



UniversalPlantViewer Builder

Manual

ENGINEERED EFFICIENCY



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1 Introduction

UniversalPlantViewer Builder creates UniversalPlantViewer files and/or PDF documents with 3D content, including attributes, project hierarchy and 2D Drawings (Isos) from Intergraph SmartPlant Review, Smart 3D, PDS and PDMS (via CAXperts Adapters).

1.1 General conventions

This document contains many visual cues to help you understand the meaning of certain words or phrases. The use of different fonts for different types of information allows you to scan the document for key concepts or commands. Symbols help abbreviate and identify commonly used words, phrases, or groups of related information

Typefaces

<i>Italic</i>	Indicates a system response, which is an explanation of what the software is doing. For example, <i>The text is placed in the viewing plane.</i>
Bold	Indicates a command name, parameter name, or dialog box title. Command paths are shown using an arrow between command names. For example, Choose File → Open to load a new file.
Normal typewriter	Indicates an actual file or directory name. For example, The ASCII report is stored in the layout.rpt file.
Bold typewriter	Indicates what you literally type in. For example, Key in original.dat to load the ASCII file.

Symbols

This document uses the following symbols to identify special information:

-  Note – important supplemental information.
-  Map or path – shows you how to get to a specific command or form.
-  More information – indicates there is additional or related information.

2 Installation

Requirements:

- Supported operating systems:
 - Microsoft Windows 7
 - Microsoft Windows 8
 - Microsoft Windows 10
- Microsoft .NET Framework 4.0
- Microsoft Excel
- Adobe Reader X or later

Administrator rights are required on each computer to install CAXperts **Universal-PlantViewer Builder**. "Run as" is not supported.

Uninstall

To uninstall the software, select **Control panel** from the start menu. Then on large or small icon view, click **Programs and features**. If you are using category view, under **Programs**, click **Uninstall a program**.

Select the program you want to remove, and click Uninstall/Remove. Alternatively, right-click the program and select **Uninstall**.

Setup command line (for administrators)

The following command line options are supported by the installer:

/S:<<optional ini file>>

Allow an install to be run in silent mode. As a result, no screens or dialogs will be shown.

This command line option also has an optional INI file that can be passed containing session variable values. For example:

```
"C:\output\setup.exe" "/S:C:\setupvars.ini"
```

This will cause the session variables in the INI file to be used for the setup. The INI file should be in the format:

```
[SetupValues]
```

```
%AppFolder%=C:\Program Files\MyProduct
```

/U:<<XML config file>>

This command line option must be used when calling the uninstall program from the command line. This command also has an optional XML file that can be passed containing session variable values. For example:

```
"C:\Program Files\MyProduct\uninstall.exe" "/U:C:\Program Files\MyProduct\irunin.xml"
```

2.1 Licence

CAXperts software supports two types of licences:

Site licence (local)

Domain based licences are restricted to machines within a 5 miles (8 kilometres) radius at a specific geographic location (building) for which the licence key file was issued for. There is no limitation regarding the number of users or machines.

CAXperts will need your **Current domain name** to issue a licence file (.lic).

The licence file has to be stored on a local or network location accessible by the machine running the CAXperts product; a licence server is not required.

The location of the licence file should be defined on every machine with the CAXperts product installed, which can be done

- Either by setting the environment variable
CAXPERTS_LICENSE_FILE=C:\Program Files (x86)\CAXperts\Licensing\
- Or by setting the registry key
HKEY_CURRENT_USER\Software\FLEXlm License
Manager\CAXPERTS_LICENSE_FILE=C:\Program Files
(x86)\CAXperts\Licensing\

Multiple licence key file locations should be separated by semicolons (“;”).

 Note: If the licence key file location is not defined, “C:\Program Files (x86)\CAXperts\Licensing\” is used

 Note: The licence key file may be renamed (including the extension). The CAXperts product will check the content of all files in the licence folder(s) for valid keys.

 Note: Changes to the key path (in the environment variable or registry key) are read during the next start of the CAXperts product.

Floating (server) licence

Floating licences require a FlexNET server (lmadmin or lmgrd) accessible by the machine running the CAXperts product. The licence key file is typically located on the FlexNET server machine. The licence key file defines the maximum number of seats which can be used at the same time.

 Note: Every running instance of the CAXperts software product will require one seat, no matter if the application is running multiple times on the same or different machine(s).

New instances can only be started as long as seats are available and the FlexNET server is accessible.

The location of the licence server must be defined on every machine with the CAXperts product installed, which can be done

- Either by setting the environment variable
CAXPERTS_LICENSE_FILE=@YourServerName

- Or by setting the registry key
 HKEY_CURRENT_USER\Software\FLEXlm License
 Manager\CAXPERTS_LICENSE_FILE=@YourServerName

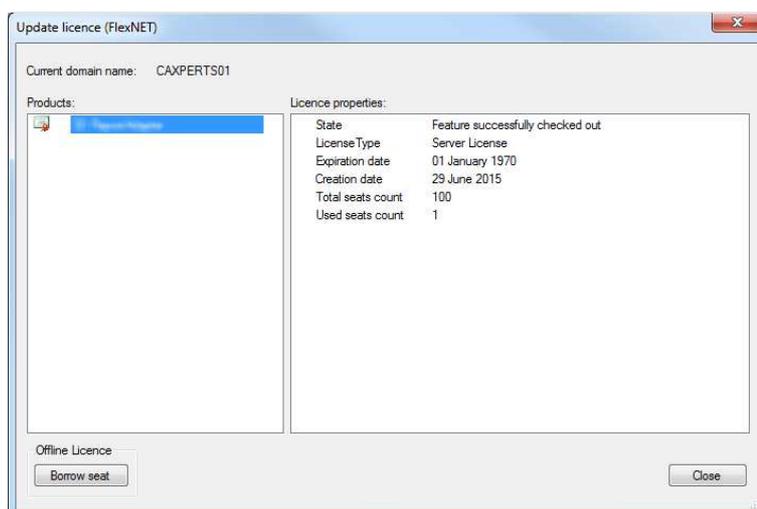
Every computer name must be preceded by the @ symbol. Multiple licence server locations should be separated by semicolons (;).

YourServerName is the Windows computer name of the machine running lmadmin (FlexNET server). If lmadmin is running on a non-default port, the port number should be defined like this: port@ YourServerName.

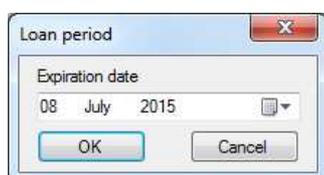
 **Note:** Changes to the server path (in the environment variable or registry key) are read during the next start of the CAXperts product.

Borrowed licences

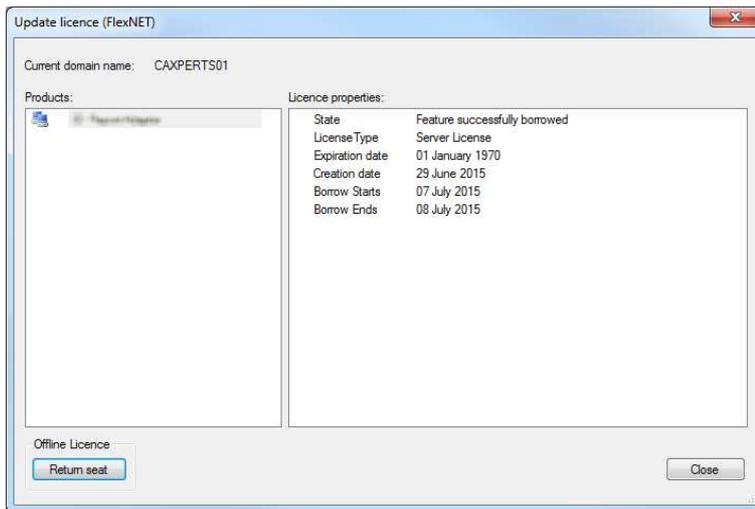
Licence seats can be borrowed for a period of time from the server and saved to the local machine. Once the seat has been borrowed the CAXperts application can be used without any connection to the FlexNET server.



To borrow a licence seat press the **Borrow seat** button, define the loan period (up to 7 days) and press OK. When the borrowed seat expires it gets automatically returned back to the FlexNET server.



The seat can be returned earlier by pressing the **Return borrowed seat** button.



 **Note:** Without a valid licence file the software will run in demo mode.

3 Overview

Based on model graphics and attributes captured by **ReviewAdapter** or **PDMS ReportAdapter** (*.upvc files) **UniversalPlantViewer Builder** creates:

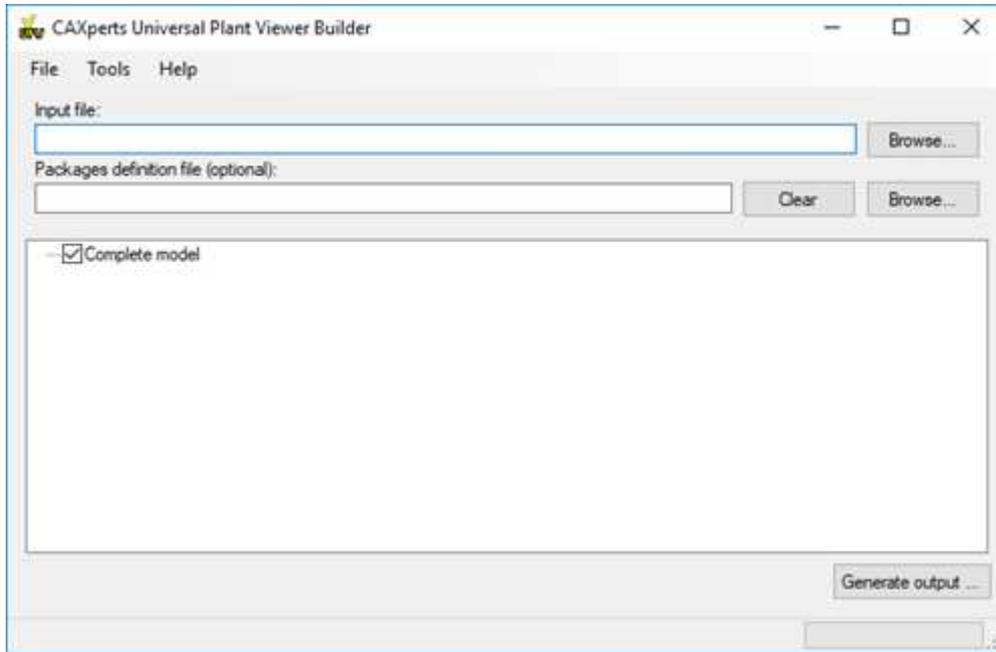
- **UniversalPlantViewer** sessions that can be viewed on Windows, Android and iOS systems.
- **3D PDF files that can be viewed in Adobe Reader**

Both output files formats and how to use them is described in additional manuals.

 Note: Before using **UniversalPlantViewer Builder**, a UPVC file has to be created. Please use **ReviewAdapter** (or **PDMS ReportAdapter**) to create a UPVC file.

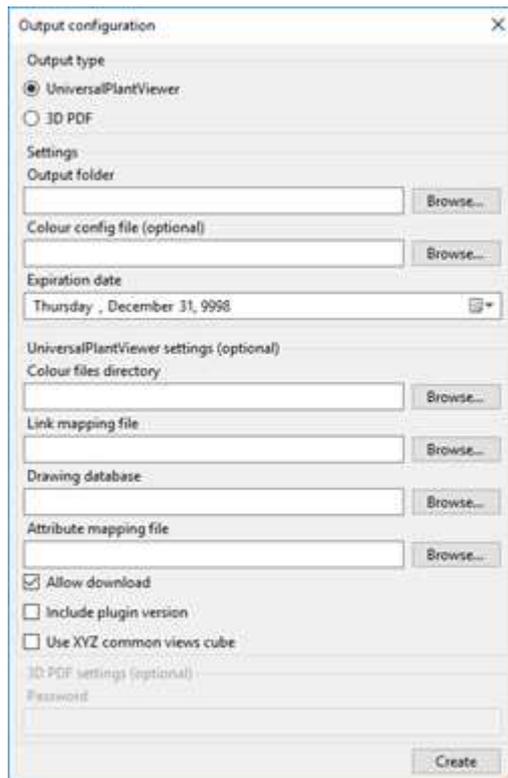
4 Using UniversalPlantViewer Builder

After the graphics have been captured by **ReviewAdapter**, open the *.upvc file in **UniversalPlantViewer Builder**. The session tasks/disciplines and attributes will be shown in a tree view.



Package definition file: load a package definition file created by UPV and select single packages. For each selected package a separate model will be generated.

Press the **Generate output** button to select the type of output session (Universal-PlantViewer or 3D PDF) and configure other parameters:



Output type:

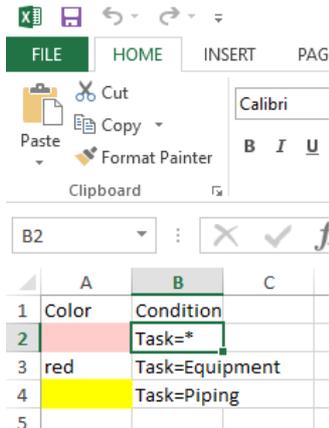
- **UniversalPlantViewer:** creates a folder with 3D content, attributes and tree hierarchy, which can be viewed in **UniversalPlantViewer**.
- **3D PDF:** creates PDF file with 3D content, attributes and tree hierarchy, which can be viewed in Adobe Acrobat Reader.

Settings:

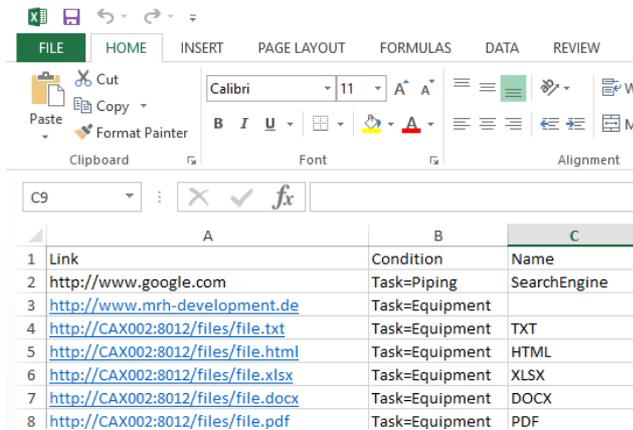
- **Output folder:** specifies the target directory
- **Excel colour file (optional):** if defined the colours of the output 3D graphics can be changed as defined in the Excel configuration file. An example can be found in Application Folder\Templates\DefaultConfig.xlsx
- **Expiration date (optional):** if defined the created PDF file will no longer be available for reviewing after the expiration date is reached.

UniversalPlantViewer settings (optional):

- **Colour files directory:** include standard colour files that can be used by UniversalPlantViewer:



- **Link mapping file:** attach links to external documents



- **Drawing database:** include content of an ISO drawing database
- **Attribute mapping file:** for P&ID files generated with **PID ReportAdapter**, the link between P&ID and 3D can be defined here:

	A	B	C	D
1	DrawingAttribute	3DAttribute	DrawingRegEx	3DRegEx
2				
3	Equipment_ITEMTAG	Name	(-*)(_*)+	(-*)(_*)+
4				
5	InlineComp_ITEMTAG	Name	(-*)(_*)+	(-*)(_*)+
6				
7				
8				
9				
10				
11				
12				

- **Allow download**
- **Include plugin version**
- **Use XYZ common views cube:** new common views cube (-x, -y, -z, x, y, z)

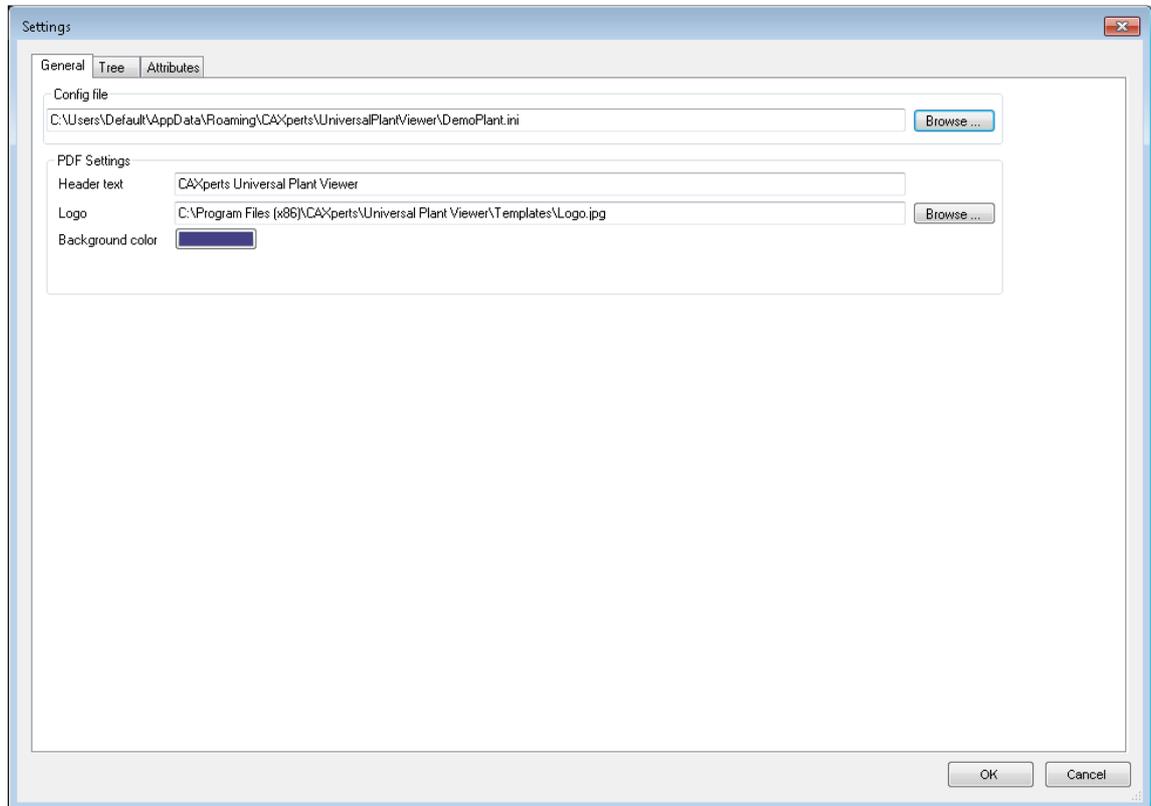
3D PDF settings:

- **Password (optional):** if defined the created PDF file can be viewed only after entering a valid password combination.

4.1 Merge sessions

4.2 Settings

All settings are stored automatically in the configuration file of the user profile. The location of the configuration file can be changed in **Tools** → **Settings**.



Use **File** → **Save settings to file** to export the settings. To import the settings from file use **File** → **Load settings from file**.

 **Note:** **Load settings from file** doesn't change the current location of the configuration file. Once the settings have been imported any further changes are stored in the current configuration file displayed in menu **Tools** → **Settings**.

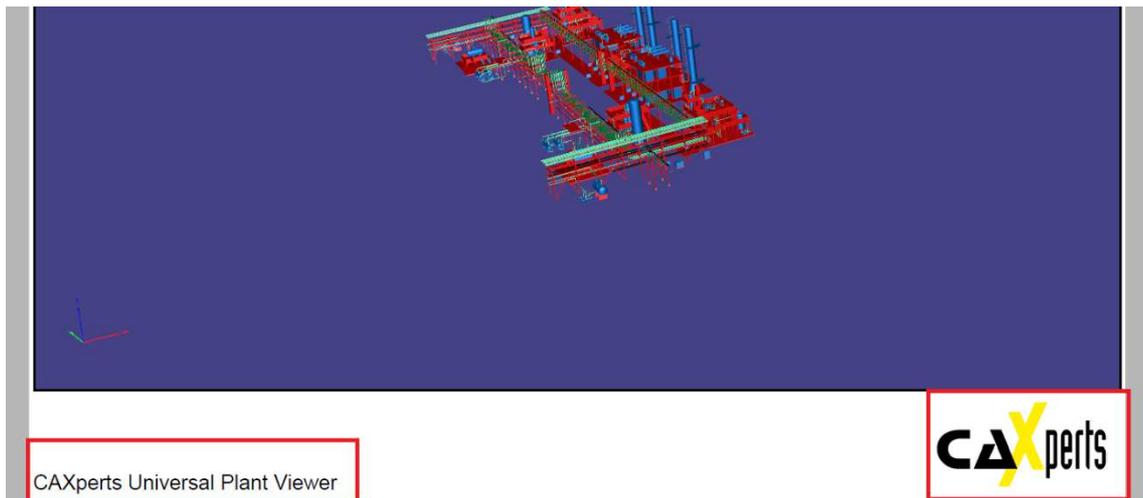
General

PDF settings

Header text: the text displayed in the bottom left corner of the PDF file as shown on the screenshot below.

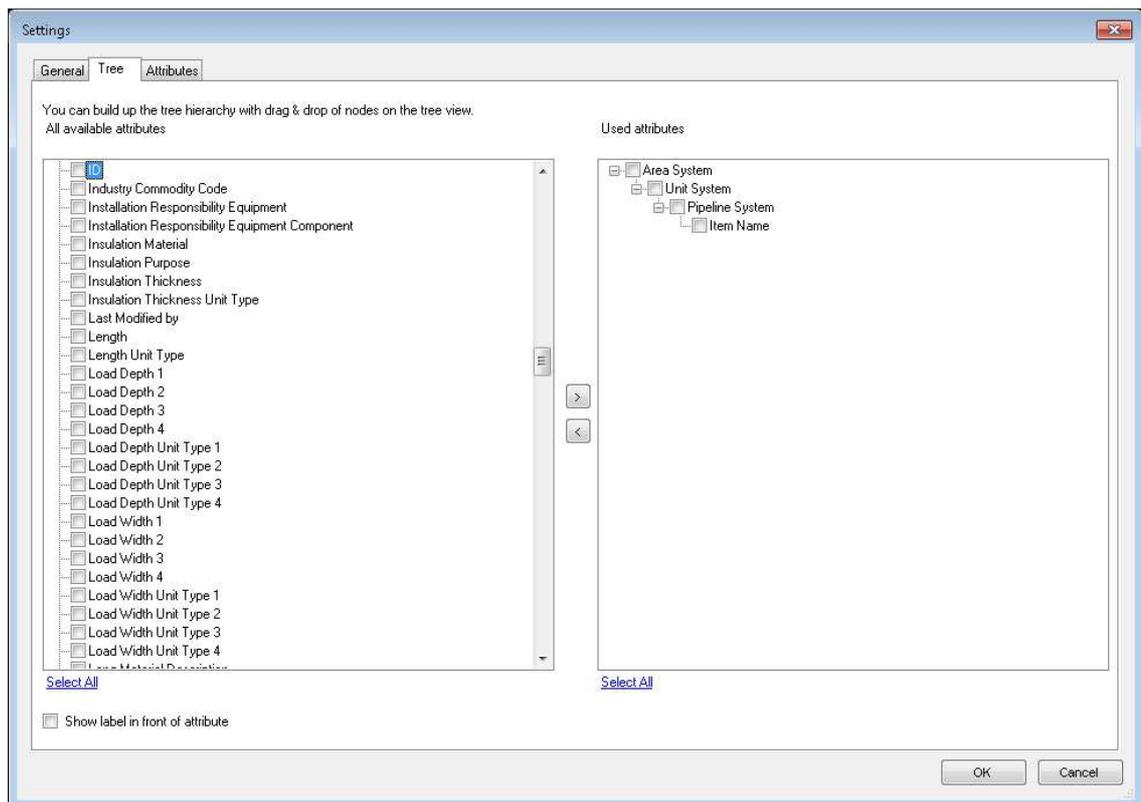
Logo: defines path to the logo file (*.jpg) which is displayed in the bottom right corner of the PDF file as shown on the screenshot below.

Background colour: background colour of 3D content in the PDF file.



Tree

On this tab the tree for UniversalPlantViewer and 3D PDF can be configured. To build a tree hierarchy drag & drop attributes or select them from the list of available attributes (on the left hand side) and add them to the list of used attributes (right hand side).

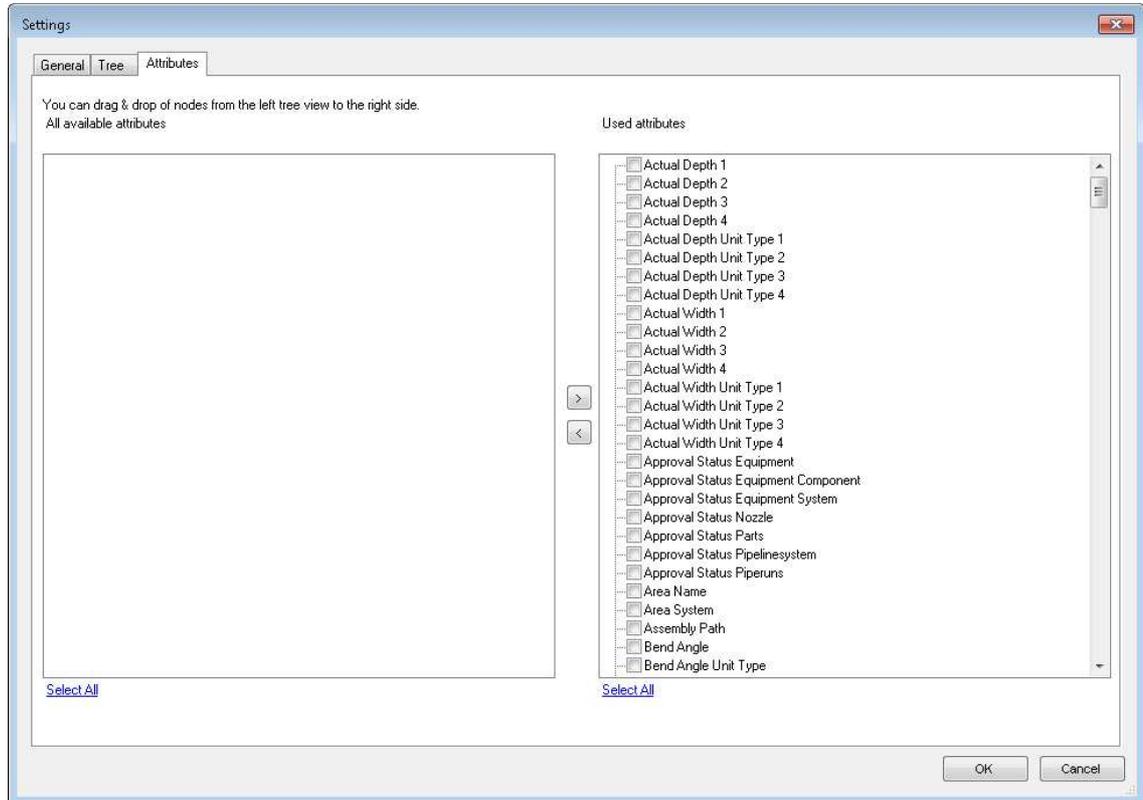


If one of the following special attributes is added to the list of used tree attributes **UniversalPlantViewer Builder** builds the tree automatically based on the content of all attributes ending on ...path.

Show label in front of attribute: if enabled the attribute name is displayed in front of the value in the tree: e.g. Area Name: Refining Area →Unit System: Distillation →... This functionality is available only for 3D PDF.

Attributes

To make attributes visible in the UniversalPlantViewer or 3D PDF file drag & drop them or select them from the list of available attributes (on the left hand side) and add them to the list of used attributes (right hand side).

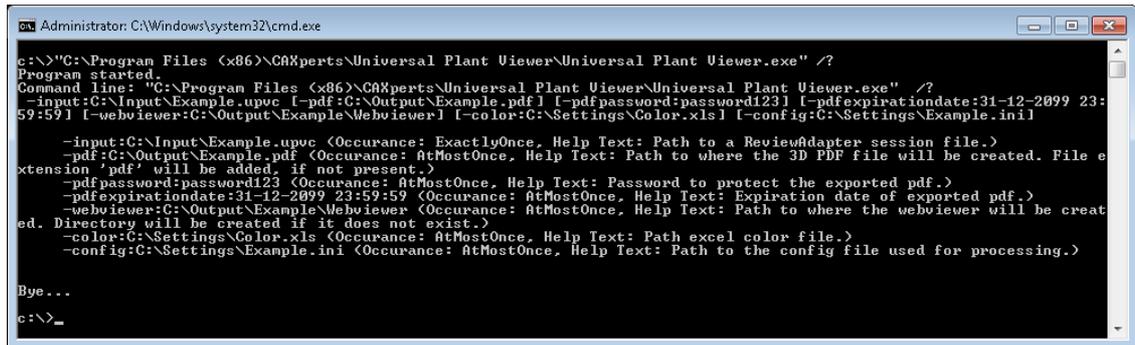


4.3 Command line mode

UniversalPlantViewer Builder can also be used in command line mode to create Web-Viewer or 3D PDF files automatically from a batch script. Use the following command to show the command line arguments:

C:\>"C:\Program Files\CAXperts\UniversalPlantViewer Builder\Universal-PlantViewer Builder.exe" /?

Command line arguments:



Example:

"C:\Program Files\CAXperts\UniversalPlantViewer Builder\UniversalPlantViewer Builder.exe" -input C:\39_VUE_Madison\MADISON.upvc -pdf C:\Madison.pdf -upv C:\UniversalPlantViewer

5 Advanced features

5.1 Advanced configuration for capturing graphics

This chapter is for advanced users. You may ignore this chapter if advanced configuration is not required. Using an .ini file, users can define custom object types and rules for how **UniversalPlantViewer Builder** should handle these objects.

Number of objects

The file size of the resulting PDF file depends noticeably on the number of objects captured. Ignoring less-meaningful objects (e.g. welds in **SmartPlant 3D** sessions) is one approach for reducing the overall 3D PDF file size.

The following syntax is used to define a custom object type in the.ini file:

```
[ObjectDefinition]
ObjectTypeName=AttributeName Operator Value
```

Example:

```
[ObjectDefinition]
MyWeld=Component=Weld
```

[ObjectDefinition] is the section name in the .ini file. **MyWeld** is the object type name, which can be freely defined. **Component** is an attribute name, which must exist in the design review session. The "=" character after **Component** is the operator. The operator may be "=" and "<>" for equality or "like" and "not like" when using wildcards. **Weld** is the attribute value.

The example defines that an object type **MyWeld** exists for the objects, whose attribute **Component** equals the value **Weld**. Users can build rules to ignore objects of type **MyWeld** using the following syntax in the .ini file:

```
[IgnoreObject]
MyWeld=1
```

The .ini file name is `UniversalPlantViewer.ini` and is copied automatically from the installation template to the folder of the design review session loaded in **Universal-PlantViewer**. By default the following definitions exist in the .ini file to ignore welds of **Smart 3D** sessions:

```
[ObjectDefinition]
Weld=Component=Weld
Weld1=Commodity type Like *weld*
```

```
[IgnoreObject]
Weld=1
Weld1=1
```

