute following steps to enable logging:

1. Edit the file `PDMPConnector.xml`:
 - A. Set `EnablePDMPLogging` to `true`.
 - B. Set value `PDMPLogFile` to a path on local disc.
 - C. Set value of `PDMPLogLevel` accordingly.

2. Edit the file `XPlmSolidEdgeConnector.xml`:
 - A. Set `EnableSolidEdgeLogging` to `true`.
 - B. Set value `SolidEdgeLogFile` to a path on local disc.
 - C. Set value of `SolidEdgeLogLevel` accordingly.

5.2 Solid Edge

In the following, further Solid Edge-related configuration possibilities are described.

5.2.1 Configuration files

The SOLIDWORKS PDM integration for Solid Edge is configured mainly using the following configuration files:

- `XPlmSolidEdgeConnector.xml`: Contains the base configuration of the Solid Edge connector.
- `XPlmSolidEdgePDMPCConnector.xml`: Contains the base configuration of the Solid Edge connector.
- `PDMPSolidEdgeAddin.xml`: Contains the menu definitions and add-in registration. Do not change this file.

`XPlmSolidEdgeConnector.xml`

Table 6: Settings and values

Setting	Purpose and available values
<code>EnableSolidEdgeLogging</code>	If set to true, logging is enabled. Default: true Possible values: true false
<code>SolidEdgeLogFile</code>	Value is the full path to the log file, required if logging is enabled. For example C:\tmp\SolidEdge.log
<code>SolidEdgeLogLevel</code>	Defines the level of detail of the log file. A higher number indicates more log messages. Default: 20 Possible values:
<code>SolidEdgeDefaultSaveMode</code>	Do not change
<code>SolidEdgeIgnoreMissingParts</code>	Do not change. The property controls whether the traversing of CAD structures is aborted with errors if files are not found. Default: true Possible values: true false
<code>SolidEdgeStandardPartDir</code>	Not used.
<code>SolidEdgeTemplateDir</code>	Not used.

Setting	Purpose and available values
SolidEdgeDefaultSaveName_*	Not used.
SolidEdgeDefaultSaveModeCreate	Not used.
SolidEdgeDefaultSaveModeUpdate	Not used.
SolidEdgeCreateBitmapPreview	Not used.
SolidEdgeCreateUniqueFileNames	Not used.
SolidEdgeEvent_*	<p>These options are linked to a callback event created by CAD. If such an option is activated, the corresponding transaction defined in the file <code>XPlmSolidEdgeTransaction.xml</code> is executed on event occurrence. Changes should only be made by trained persons.</p> <p>Possible values: true false</p>
View file settings	Not used.

XPlmSolidEdgePDMPConnector.xml

Table 7: Settings and values

Setting	Purpose and available values
Settings for Solid Edge Add-in Files	
SolidEdgeMenuFiles	<p>Do not change.</p> <p>Name of add-in xml file.</p> <p>Default: PDMPSolidEdgeAddin.xml</p>
Menu definition of the context menu entries within SOLIDWORKS PDM UI	
PDMWorksMenuFiles	<p>Do not change.</p> <p>Name of add-in XML file.</p> <p>Default: PDMPSolidEdgePDMPAddin.xml</p>
Settings for communication component	
RunMarco	<p>Do not change.</p> <p>Used for internal process control.</p> <p>Default: intern</p> <p>Possible values: intern extern</p>

6 Update

6.1 Modifying installation

Complete these steps to modify an existing installation and add for example new components or remove existing.

About this task

During modification, no existing files are overwritten and only missing files are added.



You can install, modify, repair, or uninstall also in silent-mode. See [Silent-mode installation](#) (p. 32) for more information.

Procedure

1. Close all open applications related to the integration.
2. Start the current installer `Setup-*.exe` with administrator rights. If this file is no longer available, start `Setup-*.msi` directly from the directory `C:\ProgramData\XPLM Solution GmbH\packages`. Alternatively, you can also start the installer from Windows:
 - a) In the system settings, go to *Apps & Features* and search for the entry **Siemens Solid Edge Setup**.
 - b) Select the entry and click **Modify**.

→ Visual C++ runtimes are checked/installed again and the installation wizard appears.
3. Click **Next** to start the wizard.

→ The step *Modify, repair or remove installation* appears.
4. Click **Modify**.

→ The step *Installation path* appears.
5. In this step, you cannot change the installation path, but applying overlay packages or making backups are possible.
 - **Optional:** To overwrite the installation files with an overlay package after completion, enable the option **Apply custom files after installation**. If an overlay package from Dassault Systèmes is delivered as a ZIP file, unzip it first.When unzipping, often a "double" directory structure is created, for example `custom_files\custom_files\xml`. Always select the directory that corresponds to the installation directory that contains the configuration.
 - **Optional:** To backup the existing installation, enable the option **Backup current installation**.Always create a backup copy when you update or change an installation. This makes it easier to compare and merge the files later.
6. Click **Next** and update components, if required.

→ The step *Ready to install* appears.
7. To start installation, click **Install**.During the installation process, a CMD window appears showing the progress of the installation. Do not click into this window or the installation will not continue. If you clicked in by mistake, press **Enter** or **Esc** to continue.

8. To close the wizard after installation, click **Finish**.

Result

The installation is modified. Start the product and verify everything works as expected.

Related links

[Using overlay packages](#) (p. 30)

6.2 Repairing installation

Complete these steps to repair an existing installation if the product does not work correctly, for example fixing missing or corrupt files, or incorrect shortcuts and registry entries.

About this task

During repair, existing files are overwritten and components registered again.



You can install, modify, repair, or uninstall also in silent-mode. See [Silent-mode installation](#) (p. 32) for more information.

Procedure

1. Close all open applications related to the integration.
2. Start the current installer `Setup-*.exe` with administrator rights. If this file is no longer available, start `Setup-*.msi` directly from the directory `C:\ProgramData\XPLM Solution GmbH\packages`. Alternatively, you can also start the installer from Windows:
 - a) In the system settings, go to *Apps & Features* and search for the entry **Siemens Solid Edge Setup**.
 - b) Select the entry and click **Modify**.→ Visual C++ runtimes are checked/installed again and the installation wizard appears.
3. Click **Next** to start the wizard.
→ The step *Modify, repair or remove installation* appears.
4. Click **Repair**.
→ The step *Installation path* appears.
5. In this step, you cannot change the installation path, but applying overlay packages or making backups are possible.
 - **Optional:** To overwrite the installation files with an overlay package after completion, enable the option **Apply custom files after installation**. If an overlay package from Dassault Systèmes is delivered as a ZIP file, unzip it first.When unzipping, often a "double" directory structure is created, for example `custom_files\custom_files\xml`. Always select the directory that corresponds to the installation directory that contains the configuration.
 - **Optional:** To backup the existing installation, enable the option **Backup current installation**.Always create a backup copy when you update or change an installation. This makes it easier to compare and merge the files later.

6. Click **Next**.

→ The step *Ready to install* appears.

7. To start installation, click **Install**.



During the installation process, a CMD window appears showing the progress of the installation. Do not click into this window or the installation will not continue. If you clicked in by mistake, press **Enter** or **Esc** to continue.

8. To close the wizard after installation, click **Finish**.

9. **Optional:** Carefully compare and merge the changes from the backup directory with the newly installed files.

Result

The installation is repaired. Start the product and verify everything works as expected.

Related links

[Using overlay packages](#) (p. 30)

6.3 Updating installation

Complete these steps to update an existing installation.

About this task

Dassault strongly recommends using appropriate services for an update. This ensures that existing functionality and modifications are correctly transferred to the new product. Contact <https://www.solidworks.com/support/> for assistance.



You can install, modify, repair, or uninstall also in silent-mode. See [Silent-mode installation](#) (p. 32) for more information.

Procedure

1. Close all open applications related to the integration.
2. Start the new installer `Setup-*.exe` with administrator rights.
→ Visual C++ runtimes are checked/installed again and the installation wizard appears.

3. Click **Next to start the wizard.**

→ The installer detects an existing installation and shows a message.

- If the existing installation is compatible with the unified installer, you can proceed. At the start of the installation, the old components are removed first and the new ones are installed afterwards.

How to identify if the existing installation is already compatible with the unified installer technology?

- The directory `C:\ProgramData\XPLM Solution GmbH` exists.
- The registry entry `HKLM\SOFTWARE\XPLM Solution GmbH\{00000000-0000-0000-0000-000000000000}` exists.

- If the existing installation is not compatible with the unified installer, it will first be uninstalled completely. Before you continue, manually back up the existing installation directory `<SWPDM INSTALL DIR>\CAD Integration`. Then proceed with installation.



In both cases, files with the prefix `customer_` are not affected by the update. All other files are overwritten with the new files.

4. Click **Next.**

→ The step *License agreement for end-users* appears.

5. Accept the license agreement and click **Next.**

→ The step *Installation path* appears.

6. If an existing and compatible installation was found, you cannot change the installation path in this step, but applying overlay packages or making backups are possible.

- **Optional:** To overwrite the installation files with an overlay package after completion, enable the option **Apply custom files after installation**. If an overlay package from Dassault Systèmes is delivered as a ZIP file, unzip it first.



When unzipping, often a "double" directory structure is created, for example `custom_files\custom_files\xml`. Always select the directory that corresponds to the installation directory that contains the configuration.

- **Optional:** To backup the existing installation, enable the option **Backup current installation**.



Always create a backup copy when you update or change an installation. This makes it easier to compare and merge the files later.

7. Click **Next and update components, if required.****8. To start installation, click **Install**.**

During the installation process, a CMD window appears showing the progress of the installation. Do not click into this window or the installation will not continue. If you clicked in by mistake, press **Enter** or **Esc** to continue.

9. To close the wizard after installation, click **Finish.****10. Carefully compare and merge the changes from the backup directory with the newly installed files.****Result**

The installation is updated. Start the product and verify everything works as expected.

Related links

[Using overlay packages](#) (p. 30)

7 Uninstallation

7.1 Removing installation

Complete these steps to remove an installation.

About this task

To uninstall an installation, you need the setup and component MSIs. If you installed correctly, they are located in the directory `C:\ProgramData\XPLM Solution GmbH\packages`.



The Windows uninstall feature is not supported. However, you can start the MSIs from Windows and use the installer's uninstall function.



You can install, modify, repair, or uninstall also in silent-mode. See [Silent-mode installation](#) (p. 32) for more information.

Procedure

1. Close all open applications related to the integration.
2. Start the current installer `Setup-*.exe` with administrator rights. If this file is no longer available, start `Setup-*.msi` directly from the directory `C:\ProgramData\XPLM Solution GmbH\packages`. Alternatively, you can also start the installer from Windows:
 - a) In the system settings, go to *Apps & Features* and search for the entry **Siemens Solid Edge Setup**.
 - b) Select the entry and click **Modify**.
→ Visual C++ runtimes are checked/installed again and the installation wizard appears.
3. Click **Next** to start the wizard.
→ The step *Modify, repair or remove installation* appears.
4. Click **Remove**.
→ The step *Remove of the installation* appears.
5. Click **Remove** to remove the installation.
6. To close the wizard after installation, click **Finish**.
7. Check the directory `<SWPDM INSTALL DIR>\CAD Integration` for leftover directories and files, and delete them manually.

Result

The installation is removed.

8 Troubleshooting

This chapter describes instructions for troubleshooting integration errors.

8.1 Common troubleshooting procedure

In case of integration problems, do the following.

1. Close related programs.
2. Enable logging.
3. Restart the integration and reproduce the problem.
4. Send an email with a problem description and log files to support.

8.2 License error codes

Table 8: License error codes

Error code	Description
1	Component license not found
10	License expired
100	Wrong MAC address
1000	Wrong company identifier
1111	License file exist but is not valid
3333	License file not found

9 References

9.1 Using overlay packages

An overlay package usually contains modified configuration files. You can select an option in the installer to apply an overlay package as the last step of the installation process, copying the modified configuration over the installed files.

About this task

Overlay packages are best applied when running the installer in GUI-mode, but are also possible under silent-mode. Complete the following steps to become familiar with the concepts of overlay packages.

Procedure

1. Create an overlay package:
 - a) Manually install the product on a client computer using the installer in GUI-mode.
 - b) After installation, configure the product as required.
 - c) Create the overlay directory `custom_files` under the extracted installer structure:

```
|—custom_files
|—packages
|—vcredist_*_x64
|—vcredist_*_x86
Setup-*.exe
```



You can also execute an additional script while applying overlay packages. In your overlay directory, create the directory `script` and add the batch file `custom.bat`. The script will be executed automatically when the overlay is applied. This is a generic mechanism and works everywhere in an overlay package. Just make sure that you keep the directory and script name as described.

- d) Copy the modified files from the directories under `<SWPDM INSTALL DIR>\CAD Integration` to `custom_files`, creating also their relevant parent directories as in the original location, for example `custom_files\xml`.

→ Overlay package is created.

2. Test the created overlay package in GUI-mode:

- a) Start `Setup-*.exe` or any of the MSIs and click **Modify** to change the installation.
→ The step *Installation path* appears. Because the directory `custom_files` exists in the installer structure, the option **Apply custom files after installation** is already selected and the path to the overlay package is automatically detected.
- b) Complete installation.
→ The content of the overlay package is first copied with *Robocopy* to `%ProgramData%\XPLM Solution GmbH\custom_files`. From there it is copied to `<SWPDM INSTALL DIR>\CAD Integration`.
- c) Check if content of the overlay package was correctly applied in `<SWPDM INSTALL DIR>\CAD Integration`.
→ Overlay package is working.

3. Test the created overlay package in silent-mode:



There are no parameters for applying an overlay package in silent mode because the copy operation is not triggered by an MSI. You can only use certain parameters to preselect options in the installer. However, you can use the *Robocopy* commands created during application of an overlay package in GUI-mode and use these commands in your own batch file for silent-mode installation.

- a) Go to the directory `%ProgramData%\XPLM Solution GmbH\cmd`.
- b) Check the latest batch file `Setup-*_user.bat` corresponding to the installer version for the first copy command of the overlay package to `%ProgramData%\XPLM Solution GmbH\custom_files`.
- c) Copy this command to your own batch file.
- d) Check the latest batch file `Setup-*_admin.bat` corresponding to the installer version for the second copy command from `%ProgramData%\XPLM Solution GmbH\custom_files` to `<SWPDM INSTALL DIR>\CAD Integration`.
- e) Copy this command to your own batch file.
- f) Test your batch file on a clean client computer.
→ Overlay package is working.

4. Manually integrate an updated overlay package from Dassault into an existing installation:

- a) Extract the overlay package and check the directory structure.



When unzipping, often a "double" directory structure is created, for example `custom_files\custom_files\xml`. Always select the directory that corresponds to the installation directory that contains the configuration.

- b) Copy the directory that contains the modified files to the directory `<SWPDM INSTALL DIR>\CAD Integration` and its related sub-directory, for example:

```
C:\temp\custom_files\xml >> <SWPDM INSTALL DIR>\CAD Integration\xml
```

- c) Check the copied files and start the integration.

→ Overlay package is working.

Result

You understand how to create, test and apply overlay packages.

9.2 Silent-mode installation

You can also install this Dassault product in silent-mode. Silent-mode has the advantage that you can easily install the product from a batch file without showing the installer GUI. Alternatively, you can start the installer with preset options, allowing it to be installed in a controlled manner by the user or by other automated installation routines.


The installer packages are all of type Windows Installer (MSI) and require corresponding parameters for silent-mode installation.

The Visual C++ runtimes are normal executables. Always install all x64/x86 runtimes that come with the installer package.

Understanding installer structure

When you start an installation using the installer, required files are copied first to the directory `C:\ProgramData\XPLM Solution GmbH` and are executed from this location.

```
XPLM Solution GmbH
├──cmd
├──log
└──packages
```

- `cmd`: Contains the batch files `Setup-*_admin.bat` and `Setup-*_user.bat`.
 - The file `Setup-*_user.bat` contains the copy commands for the required MSIs from the original location to the directory `C:\ProgramData\XPLM Solution GmbH\packages`.
 - The file `Setup-*_admin.bat` installs the individual MSIs from this new location with the parameters as defined in the installer.
 - `log`: Contains log files of each installed component.
 - `packages`: Contains copies of all MSIs used for installation, modification or uninstallation.
-  Use the definitions in the files `Setup-*_user.bat` and `Setup-*_admin.bat` as the basis for a silent-mode installation. The command line calls already contain the required component MSIs and parameters as selected in the installer.

General command line calls

Installing Visual C++ runtimes:

```
vcredist_*.exe /quiet
```

Uninstalling Visual C++ runtimes:

```
vcredist_*.exe /quiet /uninstall
```

Installing or modifying MSIs:

```
msiexec /i <fileName>.msi /quiet <parameter>=<value>
```


Repairing MSIs:

```
msiexec /i <fileName>.msi /quiet INSTALLMODE=Restore
```

Uninstalling MSIs:

```
msiexec /x <fileName>.msi /quiet REMOVE_SECURE=1
```

Using preset options in the installer (Setup-*.exe):

```
Setup-*.exe <parameter>=<value>
```

Using preset options in the installer (Setup-*.msi):

```
msiexec /i Setup-*.msi <parameter>=<value>
```

Creating a batch file for silent-mode installation

This example is intended as a general guideline for creating an installation script in silent mode. It assumes that the MSIs used for the installation are stored on a network share.

1. On a test computer, extract the main archive and start the file `Setup-*.exe` with administrator rights.
2. Select required components and settings, and finish installation.
3. Copy the entire contents from the extracted archive to a network share, for example `\\xplmShare`.
4. Create a new batch file locally, for example `silent.bat`.
5. Add the installation commands for the C++ runtimes to this file, for example:

```
REM *** install c++ runtimes ***
\\xplmShare\vcredist_14.32.31326.0_x64\vcredist_14.32.31326.0_x64.exe /quiet
\\xplmShare\vcredist_14.32.31326.0_x86\vcredist_14.32.31326.0_x86.exe /quiet
```

6. Go to the directory `C:\ProgramData\XPLM Solution GmbH\cmd`.
7. Open the file `Setup-*_user.bat` and copy all *robocopy* commands into your batch file. Change the path in the first argument (the source) to point to the network share, for example:

```
REM *** copy from network share to client ***
robocopy "\\xplmShare\packages" "C:\ProgramData\XPLM Solution GmbH\packages" ←
Core_23.0.0.538.msi
...
```

8. Open the file `Setup-*_admin.bat` and copy the command line calls for installing the MSIs into your batch file. Change the path of the MSI to point to the network share, for example:

```
REM *** installing msi ***
msiexec /i "\\xplmShare\packages\Core_*.msi" /passive ←
    CALLED_BY=Setup-* ←
    INSTALLDIR="C:\Program Files\XPLM Solution GmbH\" ←
    BATCH_ADMIN="C:\ProgramData\XPLM Solution GmbH\cmd\Setup-*_admin.bat" ←
    GUI_LOG_FILE="C:\ProgramData\XPLM Solution GmbH\log\Setup-*_gui.log" ←
    JAVA_JNI=0 ←
    JAVA_JNI_X86="" ←
    JAVA_JNI_X64="" ←
...

```



In the above example, line breaks were inserted to show readable content. Usually, each `msiexec` call would be on one line. You can further clean-up each call by deleting the information marked red, as it is not required in your batch file.

9. To test silent installation, use a clean client computer, copy the batch file `silent.bat` to it and run it with administrator rights.

Parameters usage

- If no parameters are defined, default settings apply. In the following tables, default settings are underlined>.
- If you use parameters in the scope of `Setup_*.exe/msi`, use them with the provided prefix, for example `COR_JAVA_JNI`.



You cannot use the setup files `Setup_*.exe/msi` for silent-mode installation. For this you must use the individual component MSIs. However, you can use parameters in `Setup_*.exe/msi` to preset options when installing in GUI-mode.

- Use parameters without prefix to define settings within the scope of component MSIs, for example `Core_*.msi`.
- Use the following parameters to control either GUI-mode or silent-mode installation:
 - `none`: GUI-mode
 - `/quiet`: Silent-mode without GUI
 - `/passive`: Silent-mode with additional progress indication

Parameter for silent-mode & GUI-mode

The following parameters apply to silent mode as well as to the presetting of options in GUI mode.

Table 9: Component MSI & Setup EXE/MSI

Prefix	Parameter	Value	Description and use
	INSTALLDIR	Path to a valid directory	Defines the path of the installation directory. Available in all MSIs.

Prefix	Parameter	Value	Description and use
	INSTALLMODE	<u>C</u> hange Restore	Defines the installation mode after the installation is already completed and the installer is restarted. <ul style="list-style-type: none"> ■ Change = Modify ■ Restore = Repair Available in all MSIs.
	REMOVE_SECURE	<u>0</u> 1	Enables uninstallation. This corresponds to Remove in the installer. Available in all MSIs.
PDM	VERSION	Version as shown in installer	Defines the SOLIDWORKS PDM version. Available in EnterprisePDM MSI and all Setup EXE/MSI using this component.
SED_	VERSION	Version as shown in installer	Defines the Solid Edge version. Available in SolidEdge MSI and all Setup EXE/MSI using this component.

Parameter for GUI-mode

The following parameters apply exclusively to the presetting of options in GUI-mode and not to silent-mode.

Table 10: All MSIs

Parameter	Value	Description and use
BACKUP_FILES	Path to a valid directory	Defines a location for the backup.
BACKUP_TYPE	FULL CONFIG	Defines the backup scope. <ul style="list-style-type: none"> ■ FULL = full backup of <SWPDM INSTALL DIR>\CAD Integration. ■ CONFIG = backup of configuration directory only, for example <SWPDM INSTALL DIR>\CAD Integration \xml.
CUSTOM_FILES	Path to a valid directory	Defines the path to a directory containing an overlay package with custom files to be copied after installation.

Table 11: Setup-PDMProfessional-SolidEdge EXE/MSI

Parameter	Value	Description
PDM_SED	<u>0</u> 1	Enables Solid Edge.