HiCAD Plant Engineering

Version 2016

Import Notes on Updates

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ISD Software und Systeme GmbH

www.isdgroup.com

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Important Notes on Updates (PE)

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 (PE)

If you have already used the Plant Engineering module of a HiCAD version older than 2016, 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 prompt and switch to the HiCAD *exe* directory.
- Enter the command ***HeliosDbUpdate.exe /E***.
  - If this has not already been done, update the database subversion.
  - Open the **Plant Engineering** tab and click on **Define links**.
  - After completion of the process, close the program with **Close**.

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).

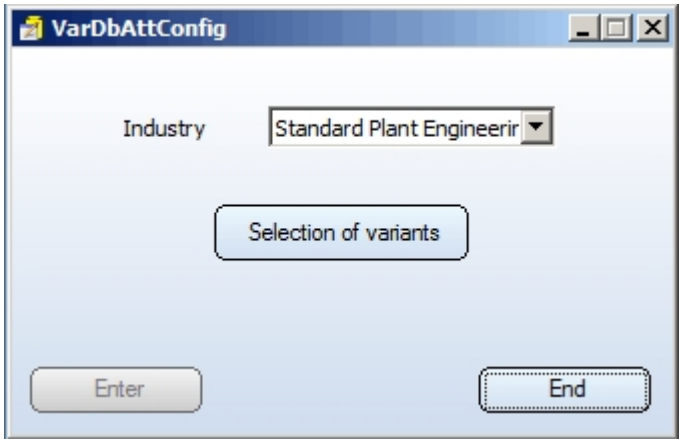
Generate BESTELLVERMERK (=ORDER NOTE) attribute

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 subsequqntly 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 sub-directory.

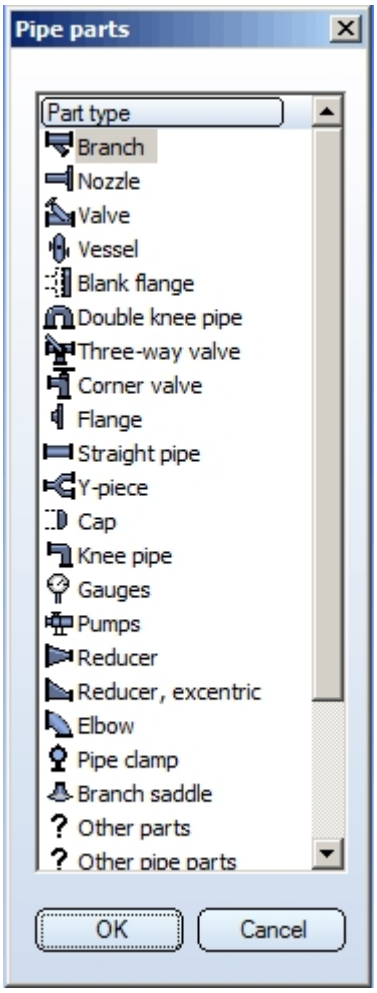
1. Start the tool **VarDbAttConfig.exe** with a double-click.
2. After starting the tool, select the **Industry** - Standard Plant Engineering or Air ducts - and click the click the **Selection of variants** button.

Select industry



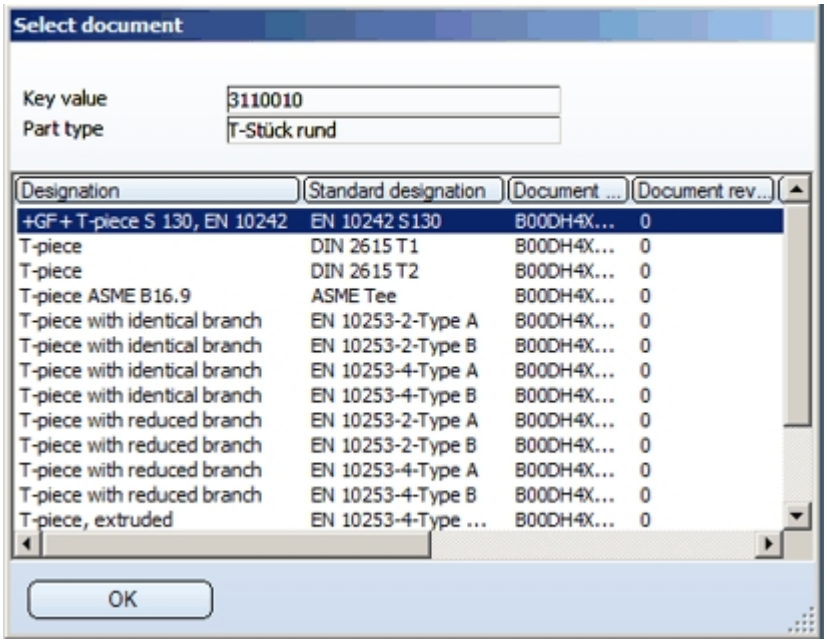
3. Choose a part type - either double-click the desired part or select it with a single click and confirm with **OK**.

Select part type



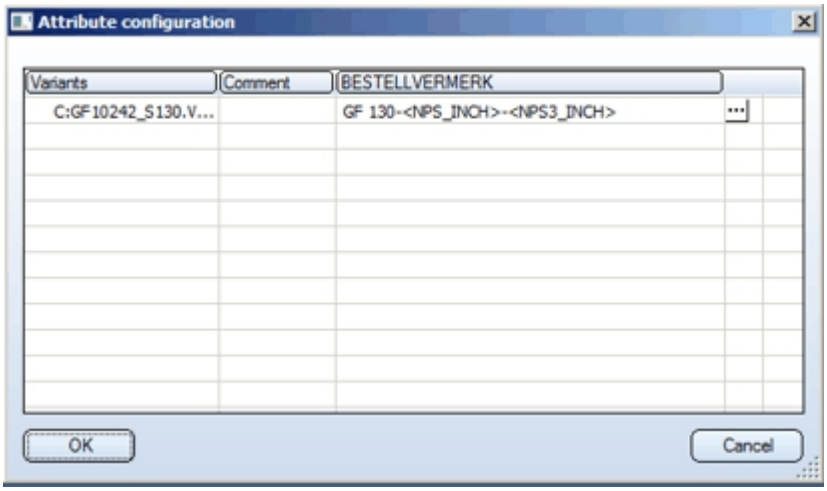
4. Select one or several variants and click **OK**.

Select variants



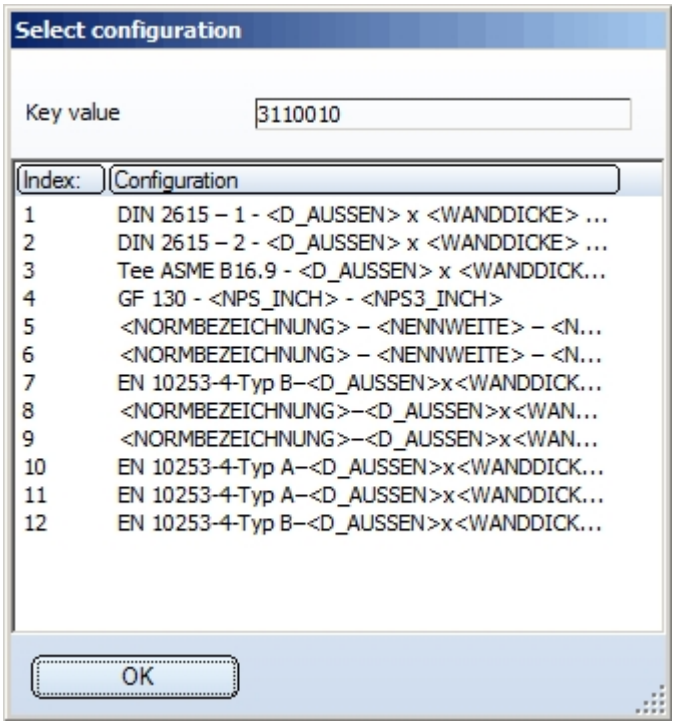
5. In the **Attribute configuration** window, the attribute contents of the variant are listed in the BESTELLVERMERK (=ORDER_NOTE) column. If required, you can modify them via a double-click.

Attribute configuration



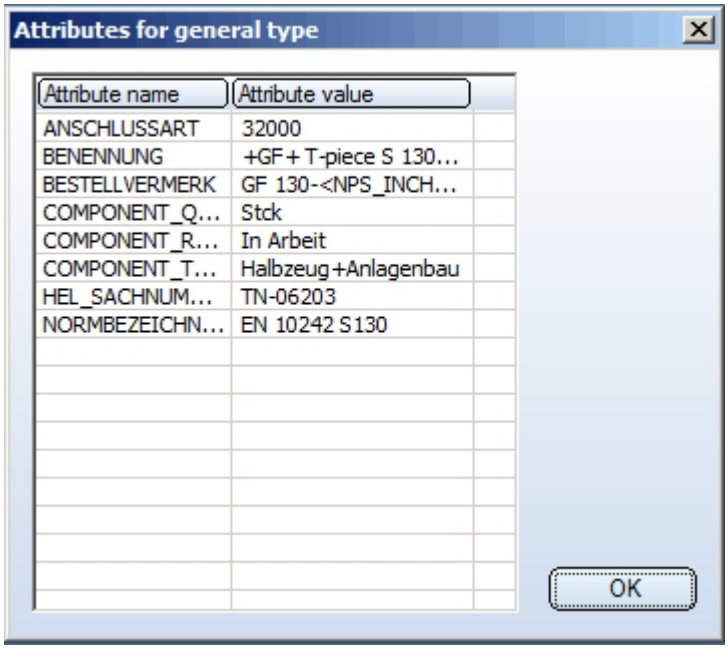
Click the ⋯ icon to select a saved article number configuration. The corresponding configuration files *NNNNNN*.*.DESIGNATIONCONFIG.TXT are located in the HiCAD sub-directory PLANTPARTS\CATSEARCH. Double-click a configuration, or select it with a single click and confirm with **OK**.

Select configuration



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

Attributes of the variant



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 (PE)

If you have already used the Pipeline Planning module of a HiCAD version older than 2016, 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

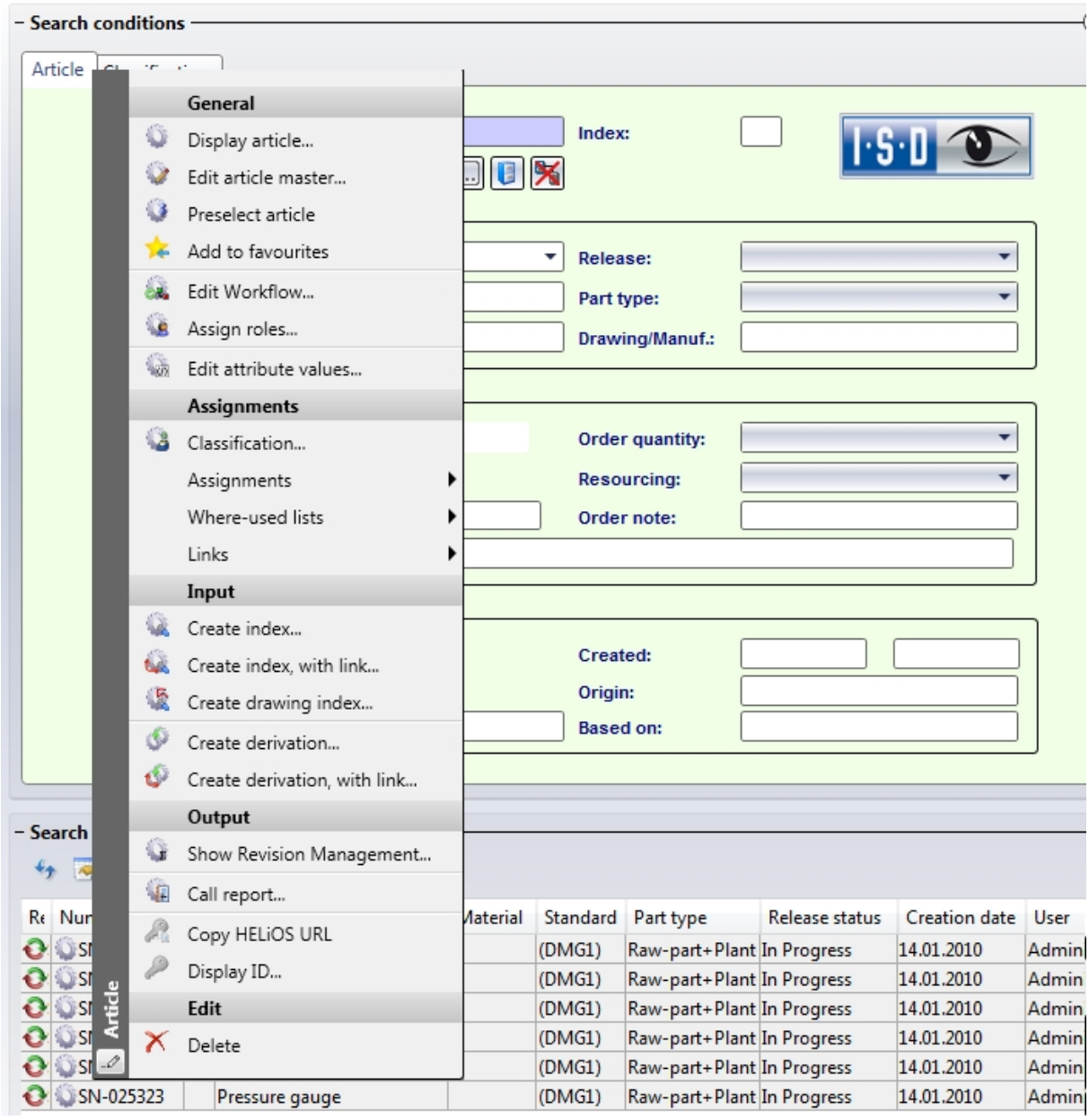
- Start HiCAD. Try to create a new Plant Engineering drawing file.
- If the **Update part variants** dialogue appears, click **Update now**.
- In the next dialogue, click **Start** . After completion of the process, click **End**.

Adjustment for Part Type 'Gauge Part' (PE)

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**.

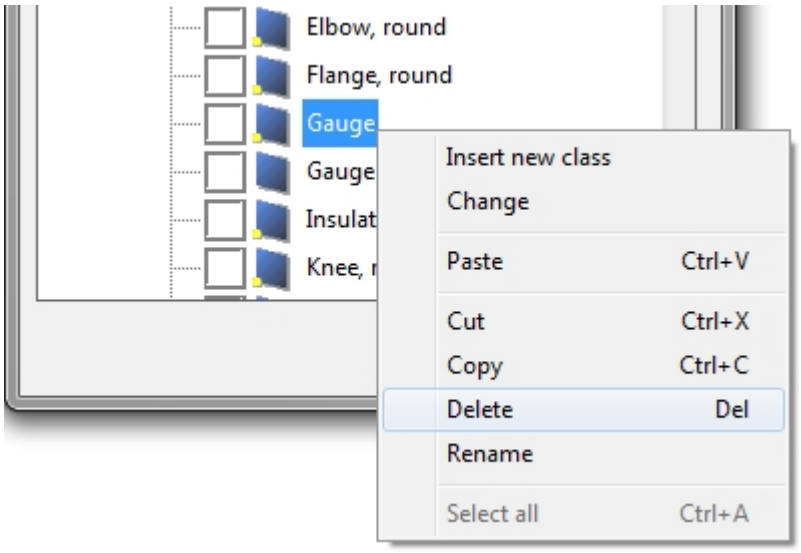


Result list (Example)

- 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:



Data Format and Adjustment of Parts / Database (PE)

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 to 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 to the new format.

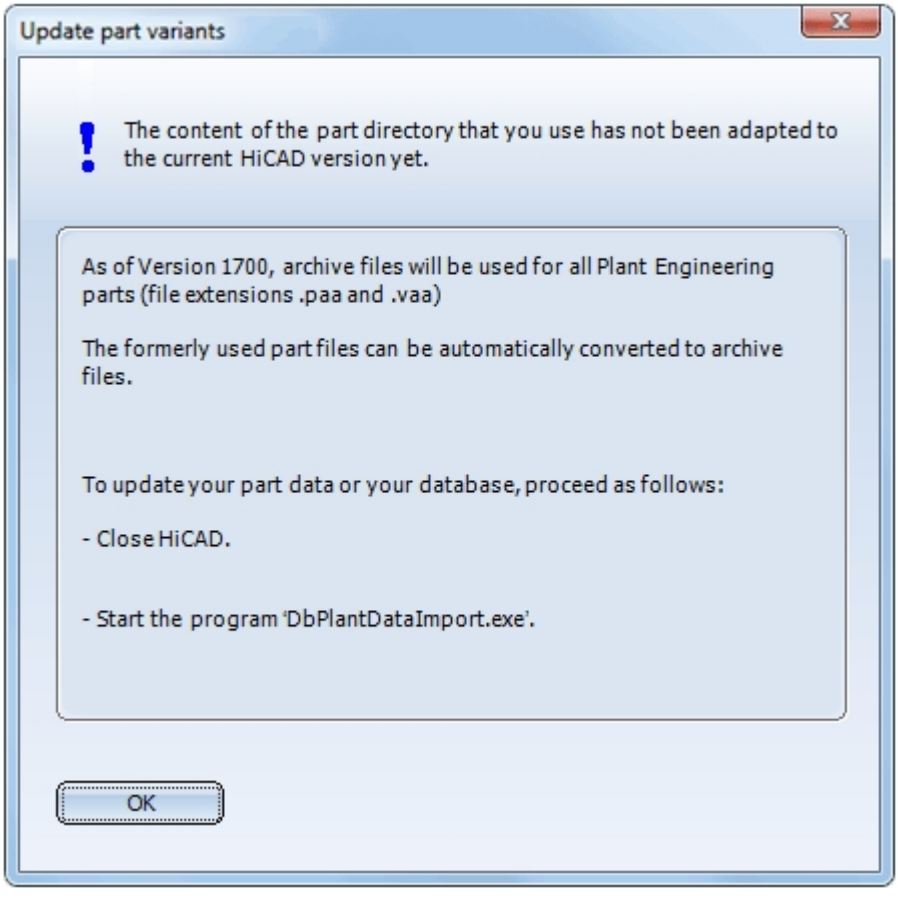
First make sure that the correct directory path to your current Plant Engineering files has been specified at position 6: in the FILEGRUP.DAT file in the HiCAD EXE subdirectory.

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:

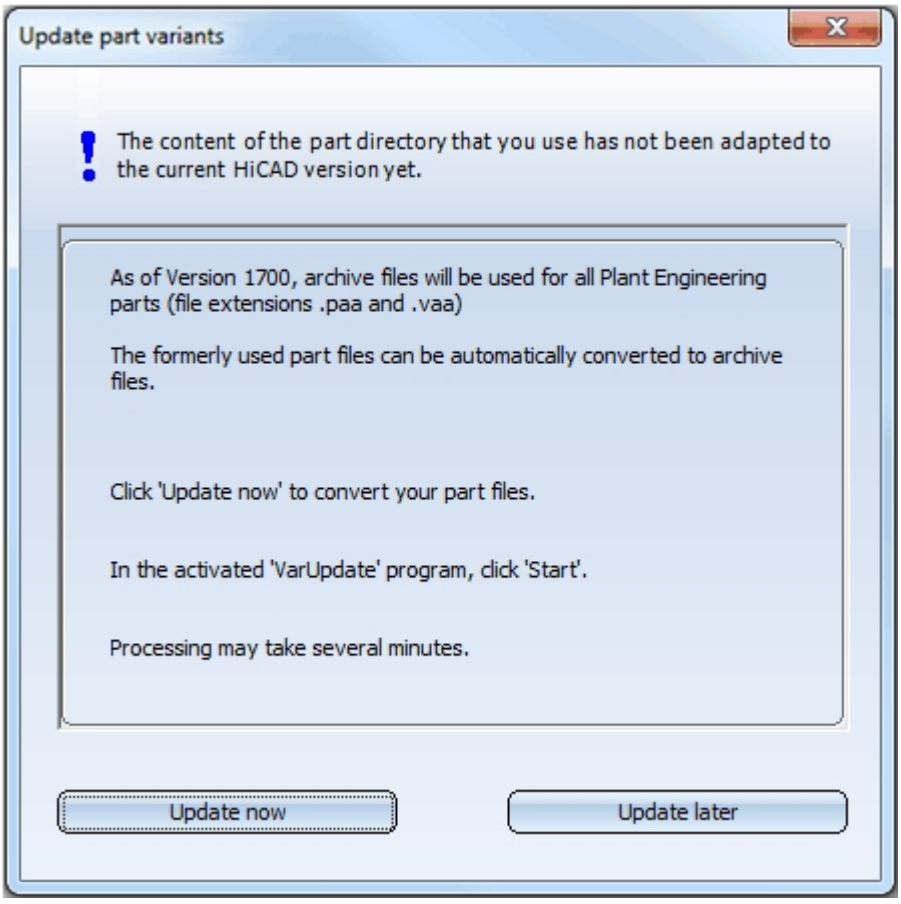


If you are currently not using the HiCAD Plant Engineering modules, click **OK** and operate HiCAD in the same way as you would usually do. This window will not be re-displayed until you re-start HiCAD.

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:



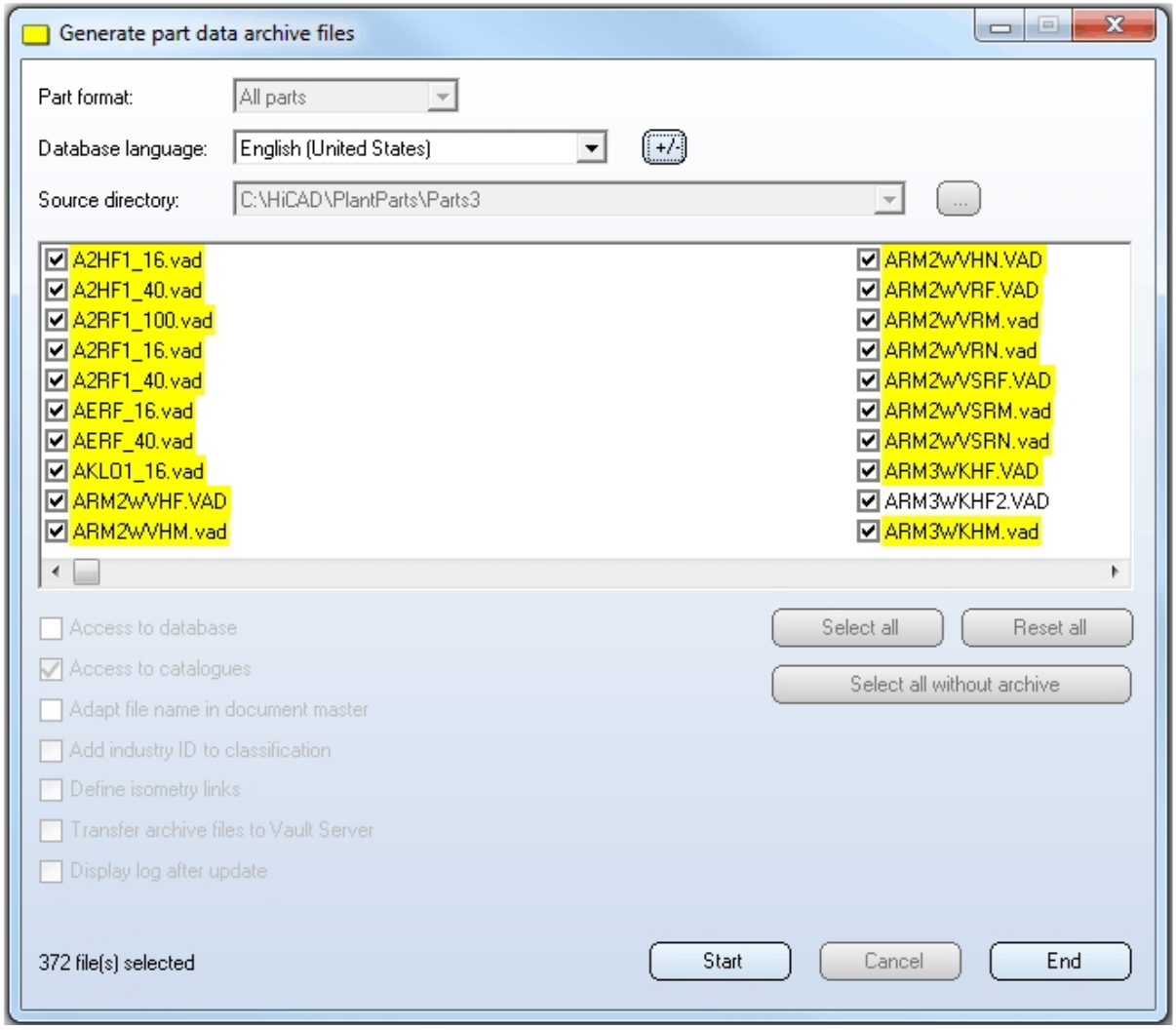
If you are currently not using the HiCAD Plant Engineering modules, click **Update later** and operate HiCAD in the same way as you would usually do. This window will not be re-displayed until you re-start HiCAD.

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 **VarUpdate.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**.

After starting the tool the following window will be displayed:



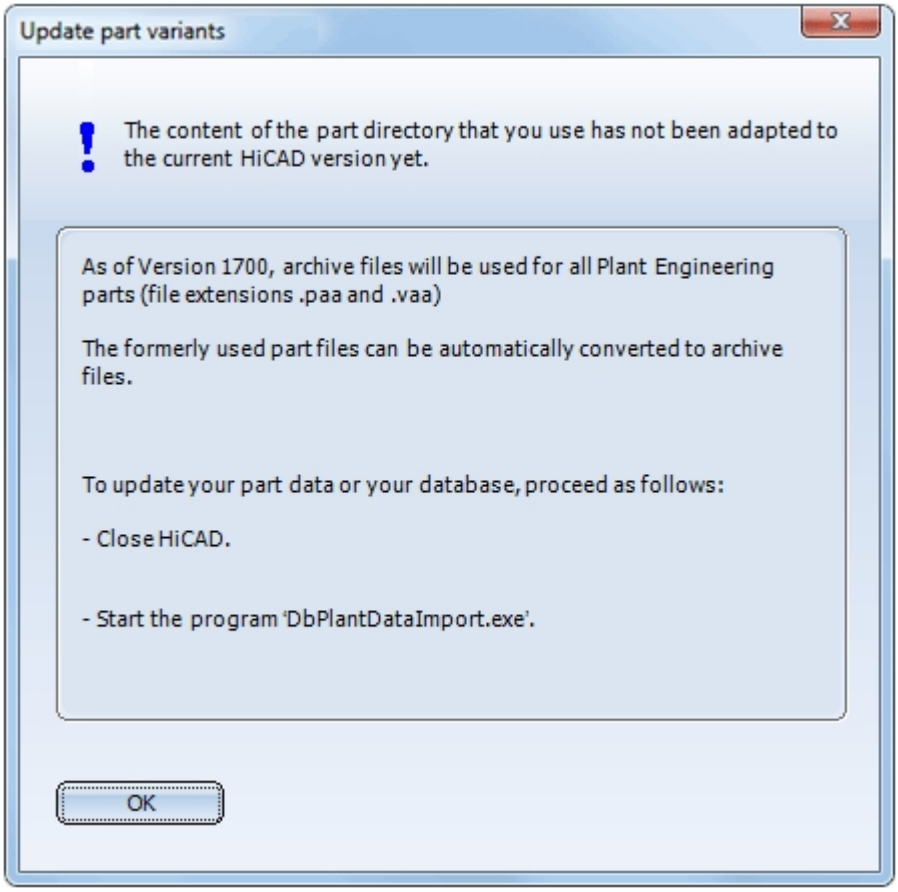
Part data for which a catalogue entry exists are highlighted. Click **Start**: The updating of the part data begins. This process normally takes 10 - 20 minutes, depending on the number of existing part files; if the parts are transferred via a network, the process can take significantly longer. The 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:



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 (DbPlantDataImport)

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.

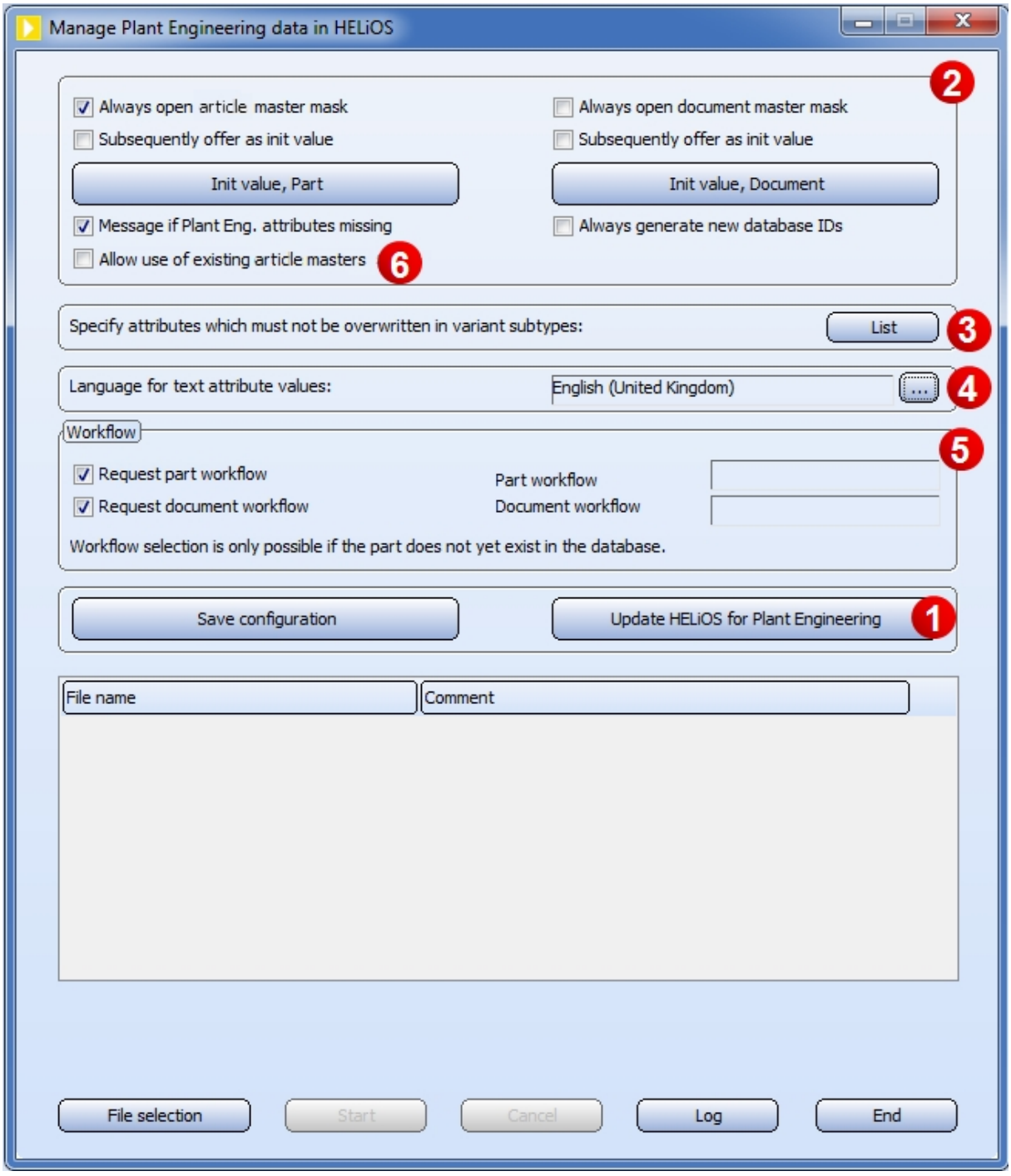
Please note:

- 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.

Manage Plant Engineering Data in HELiOS (DbPlantDataImport)

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)



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

Further buttons are:

Save configuration	When you click this button, the current settings of the dialogue window will be saved to the file *DbPlantDataImportConfig.xml* 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 part 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 *DbPlantDataImport.exe* program will be recorded in the log file *DbPlantDataImport_Protocol.txt* 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

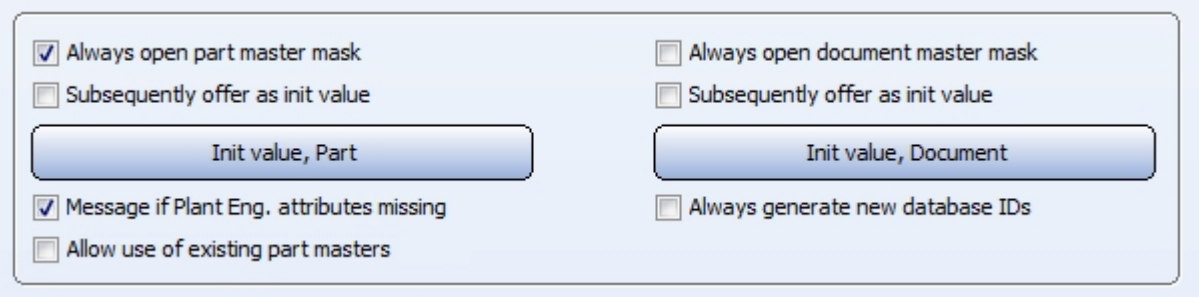
The updating of the database is the first step of the HELiOS database configuration. To do this, click the **Update HELiOS for Plant Engineering** button in the dialogue window.

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.

Init values

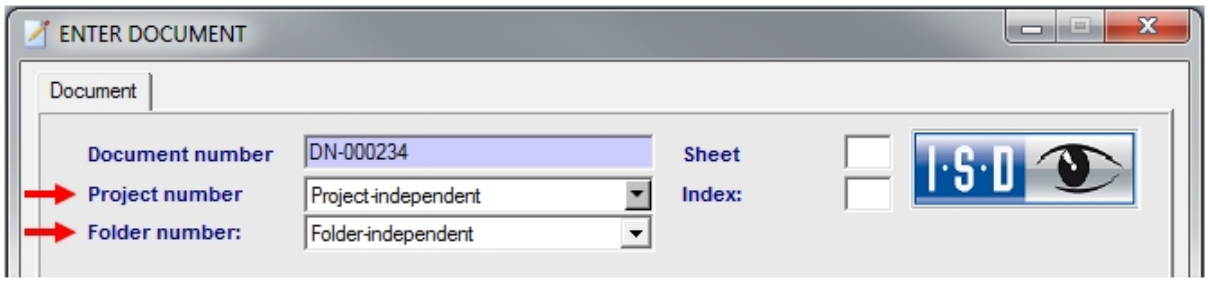
To automate the import, i.e. to avoid manual data input by the user, Workflow and attribute values can be initialised (i.e. assigned preset values).



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.

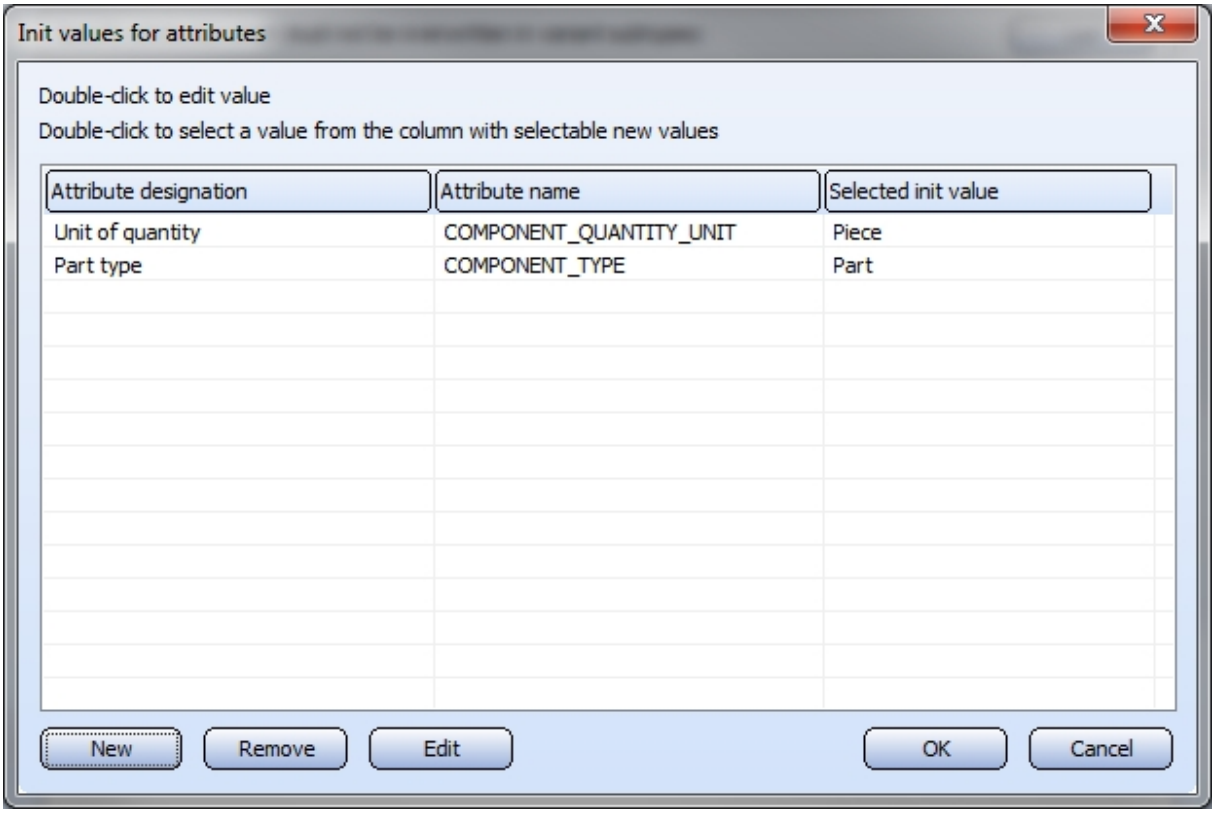
Always open article master mask / document master mask

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.



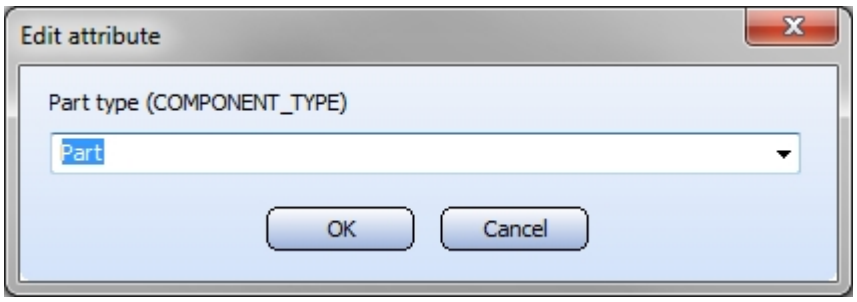
Init value, Part / Document

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.



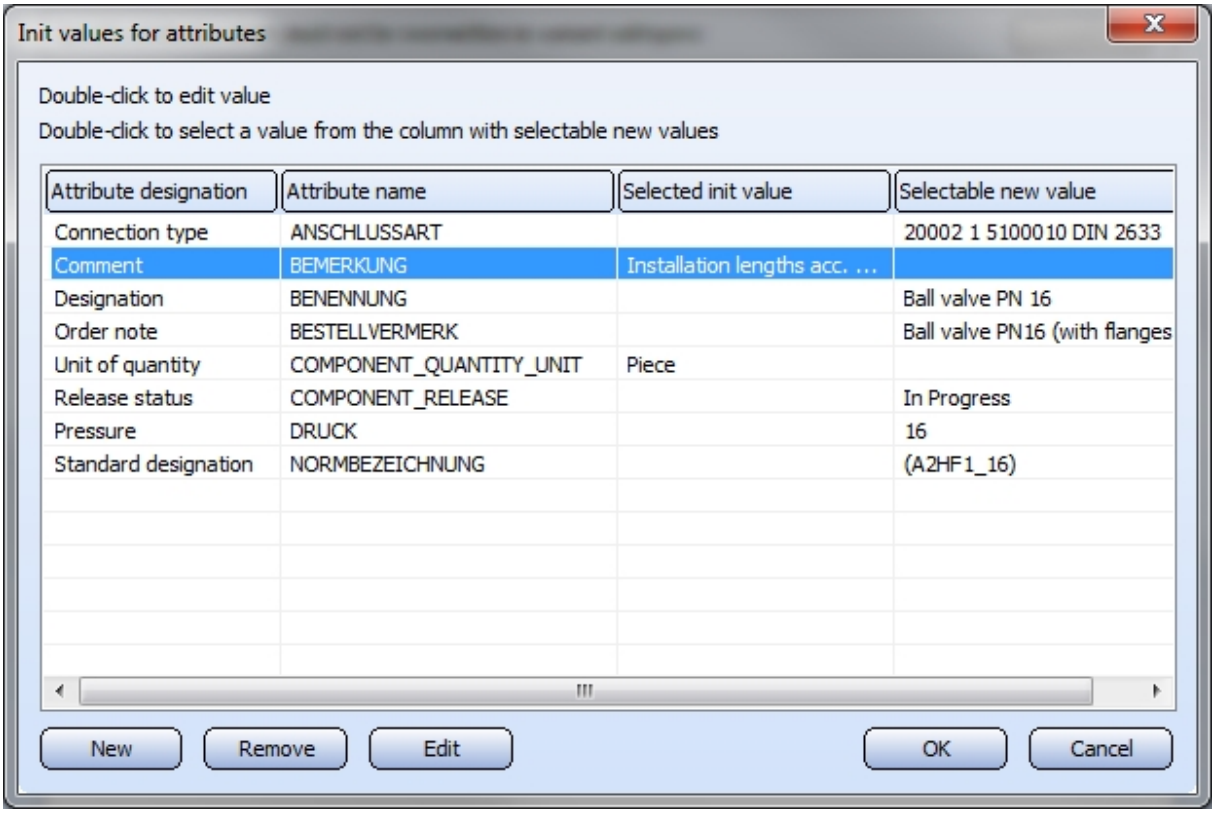
In the dialogue window the attributes and their texts are shown as entered into the mask (apart from a few exceptions). For attributes of the type REFERENCE, the references must always be specified.

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



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.



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.

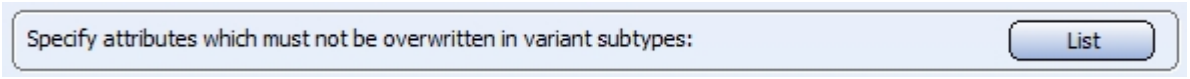
Always generate new database IDs

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!

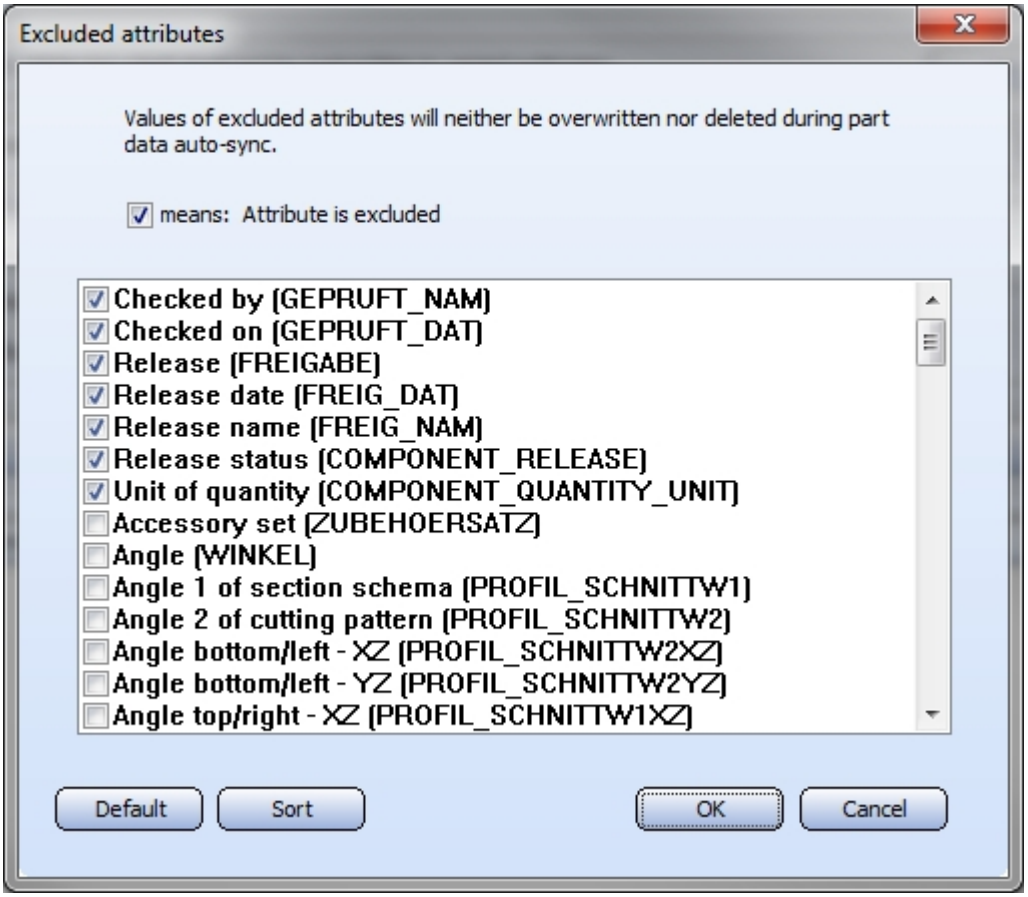
This option will be deactivated again when you restart the **DbPlantDataImport** tool.

 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



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



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

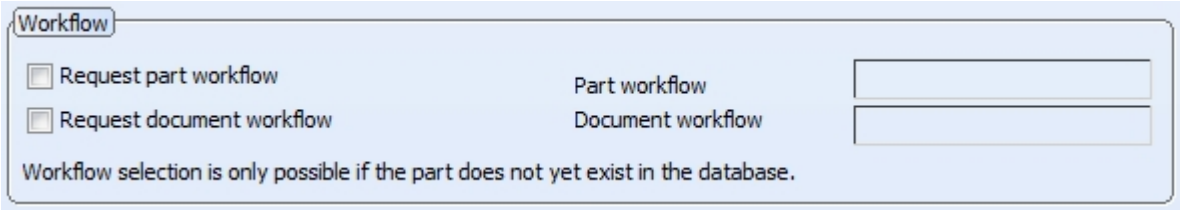
As of Version 2014, the part files (.vaa and .paa) supplied with HiCAD will contain text attributes in several languages.

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

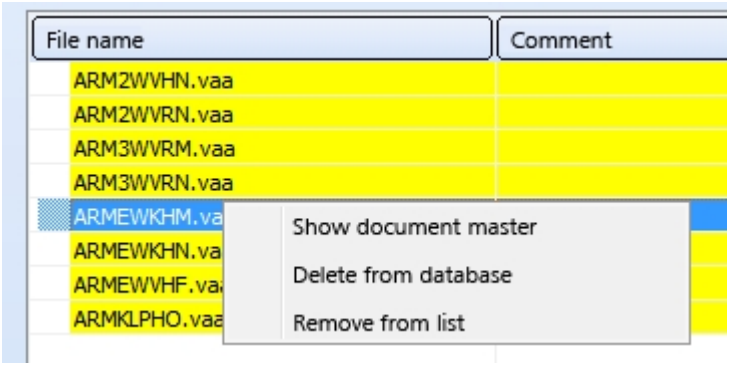


If the selection of a Workflow is required – because HELiOS offers several Workflows – this selection will be automatically applied to the Configuration and used for further data input. If you want the program to ask for the Workflow each time, activate the Request part workflow or Request document workflow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



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

Variant Update (DbPlantDataImport)

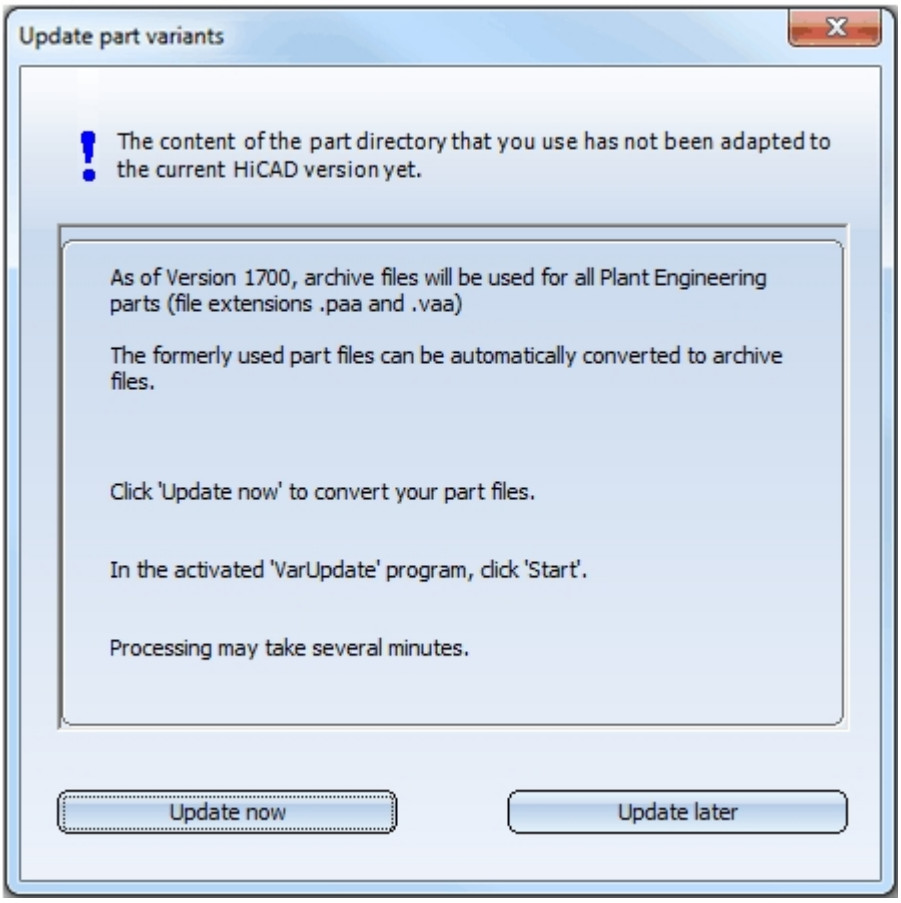
When you start HiCAD and the *DBPlantDataImport* tool, it is checked automatically whether an update of the variants will be necessary. If required, the updating will be performed automatically. You have the option to cancel the process, which will close the program. The program will also be closed if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

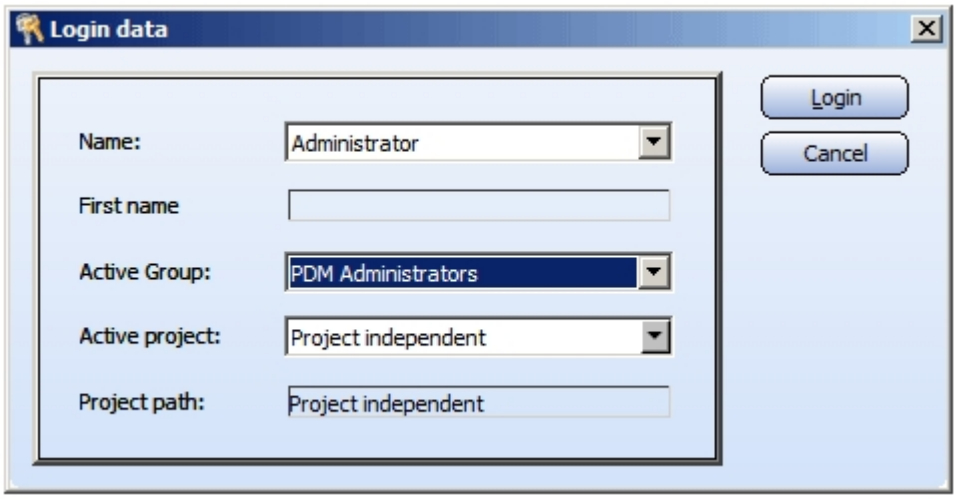
First make sure that the correct directory path to your current Plant Engineering files has been specified at position 6: in the FILEGRUP.DAT file in the HiCAD EXE subdirectory.

First, the following dialogue will be displayed:



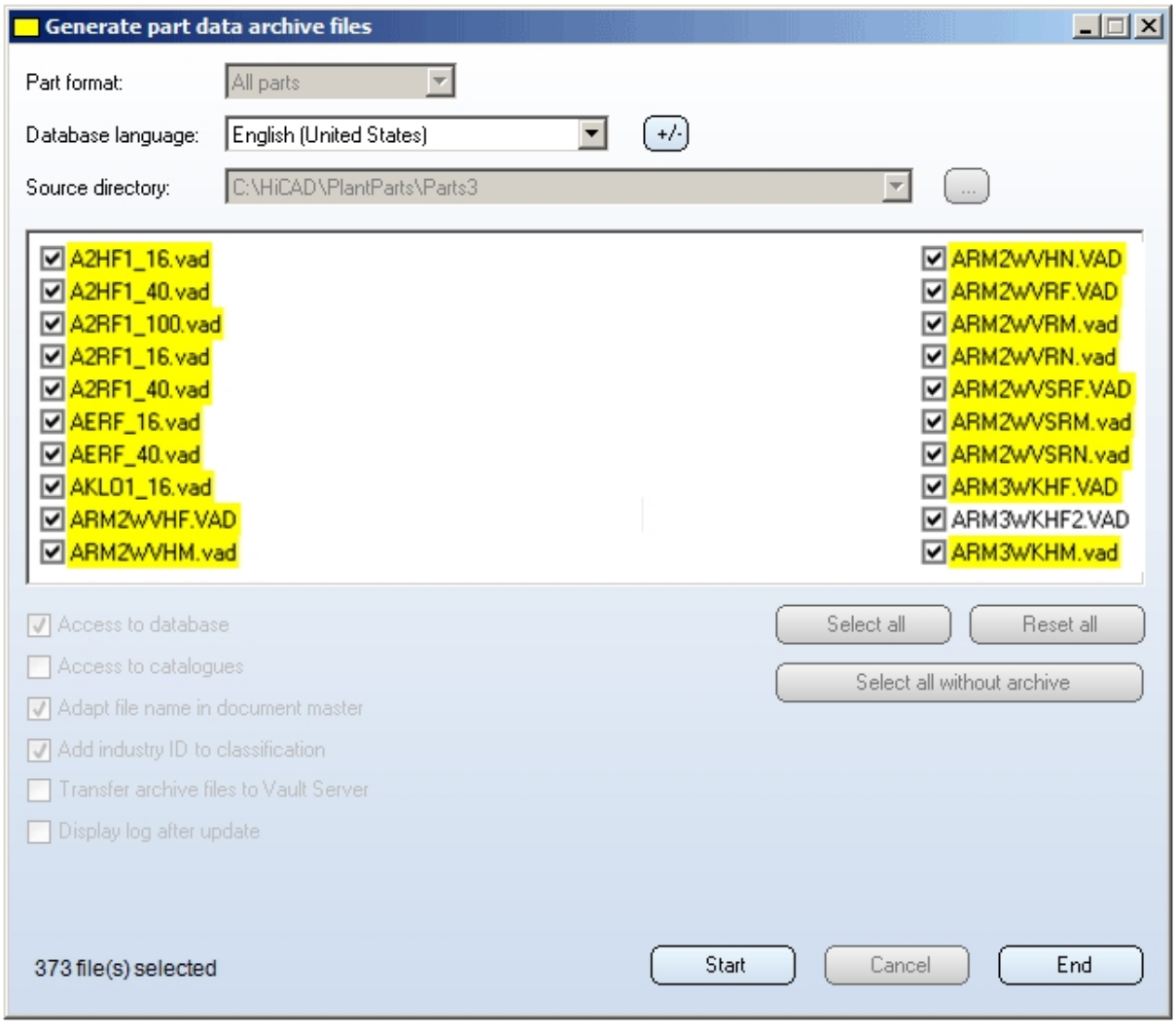
If you want to cancel the complete update/import process, click **Update later**.

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



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:



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**).

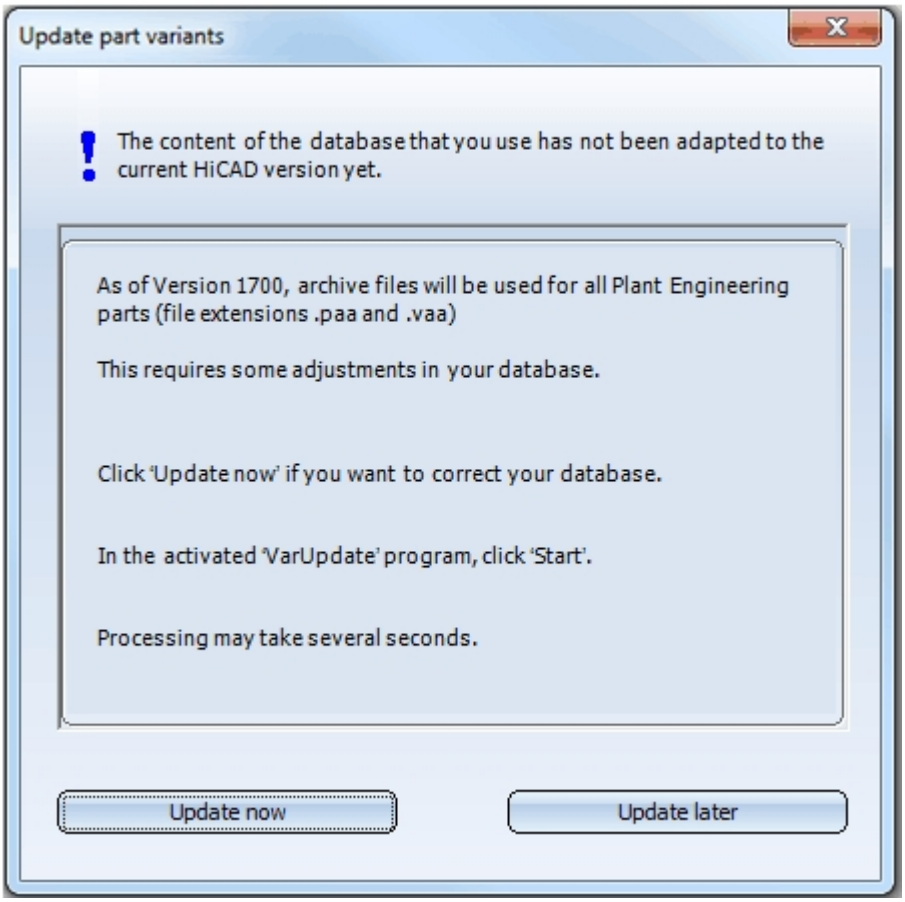
If a Vault Server exists and has been activated, the archive files of the parts will be moved to the Vault Server. The files can then no longer be accessed via the Windows file system.

After successful update, click **End**.

Auto-synchronisation of the database entries

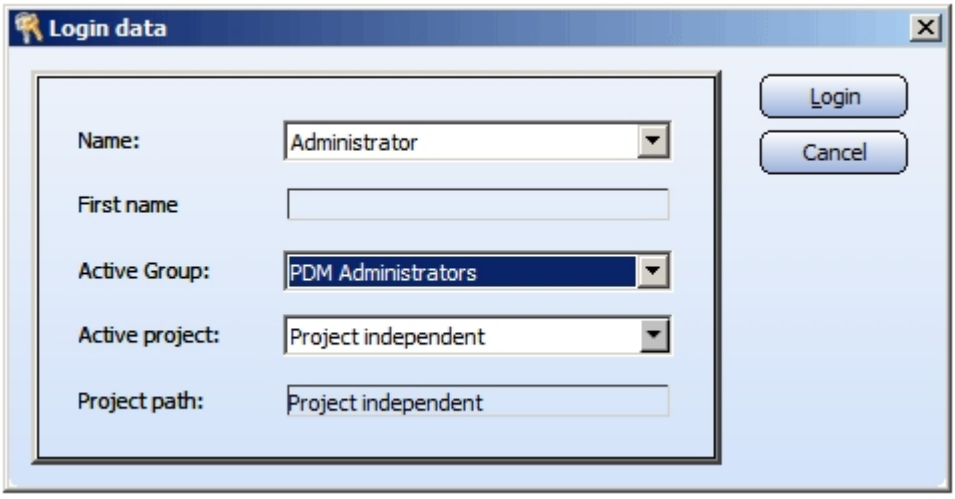
If you did not use any old HiCAD versions and installed the new HiCAD version on your computer, the part files already exist in the new archive file format. However, it may be possible that the installed HELIOS database needs to be adjusted.

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



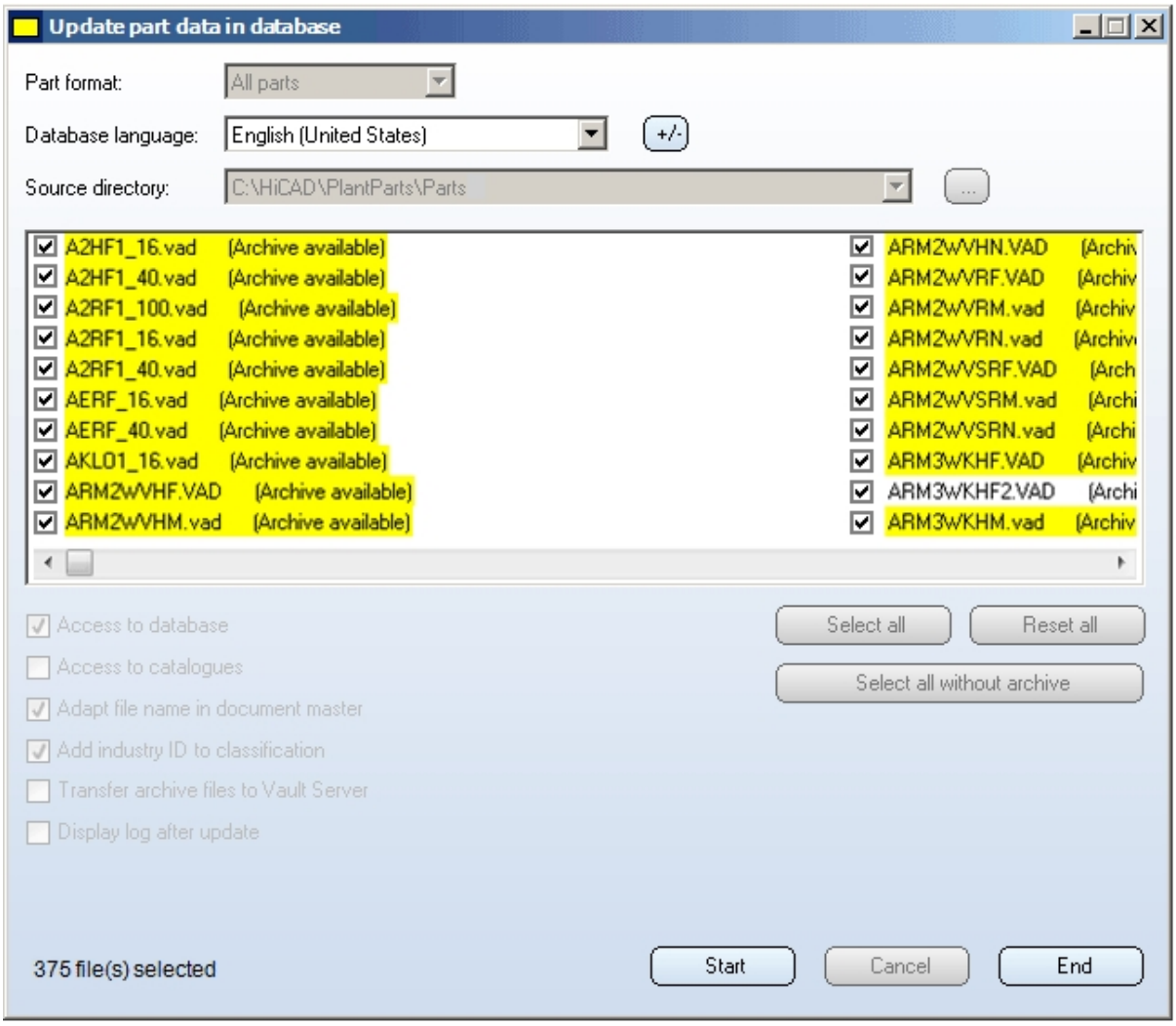
If you want to cancel the complete update/import process, click **Update later**.

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



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

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 - Layoutplan**).

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**.

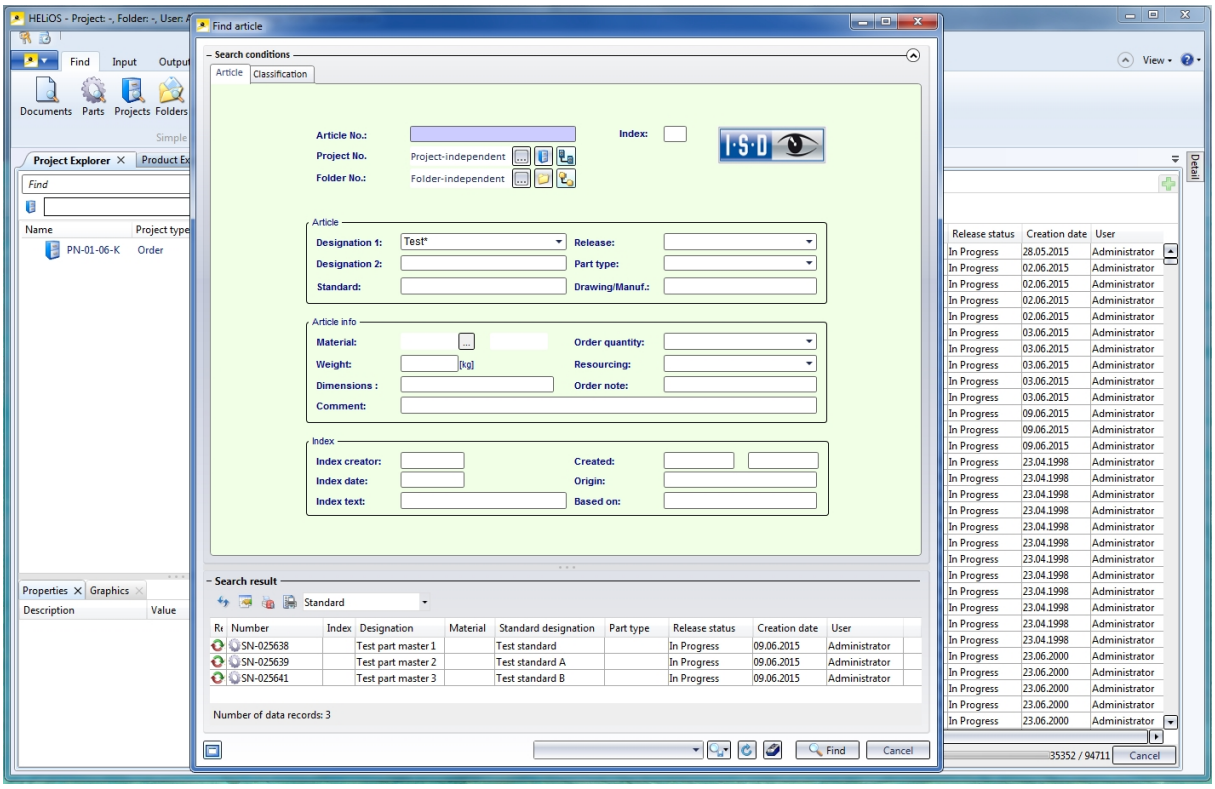
Utilisation of Existing Article Masters (DbPlantDataImport)

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

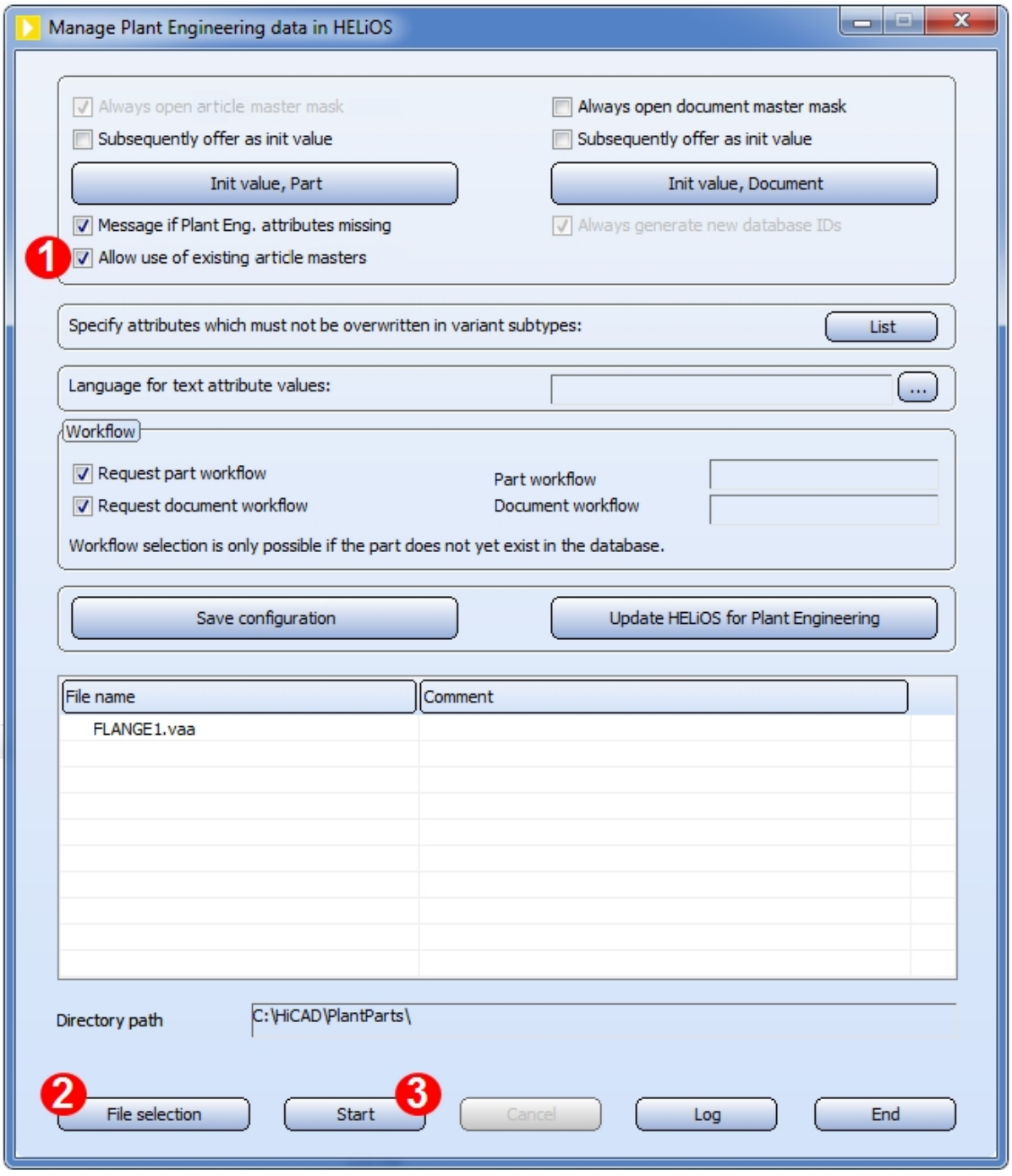
First, start the HELiOS Desktop and create, via a targeted part search with suitable search criteria, a result list containing the article masters that you want to use for the part variant. Please leave this window open, as you will need it again later.



Step 2: Start DbPlantDataImport.exe

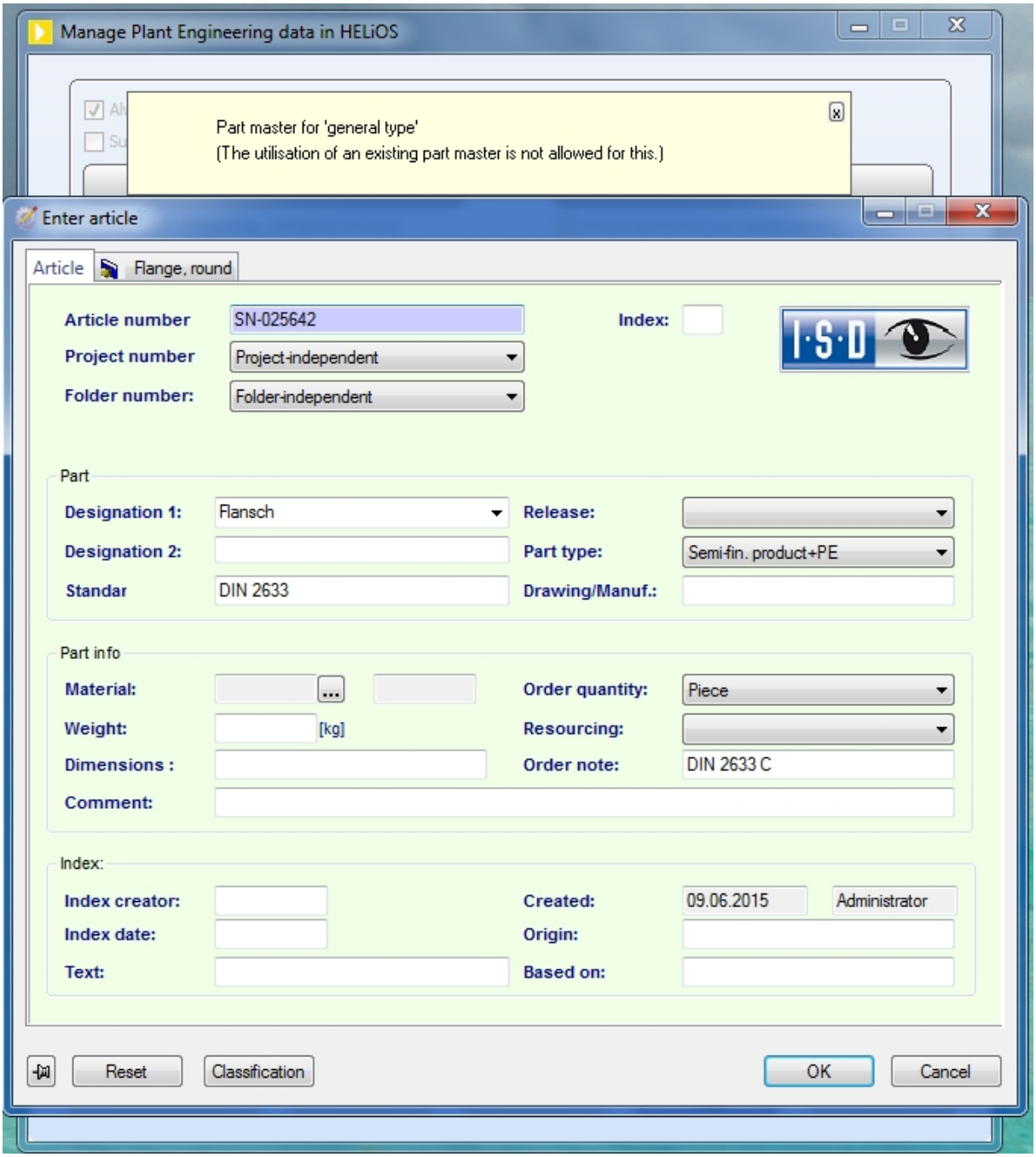
Start the **DbPlantDataImport.exe** program in the HiCAD EXE directory.

- 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).



Step 3: Specify article master data for general type

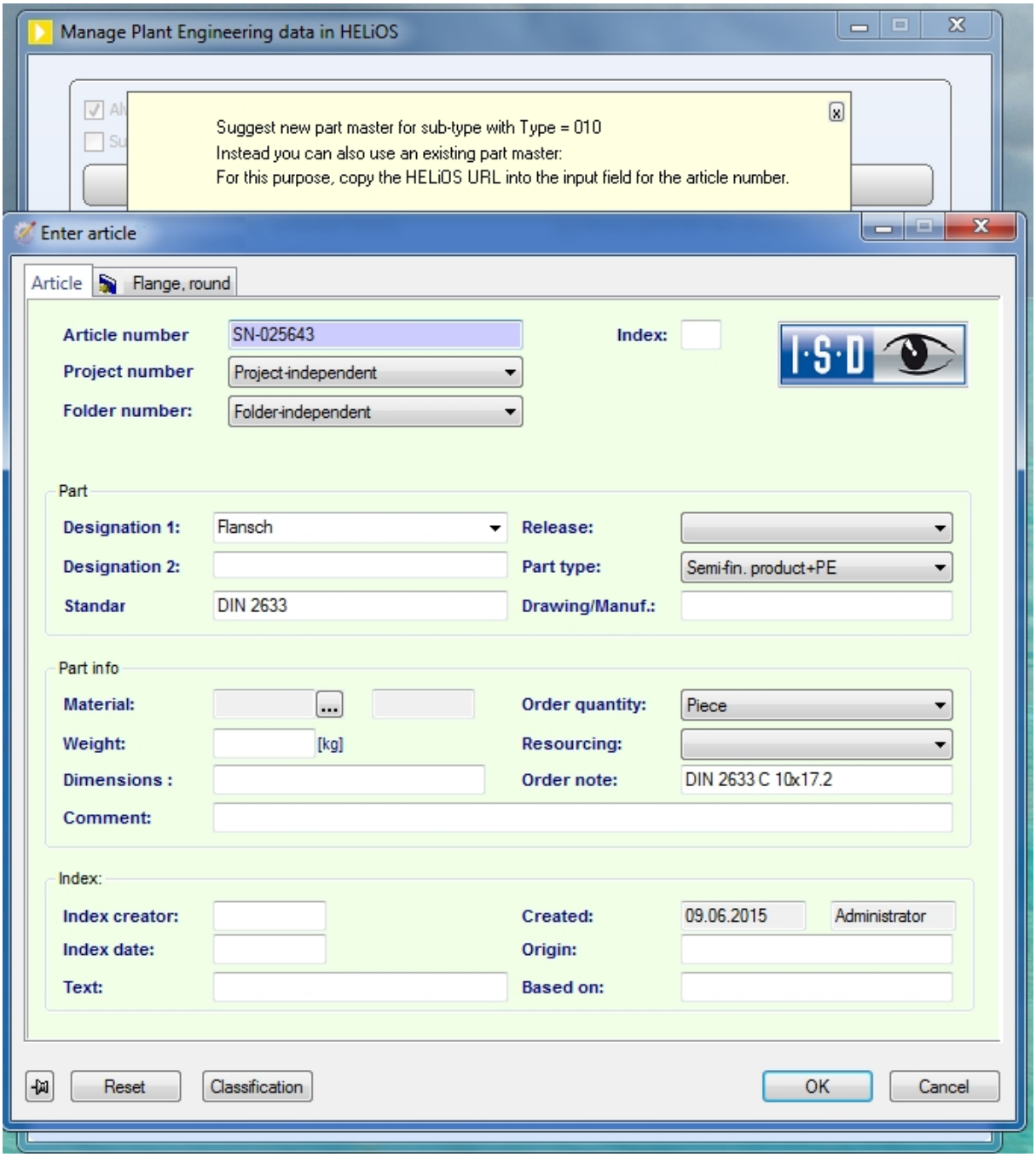
As the **Always open document master mask** checkbox has not been activated in Step 2, the article master mask for the general type will be displayed immediately.



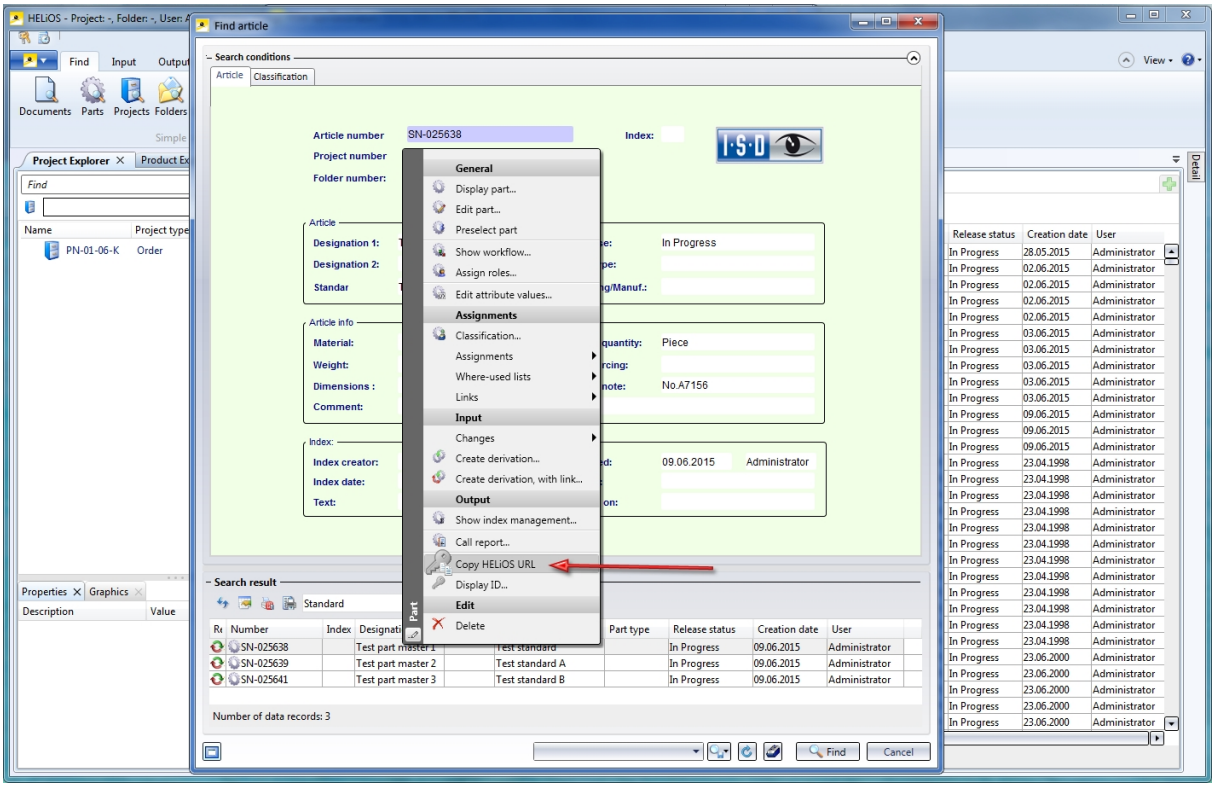
Click **OK** to start the new article master for the general type.

Step 4: Generate article master

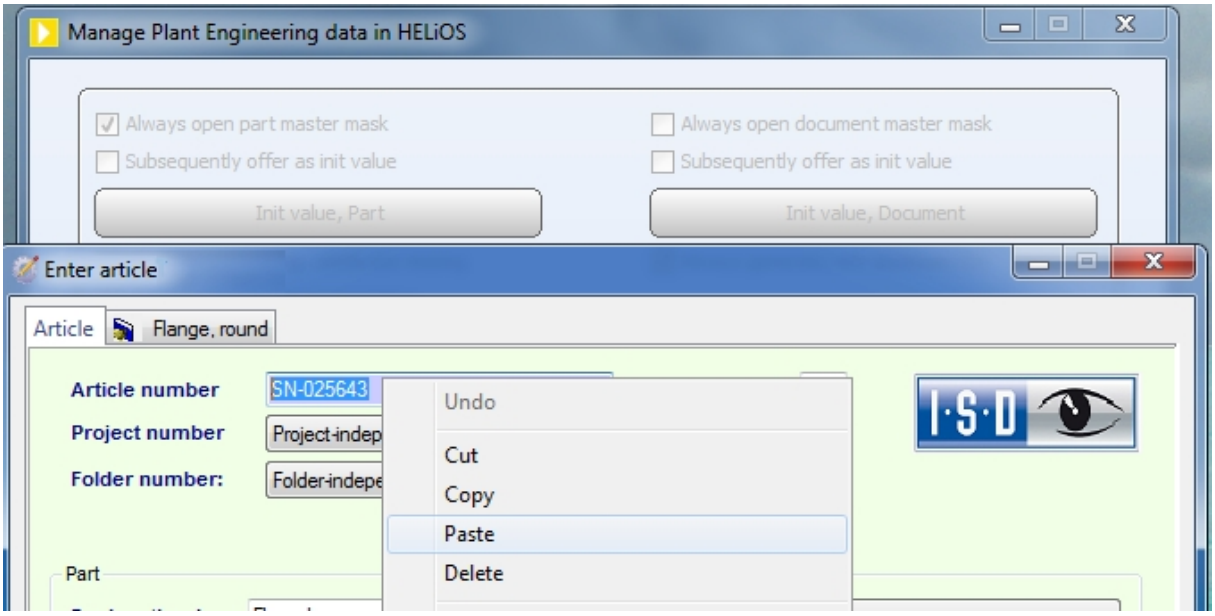
The mask for a new article master for the first variant sub-type will be displayed.



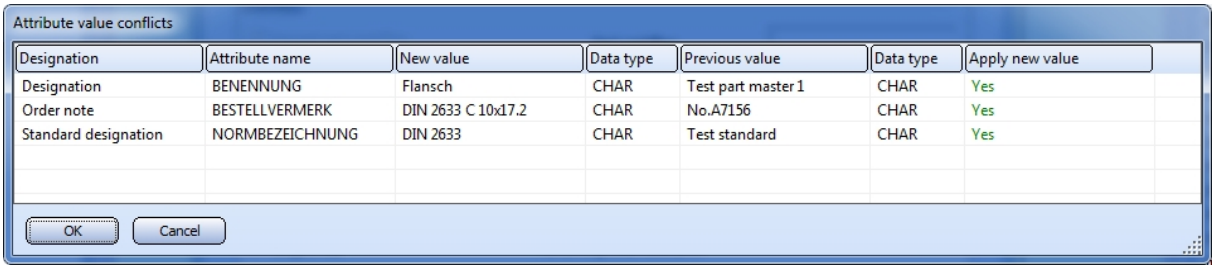
However, if you do not want a new article master for this sub-type, but want to use an already existing one instead, right-click the desired article master in the HELiOS Desktop window and select **Copy HELiOS URL**.



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

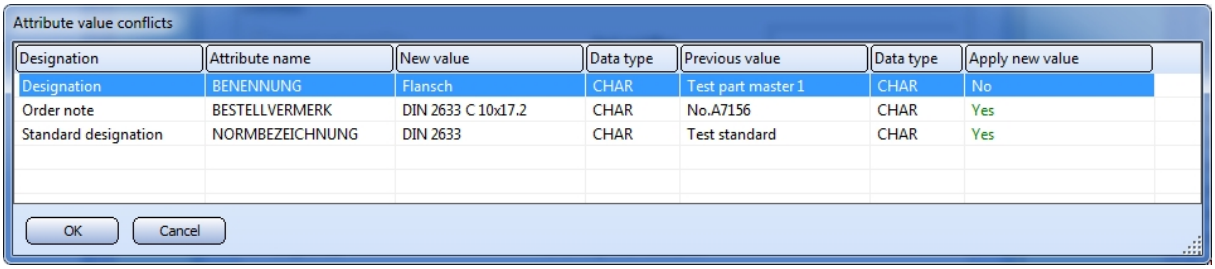


If there is a conflict between attribute values which, on the one hand, are given by the VAA file and, on the other hand, are contained in the article master to be taken over, the following window will be displayed (Example):



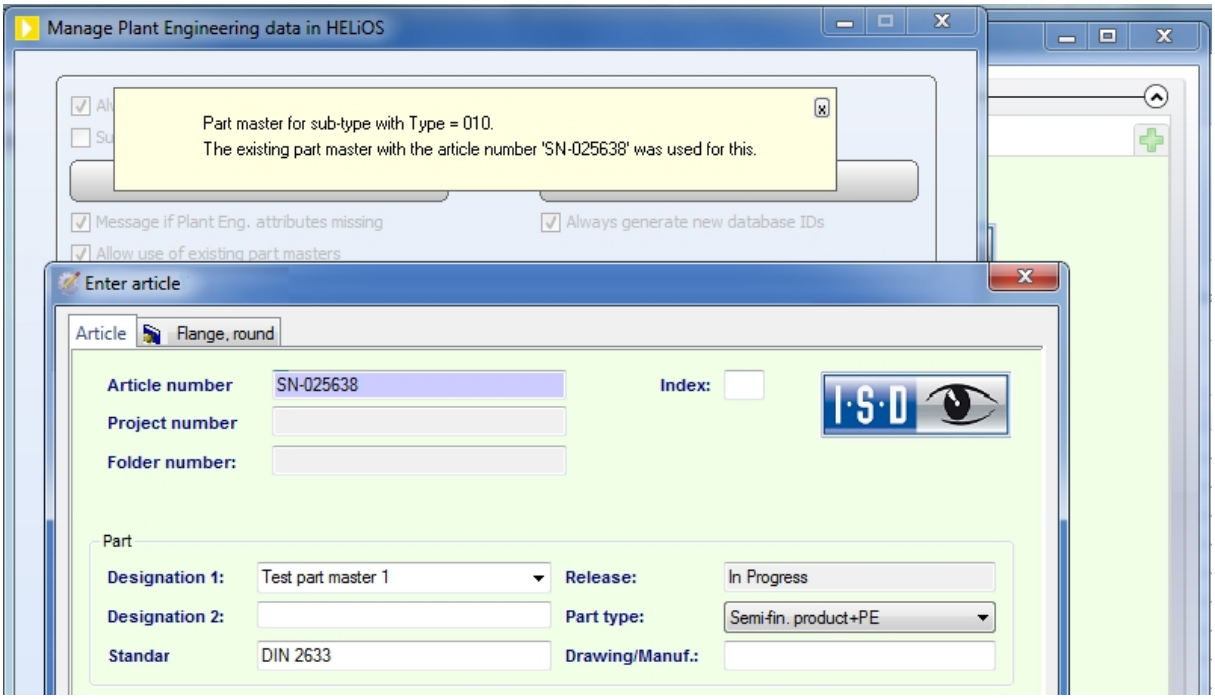
The **New value** column contains the values originating from the VAA file. Now, decide for each of the listed attributes whether you want to overwrite the existing value in the article master with the value from the VAA file (i.e. by selecting Apply new value = yes) or no).

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



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.



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 always 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 (PE)

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.

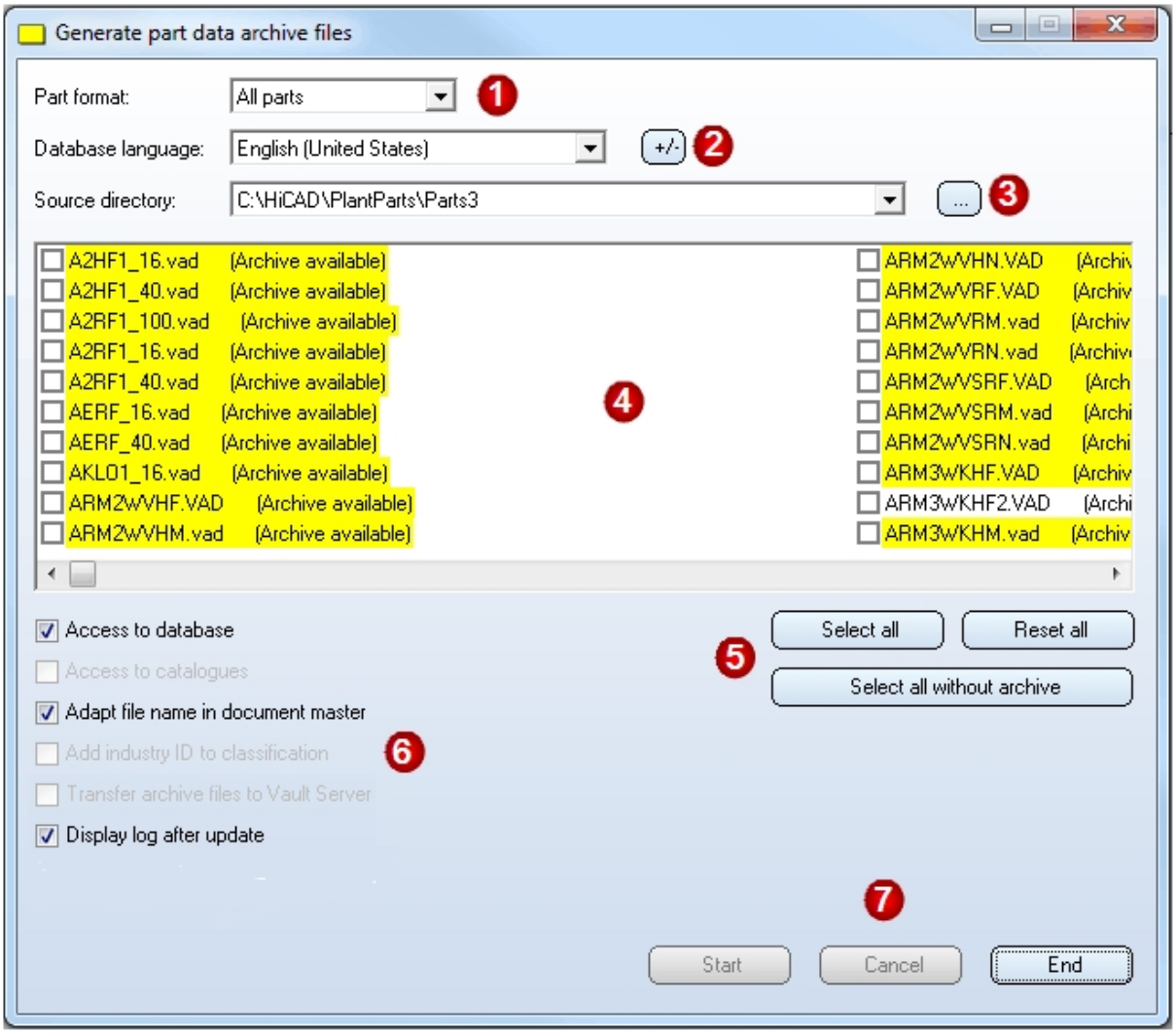
An archive file contains the data of all representation types for a part, i.e. at most one hollow body, a solid body and a symbolic representation.

Let us assume that the variant ***A2HF1_16.vad*** exists in three representations and is to be converted to 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.fig* (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 folllowing, *Plantparts*\ designates the directory path specified at position 6: in the FILEGRUP.DAT file.



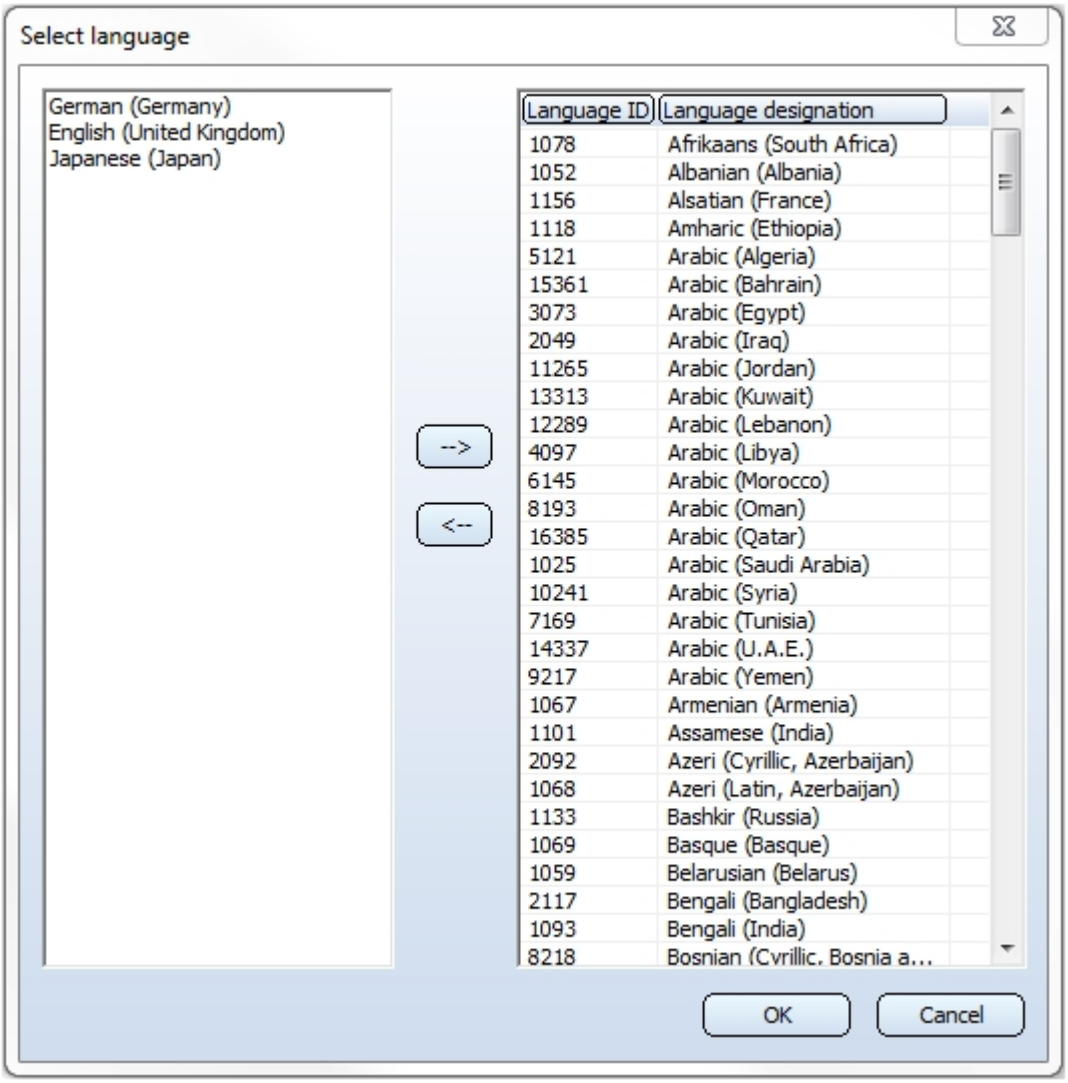
1. Part format

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 +/- button to select a different language. All selected languages will be then be shown in the list box.



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 to 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.

```
Run VarUpdate.exe:  04.11.2011  15:03:24
A2HF1_16.vad: succeeded
A2HF1_40.vad: succeeded
A2RF1_100.vad: succeeded
A2RF1_16.vad: succeeded
========== Update: 4 succeeded, 0 failed ==========
```

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 (PE)

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  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 insertion 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 (PE)

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.

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

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

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.

 Important:

In the part standards list, whitespaces will be interpreted as allowed characters of a standard designation. Therefore, no additional whitespaces 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 (PE)

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 fasternes 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	5810010	Pipe clamp
1010011	Nozzle	5900010	Other pipe part
2100010	Elbow	5910011	Double knee
2200010	Knee	5920010	Gauge part
3110010	T-piece	5970010	Fastener, symmetric
3210011	Y-piece	5971010	Fastener, unsymmetric
3230010	Branch	5990011	Seal
3300010	Cross	6110010	Saddle connection
4100010	Valve	6111010	Elbolet
4200010	Corner valve	9100001	Vessel
4300010	3-way valve	9110001	Pump
4400010	4-way valve	5902021	Other parts
5100010	Flange	5980010	Seal
5210010	Cap	9700001	Component
5310010	Reducer, concentric	9800001	Gauge
5320011	Reducer, excentric	9970001	Insulation
5710010	Blank flange		

Part Variants (PE)

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.

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

 Please note:

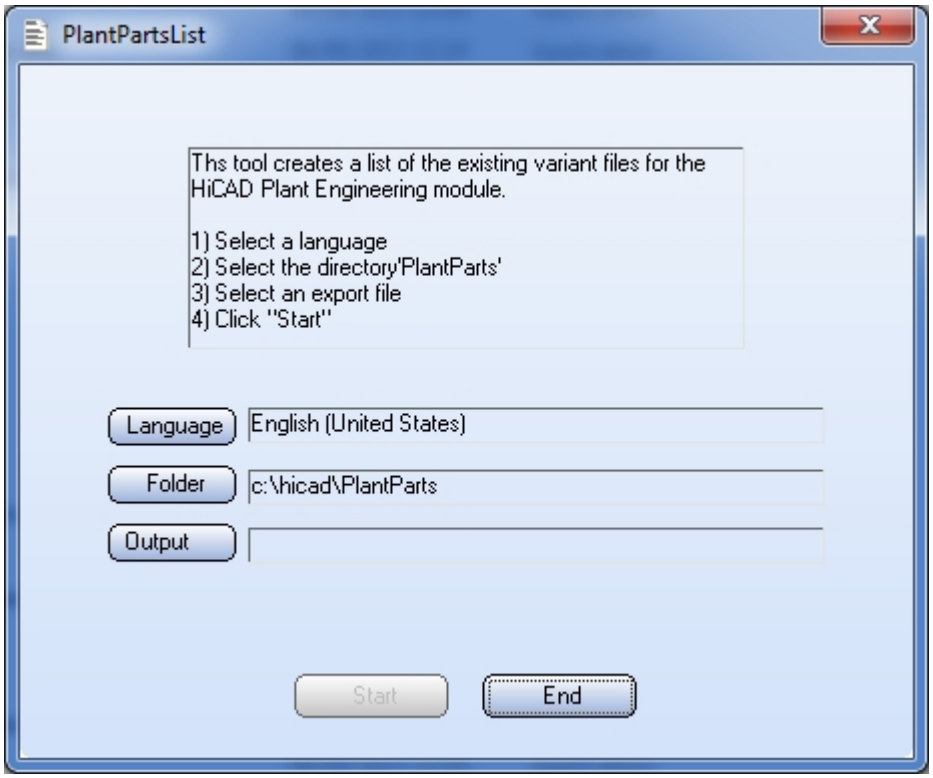
- Um neue Varianten in den HiCAD Katalog zu übertragen, verwenden Sie das Tool **VARTOCAT.EXE** oder die Funktion **Part data synchronisation** function.
- Mit dem Tool PLANTPARTSLIST.EXE können Sie eine Liste der aktuellen Anlagenbau-Varianten - in deutscher, englischer, französischer, italienischer 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 (PE)

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.

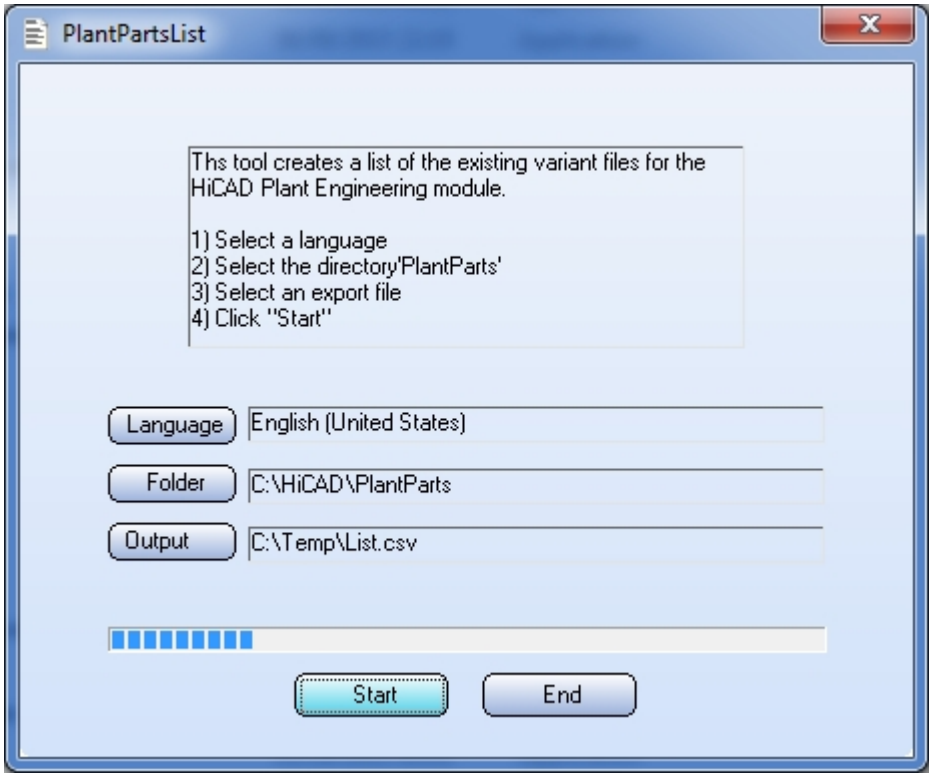
Proceed as follows:

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

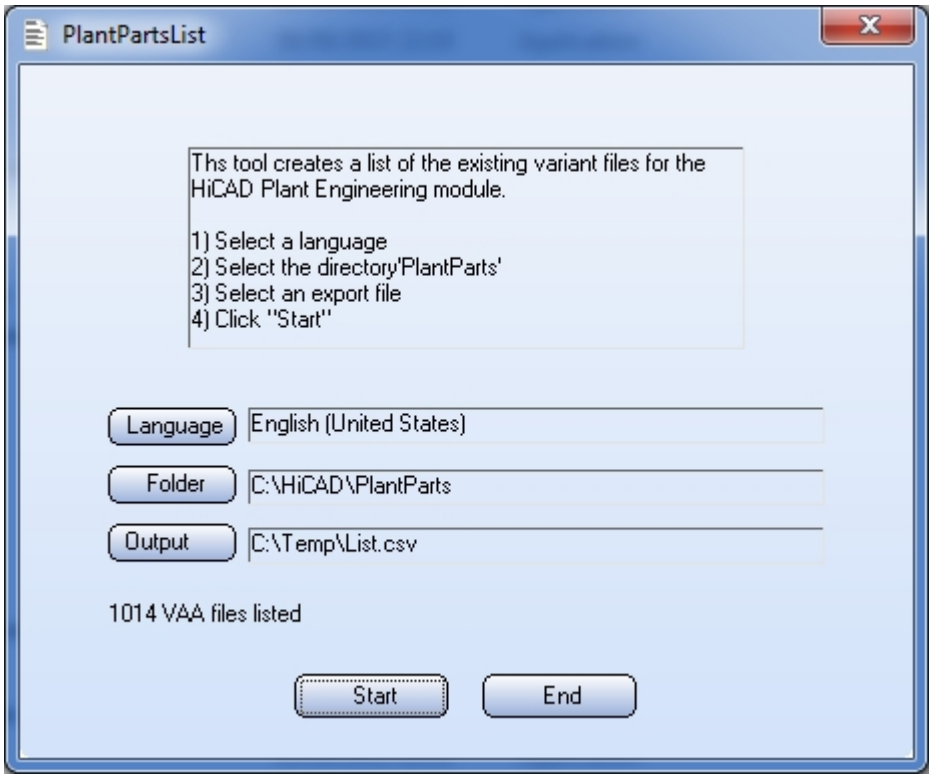


Now, perform the steps shown in the dialogue window:

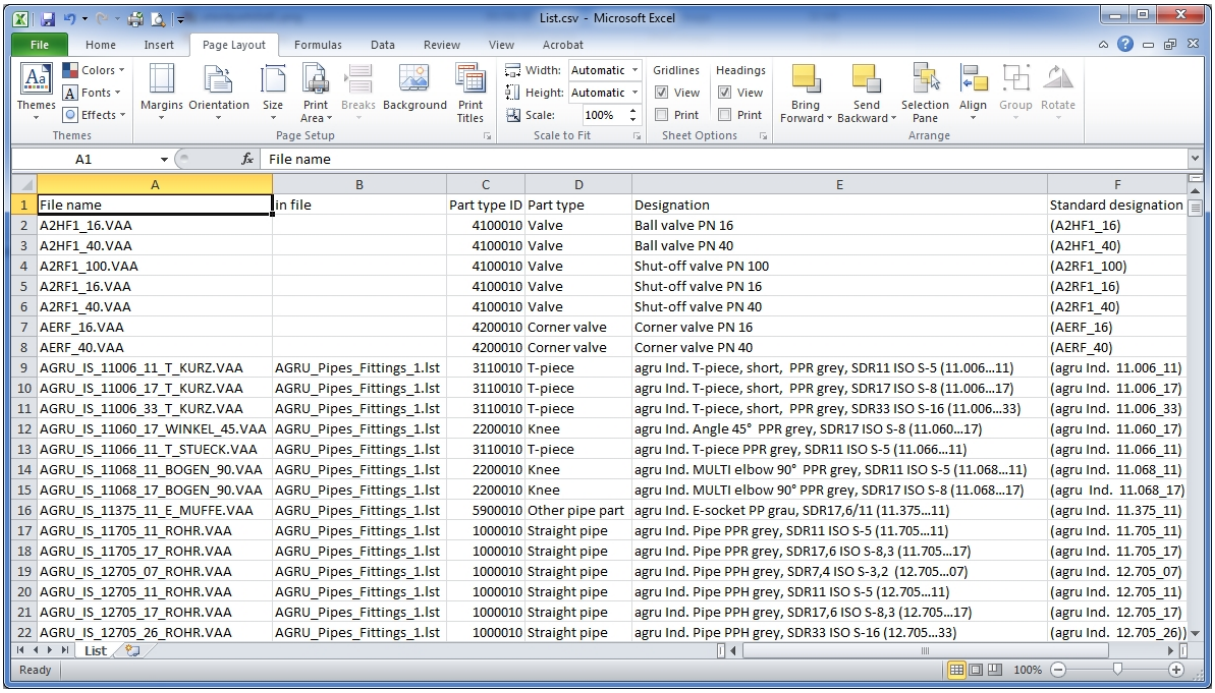
1. Click **Language** button and choose the desired language for the list to be created.
2. Click **Folder** and select the PLANTPARTS folder.
3. Click **Output**, select the folder to which you want the list to be saved, and enter the name of the CSV file.
4. Click **Start**. The generation of the list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



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



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



	A	B	C	D	E	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 (11.006...11)	(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 (11.006...17)	(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 (11.006...33)	(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 (11.060...17)	(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 (11.066...11)	(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 (11.068...11)	(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 (11.068...17)	(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 (11.375...11)	(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 (11.705...11)	(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 (11.705...17)	(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 (12.705...07)	(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 (12.705...11)	(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 (12.705...17)	(agru Ind. 12.705_17)
22	AGRU_IS_12705_26_ROHR.VAA	AGRU_Pipes_Fittings_1.lst	1000010	Straight pipe	agru Ind. Pipe PPH grey, SDR33 ISO S-16 (12.705...33)	(agru Ind. 12.705_26))

Example of a variants list in Microsoft Excel

ISD Software und Systeme GmbH
Hauert 4
44227 Dortmund
Germany
Tel. +49-(0)231-9793-0
Fax +49-(0)231-9793-101
info@isdgroup.de

ISD Berlin
Paradiesstraße 208a
12526 Berlin
Germany
Tel. +49-(0)30-634178-0
Fax +49-(0)30-634178-10
berlin@isdgroup.de

ISD Austria GmbH
Hafenstraße 47-51
4020 Linz
Austria
Tel. +43-(0)732-9015-1800
Fax +43-(0)732-9015-1829
info@isdgroup.at

ISD Hamburg
Strawinskystraße 2
25337 Elmshorn
Germany
Tel. +49-(0)4121-740980
Fax +49-(0)4121-4613261
hamburg@isdgroup.de

ISD Benelux b.v.
Het Zuiderkruis 33
5215 MV 's-Hertogenbosch
The Netherlands
Tel. +31-(0)73-61538-88
Fax +31-(0)73-61538-99
info@isdgroup.nl

ISD Hannover
Hamburger Allee 24
30161 Hanover
Germany
Tel. +49-(0)511-616803-40
Fax +49-(0)511-616803-41
hannover@isdgroup.de

ISD Benelux b.v.
Dokter van Deenweg 13
8025 BP Zwolle
The Netherlands
Tel. +31-(0)73-6153-888
Fax +31-(0)73-6153-899
info@isdgroup.nl

ISD Nürnberg
Nordostpark 7
90411 Nuremberg
Germany
Tel. +49-(0)911-95173-0
Fax +49-(0)911-95173-10
nuernberg@isdgroup.de

ISD Schweiz AG
Rosenweg 2
4500 Solothurn
Switzerland
Tel. +41-(0)32-62413-40
Fax +41-(0)32-62413-42
info@isdgroup.ch

ISD Ulm
Wilhelmstraße 25
89073 Ulm
Germany
Tel. +49-(0)731-96855-0
Fax +49-(0)731-96855-10
ulm@isdgroup.de

www.isdgroup.com