

HiCAD Plant Engineering

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Important Notes on Updates

Please read the following, important information if you have used the modules 3-D Plant Engineering or Pipeline Planning in a HiCAD version older than HiCAD 2016.

Update - Procedure for the Plant Engineering Module

If you have already used the Plant Engineering module of a HiCAD version older than 2018, proceed as follows:

1. Backup

Make a backup of the current state of your database.

In the FILEGRUP.DAT file in the *exe* subdirectory of the existing old HiCAD version, check the entry at position 6:, which indicates the part directory for HiCAD Plant Engineering. This can either be the local directory *PlantParts* of your HiCAD installation (e.g. *6:C:\hicad\PlantParts*), or a Server directory, e.g. *6:\\MyServer\hicad\PlantParts*.

- If the Server directory has been entered here, make a backup of this Server directory.
- If the local directory has been entered here, make a backup of this local *PlantParts* directory.

2. Installation

Perform the HiCAD Update Installation.

Please do not start the programs yet.

3. Updating of the database

This step needs only to be executed if you have not worked with the HiCAD Plant Engineering module yet, use a database of the ISD, and now want to work with the HiCAD Plant Engineering module. Through the executing of the file, your already existing database will be "supplemented" for the Plant Engineering module.

- Start the Windows Command Prompt and switch to the HiCAD *exe* directory.
- Enter the command *HeliosDbUpdate.exe*.
- If this has not already been done, update the database subversion.

By executing the file you can also check whether the database for the plant Engineering module is up to date.

4. Edit part directory

If a Server directory has been entered in the FILEGRUP.DAT file at position 6:, proceed as follows:

- Copy the content of the local *PlantParts* directory of the HiCAD installation to this directory.
- In the Server directory, delete the file _Upd_V170x.dat.

If the local *PlantParts* directory has been entered in the FILEGRUP.DAT file at position 6:, proceed as follows:

• In this directory, delete the file _Upd_V170x.dat.

5. Check classes for updates from Versions older than HiCAD 2010

If you are updating from a Version older than HiCAD 2010, and want to work with Air duct parts for the very first time, you need to check whether the classes listed below already exist in your database, and if so, delete them. In all other cases you can continue with Step 6.

- Base, rectangular
- Offset bend, symmetrical
- Offset bend, asymmetrical
- Flange, rectangular
- Y-piece, rectangular

- Duct part, rectangular
- Knee, rectangular with arc
- Knee, rectangular with corner
- Pipe transition, symmetrical
- Pipe transition, asymmetrical
- T-piece, rectangular, straight top
- T-piece rectangular, slanted top
- Transition, symmetrical
- Transition, asymmetrical

6. Realise required database state

Start the *DbPlantDataImport.exe* program. Login as Administrator, because you require unlimited read and write permissions.

- If the **Update part variants** dialogue window appears, click **Update now**.
 - Again, log in as Administrator.
 - In the next dialogue, click **Start**. After completion of the process, click **End**.
 - If the **DbPlantDataImport.exe** program closes after this, re-start it.
- Click Update Helios for Plant Engineering.
- After completion of the process, close the program.

7. Adjustment of part type "Gauge parts"

If required, you can now perform the adjustment for the part type "Gauge parts" (see below).

8. Import new variants

Also use **DbPlantDataImport.exe** to import supplied (new) variants to your database if these are not yet contained in it.

If you are updating from a Version older than HiCAD 2011, please additionally note the following:

Seal elements

If your database already contains seal elements, and you want to fit seals or gaskets as 3-D parts, add the attribute ANSCHLUSSART (CONNECTION_TYPE) with value 20000 to all data records of parts of the type DICHTUNG (SEAL).

Generate BESTELLVERMERK (=ORDER NOTE) attribute

If you enter the variants supplied with the current HiCAD version into the database via part data synchronisation, the BESTELLVERMERK (=ORDER_NOTE) attribute will be automatically assigned a value.

Use the external tool **VarDbAttConfig.exe** to subsequently add the HELiOS part attribute BESTELLVERMERK (=ORDER_NOTE) to the variants that already exist in the database. . You can find this tool in the HiCAD / EXE subdirectory.

- 1. Start the tool VarDbAttConfig.exe with a double-click.
- 2. After starting the tool, select the **Industry** Standard Plant Engineering or Air ducts and click the click the **Selection of variants** button.

🛃 VarDbAttConfig	
Industry	Standard Plant Engineerir 💌
	Selection of variants
Enter	End

3. Choose a part type - either double-click the desired part or select it with a single click and confirm with **OK**.

Part type	-
Rranch	
Nozzle	
🔄 Valve	
🕩 Vessel	
Blank flange	
Double knee pipe	
Three-way valve	
Corner valve	
Flange	
Straight pipe	
ECY-piece	
🗇 Cap	
TKnee pipe	
♀ Gauges	
Pumps	
Reducer	
Reducer, excentric	
Elbow	
Pipe clamp	
Branch saddle	
? Other parts	-
? Other pipe parts	_

Select part type

4. Select one or several variants and click **OK**.

Select variants

Select document			
Key value 3110010 Part type T-Stück) rund		
Designation	Standard designation	Document	Document rev
+GF+T-piece S 130, EN 10242	EN 10242 S130	B00DH4X	0
T-piece	DIN 2615 T1	B00DH4X	0
T-piece	DIN 2615 T2	B00DH4X	0
T-piece ASME B16.9	ASME Tee	B00DH4X	0
T-piece with identical branch	EN 10253-2-Type A	B00DH4X	0
T-piece with identical branch	EN 10253-2-Type B	B00DH4X	0
T-piece with identical branch	EN 10253-4-Type A	B00DH4X	0
T-piece with identical branch	EN 10253-4-Type B	B00DH4X	0
T-piece with reduced branch	EN 10253-2-Type A	B00DH4X	0 _
T-piece with reduced branch	EN 10253-2-Type B	B00DH4X	0
T-piece with reduced branch	EN 10253-4-Type A	B00DH4X	0
T-piece with reduced branch	EN 10253-4-Type B	B00DH4X	0
T-piece, extruded	EN 10253-4-Type	B00DH4X	0
•			•
ОК			

5. In the **Attribute configuration** window, the attribute contents of the variant are listed in the BESTELLVERMERK (=ORDER_NOTE) column. If required, you can modify them via a double-click.

ariants	(Comment	(BESTELLVERMERK	
C:GF10242_S130).V	GF 130- <nps_inch>-<nps3_inch></nps3_inch></nps_inch>	

Click the $\frac{1}{2}$ icon to select a saved article number configuration. The corresponding configuration files *NNNNNN*.*.DESIGNATIONCONFIG.TXT are located in the HiCAD sub-directory PLANTPARTS\CATSEARCH. Double-click a configuration, or select it with a single click and confirm with **OK**.

Select configuration

Select configuration	
Key value 3110010	
(Index:)Configuration	
1 DIN 2615 - 1 - <d_aussen> x <wanddio< td=""> 2 DIN 2615 - 2 - <d_aussen> x <wanddio< td=""> 3 Tee ASME B16.9 - <d_aussen> x <wanddio< td=""> 4 GF 130 - <nps_inch> - <nps3_inch> 5 <normbezeichnung> - <nennweite> - 6 <normbezeichnung> - <nennweite> - 7 EN 10253-4-Typ B-<d_aussen>x <wandd< td=""> 8 <normbezeichnung> - 9 <normbezeichnung> - 9 <normbezeichnung> - 10 EN 10253-4-Typ A-<d_aussen>x <wandd< td=""> 11 EN 10253-4-Typ A-<d_aussen>x <wandd< td=""> 12 EN 10253-4-Typ A-<d_aussen>x <wandd< td=""> 12 EN 10253-4-Typ B-</wandd<></d_aussen></wandd<></d_aussen></wandd<></d_aussen></normbezeichnung></normbezeichnung></normbezeichnung></wandd<></d_aussen></nennweite></normbezeichnung></nennweite></normbezeichnung></nps3_inch></nps_inch></wanddio<></d_aussen></wanddio<></d_aussen></wanddio<></d_aussen>	(E> (E>)ICK <n (ICK (AN)ICK)ICK)ICK)ICK</n
ОК	

If you right-click the name of a variant file, the attributes belonging to this variant are displayed.

Attributes of the variant

Attributes for general type	x
Attributes for general type Attribute name Attribute value ANSCHLUSSART 32000 BENENNUNG +GF+T-piece S 130 BESTELLVERMERK GF 130- <nps_inch< td=""> COMPONENT_Q Stck COMPONENT_R In Arbeit COMPONENT_T Halbzeug+Anlagenbau HEL_SACHNUM TN-06203 NORMBEZEICHN EN 10242 S130 OK OK</nps_inch<>	

- 6. After exiting the **Attribute configuration** dialogue window with **OK** the start window will be displayed again. Click the **Enter** button to enter the attribute values into HELIOS.
- 7. Click the **End** button to end the program.

Update - Procedure for the Pipeline Planning Module

If you have already used the Pipeline Planning module of a HiCAD version older than 2018, proceed as follows:

1. Backup

Make a backup of the current state of your database.

Before installing the HiCAD Update, check in the FILEGRUP.DAT file in the *exe* subdirectory of the existing old HiCAD version, check the entry at position 6:, which indicates the part directory for HiCAD Plant Engineering. This can either be the local directory *PlantParts* of your HiCAD installation (e.g. *6:C:\hicad\PlantParts*), or a Server directory, e.g. *6:\MyServer\hicad\PlantParts*.

- If the Server directory has been entered here, make a backup of this Server directory.
- If the local directory has been entered here, make a backup of this local *PlantParts* directory.

2. Installation

Perform the HiCAD Update Installation.

Please do not start HiCAD yet.

3. Edit part directory

If a Server directory has been entered in the FILEGRUP.DAT file at position 6:, proceed as follows:

- Copy the content of the local *PlantParts* directory of the HiCAD installation to this directory.
- In the Server directory, delete the file _Upd_V170x.dat.

If the local *PlantParts* directory has been entered in the FILEGRUP.DAT file at position 6:, proceed as follows:

• In this directory, delete the file _Upd_V170x.dat.

4. Start HiCAD

- Start HiCAD. Try to create a new Plant Engineering drawing file.
- If the **Update part variants** dialogue appears, click **Update now**.
- In the next dialogue, click **Start**. After completion of the process, click **End**.

Adjustment for Part Type 'Gauge Part'

The old part type **Gauge** (Part type ID: 9800001) needs to be replaced with the new part type **Gauge part** (Part type ID: 5920010; Mask: sml_msrbtl.

If this has not happened yet, proceed as follows:

- The new part type with the ID 5920010 was automatically entered in the database by **DbPlantDataImport.exe**.
- In the HELiOS Desktop, perform a part search with the Classification Gauge (not "Gauge part"!).
 - If this class does not exist, no further action will be required.
 - If the class exists, mark all rows of the result list. Right-click to open the context menu, and select **Classification**.

Search condition	15						
Article cu in		1					
	General						
0	Display article		Index	c [
S 20	Edit article master		₩				
0	Preselect article						_
🔶 📩	Add to favourites		▼ Relea	ise:		•	
2	Edit Workflow		Part	huner (
6	Assign roles			iype.			
G	Edit attribute values		Draw	/ing/Manuf.:			
	Assignments						_
G	Classification		Orde	r quantity:		•	
	Assignments	•	Reso	urcina:		•	
	Where-used lists		Orde	r note:			
	Linke	(<u> </u>		i note.			
	Innut						
6	Create index						-
	Create index		Crea	ted:			
16	Create index, with link		Origi	n: (
N6	Create drawing index		Base	d on:			
S	Create derivation						
¥	Create derivation, with link	_					
- Search	Output						
4 😼 🤤	Show Revision Management						
- · · ·	Call report						
Re Nur	Copy HELiOS URL	Aaterial	Standard	Part type	Release status	Creation date	User
	Display ID		(DMG1)	Raw-part+Plar	it in Progress	14.01.2010	Admin
	Edit		(DMG1)	Raw-part+Plar	t In Progress	14.01.2010	Admir
🖸 🖏 si 🎽 🗙	Delete		(DMG1)	Raw-part+Plar	t In Progress	14.01.2010	Admir
🖸 🕼 si 🔟			(DMG1)	Raw-part+Plar	t In Progress	14.01.2010	Admir
O SN-025323	Pressure gauge		(DMG1)	Raw-part+Plan	t In Progress	14.01.2010	Admir

Result list (Example)

• In the Classification tree structure tree, activate the new class Gauge part:



When you now click **OK**, all article masters belonging to the selected parts will be assigned the new class.

• Delete the now obsolete class *Gauge* after verifying that no parts are assigned to it any more:

Elbow, roun	d	
Flange, roun		
Gauge		
Gauge	Insert new class	
Insulat	Change	
Knee, r	Paste	Ctrl+V
	Cut	Ctrl+X
	Сору	Ctrl+C
	Delete	Del
	Rename	
	Select all	Ctrl+A

Data Format and Adjustment of Parts / Database

Please note:

- Since HiCAD 2012 (Version 1700), HiCAD has been using a new data format.
- If you have already created Plant Engineering parts with an older HiCAD version (i.e. before HiCAD 2016), you will normally want to use these parts in newer versions as well. If the parts exist in an old data format (< Version 1700), they need to be converted into the new format. see Update of part data (and database)
- If you have not used any older HiCAD versions before, and HiCAD 2014 is your first HiCAD version, the part files already exist in the new archive file format. However, it may be possible that the installed HELIOS database needs to be adjusted.
 see Adjustment of the database
- The VarUpdate.exe program can only be started automatically from HiCAD if Catalogue has been set as the part data source. If you select Database as part data source, DbPlantDataImport.exe is used as the central update tool for Plant Engineering. This tool will in turn call the VarUpdate.exe program.

Update of part files (and database)

If you have already created Plant Engineering parts with an older HiCAD version (i.e. before HiCAD 2016), you will normally want to use these parts in newer versions as well. If the parts exist in an old data format (< Version 1700), they need to be converted into the new format.

First make sure that the correct directory path to your current Plant Engineering files has been specified at position 6: in the FILEGRUP.DAT file in the HiCAD EXE subdirectory.

The further procedure depends on whether you have selected the HELiOS **Database** or the HiCAD **Catalogue** as part data source (Settings > Settings > Part selection > Parts from: ...).

Part data source: Database

Use the **DbPlantDataImport.exe** tool in the HiCAD EXE subdirectory to convert your part data, which also enables an update of the database for the plant Engineering module.

If an updating of part data is required, HiCAD will display a corresponding dialogue when you try to create or open a Plant Engineering drawing file:

Update part variants
The content of the part directory that you use has not been adapted to the current HiCAD version yet.
As of Version 1700, archive files will be used for all Plant Engineering parts (file extensions .paa and .vaa)
The formerly used part files can be automatically converted to archive files.
To update your part data or your database, proceed as follows: - Close HiCAD.
- Start the program 'DbPlantDataImport.exe'.
ок

If you are currently not using the HiCAD Plant Engineering modules, click **OK** and operate HiCAD in the same way as you would usually do. This window will not be re-displayed until you re-start HiCAD.

But if you want to use the HiCAD Plant Engineering modules, click **OK**, and then update your part data first, using the **DBPlantDataImport.exe** tool.

Part data source: Catalogue

If an updating of part data is required, HiCAD will display a corresponding dialogue when you try to create or open a Plant Engineering drawing file:

Update part variants
The content of the part directory that you use has not been adapted to the current HiCAD version yet.
As of Version 1700, archive files will be used for all Plant Engineering parts (file extensions .paa and .vaa)
The formerly used part files can be automatically converted to archive files.
Click 'Update now' to convert your part files.
In the activated 'VarUpdate' program, dick 'Start'.
Processing may take several minutes.
Update now Update later

If you are currently not using the HiCAD Plant Engineering modules, click **Update later** and operate HiCAD in the same way as you would usually do. This window will not be re-displayed until you re-start HiCAD.

If you want to use the HiCAD Plant Engineering modules, click **Update now**. This starts the **VarUpdate.exe** tool for the updating of your database.

You use this tool for the conversion of part files to archive file format (file extension: .paa or .vaa). In contrast to older HiCAD versions, it can only be started automatically from HiCAD if **Catalogue** has been set as the part data source (Settings > Settings > Part selection > Parts from: Catalogue). If you select **Database** as part data source, **DbPlantDataImport.exe** is used as the central update tool for Plant Engineering. This tool will in turn call the **VarUp-date.exe** program.

The links that were previously defined by VarUpdate.exe, as well as all other required links will now be set up by DbPlantDataImport.exe.

Generate part data ar	chive files			
Part format:	parts	•	(+7-)	
Source directory:	\HiCAD\PlantParts\Parts3			.
 A2HF1_16.vad A2HF1_40.vad A2RF1_100.vad A2RF1_16.vad A2RF1_40.vad A2RF1_40.vad AERF_16.vad AERF_40.vad AKL01_16.vad ARM2WVHF.VAD ARM2WVHM.vad 				 ARM2WVHN.VAD ARM2WVRF.VAD ARM2WVRF.VAD ARM2WVRN.vad ARM2WVSRF.VAD ARM2WVSRF.VAD ARM2WVSRN.vad ARM2WVSRN.vad ARM3WKHF.VAD ARM3WKHF2.VAD ARM3WKHM.vad
 Access to database Access to catalogues Adapt file name in doct Add industry ID to class Define isometry links Transfer archive files to 	ument master sification o Vault Server			Select all Reset all Select all without archive
Display log after update 372 file(s) selected			Star	t Cancel End

After starting the tool the following window will be displayed:

Part data for which a catalogue entry exists are highlighted. Click **Start**: The updating of the part data begins. This process normally takes 10 - 20 minutes, depending on the number of existing part files; if the parts are transferred via a network, the process can take significantly longer. The update was successful if an archive file could be generated for all parts for which a part master (or catalogue entry if the Catalogue has been selected as part data source) exists. If possible, an archive file will be created for all other parts as well. If the update was not successful, an error log will be displayed, indicating for each part whether an archive file could be successfully generated.

After the update, click **End** and re-start HiCAD. Your part inventory can now be used in HiCAD Plant Engineering.

Adjustment of the database

If you did not use any old HiCAD versions and install the new HiCAD version on your computer, the part files already exist in the new archive file format. However, it may be possible that the installed HELIOS database needs to be adjusted. Use the **DbPlantDataImport.exe** tool in the HiCAD EXE subdirectory for this purpose.

If an updating of the database is required, HiCAD will display a corresponding dialogue when you try to create or open a Plant Engineering drawing file:

Update part variants
The content of the part directory that you use has not been adapted to the current HiCAD version yet.
As of Version 1700, archive files will be used for all Plant Engineering parts (file extensions .paa and .vaa)
The formerly used part files can be automatically converted to archive files.
To update your part data or your database, proceed as follows: - Close HiCAD.
- Start the program 'DbPlantDataImport.exe'.
ОК

If you are currently not using the HiCAD Plant Engineering modules, click **OK** and operate HiCAD in the same way as you would usually do. This window will not be re-displayed until you re-start HiCAD.

But if you want to use the HiCAD Plant Engineering modules, click **OK**, and then close HiCAD. After this, update your database.

Configuration of the HELiOS Databases

The **DbPlantDataImport.exe** program is the central tool for the updating of the database, which is required for the current version of the HiCAD Plant Engineering module. For this purpose, the creation of attributes and lists of characteristics, as well as the import of variants will be required.

This is in particular required for

- customers who have not worked with the Plant Engineering module yet, and whose existing database still needs to be adjusted to the current Plant Engineering state.
- customers whose database contains an old Plant Engineering state.

The files

The tool contains the following files:

File name	Description	HiCAD directory
DbPlantDataImport.exe	The main program	Exe
DbPlantDataImportConfig.xml	General configuration file for DbPlantDataImport.exe	Sys
ExcludedAttributes.dat	Configuration file for the import of .paa and .vaa files (attributes that must not be overwritten in variant subtypes)	PlantParts\PartDataAutoSync
anbtlken_top.dat	Data file with List of Characteristics classes of the first level	Sys
anbtlken_anlagenbau.dat	Data file with Plant Engineering classes	Sys
anbtlken_luftleitungen.dat	Data file with Air duct classes	Sys
Anlagenbau_Attribute.tbk	Data file with attributes, including init values	Sys
PlantpartLinkage.dat	Links to be specified	Sys

The data files are created by the ISD, the configuration files are customer-specific files.

Starting the program

The program **DbPlantDataImport.exe** is located in the SYS directory of your HiCAD installation.

When you start the program, you will be prompted to log onto HELiOS. To be able to use all functions, log in as PDM administrator (as parts in Plant Engineering are not project-related, no Project needs to be specified here).

Please note that the program can only be used if you have previously performed a **Variant Update**. This will be automatically checked upon start. If required, the updating will be performed automatically. You have the option to cancel the process, which will close the program. The program will also be closed if errors occur during updating of the variants.

If no update is necessary, or if an update was successfully performed, the program **DbPlantDataImport** displays the **Manage Plant Engineering data in HELiOS** dialogue window. You can then update the HELiOS database and import data.

Please note:

- If an update via DbPlantDataImport.exe is required, HiCAD will display a corresponding message.
- The project assignment can take already place during login in the **Login data** dialogue window, by activating the desired project. The document master belonging to the part (or variant) and the corresponding article masters will then be assigned to this project, if no other project assignments are selected in any further dialogues.

Notes on the supplied database:

As of HiCAD Version 2018 SP1 the HiCAD PlantParts directory contains the file **starter.lst**. This file contains a list of all VAA and PAA files which are contained in an unmodified, supplied database. This facilitates an updating of the associated article and document masters and allows an clearing of the database with the help of PartDataAutoSync.exe or DBPlantDataImport.exe.

Manage Plant Engineering Data in HELiOS

If no update is necessary, or if an update was successfully performed, the program **DbPlantDataImport** displays the **Manage Plant Engineering data in HELiOS** dialogue window. The following tasks can then be performed:

- Update the HELiOS database for Plant Engineering (1)
- Import data
 - Definition of initialisation values for parts and documents to automate the data import (2),
 - Exclude attributes from processing (3),
 - Select the language in which the attributes are to be entered in the database (4), and
 - Select the Workflow if required (5).
- Allow use of existing article masters (6)

Always open article master mask	Always open document master mask
Subsequently offer as init value	Subsequently offer as init value
Init value, Part	Init value, Document
Message if Plant Eng. attributes missing	Always generate new database IDs
Allow use of existing article masters 6	
Specify attributes which must not be overwritten in	n variant subtypes:
Language for text attribute values:	English (United Kingdom)
(Workflow)	
☑ Request part workflow	Part workflow
▼ Request document workflow	Document workflow
Madden and the in addition of the state	
worknow selection is only possible if the part does	not vet exist in the database
worknow selection is only possible if the part does	not yet exist in the database.
Save configuration	Update HELiOS for Plant Engineering
Vorкпow selection is only possible if the part does Save configuration File name	Update HELiOS for Plant Engineering
Vivorkinow selection is only possible if the part does Save configuration File name Co	Update HELiOS for Plant Engineering
Save configuration File name	Update HELiOS for Plant Engineering
Save configuration File name Co	Update HELiOS for Plant Engineering
Vivorkinow selection is only possible if the part does Save configuration File name Co	Update HELiOS for Plant Engineering
Vivorkinow selection is only possible if the part does Save configuration File name	Update HELiOS for Plant Engineering
Vivorkinow selection is only possible if the part does Save configuration File name Cc	Update HELiOS for Plant Engineering
Save configuration File name	Update HELiOS for Plant Engineering
Save configuration File name	Update HELiOS for Plant Engineering
Save configuration File name	Update HELiOS for Plant Engineering
Save configuration File name	Update HELiOS for Plant Engineering
Viorkinow selection is only possible if the part does Save configuration File name Cc	Update HELiOS for Plant Engineering

Click the File selection button to select the files to be imported.

Further buttons are:

Save con- figuration	When you click this button, the current settings of the dialogue window will be saved to the file <i>DbPlantDataImportConfig.xml</i> in the SYS directory of your HiCAD installation. These will be the default settings when you re-start the program.
Start	Starts the import. Document and article master data are created or updated, and, if required, copied to the Vault Server. In the process, the program will attempt to enter the master data without any interactions with the user. If this is not possible, you will be prompted to enter the required data. Examples of this are the document mask, the part mask and the Workflow selection. Activate the Always open article master mask or the Always open document master mask checkbox if you want the mask to be displayed for each imported element.
Log	The actions performed with the <i>DbPlantDataImport.exe</i> program will be recorded in the log file <i>DbPlantDataImport_Protocol.txt</i> saved to the TEMP directory of your HiCAD installation. Click the Log button to view the contents of the file. 26.11.2013 15:15:18 Starting update of attributes 26.11.2013 15:15:18 Starting update of part classes (classification) 26.11.2013 15:15:18 New Plant Engineering class: Elbolet 26.11.2013 15:15:18 Update of part classes (classification) completed 26.11.2013 15:15:18 Starting update of links 26.11.2013 15:15:18 Link AnlBauteil-ZubSatzN entered 26.11.2013 15:15:18 Updating of links completed
End	Closes the program.

Update the HELiOS Database for Plant Engineering

The updating of the database is the first step of the HELiOS database configuration. To do this, click the **Update HELiOS for Plant Engineering** button in the dialogue window.

The following adjustments will be performed:

- HELiOS attributes, including lists of predefined values and translations will be generated, if these do not exist yet. Existing attributes etc. will be adjusted in some cases. All processes will be recorded in a log file, the contents of which you can display by clicking the **Log** button.
- List of Characteristics classes for Plant Engineering will be created if they do not exist yet.
- If any updates were necessary, the program needs to be re-started. A corresponding message will be displayed in such cases.
- The links required for the current version of HiCAD Plant Engineering will be entered into the database if this has not already happened. The links to be entered are defined in the file *PlantpartLinkage.dat* in the SYS directory of your HiCAD installation.

Import data

Init values

To automate the import, i.e. to avoid manual data input by the user, Workflow and attribute values can be initialised (i.e. assigned preset values).



The Allow use of existing article masters checkbox is important if you want to use already existing article masters for the synchronization of part variants (VAA files) or fixed parts (PAA files) with the HELiOS database. Further information on this option can be found in the Utilisation of Existing Part Masters topic.

Always open article master mask / document master mask

If you activate these checkboxes, these masks will be displayed for each imported element. In the masks you can then also change the assignment to folders or projects.

Menter Document			
Document			
Document number	DN-000234	Sheet	
Project number	Project-independent	Index:	
	Folder-independent 🔹		

Init value, Part / Document

If you click the **Init value...** buttons, the dialogue for attribute value initialisation will be displayed. These will be applied to every element during import.

Init values for attributes						
Double-click to edit value Double-click to select a value from the column with selectable new values						
Attribute designation	Attribute name	Selected init value				
Unit of quantity	COMPONENT_QUANTITY_UNIT	Piece				
Part type	COMPONENT_TYPE	Part				
New Remove	Edit	OK Cancel				

In the dialogue window the attributes and their texts are shown as entered into the mask (apart from a few exceptions). For attributes of the type REFERENCE, the references must always be specified.

Use the **New** and **Remove** buttons to add or remove attribute values. Click **Edit** to change the values.

Edit attribute	×
Part type (COMPONENT_TYPE)	
Part	-
OK Cancel	

Subsequently offer as init values

Activating this checkbox makes editing safer and more convenient, by taking over the values from an example. If the checkbox is active a dialogue will appear after input or editing of master data, allowing you to use the data you have just entered/edited as an init value for future data inputs. The dialogue corresponds to that for attribute value initialisation, but contains the additional **Selectable new value** column.

Attribute designation	Attribute name	Selected init value	Selectable new value	
Connection type	ANSCHLUSSART		20002 1 5100010 DIN 2633	
Comment	BEMERKUNG	Installation lengths acc		
Designation	BENENNUNG		Ball valve PN 16	
Order note	BESTELLVERMERK		Ball valve PN16 (with flange	
Unit of quantity	COMPONENT_QUANTITY_UNIT	Piece		
Release status	COMPONENT_RELEASE		In Progress	
Pressure	DRUCK		16	
Standard designation	NORMBEZEICHNUNG		(A2HF1_16)	

In the above example the part attributes assigned during the last input are listed. No predefined values have been selected for the other rows - the **Selected init value** column is empty. You can use the **New**, **Remove** and **Edit** buttons to specify predefined values. Or you can apply a value from the **Selectable new value** column by double-clicking it.

Always generate new database IDs

If this checkbox has been activated, the database IDs saved in the archive files (VAA or PAA files) will not be used for part data import. Instead, newly generated database IDs will be used, which will then automatically be transferred to the corresponding archive files. This means: The database IDs that previously existed in the archive files will be overwritten with the new ones!

This option will be deactivated again when you restart the **DbPlantDataImport** tool.

This option should only be activated if a previous attempt of the part data import failed, and a database error message was issued, saying that one or several document or article masters could not be created.

Specify attributes that must not be overwritten in variant subtypes

Specify attributes which must not be overwritten in variant subtypes:	List

This option enables you to exclude attributes from processing. To do this, click the **List** button.

Excluded attributes	x
Values of excluded attributes will neither be overwritten nor deleted during part data auto-sync.	
✓ means: Attribute is excluded	
 Checked by (GEPRUFT_NAM) Checked on (GEPRUFT_DAT) Release (FREIGABE) Release date (FREIG_DAT) Release name (FREIG_NAM) Release status (COMPONENT_RELEASE) Unit of quantity (COMPONENT_QUANTITY_UNIT) Accessory set (ZUBEHOERSATZ) Angle (WINKEL) Angle 1 of section schema (PROFIL_SCHNITTW1) Angle 2 of cutting pattern (PROFIL_SCHNITTW2) Angle bottom/left - XZ (PROFIL_SCHNITTW2YZ) Angle top/right - XZ (PROFIL_SCHNITTW1XZ) 	•
Default Sort OK Cancel	

All attributes that you mark in the list will be excluded from the processing through the part data auto-synchronisation, i.e. for each of these attribute the following applies:

- If the VAA or PAA archive file supplies a value for this attribute, it will not be used.
- If the article master of the general type contains a value for one of these attributes, it will not be copied to the article masters of the sub-type.

If you open the dialogue, the list will always be sorted in such a way that the marked attributes will be placed at the top in alphabetical order. All remaining attributes can be found below, also in alphabetical order. This sorting can be restored at any time by clicking the Sort button, e.g. after a marking of additional attributes.

Language for text attribute values

Language for text attribute values:	English (United Kingdom))
-------------------------------------	--------------------------	---

As of Version 2014, the part files (.vaa and .paa) supplied with HiCAD will contain text attributes in several languages.

Click the ____ button in the Language for text attribute values field to select the language in which you want the attributes to be read out.

Before importing the data of the corresponding part file to the database, HiCAD checks which languages the file can actually supply. If the chosen language is not included, the language selection dialogue window is displayed, enabling you to choose a language that exists in the file.

The chosen language applies to the current file. It can, however, also be used as a default, by activating the corresponding option in the dialogue.

Workflow

Workflow		
Request part workflow	Part workflow	
Request document workflow	Document workflow	
Workflow selection is only possible if the part do	es not yet exist in the database.	

If the selection of a Workflow is required – because HELiOS offers several Workflows – this selection will be automatically applied to the Configuration and used for further data input. If you want the program to ask for the Workflow each time, activate the Request part workflow or Request document workflow checkbox.

File selection

Click the **File selection** button to select the files to be imported. Choose the folder and the desired files. A multiple selection of archive file lists (*.lst) is also possible. All VAA and PAA files contained in the list files will then be shown and are ready for import into the database.

The file list can be edited by right-clicking an item of the list and selecting the desired function from the context menu:

File name		Comment
ARM2WVHN.vaa		
ARM2WVRN.vaa		
ARM3WVRM.vaa		
ARM3WVRN.vaa		
ARMEWKHM.va	Show document ma	aster
ARMEWKHN.va		
ARMEWVHF.vai	Delete from databa	se
ARMKLPHO.vaa	Remove from list	

The functions **Delete from database** and **Remove from list** can also be applied to multiple selections.

Please note:

Variants stored in HELiOS observe a special document/article linking model.

Variant Update

When you start HiCAD and the *DBPlantDataImport* tool, it is checked automatically whether an update of the variants will be necessary. If required, the updating will be performed automatically. You have the option to cancel the process, which will close the program. The program will also be closed if errors occur during updating of the variants.

Automatic update of part data (and database)

If you have already created Plant Engineering parts with an older HiCAD version (i.e. before HiCAD 2016), you will normally want to use these parts in newer versions as well. If the parts exist in an old data format (< Version 1700), they need to be converted into the new format.

First make sure that the correct directory path to your current Plant Engineering files has been specified at position 6: in the FILEGRUP.DAT file in the HiCAD EXE subdirectory.

First, the following dialogue will be displayed:

Update part variants
The content of the part directory that you use has not been adapted to the current HiCAD version yet.
As of Version 1700, archive files will be used for all Plant Engineering parts (file extensions .paa and .vaa)
The formerly used part files can be automatically converted to archive files.
Click 'Update now' to convert your part files.
In the activated 'VarUpdate' program, click 'Start'.
Processing may take several minutes.
ļ
Update now Update later

If you want to cancel the complete update/import process, click Update later.

Name:	Administrator	•	Login
First name			
Active Group:	PDM Administrators		
Active project:	Project independent	•	
Project path:	Project independent		

Otherwise, click **Update now**. This starts the tool for the update of your part data:

As you want to use this tool to auto-update the database, it is mandatory that you obtain the required write permissions when logging in (rights for the Administration function.

When you click **Login**, the following dialogue windows appears:

Generate part data archive files		
Part format: All parts Database language: English (United States) Source directory: C:\HiCAD\PlantParts\Parts3	• +/)	V ()
 ✓ A2HF1_16.vad ✓ A2HF1_40.vad ✓ A2RF1_100.vad ✓ A2RF1_16.vad ✓ A2RF1_40.vad ✓ A2RF1_40.vad ✓ AERF_16.vad ✓ AERF_16.vad ✓ AERF_40.vad 		ARM2WVHN.VAD ARM2WVRF.VAD ARM2WVRM.vad ARM2WVRN.vad ARM2WVSRF.VAD ARM2WVSRF.VAD ARM2WVSRN.vad ARM2WVSRN.vad ARM3WKHF.VAD ARM3WKHF2.VAD ARM3WKHF2.VAD
 Access to database Access to catalogues Adapt file name in document master Add industry ID to classification Transfer archive files to Vault Server Display log after update 		Select all Reset all Select all without archive
373 file(s) selected	Start	Cancel End

Click Start.

The update of the part data begins. Depending on the number of existing part files, this process can from a few minutes to up to half an hour; this time can be significantly longer if the data are transferred via a network. The updating was successful if an archive file could be generated for all parts with article master data (or catalogue entry, respectively, in case of the Catalogue as part data source). For all other parts, too, an archive file will be created if possible. If the updating was not successful, an error log will be displayed, indicating for each part whether or not an archive file could be successfully generated.

The following changes will be performed in the database:

- In the document masters of the Plant Engineering parts, the file names will be modified, i.e. the extension **.vad** will be replaced with **.vaa**, and the extension **.kra** will be replaced with **.paa**.
- The superordinate classes used for part classification obtain an ID, the so-called "industry ID". (10001 for the class Plant Engineering, and 10002 for the class Air ducts).
- » The link definitions required for pipeline isometry will be entered (**Pipeline Isometry** and **Pipeline Lay**outplan).

If a Vault Server exists and has been activated, the archive files of the parts will be moved to the Vault Server. The files can then no longer be accessed via the Windows file system.

After successful update, click End.

Auto-synchronisation of the database entries

If you did not use any old HiCAD versions and installed the new HiCAD version on your computer, the part files already exist in the new archive file format. However, it may be possible that the installed HELIOS database needs to be adjusted.

If this is the case, the following dialogue window will be displayed first:

Update part variants
The content of the database that you use has not been adapted to the current HiCAD version yet.
As of Version 1700, archive files will be used for all Plant Engineering parts (file extensions .paa and .vaa) This requires some adjustments in your database.
Click 'Update now' if you want to correct your database.
In the activated 'VarUpdate' program, click 'Start'.
Processing may take several seconds.
Update now Update later

If you want to cancel the complete update/import process, click Update later.

Otherwise, click **Update now**. This starts the tool for the update of your part data:

Login data		
Name: First name	Administrator	Cancel
Active Group:	PDM Administrators	•
Active project:	Project independent	•
Project path:	Project independent	

It is mandatory that you also obtain the necessary write permissions when you log in (rights for the Administration function).

📃 Update part dat	a in database					_ 🗆 X
Part format: Database language:	All parts	•	+/-			
Source directory:	C:\HiCAD\PlantParts\Parts					
 A2HF1_16.vad A2HF1_40.vad A2RF1_100.vad A2RF1_16.vad A2RF1_40.vad A2RF1_40.vad AERF_16.vad AERF_40.vad AERF_40.vad ARM2wVHF.VAI ARM2wVHF.VAI 	(Archive available) (Archive available) (Archive available) (Archive available) (Archive available) (Archive available) (Archive available) (Archive available) (Archive available) d (Archive available)			> > > > > > > > > > > > > > > > > > >	ARM2WVHN.VAD ARM2WVRF.VAD ARM2WVRN.vad ARM2WVSRF.VAD ARM2WVSRF.VAD ARM2WVSRN.vad ARM2WVSRN.vad ARM3WKHF2.VAD ARM3WKHF2.VAD ARM3WKHF2.VAD	(Archiv (Archiv (Archiv (Archi (Archi (Archi (Archi (Archiv (Archiv
 Access to database Access to catalog Adapt file name in Add industry ID to Transfer archive file Display log after up 	se ues document master classification les to Vault Server pdate			Select &	all Resi	et all
375 file(s) selected	1		Starl	Ca	ancel	End

When you click Login, the following dialogue windows appears:

Click Start.

The update of the database begins. This process will normally not take longer than 1 minute; the time can be significantly longer if the data are transferred via a network.

The following changes will be performed in the database:

- In the document masters of the Plant Engineering parts, the file names will be modified, i.e. the extension .vad will be replaced with .vaa, and the extension .kra will be replaced with .paa.
- The superordinate classes used for part classification obtain an ID, the so-called "industry ID". (10001 for the class Plant Engineering, and 10002 for the class Air ducts).
- » The link definitions required for pipeline isometry will be entered (**Pipeline Isometry** and **Pipeline Lay-outplan**).

If a Vault Server exists and is activated, the archive files of the parts will be moved to the Vault Server. The files can then no longer be accessed via the Windows file system.

After successful update, click End.

Utilisation of Existing Article Masters

When entering part data of part variants (VAA files) or fixed parts (PAA files) into the HELiOS database, you can also use already existing article masters.

The procedure for a part variant is described below:

Step 1: Create result list in HELiOS

First, start the HELiOS Desktop and create, via a targeted part search with suitable search criteria, a result list containing the article masters that you want to use for the part variant. Please leave this window open, as you will need it again later.

HELIOS - Project: -, Folder: -, User: A	Find article	
Find Input Output	- Search conditions	⊙ (>) View • ♥ •
Project Explorer × Product Ex Find	Project No. Project-independent III P La ISSUE SUE SUE SUE SUE SUE SUE SUE SUE SUE	Petal
Name Project type	Ancie Designation 1: Test*	Release status Creation date User In Progress 28.05.2015 Administrator In Progress 02.06.2015 Administrator In Progress 02.06.2015 Administrator
	Article info	In Progress 02.00.2013 Administrator In Progress 02.06.2015 Administrator In Progress 03.06.2015 Administrator In Progress 03.06.2015 Administrator In Progress 03.06.2015 Administrator
	Dimensions : Order note: Comment:	In Progress 03.06.2013 Administrator In Progress 03.06.2015 Administrator In Progress 09.06.2015 Administrator In Progress 09.06.2015 Administrator In Progress 09.06.2015 Administrator
	Index creator: Created: Index date: Origin: Index text: Based on:	In Progress 23,04,1998 Administrator In Progress 23,04,1998 Administrator In Progress 23,04,1998 Administrator In Progress 23,04,1998 Administrator In Progress 23,04,1998 Administrator
Properties X Graphics X	- Search result	In Progress 23.04.1998 Administrator In Progress 23.04.1998 Administrator In Progress 23.04.1998 Administrator In Progress 23.04.1998 Administrator In Progress 23.04.1998 Administrator
Description Value	R. Number Index Designation Material Standard designation Part type Release status Creation date User O SN+025638 Test part master 1 Test standard In Progress 09.06.2015 Administrator O SN+025639 Test part master 2 Test standard A In Progress 09.06.2015 Administrator O SN+025641 Test standard 3 In Progress 09.06.2015 Administrator	In Progress 23.04.1998 Administrator In Progress 23.04.1998 Administrator In Progress 23.06.2000 Administrator In Progress 23.06.2000 Administrator In Progress 23.06.2000 Administrator
	Number of data records 3	an rogerss 23.06.2000 Administrator In Progress 23.06.2000 Administrator In Progress 23.06.2000 Administrator • ancel

Step 2: Start DbPlantDataImport.exe

Start the **DbPlantDataImport.exe** program in the HiCAD EXE directory.

- In the dialogue window, activate the Allow use of existing article masters checkbox(1).
- Click File selection button and select the required VAA file (2).
- Click Start (3).

Manage Plant Engineering data in HELiOS	
✓ Always open article master mask	Always open document master mask
Subsequently offer as init value	Subsequently offer as init value
Init value, Part	Init value, Document
Message if Plant Eng. attributes missing	✓ Always generate new database IDs
Allow use of existing article masters	
Specify attributes which must not be overwrit	itten in variant subtypes:
Language for text attribute values:	
Workflow	
Request part workflow	Part workflow
Request document workflow	Document workflow
Workflow selection is only possible if the part	t does not yet exist in the database.
Save configuration	Update HELiOS for Plant Engineering
File name	Comment
FLANGE1.vaa	
Directory path C:\HiCAD\PlantParts	/2
	<u> </u>

Step 3: Specify article master data for general type

As the **Always open document master mask** checkbox has not been activated in Step 2, the article master mask for the general type will be displayed immediately.

Alv Su	Part master for 'general type' (The utilisation of an existing part master i	s not allowed for this.)	8
Enter article			
article 📡 Flange, rou	Ind		
Article number	SN-025642	Index:	
Project number	Project-independent	•	
Folder number:	Folder-independent	•	
Part			
Designation 1:	Flansch 👻	Release:	
Designation 2:		Part type:	Semi-fin. product+PE
Standar	DIN 2633	Drawing/Manuf.:	
Part in fo			
Material:		Order quantity:	Piece
Weight:	[kg]	Resourcing:	
Dimensions :		Order note:	DIN 2633 C
Comment:			
Index:			
Index creator:		Created:	09.06.2015 Administrator
Index date:		Origin:	
Text:		Based on:	

Click **OK** to start the new article master for the general type.

Step 4: Generate article master

The mask for a new article master for the first variant sub-type will be displayed.

Manage Plant Eng	ineering data in HELiOS Suggest new part master for sub-type wil Instead you can also use an existing par For this purpose, copy the HELiOS URL	h Type = 010 t master: into the input field for th	ne article number.
Article number Project number Folder number:	SN-025643 Project-independent Folder-independent	Index:	
Part Designation 1: Designation 2: Standar	Flansch -	Release: Part type: Drawing/Manuf.:	▼ Semi-fin. product+PE
Material: Weight: Dimensions : Comment:		Order quantity: Resourcing: Order note:	Piece ▼ DIN 2633 C 10x17.2
Index: Index creator: Index date: Text:		Created: Origin: Based on:	09.06.2015 Administrator
Reset	Classification		OK Cancel

However, if you do not want a new article master for this sub-type, but want to use an already existing one instead, right-click the desired article master in the HELiOS Desktop window and select **Copy HELiOS URL**.

Find article	And the second se		- • • × •		
R 3					
Find Input Output - Search conditions			(A)		Niew - 🙆 -
Article Classificat	an		Ŭ		
Documents Parts Projects Folders					
bocanicito Fuilo Filipeco Foldero					
Simple	Article number SN-025638	Index:			
Project Explorer × Product Ex	Project number				₹ 0
	Folder number:				
Fina	Display part				5.0
	🐼 Edit part				
Name Project type	Article Preselect part			Palance status Creation	date User
PN-01-06-K Order	Designation 1: Chevronet/flow	In Progress		In Departures 28.05 2015	Administrator
	Designation 2:			In Progress 02.05.2013	Administrator
	Standar Assign roles	Manuf -		In Progress 02.06.2015	Administrator
	Edit attribute values	wanut		In Progress 02.06.2015	Administrator
	Assignments			In Progress 02.06.2015	5 Administrator
	Article Into			In Progress 03.06.2015	Administrator
	Material: qua	antity: Piece		In Progress 03.06.2015	administrator
	Weight: Assignments rcir	ng:		In Progress 03.06.2015	o Administrator
	Dimensions : Where-used lists	te: No.A7156		In Progress 03.06.2015	5 Administrator
	Links			In Progress 03.06.2015	5 Administrator
	Input			In Progress 09.06.2015	6 Administrator
	Changes			In Progress 09.06.2015	5 Administrator
	index:			In Progress 09.06.2015	5 Administrator
	Index creator: Create derivation ed:	09.06.2015 Administrator		In Progress 23.04.1998	8 Administrator
	Index date: Create derivation, with link			In Progress 23.04.1998	8 Administrator
	Text: Output on	:		In Progress 23.04.1998	Administrator
	Show index management			In Progress 23.04.1998	Administrator
	Call second			In Progress 23.04.1998	Administrator
	Contreporta.			In Progress 23.04.1998	Administrator
	Gr Copy HELIOS URL			In Progress 23.04.1990	Administrator
Properties × Graphics × - Search result	Display ID			In Progress 23,04.1996	Administrator
Description Value 😽 🗟 🗎	Standard 🛫 Edit			In Progress 23.04.1998	3 Administrator
Pe Number	Index Decignati 🐣 🗡 Delete D	art type Release statur. Creation date	Urar	In Progress 23.04.1998	8 Administrator
	Tect part matter	In Progress 00.06 2015	Administrator	In Progress 23.04.1998	8 Administrator
30-023036 30 (Schi-02620	Test part master 2 Test standard A	In Progress 09.06.2015	Administrator	In Progress 23.06.2000) Administrator
O SN-023059	Test part master 3 Test standard R	In Progress 09.06.2015	Administrator	In Progress 23.06.2000) Administrator
S14-023041	reasonable of the soundard of	,		In Progress 23.06.2000) Administrator
Number of data or	and a 2			In Progress 23.06.2000) Administrator
Number of data re	Lorus: 5			In Progress 23.06.2000) Administrator 🔽
			and County 1		I•
			ancel		

Now, right-click the **Article number** input field in the part data input window of the DbPlantDataImport tool and select **Paste**.

Always open document master mask

If there is a conflict between attribute values which, on the one hand, are given by the VAA file and, on the other hand, are contained in the article master to be taken over, the following window will be displayed (Example):

Attribute value conflicts						
Designation	Attribute name	New value	Data type	Previous value	Data type	Apply new value
Designation	BENENNUNG	Flansch	CHAR	Test part master 1	CHAR	Yes
Order note	BESTELLVERMERK	DIN 2633 C 10x17.2	CHAR	No.A7156	CHAR	Yes
Standard designation	NORMBEZEICHNUNG	DIN 2633	CHAR	Test standard	CHAR	Yes
OK Cancel						

The **New value** column contains the values originating from the VAA file. Now, decide for each of the listed attributes whether you want to overwrite the existing value in the article master with the value from the VAA file (i.e. by selecting Apply new value = yes) or no).

Here, the option **no** has been selected for the **Designation** attribute:

Attribute value conflicts								
Designation	Attribute name	New value	Data type	Previous value	Data type	Apply new value		
Designation	BENENNUNG	Flansch	CHAR	Test part master 1	CHAR	No		
Order note	BESTELLVERMERK	DIN 2633 C 10x17.2	CHAR	No.A7156	CHAR	Yes		
Standard designation	NORMBEZEICHNUNG	DIN 2633	CHAR	Test standard	CHAR	Yes		
OK Cancel								

Close the dialogue with **OK**.

Now, the input mask of the applied article master that has been modified by the taking over of attribute values from the VAA file and the Classification will be displayed.

Message if Plant Eng. attributes missing Allow use of existing part masters Enter article Article in maker SN-025638 Project number Index:
Allow use of existing part masters Enter article Article Article number SN-025638 Index: Index:
Article Namber SN-025638 Index:
Folder number:
Part
Projection 4 Technologia 1 Palaceus In Provide State

The applied article master was previously classified as **Miscellaneous**. Since the VAA file requires the classification as "Flange, round" here, the article master will now be additionally classified as **Flange, round**.

If required, you can change the attribute values in the mask manually.

Click **OK** to confirm your edits of the article master.

Now, the data mask of the article master for the next variant sub-type will be displayed. If you do not want to apply an existing data record, click **OK** and answer the query



with Yes. If you prefer to apply an existing article master instead, click No.



General notes on applying of existing article masters:

- If you interrupt the process with Cancel in the course of the procedure described above, all article masters and document masters created up to this point will be deleted again. Previously existing, applied article masters will be restored to the state they had before they were applied.
- An article master that already belongs to a part variant cannot be applied.
- An article master that has been assigned through its classification to a Plant Engineering part type that differs from that required by the VAA file cannot be applied.
- Attributes which are relevant for the HiCAD Plant Engineering functionality (e.g. Nominal width, Wall thickness, Outer diameter, Connection type...) should <u>always</u> be transferred to the applied article master; otherwise, problems may occur during part insertion.
- The taking over of an already existing article master works for PAA files in the same way as described above for VAA file, with the difference that for PAA files, only one article master needs to be edited.

Use VarUpdate to Generate Part Archive Files

You use the **VarUpdate.exe** tool for the conversion of part files to the archive file format (file extension: .paa or .vaa). In contrast to older HiCAD versions, it can only be started automatically from HiCAD if **Catalogue** has been set as the part data source (Settings > Settings > Part selection > Parts from: Catalogue). If you select **Database** as part data source, **DbPlantDataImport.exe** is used as the central update tool for Plant Engineering. This tool will in turn call the **VarUpdate.exe** program.

Further information on how to proceed in such cases can be found in the Update of the database paragraph of the topic **Data Format and Adjustment of Parts / Database**.

You will probably no longer need the tool afterwards. However, in case that you want to use it again, (e.g. after contacting the ISD Hotline), the information given below should be helpful to you.

If article attributes exist for a part in the active HELiOS Database, the attribute data that are relevant for the part can also be transferred to the archive file.

If no HELiOS Database is active, attribute data can be taken from the HiCAD Catalogue, if a corresponding catalogue entry for the part exists. In this case, the launching of VarUpdate.exe takes a little longer, as the search in the catalogues usually takes more time than in the database.

If the HELIOS Database is active, and an active Vault Server exists, the generated archive files can directly be moved to the Vault Server.

An archive file contains the data of all representation types for a part, i.e. at most one hollow body, a solid body and a symbolic representation.

Let us assume that the variant *A2HF1_16.vad* exists in three representations and is to be converted into the new file format. In this case the following files will be considered for processing:

- *A2HF1_16.vad* in *Plantparts\Parts3* (as well as the information from HELiOS with the document file name *C:A2HF1_16.VAD*, or the information from the catalogue with the table name *A2HF1_16.ipt*).
- *A2HF1_16.mac* in *PlantParts\Parts3* (as well as all other MAC files which are called) for the graphic of the solid body representation
- *A2HF1_16.mac* in *PlantParts\Parts2* (as well as all other MAC files which are called) for the graphic of the hollow body representation
- A2HF1_16.emf (Icon of the symbolic representation for the Symbol Editor) in \PlantParts\Parts1
- *A2HF1_16.fga* (HiCAD graphic of the symbolic representation) in *PlantsParts**Parts1*
- ANBASVAR.dat (description data for the Variant Editor) in \PlantParts\VariantStruct
- A2HF1_16.emf (image for the Variant Editor) in \ega

Setting options

In the following, \Plantparts\ designates the directory path specified at position 6: in the FILEGRUP.DAT file.

Generate part dat	a archive files		
Part format:	All parts 🔽 🚺		
Database language:	English (United States)	💽 🕫 💋	
Source directory:	C:\HiCAD\PlantParts\Parts3		. €
 A2HF1_16.vad A2HF1_40.vad A2RF1_100.vad A2RF1_16.vad A2RF1_40.vad AERF_16.vad AERF_40.vad AERF_40.vad AKL01_16.vad ARM2WVHF.VAD ARM2WVHF.VAD ARM2WVHM.vad Access to databas Access to catalogs Add industry ID to Transfer archive fill Display log after up 	(Archive available) (Archive available) (Archi	4	ARM2WVHN.VAD (Archiv ARM2WVRF,VAD (Archiv ARM2WVRM.vad (Archiv ARM2WVSRF,VAD (Archi ARM2WVSRF,VAD (Archi ARM2WVSRM.vad (Archi ARM2WVSRN.vad (Archi ARM2WVSRN.vad (Archiv ARM3WKHF,VAD (Archiv ARM3WKHF,VAD (Archiv Select all Reset all Select all vithout archive
		Start	Cancel End

1. Part format

Here you select the format of the source files:

- All parts (VAD, KRA files),
- Part variants (VAD files) or
- Individual parts (KRA file).

2. Database language

By default, the language used by HiCAD is set as the database language. Click the $\frac{1}{2}$ button to select a different language. All selected languages will be then be shown in the list box.

German (Germany)		Language	ID)(Language designation	
nglish (United Kingdom)		1078	Afrikaans (South Africa)	ſ
apanese (Japan)		1052	Albanian (Albania)	١.
		1156	Alsatian (France)	1
		1118	Amharic (Ethiopia)	L
		5121	Arabic (Algeria)	
		15361	Arabic (Bahrain)	
		3073	Arabic (Egypt)	
		2049	Arabic (Iraq)	
		11265	Arabic (Jordan)	
		13313	Arabic (Kuwait)	
	\square	12289	Arabic (Lebanon)	
	(->)	4097	Arabic (Libya)	
		6145	Arabic (Morocco)	
		8193	Arabic (Oman)	
		16385	Arabic (Qatar)	
		1025	Arabic (Saudi Arabia)	
		10241	Arabic (Syria)	
		7169	Arabic (Tunisia)	
		14337	Arabic (U.A.E.)	
		9217	Arabic (Yemen)	
		1067	Armenian (Armenia)	
		1101	Assamese (India)	
		2092	Azeri (Cyrillic, Azerbaijan)	
		1068	Azeri (Latin, Azerbaijan)	
		1133	Bashkir (Russia)	
		1069	Basque (Basque)	
		1059	Belarusian (Belarus)	
		2117	Bengali (Bangladesh)	
		1093	Bengali (India)	
		8218	Bosnian (Cvrillic, Bosnia a	

3. Source directory

The default directory for the part source is *PlantParts\Parts3*. To select a different directory, click the button. After its selection, all part files contained therein are displayed in the list below.

4. File selection

Depending on the selected part format, the VAD and/or KRA files from the source directory will be listed. By activating the corresponding checkbox, the files can be selected for update. The comment "(Archive available)" means that the part file has already been converted into an archive file. The archive file will be saved to the directory *PlantParts* or to the Vault Server. If a document master exists in HELiOS for the part file, the list entry will be marked in yellow colour. If the part file has been entered in the catalogue, and HELiOS is not active, the entry will be marked in light blue colour.

5. Select/Deselect all

In this area you can select or deselect all files in one step.

Select all

Selects all parts of the list for processing.

Reset all

All selections in the list will be reset (deactivated).

Select all without archive

All parts for which no archive file exists yet will be selected.

6. Checkboxes

Access to database

This checkbox determines whether the HELiOS part information is to be accessed. You can also, if HELioS is active, switch off the access to HELiOS.

Access to catalogues

This checkbox is only available if no HELiOS Database is active. If you activate the checkbox, the part information from the HiCAD Catalogue will be used, otherwise they will be ignored.

• Adapt file name in document master

If this checkbox is active, you can set 6:*.vaa instead of C:*vad (or 6:*.paa instead of C:*.kra) as the file name in the HELiOS document master during the update.

Add industry ID to classification

If you activate this checkbox, you can set the industry ID for the classification, if it has not been set yet (10001 for Standard Plant Engineering, 10002 for Air ducts).

Transfer archive files to Vault Server

If this checkbox is active, the newly created archive files will be transferred to the Vault Server. Accessing the files via the Windows file system is then no longer possible!

Show log after update

If this checkbox is active, a log will be displayed immediately after the update.

7. Start/End update process

When you click **Start**, the update process will be performed. A progress bar indicates the status of the update process. If you want to stop the update process, select **Cancel**. The currently processed file will still be finished, after this the process will be stopped. The generated archive files will be saved to *\PlantParts*: or to the Vault-Server. Select **End** to end the **VarUpdate.exe** program.

Nozzles

Nozzles are supported by the part type **Nozzle** and special functions for part insertion. New variants for nozzles with or without flange can be easily derived from the variant STUTZEN.VAA (Stutzen = nozzle).

Derivation of a new nozzle

- On the **Part Data Tools** function group of the **Plant Engineering** tab, select the **Derive new variant** function.
- When you click the **Nozzle** button, the Variant Editor will be opened, for a copy of the variant STUTZEN_ FL1.VAA with the specified new name.
- First decide whether you want the nozzle to have flanges. If not, deselect the flange. Next, edit the records. To end editing, click **End**, respond you the query if you want to save with **Yes**, and exit the Variant Editor. Data synchronisation is carried out automatically.

Take over pipe and flange data

The variables of the base variant STUTZEN.VAA are selected in such a way that records from variants of flange or straight pipes can easily be taken over.

Let us assume that you want the nozzle to have a flange according to DIN 2635 instead of DIN 2633.

- At the edge of the graphic window, click the green marked button for the flange, then click **Import**
- Choose the file N2635V2.VAA from the selection window.
- The variables assignment is now almost perfect. Only two changes are still required:
 - Select the variable L for the flange length which has not been assigned yet.
 - Select S as the variable determining the record assignment.
- Click List, then click Import all.
- When you return to the main window of the Variant Editor, you can now check the result with a click on the List button.

Fit nozzle in vessel

Use the Fit nozzle **I** function to insert a nozzle in a vessel (or in any other part).

If the part is a hollow body, you need to fit the nozzle as a hollow body as well. If the vessel is a solid body, the nozzle needs to be a solid body as well.

If the lengths and fitting angles are appropriately selected, the function automatically cuts the nozzle to fit (including the hole in the vessel).

If you want to place a solid nozzle perpendicular to a plane on which an isolated point as target point exists, you may as well use the **Pipe parts** function.

Using Connection Type Attributes

General information

In the data records of parts, the attributes

- Anschlussart (=Connection type),
- Anschlussart2 and
- Anschlussart3

enable a determination of the type of connection and of any required accessories. If a part to which particular connecting parts have been assigned via connection attributes is placed onto a guideline, the accessories will be automatically attached to connections 1 and 2 of the part.

If no own attribute entry exists for a connection, the entry with the next lower connection number will be used.

Example:

If we assume that entries only exist for **Anschlussart** (Connection type) and **Anschlussart3** (Connection type 3) respectively, then the attribute for **Anschluss** (Connection) also applies to connection 2.

ID	Meaning	ID	Meaning
1000x	welded	3200x	screwed, f
2000x	flange	4100x	plugged, m
2100x	flange with notch	4200x	plugged, f
2200x	flange with groove	5100x	butt-welded, m
3100x	screwed, m	5200x	butt-welded, f

The attribute entry is composed of an ID number (connection type ID) and a supplement.

The last digit (x) of the identification number provides additional information on the supplement:

- 0 no supplement
- 2 The supplement is composed of the connection number, part type ID and part standard of the part to be attached.

Example:

20002 1 5100010 DIN 2633

This means: "Attach flange according to DIN 2633 with Connection 1."

The wildcard character ('?') is not allowed for the part type ID (in this case 5100010).

The 4th digit of the ID is interpreted as a priority indicator. This digit is important in cases where two parts coincide on one connection which both specify additional parts to be inserted via their connection type (often Fasteners). If one part is connected to another part, on the connecting points of which fasteners are already located, the prioritization will be evaluated.

The meaning of the 3rd digit has not been defined yet.

Please note:

- Parts with only one "genuine" connection still require two named isolated points (Designation: ! and 2) to enable them to be auto-aligned correctly. To prevent Point 2 from being falsely interpreted as a connection in the isometry, the attribute ANSCHLUSSART2 needs to be set to the value 0.
- If no entry concerning the "Anschlussart" ("Connection type") attribute exists for a part, HiCAD assumes 10000 (= welded, without supplement).

Connection type ID with priority information

In practice it can happen that two parts coincide which both specify additional parts to be inserted via their connection type (often Fasteners). In such cases, the last but one digit of the connection will be interpreted as a priority indicator. If one part is connected to another part, on the connecting points of which fasteners are already located, the prioritization will be evaluated. If the part to be connected has a higher priority, the fasteners that already exist on the connection will be removed and replaced with the part to be connected.

If the connection type of the part to be connected has a lower priority, its fasteners will not be inserted.

In cases of equal priority new fasteners will only be inserted if no fasteners exist on the connection yet.

The priority information will also be evaluated if a part does not supply any further elements. Even in such cases, existing fasteners will be removed if the part to be connected has a connection type with a higher priority than that of the existing connection. This means that a part can remove all fasteners because it acts as a fastener itself.

Connection type ID - List of part standards

Instead of specifying a standard in the supplement, it is also possible to specify a list of standards separated by commas, e.g.

41002 1 5971010 Standard_A, Standard_B, Standard_C

During part search in the catalogue or in the HELiOS database the standards will be combined by means of an OR condition. This means that not several parts are specified here, but the range of allowed parts will be extended here.



In the part standards list, spaces will be interpreted as allowed characters of a standard designation. Therefore, no additional spaces must be entered to the right and to the left of the separating commas. Since the standards are separated by commas, they must not contain any commas themselves.

List of Part Type IDs

In the data record of a part you can, with the help of the so-called connection type attributes, specify the connection types and the fasteners that may be required for this. If a part to which particular fasteners are assigned via connection attributes will be places on a guideline, these will be automatically placed onto the Connections 1 and 2 of the part.

For this the part type ID will be required.

ID	Part type	ID	Part type
1000010	Straight pipe	5900010	Other pipe part
1010011	Nozzle	5910011	Double knee
2100010	Elbow	5920010	Gauge part
2200010	Knee	5970010	Fastener, symmetrical
3110010	T-piece	5971010	Fastener, asymmetrical
3210011	Y-piece	5980010	Weld gap
3230010	Branch	5990011	Sealing gasket
3300010	Cross	6110010	Saddle connection
4100010	Valve	6110010	Elbolet
4200010	Corner valve	9100001	Vessel
4300010	3-way valve	9110001	Pump
4400010	4-way valve	9700001	Other component
5100010	Flange	9800001	Gauge
5210010	Сар	9960001	Accessory set
5310010	Reducer, concentric	9960001	Bolted flange connection
5320011	Reducer, excentric	9970001	Insulation
5710010	Blank flange	9980001	Connection
5800010	Pipe clamp		

Part type IDs in Plant Engineering

Part type IDs for Air ducts

ID	Part type	ID	Part type
1030010	Straight pipe (round)	5610030	Pipe transition, symmetrical (rectangular)
2210020	Elbow, symmetrical (rectangular)	5620031	Pipe transition, asymmetrical (rect- angular)
2230020	Elbow transition (rectangular)	5510020	Transition, symmetrical (rectangular)

ID	Part type	ID	Part type
2220020	Angle, symmetrical (rectangular)	5520021	Transition, asymmetrical (rectangular)
2240020	Angle, transition (rectangular)	5530021	Transition fitting (rectangular)
1020020	Duct part (rectangular)	3210021	Y-piece (rectangular)
5410021	Offset bend, symmetrical (rect- angular)	3130021	T-piece, with offset (rectangular)
5420021	Offset transition (rectangular)	3120020	T-piece, without offset (rectangular)
5220020	Base (rectangular)	5902021	Other duct parts (rectangular)

Part Variants

HiCAD currently offers more than 1000 part variants for Plant Engineering, which can be found in the PLANTPARTS sub-directory of your HiCAD installation. If you open a VAA file with the Variant Editor you will obtain extensive information about this variant.

Use the **DbPlantDataImport.exe** tool to import supplied (new) variants to your database if these are not yet contained in it.

All Please first check whether these variants do not already exist in your database!



Please note:

- Um neue Varianten in den HiCAD Katalog zu übertragen, verwenden Sie das Tool VARTOCAT.EXE oder die Funktion Part data synchronisation function.
- Mit dem Tool PLANTPARTSLIST.EXE können Sie eine Liste der aktuellen Anlagenbau-Varianten in deutscher, englischer, französischer, italienischer und polnischer Sprache - erzeugen. Die Liste wird in eine CSV-Datei geschrieben, die Sie danach mit Microsoft Excel öffnen und bearbeiten können.

Create List of Part Variants

HiCAD currently offers more than 1000 Plant Engineering part variants, which are stored in the PLANTPARTS directory of your HiCAD installation. You can use the PLANTPARTSLIST.EXE tool in the EXE subdirectory to create a list of variants - in German, English, French, Italian, Polish and Hungarian language. The list will be written into a CSV file, which can then be opened and edited with Microsoft Excel.

Proceed as follows:

Start the **PlantPartsList.exe** tool in the exe directory of your HiCAD installation.

PlantPartsList						
The tool creates a list of the existing variant files for the HiCAD Plant Engineering module. 1) Select a language 2) Select the directory/PlantParts' 3) Select an export file 4) Click "Start" Language English (United States) Folder c:\hicad\PlantParts Output						
Start End						

Now, perform the steps shown in the dialogue window:

- 1. Click Language button and choose the desired language for the list to be created.
- 2. Click **Folder** and select the PLANTPARTS folder.
- 3. Click Output, select the folder to which you want the list to be saved, and enter the name of the CSV file.
- 4. Click **Start**. The generation of the list begins and the progress is shown in a progress bar at the bottom of the dialogue window.

PlantPartsList
The tool creates a list of the existing variant files for the HiCAD Plant Engineering module. 1) Select a language 2) Select the directory/PlantParts' 3) Select an export file 4) Click "Start" Language English (United States) Folder C:\HiCAD\PlantParts Output C:\Temp\List.csv
Start End

The list generation is completed when the number of listed files is shown in the dialogue window.

PlantPartsList	3					
Ths tool creates a list of the existing variant files for the HiCAD Plant Engineering module. 1) Select a language 2) Select the directory'PlantParts' 3) Select an export file 4) Click ''Start''						
Language English (United States) Folder C:\HiCAD\PlantParts Output C:\Temp\List.csv						
1014 VAA files listed Start End						

Click **End** to close the dialogue window.

🗶 🛃 🕫 • (* - 🚔 💁 🖛	for an a state of the state of	List.csv - Micros	oft Excel					
File Home Insert Page Layout	Formulas Data Revi	ew View Acrobat		a 😮 🖬 🖬 🛛				
Themes	ize Print Breaks Background Area Page Setup	Image: Print Titles Vidth: Automatic Scale: 100% Scale: 100%		Rotate				
A1 - fx	File name			*				
A	В	C D	E	F F				
1 File name	in file	Part type ID Part type	Designation	Standard designation				
2 A2HF1_16.VAA		4100010 Valve	Ball valve PN 16	(A2HF1_16)				
3 A2HF1_40.VAA		4100010 Valve	Ball valve PN 40	(A2HF1_40)				
4 A2RF1_100.VAA		4100010 Valve	Shut-off valve PN 100	(A2RF1_100)				
5 A2RF1_16.VAA		4100010 Valve	Shut-off valve PN 16	(A2RF1_16)				
6 A2RF1_40.VAA		4100010 Valve	Shut-off valve PN 40	(A2RF1_40)				
7 AERF_16.VAA		4200010 Corner valve	Corner valve PN 16	(AERF_16)				
8 AERF_40.VAA		4200010 Corner valve	Corner valve PN 40	(AERF_40)				
9 AGRU_IS_11006_11_T_KURZ.VAA	AGRU_Pipes_Fittings_1.lst	3110010 T-piece	agru Ind. T-piece, short, PPR grey, SDR11 ISO S-5 (11.00611)	(agru Ind. 11.006_11)				
10 AGRU_IS_11006_17_T_KURZ.VAA	AGRU_Pipes_Fittings_1.lst	3110010 T-piece	agru Ind. T-piece, short, PPR grey, SDR17 ISO S-8 (11.00617)	(agru Ind. 11.006_17)				
11 AGRU_IS_11006_33_T_KURZ.VAA	AGRU_Pipes_Fittings_1.lst	3110010 T-piece	agru Ind. T-piece, short, PPR grey, SDR33 ISO S-16 (11.00633)	(agru Ind. 11.006_33)				
12 AGRU_IS_11060_17_WINKEL_45.VAA	AGRU_Pipes_Fittings_1.lst	2200010 Knee	agru Ind. Angle 45° PPR grey, SDR17 ISO S-8 (11.06017)	(agru Ind. 11.060_17)				
13 AGRU_IS_11066_11_T_STUECK.VAA	AGRU_Pipes_Fittings_1.lst	3110010 T-piece	agru Ind. T-piece PPR grey, SDR11 ISO S-5 (11.06611)	(agru Ind. 11.066_11)				
14 AGRU_IS_11068_11_BOGEN_90.VAA	AGRU_Pipes_Fittings_1.lst	2200010 Knee	agru Ind. MULTI elbow 90° PPR grey, SDR11 ISO S-5 (11.06811)	(agru Ind. 11.068_11)				
15 AGRU_IS_11068_17_BOGEN_90.VAA	AGRU_Pipes_Fittings_1.lst	2200010 Knee	agru Ind. MULTI elbow 90° PPR grey, SDR17 ISO S-8 (11.06817)	(agru Ind. 11.068_17)				
16 AGRU_IS_11375_11_E_MUFFE.VAA	AGRU_Pipes_Fittings_1.lst	5900010 Other pipe part	agru Ind. E-socket PP grau, SDR17,6/11 (11.37511)	(agru Ind. 11.375_11)				
17 AGRU_IS_11705_11_ROHR.VAA	AGRU_Pipes_Fittings_1.lst	1000010 Straight pipe	agru Ind. Pipe PPR grey, SDR11 ISO S-5 (11.70511)	(agru Ind. 11.705_11)				
18 AGRU_IS_11705_17_ROHR.VAA	AGRU_Pipes_Fittings_1.lst	1000010 Straight pipe	agru Ind. Pipe PPR grey, SDR17,6 ISO S-8,3 (11.70517)	(agru Ind. 11.705_17)				
19 AGRU_IS_12705_07_ROHR.VAA	AGRU_Pipes_Fittings_1.lst	1000010 Straight pipe	agru Ind. Pipe PPH grey, SDR7,4 ISO S-3,2 (12.70507)	(agru Ind. 12.705_07)				
20 AGRU_IS_12705_11_ROHR.VAA	AGRU_Pipes_Fittings_1.lst	1000010 Straight pipe	agru Ind. Pipe PPH grey, SDR11 ISO S-5 (12.70511)	(agru Ind. 12.705_11)				
21 AGRU_IS_12705_17_ROHR.VAA	AGRU_Pipes_Fittings_1.lst	1000010 Straight pipe	agru Ind. Pipe PPH grey, SDR17,6 ISO S-8,3 (12.70517)	(agru Ind. 12.705_17)				
22 AGRU_IS_12/05_26_ROHR.VAA	AGRU_Pipes_Fittings_1.lst	1000010 Straight pipe	agru Ind. Pipe PPH grey, SDR33 ISO S-16 (12.70533)	(agru Ind. 12.705_26)) -				
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Example of a variants list in Microsoft Excel

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HiCAD_2601

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