

Interfaces

Overview

The SmartPlant Instrumentation program enables you to exchange data with some of the most popular Instrument Index Systems DDSs and DCS Configurators such as PDS, IDM, AutoPlant, and Centum CS, and provides you with ready-made links to these systems. The full list of systems with ready-made links is shown below. For the systems marked with an asterisk(*), the import procedure must be carried out using the interface for the system. The interfaces are available as add-ins that can be purchased from your local SmartPlant Instrumentation dealer or Intergraph's Sales Department.



Note

- Details of the links can be reviewed by selecting the required links in the **Link Explorer** window and opening them in the **Import Link** window

Electrical Systems

- * SmartPlant Electrical

P&ID Systems

- * Plant Design System (PDS) 2D
- * SmartPlant P&ID
- AutoPlant
- CADPIPE
- PlantSpace

DCS and PLC Systems

- Centum

Other interfaces

- * Instrument Data Manager (IDM)
- * FIRSTVUE
- * Flowserve Performance!
- * Masoneilan ValSpeQ
- * Zyqad
- SAP (export interface) – Open the SAP User's Guide in Adobe Reader.
- DDP Export utility – Open the DDP User's Guide in Adobe Reader.

SmartPlant P&ID

Overview

The SmartPlant P&ID interface allows you to import P&ID components (instrument tags, lines, or equipment) into your database from a SmartPlant P&ID database.

You import the P&ID data first by connecting to the appropriate SmartPlant P&ID database from which the [Import](#) utility will import the drawing data. After you connect to the SmartPlant P&ID database you select the source unit and source drawings. With the source data selected, you can perform the import setup process and import the selected data (for details, see [Data Import Process](#)).

SmartPlant P&ID Requirements

To work with the SmartPlant P&ID interface you need to comply with the following requirements:

- The SmartPlant P&ID server component must be installed on an NT server, and SmartPlant P&ID client and SmartPlant Instrumentation must be installed on a Windows 2000 workstation that is defined on the server.
- The SmartPlant P&ID client component must be installed on the same machine where the SmartPlant P&ID interface will be run.
- The SmartPlant P&ID external links must be added to SmartPlant Instrumentation by the Domain Administrator prior to executing the SmartPlant P&ID import links. These are preliminary links and may need to be modified.
- You must have an existing target unit which contains naming conventions in order to be able to add the appropriate instrumentation data after you import the P&ID data.
- You must have the required database client (Oracle or SQL Server) installed in your system and the appropriate access rights (that is, the server / database names and passwords required to connect to SmartPlant P&ID).



Notes

- The source text file profile is defined in the ODBC.INI **registry** folder.
- When you install SmartPlant Instrumentation, you can also install the predefined Sybase Adaptive Server Anywhere profile which is provided as a part of the software package.
- If you do not want to use existing profiles, you can define new profiles using the SmartPlant Instrumentation Internal Setup Utility or other ODBC applications. To learn how to define a new profile and add it to SmartPlant Instrumentation, see [Creating an ODBC Profile](#).

SmartPlant P&ID Interface Main Features

The SmartPlant P&ID interface incorporates several important features which enable you to successfully migrate data from SmartPlant P&ID into SmartPlant Instrumentation.

Providing Ready-Made Import Links

When transferring data from SmartPlant P&ID to SmartPlant Instrumentation, you can use the [Import](#) utility ready-made table links which can be easily modified if required. These links have been specially created to transfer the SmartPlant P&ID tables which are required for managing the transferred SmartPlant P&ID data in SmartPlant Instrumentation (for details, see [Executing the Import of Data](#)).

Synchronizing SmartPlant P&ID Data Deviations

When importing SmartPlant P&ID data into SmartPlant Instrumentation, you may encounter mismatched data. It is therefore imperative to analyze and synchronize the differences between the databases before data is transferred from one database application to another. You synchronize the data by using the [Import](#) utility Comparison List feature which allows you to select and transfer the required components as well as control future data transfers. This way any operations performed in the source will be updated in the SmartPlant Instrumentation target data during the import process, including update, insert, and delete (for details, see [Import Comparison](#)).

Selecting SmartPlant P&ID Data for Import

The following procedure describes how to connect to the SmartPlant P&ID database for different platforms and how to select the required data for import.



Caution


- When importing SmartPlant P&ID data, you must **always** use the SmartPlant P&ID interface to connect to the source database before you can run the links from the **Link Explorer**. You cannot create and run links outside of the interface.



Note

- Before starting this procedure, make sure that you have configured the software to work with the appropriate version of SmartPlant P&ID (Version 3 or Version 4). For details, see [Switching the Interface for SmartPlant P&ID Versions 3 and 4](#).

➤ To select the data for importing from the SmartPlant P&ID database

1. Start the [Import](#) utility and log on using your user name and password.
2. Do one of the following:
 - Click .
 - On the **Options** menu, click **SmartPlant P&ID**.
3. In the **SmartPlant P&ID** dialog box, click **Open Plant** to navigate to the required SmartPlant P&ID plant from which you want to import data. If the **Available plant structures** window of the **Open Plant Structure** dialog box is empty, or if you are unable to open a plant, please refer to your SmartPlant P&ID documentation for more information.

4. Under **SmartPlant hierarchy**, select the required drawings that contain the data to be imported as follows:
 - a) In the **Tree** pane, expand the entities and navigate to the entity level where the required SmartPlant P&ID drawings are located.

The following table describes how the display in the **Contents** pane changes as you select different entities in the **Tree** pane. (The entities shown are the defaults, and the names and hierarchy structure may be changed using SmartPlant Manager.)

Selection in Tree (or Site Hierarchy) pane	Display in Contents pane
Site	Plants belonging to the site
Plant	Units belonging to the plant
Unit	Drawings in the unit

- b) In the **Contents** pane, select the required drawings. (In the above case, selecting a specific plant or unit results in selection of all the drawings associated with that plant or unit.) Use **Ctrl** or **Shift** to make multiple selections.



Note

- SmartPlant Instrumentation imports only the data related to the selected drawings for the item types you select.

5. Under **Item types**, select at least one of the item type check boxes, or select the **All item types** check box to select all the item types.



Tip

- It is recommended the first time you import data to select **All item types**.

6. If required, you can specify the import of certain attributes only for the selected item types as follows:

- a) Click **Attributes** to specify the item attributes for which data is imported.
 - b) Select **Use attribute list** to select specified properties for the item types you have selected.



Tip

- If using the attribute list, it is recommended that you select one item type at a time for easier selection of the required attributes. The software retains the information you save for each item type.

**Notes**

- The first time you select this option to import data, all the item type columns are selected by default. For subsequent import sessions, the software imports data for the selected columns when you select **Use attribute list**.
- Whenever you import data, if an attribute appears in the import link, the software imports data for that attribute even if you did not select the attribute from the list.

7. If required, you can translate (expand) P&ID tags to instrument tags as follows:

- a) Click **Macro** to define associations between SmartPlant P&ID macros and SmartPlant Instrumentation typical tags.
- b) Select **Use macro expansion** to use the macro association definitions to create new tags in SmartPlant Instrumentation based on the imported data.

**Tip**

- On selecting this option, you can also select the **Import original SPPID tag** check box to include in the import the P&ID tags that were expanded (see example for details).
- c) Select **Use measured variable** to use the measured variable in the SmartPlant P&ID database to modify the typical tag name when creating the instrument type in SmartPlant Instrumentation. Clear the check box to use the typical tag name as is.
 - d) Click **Browse** to navigate to the folder where the following files used by the macro expansion component are located:
 - sp_exp_macro_func
 - sp_exp_macro_locn
 - sp_exp_macro_rmk
 - sp_exp_macro_sig
 - sp_exp_macro_type

**Note**

- An instrument type is created for the tag only if it has a unique description in the SmartPlant Instrumentation database.

8. Do one of the following:

- Clear **Run link group automatically** if you need to modify any of the links before importing the data.
- Select **Run link group automatically** to select a particular link group and run all the links in it automatically.



Tip

- It is recommended the first time you import data to clear **Run link group automatically**. On clicking **OK**, you can then open the links to check the data mapping for each link and make any modifications if required.

9. Click **OK** to continue the import process.

If you selected to run the link groups automatically, the **Select Link Group** dialog box opens for you to select the required group of SmartPlant P&ID links to import.

If you selected not to run the link groups automatically, the **SmartPlant P&ID** dialog box is minimized and you can:

- Open a link to modify it.
- Run an import link or a group of links.



Notes

- Separate link groups are defined for importing drawing, loop, line, and tag data according to whether you select the macro expansion option:
 - Link group **SmartPlant P&ID+macros** when using macro expansion.
 - Link group **SmartPlant P&ID-macros** when not using macro expansion.
- You can select to execute a previously saved link group or link. In these cases the **Import** utility automatically selects all the required drawing data of the source PDS Unit.

Switching the Interface for SmartPlant P&ID Versions 3 and 4

The following procedure describes how to switch the Interface for use with SmartPlant P&ID Version 3 or Version 4. The interface is identical for both versions, but each SmartPlant P&ID version requires the appropriate version of the file SPPIDproj.ocx. By default, the file provided with this name is the file suitable for SmartPlant P&ID Version 4. An alternative .ocx file SPPIDproj3.ocx is available for use with SmartPlant P&ID Version 3.

➤ To switch the SmartPlant P&ID interface for use with a different software version

1. Unregister the currently selected version of the .ocx file.
2. Make a backup copy of the file SPPIDproj.ocx.
3. Rename the file SPPIDproj3.ocx to SPPIDproj.ocx.
4. Register the switched version of the .ocx file.



Note

- To switch back to the interface for SmartPlant P&ID Version 4, perform steps 1, 2, and 4 using the appropriate files.

Specifying SmartPlant P&ID Item Attributes

When selecting the source data for importing to SmartPlant Instrumentation according to SmartPlant P&ID item types, if you have a large quantity of data in the source, it is possible that you may only want to import specific data attributes. This option enables you to select the required data attributes for each item type that you selected in the **SmartPlant P&ID** dialog box.

➤ To specify SmartPlant P&ID item attributes

1. In the **SmartPlant P&ID** dialog box, click **Attributes**.
2. In the **Item Attributes** dialog box, do one of the following:
 - Select the check box in the **Select** column for each attribute you want to include in the import.
 - Select the **Select all** check box to select all the attributes that appear in the list.



Notes

- If you do not select any of the attributes for a specific item type, the software uses all the attributes for that item type.
 - If you select an attribute, but it is not defined in the SmartPlant P&ID import link, the software does not import the data for that attribute unless you map that attribute to a target column in the link.
 - If you do not select an attribute, but it is defined in the SmartPlant P&ID import link, the software imports the data for that attribute in any case.
3. Select the **Select attributes from links** check box to include the attributes that are derived from the SmartPlant P&ID import links.
 4. If you want to filter the attributes that appear in the list, under **View attributes**, click one of the option buttons:
 - **All** – to display all the attributes in the list.
 - **Selected** – to display only those attributes in the list that are selected.
 - **Not selected** – to display only those attributes in the list that are not selected.

5. Click **Apply** to accept the selections you have made.



Notes

- If you save the attributes for a particular item type, the software retains the information for that item type even if you subsequently save attributes for another item type.
 - You can click **Report** to generate a report of the selected attributes. You can then print the report or save it in a specified file format.
6. Click **Close** to return to the **SmartPlant P&ID** dialog box.

SmartPlant P&ID Macro Expansion

Since P&ID information is sometimes more generalized than the information found in instrumentation drawings, it is possible to represent a single P&ID tag in an instrumentation drawing by several SmartPlant Instrumentation instrument tags. If a P&ID tag has a macro, you can map it in SmartPlant Instrumentation to one or more typical instruments. In this way, SmartPlant Instrumentation can use the macro to expand a single P&ID tag to several instrument tags when importing data from SmartPlant P&ID.



Note

- Macro expansion will be performed only for the P&ID tags that are associated with the drawings you selected in the **Contents** section of the **SmartPlant P&ID** dialog box and for which macros exist.

➤ To define the SmartPlant P&ID macro settings

1. In the **SmartPlant P&ID** dialog box, click **Macro**.
2. In the **Edit PDS\SP-P&ID Macro** dialog box, click **Insert** to add a new line, and in the **Macro name** column, type the required macro name.



Notes

- Macro names can be found in the macroname column for item type: instrument.
 - When defining a macro associated with more than one instrument type, remember to use the same macro name for each line as appropriate.
3. Click **Assign** and use the **Find Tag** dialog box to select the required typical instrument to assign to the macro.
 4. Repeat steps 2 and 3 for each typical instrument you want to assign to a macro.

SmartPlant P&ID Macro Expansion Example

Suppose you have a P&ID drawing with a tag whose number is V-999. This tag actually consists of a positioner and an I/P transducer. If the **Use macro expansion** check box is selected, the original tag will be translated (expanded) and two new tags, one representing the positioner, and the other representing the I/P transducer, will be imported into SmartPlant Instrumentation.


If the **Import original SPPID tag** check box is selected, V-999 will also be imported into the SmartPlant Instrumentation database; if the check box is cleared, V-999 will not be imported.

Running the SmartPlant P&ID Links




After you define the connection to the SmartPlant P&ID database, the following link groups and their associated links are available for use:

- SmartPlant P&ID Equipment
- SmartPlant P&ID Process Data
- SmartPlant P&ID+macros (for import with macro expansion)
- SmartPlant P&ID-macros (for import without macro expansion)

➤ To run the SmartPlant P&ID links

1. Select the required data for import with the SmartPlant P&ID interface.
2. In the **Link Explorer**, select the required import links.
3. Click .
4. Ensure that the following source is mapped to the target column EQUIP NAME (if it appears in the link):

`t_tagprefix + - + t_tagsequenceno + - + t_tagsuffix`

5. Modify each link as required and click  to save.
6. Click  to test the current import link.
7. Click  to run the import process for the current link.

PDS

Overview

The PDS interface allows you to import P&ID components (for example, drawings, tags, and so forth) into your database from a PDS database.

You import the P&ID data first by connecting to the appropriate PDS database from which the [Import](#) utility will import the drawing data. The PDS application produces two databases/schemas from which you need to import data.

- **Project Control Database** - this database contains the unit data and it has the same functions as the SmartPlant Instrumentation Administration data.
- **P&ID Source Database** - this database contains the actual P&ID drawing data.

After you connect to the PDS database you select the source unit and source P&ID. With the source data selected, you can perform the import setup process and import the selected P&ID data (for details, see [Data Import Process](#)).

PDS Requirements

To work with the PDS interface you need to comply with the following requirements:

- The PDS external links must be added to SmartPlant Instrumentation by the Domain Administrator prior to executing the PDS import links. These are preliminary links and may need to be modified.
- You must have an existing target unit which contains naming conventions in order to be able to add the appropriate instrumentation data after you import the P&ID data.
- You must have the required database client (Oracle or SQL Server) installed in your system and the appropriate access rights (that is, the server / database names and passwords required to connect to PDS).



Notes

- PDS and SmartPlant Instrumentation cannot work from the same Microsoft SQL database server. This is because the sort order is different for the two applications, and databases with different sort orders cannot be located on the same server.
- The source text file profile is defined in the ODBC.INI **registry** folder.
- When you install SmartPlant Instrumentation, you can also install the predefined Sybase Adaptive Server Anywhere profile which is provided as a part of the software package.
- If you do not want to use existing profiles, you can define new profiles using the SmartPlant Instrumentation Internal Setup Utility or other ODBC applications. To learn how to define a new profile and add it to SmartPlant Instrumentation, see [Creating an ODBC Profile](#).

PDS Main Features

The PDS interface incorporates several important features which enable you to successfully migrate data from PDS into SmartPlant Instrumentation.

Providing Ready-Made Import Links

When transferring data from PDS to SmartPlant Instrumentation, you use the [Import](#) utility ready-made table links which can be easily modified if required. These links have been specially created to transfer the PDS tables which are required for managing the transferred PDS data in SmartPlant Instrumentation (for details, see [Executing the Import of Data](#)).

Synchronizing PDS Data Deviations

When importing PDS data into SmartPlant Instrumentation for the purposes of updating the information, you may encounter mismatched data. It is therefore imperative to analyze and synchronize the differences between the databases before data is transferred from one database application to another. You synchronize the data structure by using the [Import](#) utility Comparison List feature which allows you to select and transfer the required components as well as control future data transfers. This way any operations performed in the source will be updated in the SmartPlant Instrumentation target data during the import process (for details, see [Import Comparison](#)).

PDS Code List

The PDS interface supports a user-defined PDS code list. The PDS database stores information as codes that are not recognized by SmartPlant Instrumentation. When exporting data, the PDS application generates a set of files that are used to translate the PDS codes into data that SmartPlant Instrumentation can recognize. By selecting the appropriate option during the import setup process, the [Import](#) utility automatically replaces reference codes with the user-defined data kept in PDS code list files (see example for details).

PDS Data Example

A file called ATTRIBUTES (or ATTRIBUTES.TXT) contains a list of the source tables where the PDS data is located. The following example shows some of the tables:

No	Name	Data Type	Default Value	Units of Measure	App Type(s)	Description
0	system_unique_no	I4	0	0	1	'Occurrence no'
1	propagation_no	I2	0	0	1/1	'Propagation no'
2	company_name	A40	"	0	1	'Company name'
3	plant_name	A40	"	0	1	'Plant name'
.
.
.
109	instr_comp_type	C510	1	0	2	'Instr comp type'

Each table includes a data type code that refers to a file that contains a list of fields that belong to the table together with their codes. For example, the data type for table 109, instr_comp_type is C510. This refers to the file LIST.0510, part of which is as follows:

```

MAX=999
; 0510, Instrument Component Type (999)
1  ' '
;
16  'Instrument to Process line'
17  'Capillary tube'
18  'Mechanical link'
19  'Electric signal'
20  'Electric binary signal'
;
72  'Control valve'
78  'Solenoid valve'

```

This means that the PDS field with code no. 72 will be displayed in SmartPlant Instrumentation with the source name [Control Valve](#).

Selecting PDS Data for Import


The following procedure describes how to connect to the PDS database for different platforms and how to select the required data for import.



Caution

- When importing PDS data, you must **always** use the PDS interface to connect to the source database before you can run the links from the **Link Explorer**. You cannot create and run links outside of the interface.

➤ To import drawing data from the PDS database

- Start the **Import** utility and log on using your user name and password.
- Do one of the following:
 - Click .
 - On the **Options** menu, click **PDS**.
- In the **Server** section of the **PDS Login** dialog box, select a database platform (**DBMS**) and connection string (**Name**) from the following:

Platform	DBMS	Name
Oracle 7.x	O7 , O71 , O72 , or O73 .	<alias name>
Oracle 8.x	Select O84 and then overtype with the actual version number	<alias name>
Oracle 9.x	Select O84 and then overtype with the actual version number	<alias name>
SQL Server	MSS	<server name>

- If you selected the SQL Server platform, type the name of the database you want to connect to.
- In the **Project control database** section, do the following:
 - In the **Name** data line, type the appropriate PDS Control Database Project name where the source unit and drawing number data is located (for example **pds_control_db**).
 - In the **Password** data line, type the password required to connect to the PDS Control Database Project.

6. In the **P&ID source database** section, do the following:
 - a) In the **Name** data line, type the appropriate PDS P&ID source database name where the source loop, tag number, and wiring data is located (for example [pds_source_db](#)).
 - b) In the **Password** data line, type the password required to connect to the PDS P&ID source database.
7. Use the **PDS codes** section for importing fields that are defined in PDS by code numbers only. The PDS application generates the export files which are used to translate the PDS codes into data that can be recognized by SmartPlant Instrumentation.

**Notes**

- The PDS export files must be located in two sub-folders: the first sub-folder, named DATA, contains a file called ATTRIBUTES file (with or without a TXT extension) and the second sub-folder, named CODES, contains a set of list files with the field names referenced by the ATTRIBUTES file. (For an explanation of the contents of these files, see example).
 - Both of these sub-folders should be contained in the same parent folder.
8. Do the following:
 - a) Type or click **Browse** to browse to the full path of the PDS Codes Description file, for example:

C:\SMARTPLANT\INSTRUMENTATION\IMPORT\CODE\ATTRIBUTES.TXT

**Note**

- The actual file name may or may not have the TXT extension.
- b) Select the **Use code description** check box to replace the PDS codes with their descriptions, after selecting the appropriate PDS Codes Description file in the previous step.

**Note**

- If you choose to use the code description option and an equivalent for the code in SmartPlant Instrumentation is not found, the field code will be imported from the PDS database.

**Tip**

- If you know that SmartPlant Instrumentation will recognize all the source field names, you can clear the **Use code description** check box, in which case the software will not check the ATTRIBUTE and CODES files, thus speeding up the import process.

9. Click **Connect** to connect to the database specified in the **PDS Login** dialog box.

**Note**

- If the connection fails, an appropriate message is displayed, in which case you need to correct the database login information.
10. In the **Drawing Selection** dialog box, select the required drawings that contain PDS data to be imported as follows:
 - a) From the **Unit** list, select the required source PDS Unit. This displays the P&ID drawings in this PDS Unit in the **Drawings** pane.
 - b) Do one of the following:
 - Select the **Select all** check box to select all the P&ID drawings so that all data in the PDS unit will be imported.
 - Select any P&ID drawings that you want to include in the import process. Use **Ctrl** or **Shift** to make multiple selections.

**Note**

- Only the data in the selected drawings will be imported and SmartPlant Instrumentation will use this data to create P&ID drawings.

11. If required, you can translate (expand) P&ID tags to instrument tags as follows:

- a) Click **Macro** to define associations between PDS macros and SmartPlant Instrumentation typical tags.
- b) Select **Additional tags based on macros** to use the macro association definitions to create new tags in SmartPlant Instrumentation based on the imported data. On selecting this option, you can also select the **Insert original PDS tag** check box to include in the import the P&ID tags that were expanded (see example for details).
- c) Select **Use measured variable** to use the measured variable in the PDS database (in the instr_comp table) to modify the typical tag name when creating the instrument type in SmartPlant Instrumentation. Clear the check box to use the typical tag name as is.



Note

- An instrument type will be created for the tag only if it has a unique description in the SmartPlant Instrumentation database.

12. Do one of the following:

- Clear **Run link group automatically** if you need to modify any of the links before importing the data.
- Select **Run link group automatically** to select a particular link group and run all the links in it automatically.

13. Click **OK** to continue the import process.

If you selected to run the link groups automatically, the **Select Link Group** dialog box opens for you to select the required group of PDS links to import.

If you selected not to run the link groups automatically, the **Drawing Selection** dialog box is minimized and you can:

- Open a link to modify it.
- Run an import link or a group of links.



Note

- You can select to execute a previously saved link group or link. In these cases the **Import** utility automatically selects all the required drawing data of the source PDS Unit.

PDS Macro Expansion

Since P&ID information is sometimes more generalized than the information found in instrumentation drawings, it is possible to represent a single P&ID tag in an instrumentation drawing by several SmartPlant Instrumentation instrument tags. If a P&ID tag has a macro, you can map it in SmartPlant Instrumentation to one or more typical instruments. In this way, SmartPlant Instrumentation can use the macro to expand a single P&ID tag to several instrument tags when importing P&ID data from PDS.



Notes

- You can include custom fields in your typical tag definitions. The information you include in these fields will then be copied to the tags that are created from the typical tags when expanding the P&ID tag data. You can view the custom fields by defining a new style in an Instrument Index Standard Browser view that includes these fields. For details of how to create typical loops and typical tags, see [Managing Typical Loops](#).
- Macro expansion will be performed only for the P&ID tags that are associated with the drawings you selected in the **Drawing Selection** dialog box and for which macros exist.

➤ To define the PDS macro settings

1. In the **Drawing Selection** dialog box, click **Macro**.
2. In the **Edit PDS\SP-P&ID Macro** dialog box, click **Insert** to add a new line, and in the **Macro name** column, type the required macro name.



Notes

- Macro names can be found in the PDS P&ID schema in the name_txt column of the instr_comp table.
 - When defining a macro associated with more than one instrument type, remember to use the same macro name for each line as appropriate.
3. Click **Assign** and use the **Find Tag** dialog box to select the required typical instrument to assign to the macro.
 4. Repeat steps 2 and 3 for each typical instrument you want to assign to a macro.

PDS Macro Expansion Example

Suppose you have a P&ID drawing with a tag whose number is V-999. This tag actually consists of a positioner and an I/P transducer. If the **Additional tags based on macros** check box is selected, the original tag will be translated (expanded) and two new tags, one representing the positioner, and the other representing the I/P transducer, will be imported into SmartPlant Instrumentation.


If the **Insert original PDS tag** check box is selected, V-999 will also be imported into the SmartPlant Instrumentation database; if the check box is cleared, V-999 will not be imported.

Running the PDS Links

After you define the connection to the PDS database, the following link groups and their associated links are available for use:


Group	Links
1.PDS SUPPORT	COMPONENT FUNCTION TYPE PDS
	LOOP PROC PDS
	LOOP FUNCTION PDS
	EQUIPMENT TYPE
	EQUIPMENT TYPE 2 PDS
	LINE TYPE PDS
2.PDS	LINE PDS
	EQUIPMENT PDS
	EQUIPMENT 2 PDS
	LOOP PDS
	COMPONENT PDS (INSTRUMENT TYPE)
	COMPONENT PDS
	COMPONENT - LINE
	COMPONENT - LINE 2 PDS
	COMPONENT - EQUIPMENT
	COMPONENT - EQUIPMENT 2 PDS

➤ **To run the PDS links**

1. Select the required data for import with the PDS interface.
2. In the **Link Explorer**, expand the group **1.PDS SUPPORT** and select the link **COMPONENT FUNCTION TYPE PDS**.
3. Click  to open the **Parameter Settings** dialog box for the link.
4. Click the **Source** tab.
5. Under **Assign process function**, click **Define**.
6. If this is the first time you are running the link, in the **Define Instrument Type Fields** dialog box, do the following:
 - a) From **Source**, drag the field **instr_func_id** to **Instrument type name**.
 - b) From **Source**, drag the field **instr_comp_type** to **Instrument type description**.
 - c) Click **OK**.
7. In the **Process Function Mapping** dialog box, for each instrument type the left section, drag the appropriate process function from the right section to the **Process function** column.




Notes

- After the first time you run the link, some of the instrument types will already have process functions defined by default – these are displayed with a gray background, and you cannot reassign the process functions. Unassigned fields are shown with a light blue background, and assigned fields with a white background.
 - Whenever you run either of the import links: **COMPONENT FUNCTION TYPE PDS** or **COMPONENT PDS (INSTRUMENT TYPE)**, you should check that the mapping is correct and update it if required (if running both links, you need only check the mapping once).
8. When done, click **OK** to return to the **Parameter Settings** dialog box.
 9. Click **OK** to close the **Parameter Settings** dialog box.
 10. Click  to open the **Import Link** window for the selected link with the sources you selected (**instr_comp_type** and **instr_func_id**) already assigned to database targets.

11. If required, you can display the source codes for this link (PDS instrument type code and instrument type functional ID) as follows:

- a) Click .
- b) On the **File** menu, click **Exit** to return to the **Import Link** window.

12. Click  to import the data.

13. For each of the links in this group, and for all the links in Group: 2.PDS, repeat the above steps of this procedure (if prompted to overwrite existing data, click **Yes**).



Notes

- For certain links in Group 2.PDS, you are required to enter the source fields for defining naming conventions before running the link.
 - Some links import fields from more than one table. In such cases, the field name (excluding the table prefix) appears in the **Source Name** column. If you attempt to run the import process, an error message is displayed (Condition is not valid). To correct this, delete the field name indicated in the message from the **Source Name** column, and drag the appropriate field name (which includes the table prefix) to the **Source Name** column.
14. Open SmartPlant Instrumentation and examine the imported data in the [Browser](#) or [Instrument Index](#) module.

SmartPlant Electrical

SmartPlant Electrical Interface Overview

The SmartPlant Electrical Interface allows you to exchange data between the two programs using the following data types:

Power elements — You initially define power supply requirements in SmartPlant Instrumentation for tag numbers and for any panel type except for junction boxes and device panels. On publishing the data from SmartPlant Instrumentation, SmartPlant Electrical uses the published power supply data to create instruments from SmartPlant Instrumentation tag number data and cabinets from SmartPlant Instrumentation panel data. You can then publish the data and retrieve it back to SmartPlant Instrumentation with SmartPlant Electrical PDB information.

Signals — Signal data originates in SmartPlant Electrical. You can define signal data for generators, battery banks, converting equipment, loads, control stations, feeder circuits, and disconnect equipment. On retrieving all SmartPlant Electrical signals, SmartPlant Instrumentation creates special electrical tags, for which you can perform wiring and I/O control system tag assignments. After the wiring is complete, you can publish the data back to SmartPlant Electrical for further processing, and use it to display PLC I/O data in SmartPlant Electrical schematics.



Caution

- The current version of SmartPlant Electrical does not support AsBuilt functionality. For this reason, it is recommended that you do not use the SmartPlant Electrical Interface when working in an Operating Owner domain in SmartPlant Instrumentation. If you do decide to use the interface from an Operating Owner domain, you should proceed with caution, particularly in regard to managing the To Do List tasks carefully.



Notes

- The documents published by SmartPlant Electrical and SmartPlant Instrumentation do not contain the same properties. For example, instrument and cabinet data includes power supply parameters such as rated voltage, full load current, and so forth, which originate in SmartPlant Instrumentation. However, SmartPlant Electrical only publishes PDB/Cell/Circuit information. Similarly, SmartPlant Instrumentation publishes host data for signals that originate in SmartPlant Electrical, but SmartPlant Electrical does not publish the host data back to SmartPlant Instrumentation. For this reason, if, in SmartPlant Instrumentation, you change data values that originated from SmartPlant Electrical, you should update those values accordingly in SmartPlant Electrical, and vice versa.
- If you publish signals in SmartPlant Electrical for circuits that feed items other than loads, converting equipment, generators, battery banks, instruments, or cabinets, then on retrieving the items in SmartPlant Instrumentation and running the tasks, SmartPlant Instrumentation does not display the associated items.

Prerequisites for Working with the SmartPlant Electrical Interface

Before you can work with the SmartPlant Electrical Interface, do the following:

1. Install the Intergraph Schema Component from the SmartPlant Instrumentation CD Browser (click **Add-In Software**, and then click **Schema Component Installation**).



Note

- On the **Select Optional Features** page, make sure that you clear the **Schema Editor** check box.

2. Install the Intergraph Framework Client from the SmartPlant Instrumentation CD Browser (click **Add-In Software**, and then click **Framework Client Installation**).



Note

- On the **Select Features** page, make sure that you clear the **Framework Automatic Retrieval** check box.

3. In the Windows Registry, you need to specify the folder location of the .xml file containing the published data. In the case where multiple users publish the data, all the users must define the same path. The path is defined in the Registry location `HKEY_CURRENT_USER\Software\INTERGRAPH\INTTOOLS` using the parameter `OutputXMLFolder = <.xml file path>`.
4. The System Administrator must enable the entity registry.
5. The Domain Administrator must register the entities.
6. Set up the plant hierarchy for which you are going to publish and retrieve data.



Notes

- To ensure the smooth functioning of the SmartPlant Instrumentation backup and restore functions and to avoid duplicating data, each plant in SmartPlant Electrical must map to SmartPlant Instrumentation at the **domain** level. For this reason, make sure that each SmartPlant Instrumentation domain that you map contains no more than one plant.
- At this stage, the prerequisites for working with the interface must also be met on the SmartPlant Electrical side. For details, refer to SmartPlant Electrical Online Help: [Working with Interfaces, Prerequisites for Working with the SmartPlant Electrical Interface](#).

7. In SmartPlant Instrumentation, retrieve the file Plant Groups.xml, (on the **Framework** menu, click **Retrieve**, and then navigate to the file which is published in the folder of the current specified SmartPlant Electrical plant). This file contains plant structure information to facilitate correlation of the plant structures between both applications.
 8. For each unit where data is to be published and retrieved, the Domain Administrator must open the **Unit** dialog box and enter a unit number corresponding to the unit code of the mapped SmartPlant Electrical unit.
- You are now ready to use the interface to publish and retrieve data.

Flow of Activities for Creating Control Systems for SmartPlant Electrical Signals

The following steps constitute the primary flow of activities when you use SmartPlant Instrumentation to create the detailed wiring and control system data for a SmartPlant Electrical item:

1. In SmartPlant Electrical, create signals for the items you want to associate with control systems in SmartPlant Instrumentation and publish the data from SmartPlant Electrical. For details, refer to SmartPlant Electrical Online Help.

**Tip**

- SmartPlant Electrical publishes the data in an .xml file, which it creates in the plant structure path.

2. Open SmartPlant Instrumentation and retrieve the data that originated in SmartPlant Electrical.
3. Run the tasks that the software generates as a result of the retrieve.

**Tip**

- SmartPlant Instrumentation automatically creates tag numbers from the retrieved data and identifies them as SmartPlant Electrical tags.

4. View the SmartPlant Electrical tags created in SmartPlant Instrumentation.
5. Associate the SmartPlant Electrical tags with loop numbers where needed; the software populates the loop number data to SmartPlant Electrical later.
6. In the [Wiring](#) module, create the necessary panels and cables and make the connections needed to propagate the signal to the DCS or PLC that is used to define the control system tag relationship.

**Tip**

- If a signal is associated with a circuit in SmartPlant Electrical, it inherits its power distribution board (PDB) item tag as an associated field and is considered as a preassigned signal for the PDB cabinet. For circuit signals, SmartPlant Instrumentation automatically creates a cabinet with the name of the power distribution board to which the circuit was connected in SmartPlant Electrical. For other signals, you need to create device panels manually in SmartPlant Instrumentation. For details, see [Creating a Local Signal for Tags Created from SmartPlant Electrical Data](#).

7. Publish the data to SmartPlant Electrical. This creates an .xml document containing SmartPlant Instrumentation data such as the control system configuration, I/O assignment, PLC I/O card and channel, instrument tags, loop number, and so forth.

**Tip**

- The software creates the file in the following path: <SmartPlant Instrumentation home folder>\XML\IO Assignment_data.xml.

8. Retrieve (import) the configured data in SmartPlant Electrical.
9. Display the I/O assignment data in a SmartPlant Electrical schematic by including in the schematic macros related to signal data. For details, see [SmartPlant Electrical Signal Information](#) in the topic SmartPlant Instrumentation Macro Structure.

**Tip**

- In Enhanced SmartLoop reports and CAD drawings for a signal that applies to a circuit, the loop macros cannot retrieve main or associated electrical equipment names and types because the signal is not directly linked with these items. Furthermore, it is possible for a circuit to feed more than one item of equipment, and this is incompatible with the way that macros function, where each macro can retrieve only a single data value at a time. Likewise, if a signal is linked to an item of electrical equipment, you cannot use macros to retrieve circuit data.

**Notes**

- You can repeat this procedure as many times as you want to; SmartPlant Instrumentation recognizes new, modified, and deleted data that is published from SmartPlant Electrical.
- The data is owned by the application that created it. If you modify or delete the data in the application that does not own it, the next time you retrieve the data from the owner application, it overwrites any modified data, or reinserts data if it was deleted. A specific data property usually belongs to one or other of the applications; however, the **Sys I/O type** property is owned by both applications and in this case the software overwrites the value in whichever application you retrieve the data.

Retrieving SmartPlant Electrical Data


After you complete the process of designing your SmartPlant Electrical-compatible plant in SmartPlant Instrumentation, use this procedure to retrieve (import) data from SmartPlant Electrical.

➤ To retrieve SmartPlant Electrical data

1. From any module, on the **Tools** menu, point to **Interfaces** and click **SmartPlant Electrical**.
2. Under **Data transfer mode**, click **Retrieve SmartPlant Electrical data**.
3. In the **Retrieve Document** dialog box, type the path to the folder where the source .xml files containing the published data are located, or click **Browse** to navigate to the folder.
4. From the **Document** list, select the document that you want to retrieve.
5. On the **Framework** menu, click **To Do List** to open the **To Do List** window, and run the tasks as required. For more about details the To Do List, see [Working with the To Do List: An Overview](#).



Notes

- The software automatically retrieves the appropriate .xml files associated with the document that you select.
- It is possible for SmartPlant Electrical users to delete items that originated from SmartPlant Instrumentation, such as cabinets. In this case, when data is next published from SmartPlant Electrical and retrieved back into SmartPlant Instrumentation, the software creates **Delete** tasks for those items in the **To Do List** dialog box. If you do not want those items to be deleted from the SmartPlant Instrumentation database, you should click  to remove the task from the **To Do List** dialog box.

Viewing Tag Numbers Created from SmartPlant Electrical Signals


On retrieving data from SmartPlant Electrical, SmartPlant Instrumentation creates corresponding electrical tag numbers. You can view these tags in the [Instrument Index](#) or [Browser](#) modules.



Notes

- Some tag number properties apply to SmartPlant Electrical data only, and are read-only. You can edit other properties such as **Service**, **System I/O type**, and **Notes**.
- When you retrieve a SmartPlant Electrical PDB (power distribution board) preassigned circuit signal, SmartPlant Instrumentation automatically creates a cabinet with the name of the power distribution board associated with the signal. If you delete such a cabinet, its preassignment relationship with the signal is lost and you will no longer be able to find the tag for that signal when you select **Pre-assigned signals only** in the **Signal Filter** dialog box. However, the next time you publish the signal from SmartPlant Electrical and retrieve it into SmartPlant Instrumentation, the cabinet is created afresh.
- When you download electrical tags from SmartPlant Electrical, SmartPlant Instrumentation automatically assigns a control system tag to each electrical tag.
- There are three categories of electrical signals, for each of which the user interface differs slightly. The categories are:
 - Signals related directly to PDB circuits that are associated with main equipment; for example, a signal created in a feeder circuit that feeds a motor.
 - Signals directly related to main equipment; for example, a signal created under a motor or a transformer.
 - Signals associated directly with control stations that are associated with main equipment such as motors.

➤ To view tag numbers originating in SmartPlant Electrical

1. On the [Instrument Index](#) module toolbar, click .
2. On the **Enter Tag Number** dialog box, click **Find**.
3. On the **Find Tag** dialog box, select **Find SmartPlant Electrical tags only**.
4. Select the tag number that you want to view.

➤ **To view tag numbers originating in SmartPlant Electrical from the Browser module**

- In the [Browser](#) module, open a view for one of the following Instrument Index browsers:
 - **Electrical Tag Browser** — Displays data for all tag numbers derived from SmartPlant Electrical signals for all items but does not retrieve data values of associated attributes for signals created under circuits. The software displays data for the main item and also associated circuit data.
 - **Circuit Related Electrical Tag Browser** — Displays data for tag numbers derived from SmartPlant Electrical signals for circuits. If a circuit relates to more than one electrical item, a separate data row appears for each item.
 - **Electrical Power Element Browser** — Displays electrical properties owned by SmartPlant Instrumentation and SmartPlant Electrical for instruments and cabinets.

Creating Wiring Entities for SmartPlant Electrical Signals

This procedure describes the sequence of actions involved in performing wiring and I/O control system tag assignments for SmartPlant Electrical signal data.

➤ **To create wiring entities for SmartPlant Electrical signals**

1. Create a PLC panel. For details, see [Creating PLC Panels](#).
2. Create an I/O card for the PLC panel. For details, see [Creating I/O Cards](#).



Note

- When entering channel addresses for the I/O card, the values must be numeric only for publishing to SmartPlant Electrical.
3. Create the cables needed to make the connections. For details, see [Cables, Cable Sets, and Wires](#).
 4. Add terminal strips to the cabinets that SmartPlant Instrumentation created automatically from circuit signals that you downloaded from SmartPlant Electrical. For details, see [Creating Terminal Strips](#).
 5. Create device panels for tags that do not come from preassigned signals. Such tags usually originate from SmartPlant Electrical control stations or from one of the types of electrical equipment (motors, heaters, transformers, generators, and so forth). For details, see [Creating a Device Panel for a Tag Created from a SmartPlant Electrical Signal](#).

6. Create tag signals. For details, see [Creating a Local Signal for Tags Created from SmartPlant Electrical Data](#).
7. Connect the PLC to the cabinet using the cable you created. For details, see [Connecting a Cable or a Cable Set to a Terminal Strip](#).
8. Propagate the tag signal to the PLC. For details, see [Semi-Automatic Tag Signal Propagation](#), Repropagating a Tag Signal.




**Note**

- You can use SmartPlant Electrical signal macros to generate Enhanced SmartLoop reports or CAD application-based drawings. For details, see [SmartPlant Electrical Signal Information](#) in the topic SmartPlant Instrumentation Macro Structure.

Creating a Device Panel for a Tag Created from a SmartPlant Electrical Signal

This procedure shows you how to create a device panel for a tag that was created from retrieved data from SmartPlant Electrical.


➤ To create a device panel for a SmartPlant Electrical tag

1. Open the [Wiring](#) module.
2. Do one of the following:
 - On the toolbar, click .
 - On the **Associations** menu, click **Device Panels**.
3. Click .
4. In the **Filter** dialog box, do the following to display SmartPlant Electrical tags only:
 - a) From the **Column Name** list, select [Sub-Category](#).
 - b) From the **operator** list, select **=**.
 - c) From the **Value** list, select [SmartPlant Electrical](#).
5. Click **OK** to return to the **Device Panels** window.
6. Select a tag number and do one of the following:
 - On the toolbar, click .
 - On the **Actions** menu, click **Create**.
7. In the **Create Device Panel and Cable** dialog box, select the required default panel, default cable, and connection type.
8. To apply the values that you set to all of the tags with incomplete profiles that you selected in the **Device Panels** window, select **Apply to all selected tags with incomplete profile**.

Creating a Local Signal for Tags Created from SmartPlant Electrical Data

This procedure shows you how to generate a local signal in SmartPlant Instrumentation for tags that were created from retrieved data from SmartPlant Electrical.

➤ To create a local signal for retrieved SmartPlant Electrical tag data

1. Open the [Wiring](#) module and select one of the following:
 - A terminal strip that you created for an automatically generated cabinet (derived from the PDB in SmartPlant Electrical).
 - A field device panel.
2. On the **Associations** menu, click **Connection**.
3. In the **Connection** window, do one of the following:
 - Right-click in the data window and select **Local Signal** on the shortcut menu.
 - On the **Connection** menu, click **Local Signal**.
 - Click .
4. In the **Local Signal** dialog box, click **Filter**.
5. In the **Signal Filter** dialog box, select **SmartPlant Electrical tags only**. This option selects only tags related to SmartPlant Electrical that do not have any connections.
6. Do one of the following:
 - Select **Preassigned signals only** to select only those electrical tags for which the SmartPlant Electrical signals have preassigned associations to a power distribution board.
 - Clear **Preassigned signals only** to select all unconnected tags related to SmartPlant Electrical.
7. Click **OK** to return to the **Local Signal** dialog box.
8. Select a tag number and click **Create** to create and associate the local signal with the tag number. Repeat this action for each tag number.



Note

- SmartPlant Instrumentation creates the local signal and its name appears next to the instrument tag with which it is associated in the **Local Signal** dialog box.
9. Click **Close**.

Flow of Activities for Specifying Power Supplies Required for Instruments and Cabinets

The following steps constitute the primary flow of activities when you use SmartPlant Instrumentation to define power supply requirements for instruments and cabinets:

1. In SmartPlant Instrumentation, add power supply data as follows:
 - For tag numbers, in the [Instrument Index](#) module, open the **Tag Number Properties** dialog box of the tag number that you require and select **Requires power supply**.
 - For panels (except for junction boxes or device panels), in the [Wiring](#) module, open the **Properties** dialog box of the panel that you require and select **Requires power supply**.



Caution

- If the cabinet originated from PDB information in SmartPlant Electrical, the power supply data for that cabinet belongs to SmartPlant Electrical. In this case, entering power supply data in SmartPlant Instrumentation results in the creation of a task in SmartPlant Electrical that generates an error when run. To prevent publishing of power supply data in this case, make sure that you clear **Requires power supply**.
2. On the **Power Supply** tab of the appropriate dialog box, enter your electrical load data.
 3. Publish the data to SmartPlant Electrical. This creates an .xml document containing all SmartPlant Instrumentation data in the current plant such as the control system configuration, I/O assignment, PLC I/O card and channel, instrument tags, loop number, and so forth.



Tip

- The software creates the file in the following path: <SmartPlant Instrumentation home folder>\XML\IO Assignment_data.xml.
4. Retrieve (import) the configured data in SmartPlant Electrical. In SmartPlant Electrical, the following actions need to be performed:
 - a) Run the tasks from the To Do List — this creates instruments and cabinets.
 - b) Assign a PDB and circuit for each load.
 - c) Publish the data from SmartPlant Electrical to SmartPlant Instrumentation.

5. Retrieve the SmartPlant Electrical data into SmartPlant Instrumentation.
6. Run the tasks that the interface generates as a result of the retrieve.
7. View the tag numbers or cabinets in SmartPlant Instrumentation and note that power distribution board data appears on the **Power Supply** tab of the appropriate dialog box.



Notes

- The power distribution board data is also available for displaying in loop drawings.
- You can repeat this procedure as many times as you want to; SmartPlant Instrumentation recognizes new, modified, and deleted data that is published from SmartPlant Electrical.
- The data is owned by the application that created it. If you modify or delete the data in the application that does not own it, the next time you retrieve the data from the owner application, it overwrites any modified data, or reinserts data if it was deleted. A specific data property usually belongs to one or other of the applications.

Publishing Data for SmartPlant Electrical

After you complete the process of designing your SmartPlant Electrical-compatible plant in SmartPlant Instrumentation, use this procedure to publish (export) the required data for accurate and efficient SmartPlant Electrical configuration.

➤ To publish data for SmartPlant Electrical

1. From any SmartPlant Instrumentation module, on the **Tools** menu, point to **Interfaces** and click **SmartPlant Electrical**.
2. Under **Data Transfer mode**, do one of the following:
 - For instrument and panel data, click **Publish electrical power elements**.
 - For signal data, click **Publish electrical signals**.



Note

- If the Windows Registry does not specify a value for the folder location of the .xml file containing the published data, the **Publish to File** dialog box opens for you to enter a location.
3. To view the log of the publishing process, in the **Process** dialog box, click **View Log**.

DeltaV

DeltaV Interface Overview

The DeltaV interface allows you to share data between SmartPlant Instrumentation and the Emerson DeltaV plant automation and control system. This interface allows you to download configurations of DeltaV I/O cards and of other certified entities into SmartPlant Instrumentation from the Emerson web site.

Within SmartPlant Instrumentation, you interface with the DeltaV DCS on the component/card level. If, for example, you design a loop that needs to be controlled by DeltaV, you need to connect the loop wiring to I/O cards in the DeltaV DCS.

After you configure your DeltaV DCS system within SmartPlant Instrumentation, you then publish this data for DeltaV.

The interface supports conventional and Foundation Fieldbus instruments.

Prerequisites for Working with the DeltaV Interface

General Prerequisites

The DeltaV interface functions for any Oracle or Microsoft SQL database that is approved for **INtools** Version 6 or SmartPlant Instrumentation Version 7. (For details, see [SmartPlant Instrumentation Installation Guide](#), [SmartPlant Instrumentation on Oracle](#) and [SmartPlant Instrumentation on SQL Server](#).)

Make sure that you have Internet access to the URL from which you download the DeltaV definitions document.

Before you can work with the DeltaV Interface, it is necessary to perform the following actions:

1. The System Administrator must enable the entity registry.
2. The Domain Administrator must register the entities.
3. Optimize your SmartPlant Instrumentation preferences for the interface with DeltaV. (For details, see [Preferences \(Interfaces - DCS Vendors\)](#)).

Additional Prerequisites for Publishing from SmartPlant Instrumentation for DeltaV

To prepare a workstation for publishing SmartPlant Instrumentation data for DeltaV, the following actions must be performed:

1. You must install the Intergraph Schema Component from the SmartPlant Instrumentation CD Browser (click **Add-In Software**, and then click **Schema Component Installation**).
2. You must install the Intergraph Framework Client from the SmartPlant Instrumentation CD Browser (click **Add-In Software**, and then click **Framework Client Installation**).

Flow of Activities for Configuring DeltaV

This topic describes the primary flow of activities when you use SmartPlant Instrumentation to design a plant to be run and controlled using the DeltaV system.



Note

- The flow that follows may be performed multiple times during the project life cycle.
1. Download and unzip the DeltaV entity definition documents, and import them into SmartPlant Instrumentation. For details, see [Downloading and Importing DeltaV Definitions](#).
 2. Using the DeltaV-compatible objects now available in the **Reference Explorer** and supporting tables of your SmartPlant Instrumentation database, update your plant design. From the perspective of SmartPlant Instrumentation, the DeltaV DCS (Distributed Control System) panel is a DCS in the **Reference Explorer** from which you create a specific DeltaV DCS in the **Domain Explorer**. For details, see [Viewing DeltaV Entities in SmartPlant Instrumentation](#) and [Creating Wiring Entities Compatible with DeltaV](#).
 3. Publishing Data for DeltaV
The .xml document that you publish (export) is a partial set of the SmartPlant Instrumentation database, including data such as the DeltaV configuration, I/O assignment, conventional and fieldbus data, and so forth.
 4. Import Data Published from SmartPlant Instrumentation into DeltaV.
Following the import, validate and — if necessary — reconcile the data imported from SmartPlant Instrumentation with the DeltaV database.



Note

- Future development will allow you to retrieve configured DeltaV data back into SmartPlant Instrumentation. This option will allow the DeltaV user to benefit from the graphics and reporting abilities of SmartPlant Instrumentation.

Downloading and Importing DeltaV Definitions

The DeltaV entity definition documents that you download and import to SmartPlant Instrumentation constitute the engineering library of DeltaV objects - the DeltaV DCS (Distributed Control System) itself, Foundation Fieldbus elements, and entries for supporting tables such as Manufacturer, Model, and so forth.

The Internet context offers the user efficient updating of the SmartPlant Instrumentation database with definitions of entities certified for DeltaV. Each time that you run these procedures, you can view and update the **Fieldbus Instrument Type Association** supporting table of associations that you built among DeltaV device types, instrument manufacturers, and SmartPlant Instrumentation instrument types.

The process of downloading and importing DeltaV definitions includes two procedures. To prepare for either procedure, do the following:

1. From any SmartPlant Instrumentation module, on the **Tools** menu, point to **Interfaces**, and click **DeltaV**.
2. Under **Data transfer mode**, select **Retrieve DeltaV definitions**, and click **OK**.

For each procedure, click the relevant link below:

- Downloading the DeltaV definition files to your local computer or network
- Importing the DeltaV definitions into SmartPlant Instrumentation

➤ To download DeltaV definitions to your local computer or network



Note

- Before you start this procedure, make sure that you have an Internet connection and a valid Intergraph customer user name and password.
1. In the **Retrieve DeltaV Definitions** dialog box, beside **Click here to download the definitions**, click the link.
 2. In the **Welcome to Intergraph Process Power & Marine** Web page that opens, type your Intergraph customer user name and password, and then click the arrow to the right of **Log in**.


3. Do the following to access the Emerson DeltaV website:
 - a) On the **Downloads** page, click **Products**, and then click **SmartPlant Instrumentation**.
 - b) On the **SmartPlant Instrumentation Customer Support Site** page, click **Special Announcements**.
 - c) Under **Emerson Process Management DeltaV definition files for SmartPlant Instrumentation now available for download**, click **Go**.
4. In the Emerson DeltaV website, under **DeltaV SmartPlant Instrumentation Integration**, confirm the terms of use agreement.
5. For each of the .zip files displayed, select the option button and do the following:
 - a) Click **Download**.
 - b) In the **File Download** dialog box, click **Save**.
 - c) In the **Save As** dialog box, navigate to the desired folder, and click **Save**.
 - d) In the **Download Complete** dialog box, click **Close**.
6. In Windows Explorer or comparable utility, unzip to a common folder the files that you downloaded.

➤ **To import DeltaV definitions into SmartPlant Instrumentation**



Notes

- Make sure that you downloaded DeltaV definitions to your local computer or network.
 - You can also use this procedure to view and update the **Fieldbus Instrument Type Association** supporting table of associations that you previously built among DeltaV device types, instrument manufacturers, and SmartPlant Instrumentation instrument types.
 - Not all available DeltaV I/O cards are included in the download definitions: for example, the interface does not handle ASI and Serial cards.
1. In the **Retrieve DeltaV Definitions** dialog box, click **Browse**, navigate to the folder to which you unzipped the files that you downloaded, and click **OK**.
 2. In the data window, under **Select**, select the documents that you want to import into SmartPlant Instrumentation, and click **OK**.

3. If the **Fieldbus Instrument Type Association** dialog box opens, do the following at least once for each DeltaV device type that you display in the **Interface entities** data window:
 - a) Click **New** to create a new row in the **SmartPlant Instrumentation definitions** data window.
 - b) Under **Process function**, select the required process function.
 - c) At the right of the new row, click .
 - d) In the **Instrument Types** dialog box, do one of the following:
 - Select an existing fieldbus instrument type for which the **System I/O type** value is **Fieldbus** for association with the current DeltaV device type.
 - To create a new fieldbus instrument type or edit an existing one, see [Defining an Instrument Type](#).

**Caution**

- When you create DeltaV-compatible fieldbus tags, the only acceptable values for instrument type are those that you associated with DeltaV device types during the downloading process.
- e) Click **OK** to associate the selected instrument type with the current DeltaV device type and close the **Instrument Types** dialog box.

**Caution**

- When you create a fieldbus tag based on the displayed instrument type, the only acceptable values for manufacturer are those displayed in this dialog box. If you select other manufacturers, this will prevent validation by the DeltaV reconciliation program.
4. In the **Fieldbus Instrument Type Association** dialog box, click **Next** to display each successive DeltaV device type, and then associate SmartPlant Instrumentation instrument types as above.
 5. To close the **Fieldbus Instrument Type Association** dialog box, click **OK**.
 6. In the **Retrieve DeltaV Definitions** dialog box, click **Close**.
 7. In the **DeltaV Interface** dialog box, click **Close**.

Viewing the DeltaV Log

After you import DeltaV entity definition documents into SmartPlant Instrumentation, you can use this procedure to view and save the log. You can then open the .txt file in a word processor or text editor and print it.

➤ To view the DeltaV log

1. In the **Retrieve DeltaV Definitions** dialog box, click **View Log**.
2. In the **Log** dialog box, view the log.
3. To save the log as a .txt file, do the following:
 - a) Click **Save**.
 - b) In the **Select File** dialog box, navigate to the required folder and type the required file name.
 - c) Click **Save**.

Viewing DeltaV Entities in SmartPlant Instrumentation

After you import the DeltaV entity definitions document into SmartPlant Instrumentation, use this procedure to view the DeltaV I/O cards.



Caution

- In the **Reference Explorer**, do not change any of the values in the entities that you downloaded from DeltaV.

➤ To view DeltaV entities in SmartPlant Instrumentation

1. Open the **Reference Explorer**.
2. Expand the DeltaV DCS panel to the I/O card level.
3. Right-click an I/O card, and on the shortcut menu, click **Properties**.

Creating Wiring Entities Compatible with DeltaV

Use these procedures to create actual DeltaV wiring entities in the plant that you are designing. First you must download and import DeltaV definitions into your SmartPlant Instrumentation database. (For details, see [Downloading and Importing DeltaV Definitions](#).)



Caution

- For specific guidelines regarding values acceptable for DeltaV, see [Crucial Fields for the DeltaV-SmartPlant Instrumentation Interface](#).

➤ To create a DeltaV DCS panel in SmartPlant Instrumentation

1. Open the **Reference Explorer** and the **Domain Explorer**.
2. In the **Domain Explorer**, create and populate a DeltaV DCS panel, using the I/O cards that are contained in the DeltaV DCS panel in the **Reference Explorer**. For more information, see [Copying Reference Wiring Entities](#).

➤ To create fieldbus wiring entities compatible with DeltaV



Note

- To display the **Fieldbus Instrument Type Association** supporting table of associations that you built among DeltaV device types, instrument manufacturers, and SmartPlant Instrumentation instrument types, see [Downloading and Importing DeltaV Definitions](#).
1. For general guidelines, see [Foundation Fieldbus and Profibus: An Overview](#).
 2. Regarding creation of fieldbus devices, see [Creating Foundation Fieldbus and Profibus Instruments](#).

Crucial Fields for the DeltaV Interface

When you prepare a SmartPlant Instrumentation domain for publishing to DeltaV, you must be careful to enter values according to the table that follows.



Caution

- If you diverge from the following table and its notes, the software does not validate the data; however, the DeltaV reconciliation program will reject data values that are incompatible. For complete details of the exact DeltaV values to use, please refer to your DeltaV Hardware Manual.
- Make sure that you set preferences for DeltaV. For details, see [Preferences \(Interfaces - DCS Vendors\)](#)



Notes

1. The value **Y** (Yes) is an indication to act according to the column header, as follows:
 - **Accept DeltaV Value** — Do **NOT** change the value of this field.
 - **Enter Valid Value** — Accept the value imported from DeltaV, if one exists, or enter a different valid value.
 - **Optional Value** — Accept the value imported from DeltaV, if one exists, or enter a different valid value, or enter no value.
2. Although there are additional optional fields in the dialog boxes listed, the table only includes optional fields for which data is imported from DeltaV.
3. In the **Racks** dialog box, under **Rack position numbering**, accept the default selection of **Start from one**. In the data window, for each rack that you create, type the value **8** under **Number of slots**.
4. A controller name must be upper case, and not more than 16 characters. You must assign the same controller to all of the I/O cards that share a given rack/carrier.
5. If you are defining a DeltaV redundant I/O card for a DCS panel, make sure that in the **Primary location** group box the value under **Position** is an odd number, and that the secondary location position value is an even number one greater than the position value for the primary location.
6. DeltaV redundant I/O cards are wide and therefore they occupy two adjacent slots in their carriers. The cards can only be placed in certain slots. DeltaV I/O cards have their terminations on the I/O cards themselves, and so there is no need for separate termination cards to be connected to the I/O cards. On the **Control System** tab of the **I/O Termination** dialog box, you must select the **Define a redundant I/O card** check box. On publishing the data, this indicates to DeltaV that the card is defined as a redundant double-width I/O card.

7. You can use only the following DeltaV cards as redundant I/O cards:
 - AI_8CH_HART_4-20_RED
 - AO_8CH_HART_4-20_RED
 - RFIC
 - DI_8CH_24VDC_DCT_RED
 - DO_8CH_24VDC_HSS_RED
 - RED_PROG_SERIAL_32DS
 - RED_SERIAL_32DS
8. After you import DeltaV definitions, the **Channel Types** supporting table is populated with DeltaV-compatible channel types for DeltaV-compatible I/O strip types. These are the only DeltaV-compatible values for the **Channel Type** field in the **Channels** dialog box.
9. When you create a fieldbus tag based on an given instrument type, on the **General** tab of the **Tag Number Properties** dialog box, make sure that the value that you select from the **Manufacturer** list is among the acceptable values that you set for this instrument type during importing from DeltaV.
10. On the **Fieldbus** tab of the **Tag Number Properties** dialog box, under **Field device address**, you must type a value between 20 and 35 (inclusive). If you select the **Backup link master** check box, type the value 20 under **Field device address**.
11. The values available on the **Fieldbus** tab of the **Tag Number Properties** dialog box under **Fieldbus device revision** are determined by the value that you select from the **Manufacturer** list on the **General** tab.
12. On the **Fieldbus** tab of the **Tag Number Properties** dialog box, select the **Backup link master** check box only for a device that you verified is capable of being a backup.
13. You must define virtual tags for fieldbus devices that you want to export where those devices have multiple function blocks.
14. Spaces are not allowed in DeltaV tags, therefore SmartPlant Instrumentation omits spaces in instrument and Control System tags.

Dialog Box	Field	Accept DeltaV Value	Enter Valid Value	Optional Value
DCS Properties	Type	-	-	Y
DCS Properties	Manufacturer	-	-	Y
Racks	Number of Slots		Y See note #3	
Racks	Rack position		Y	

Dialog Box	Field	Accept DeltaV Value	Enter Valid Value	Optional Value
	numbering		See note #3	
I/O Card Properties, General tab	Series	Y	-	-
I/O Card Properties, General tab	Type	Y	-	-
I/O Card Properties, General tab	Manufacturer	Y	-	-
I/O Card Properties, Control System tab	System I/O type	Y	-	-
I/O Card Properties, Control System tab	Rack/Carrier	-	Y	-
I/O Card Properties, Control System tab	Controller / Processor	-	Y See note #4	-
I/O Card Properties, Control System tab	Define a Redundant I/O	Y See note #5	-	-
Controllers	Controller	-	Y See note #4	-
Controllers	Redundant	-	Y	-
Controllers	Manufacturer	-	Emerson Process	-
Terminal Properties	Terminal	-	Y	-
Terminal Properties	Sequence	Y	-	-
Terminal Properties	Terminal color	-	Y	-
Terminal Properties	Channel	Y	-	-
Channels	Channel	Y	-	-
Channels	Enable	-	Y	-
Channels	Channel Type	-	Y See note #6	-
Channel Types	Channel Type	Y See note #6	-	-
Tag Number Properties, General tab	Manufacturer	-	Y See note #7	-
Tag Number Properties, Fieldbus tab	Field device address	-	Y See note #8	-
Tag Number Properties, Fieldbus tab	Fieldbus device revision	-	Y See note #9	-
Tag Number Properties, Fieldbus tab	Backup link master	-	Y See note #10	-

Publishing Data for DeltaV

After you complete the process of designing your DeltaV-compatible plant in SmartPlant Instrumentation, use this procedure to publish (export) the required data for accurate and efficient DeltaV configuration. You export a partial set of the SmartPlant Instrumentation database, including data such as the DeltaV configuration, I/O assignment, instrument tags, and so forth. (The process does not export specification data, for example.)



Notes

- Before you publish SmartPlant Instrumentation data for DeltaV, see [Prerequisites for Working with the DeltaV Interface](#).
- SmartPlant Instrumentation publishes the data associated with each controller into a separate .xml file.
- On publishing data other than for the first time, DeltaV identifies changes as follows:
 - The software identifies new items created in SmartPlant Instrumentation as new items to be created in DeltaV.
 - If you move items, cards, CS tags, or if you modify item fields in SmartPlant Instrumentation, the software identifies these as items to be updated in DeltaV.
 - The software identifies items deleted in SmartPlant Instrumentation as items to be deleted in DeltaV.

➤ To publish SmartPlant Instrumentation data for DeltaV

1. From any SmartPlant Instrumentation module, on the **Tools** menu, point to **Interfaces** and click **DeltaV**.
2. In the **DeltaV Interface** dialog box, under **Data transfer mode**, click **Publish SmartPlant Instrumentation data**, and then click **OK**.



Note

- If prompted to enable entity registry (although your System Administrator activated this option as required), contact SmartPlant Instrumentation support.

3. In the **Plant Controller Selection** dialog box, do one of the following:
 - To publish all relevant database fields for DeltaV, select the **Select all** check box.
 - For publishing of data associated with a given controller, select the **Select** check box next to the controller.
4. In the TEF **Publish to File** dialog box, under **Folder to save XML files**, type the path for DeltaV publishing, and click **OK** to publish the .xml file for the first controller that you selected.
5. For each additional controller that you selected in the SmartPlant Instrumentation **Plant Controller Selection** dialog box, when the TEF **Publish to File** dialog reopens, click **OK**.

SmartPlant Instrumentation - DeltaV Comparative Terminology

Although the DeltaV – SmartPlant Instrumentation interface effects automated transfer of definitions and data, it is important to understand some of the differences in terminology between SmartPlant Instrumentation and DeltaV. The following is a partial list:

SmartPlant Instrumentation Dialog Box	SmartPlant Instrumentation Terminology	DeltaV Terminology
Distributed Control System (DCS) Properties; Racks	Rack	Carrier
Racks	Slot	Position
I/O Card Properties; Strip Type	Strip Type	I/O Card Type
Channels; Channel Types	Channel Type	I/O Channel Type
Channels; Terminal Properties	Channel (conventional) Channel (fieldbus)	Channel (conventional) Port (fieldbus)
Fieldbus Instrument Tag Association	Instrument Type + Description	Device Type

Yokogawa CS3000

Yokogawa CENTUM CS 3000 Interface Overview

The Yokogawa CENTUM CS 3000 interface allows you to share data between SmartPlant Instrumentation and the Yokogawa CENTUM CS 3000 plant automation and control system. This interface allows you to retrieve configurations of Yokogawa CENTUM CS 3000 I/O cards and of other certified entities into SmartPlant Instrumentation.

Within SmartPlant Instrumentation, you interface with the Yokogawa CENTUM CS 3000 on the component/card level.

After you configure your Yokogawa CENTUM CS 3000 system within SmartPlant Instrumentation, you then publish this data for Yokogawa CENTUM CS 3000.

The interface supports conventional and Foundation Fieldbus instruments.

Prerequisites for Working with the Yokogawa CENTUM CS 3000 Interface

General Prerequisites

The Yokogawa CENTUM CS 3000 interface functions for any Oracle or Microsoft SQL database that is approved for SmartPlant Instrumentation Version 7. (For details, see [SmartPlant Instrumentation Installation Guide](#), [SmartPlant Instrumentation on Oracle](#) and [SmartPlant Instrumentation on SQL Server](#).)

Before you can work with the Yokogawa CENTUM CS 3000 Interface, it is necessary to perform the following actions:

1. The System Administrator must enable the entity registry.
2. The Domain Administrator must register the entities.
3. Optimize your SmartPlant Instrumentation preferences for the interface with Yokogawa CENTUM CS 3000. For details, see [Preferences \(Interfaces - DCS Vendors\)](#).

Additional Prerequisites for Publishing from SmartPlant Instrumentation for Yokogawa CENTUM CS 3000

To prepare a workstation for publishing SmartPlant Instrumentation data for Yokogawa CENTUM CS 3000, the following actions must be performed:

1. You must install the Intergraph Schema Component from the SmartPlant Instrumentation CD Browser (click **Add-In Software**, and then click **Schema Component Installation**).
2. You must install the Intergraph Framework Client from the SmartPlant Instrumentation CD Browser (click **Add-In Software**, and then click **Framework Client Installation**).

Flow of Activities for Configuring Yokogawa CENTUM CS 3000

This topic describes the primary flow of activities when you use SmartPlant Instrumentation to design a plant to be run and controlled using the Yokogawa CENTUM CS 3000 system.



Note

- The flow that follows may be performed multiple times during the project life cycle.
1. Retrieve the Yokogawa CENTUM CS 3000 entity definition documents, into SmartPlant Instrumentation. For details, see [Retrieving Yokogawa CENTUM CS 3000 Definitions](#).
 2. Retrieve Yokogawa CENTUM CS 3000 DCS panel data into SmartPlant Instrumentation.
 3. Using the Yokogawa CENTUM CS 3000-compatible objects now available in the SmartPlant Instrumentation **Reference Explorer** and supporting tables of your SmartPlant Instrumentation database, you update your plant design. From the perspective of SmartPlant Instrumentation, the Yokogawa CENTUM CS 3000 panel is a DCS in the **Reference Explorer** from which you create a specific Yokogawa DCS in the **Domain Explorer**. For details, see [Viewing Yokogawa CENTUM CS 3000 Entities in SmartPlant Instrumentation](#) and [Creating Wiring Entities Compatible with Yokogawa CENTUM CS 3000](#).
 4. Publishing Data for Yokogawa CENTUM CS 3000
The .xml document that you publish (export) is a partial set of the SmartPlant Instrumentation database, including data such as the Yokogawa CENTUM CS 3000 configuration, I/O assignment, conventional and fieldbus data, and so forth.
 5. Import Data Published from SmartPlant Instrumentation into Yokogawa CENTUM CS 3000.
Following the import, validate and — if necessary — reconcile the data imported from SmartPlant Instrumentation with the Yokogawa CENTUM CS 3000 database.

Retrieving Yokogawa CENTUM CS 3000 Definitions

The Yokogawa CENTUM CS 3000 entity definition documents that you download and import to SmartPlant Instrumentation constitute the engineering library of Yokogawa CENTUM CS 3000 objects - Yokogawa CENTUM CS 3000 itself, Foundation Fieldbus elements, and entries for supporting tables such as Manufacturer, Model, and so forth.


Each time that you run this procedure, you can view and update the **Fieldbus Instrument Type Association** supporting table of associations that you built among Yokogawa CENTUM CS 3000 device types, instrument manufacturers, and SmartPlant Instrumentation instrument types.

➤ To import Yokogawa CENTUM CS 3000 definitions into SmartPlant Instrumentation



Note

- You can also use this procedure to view and update the **Fieldbus Instrument Type Association** supporting table of associations that you previously built among Yokogawa CENTUM CS 3000 device types, instrument manufacturers, and SmartPlant Instrumentation instrument types.
1. From any SmartPlant Instrumentation module, on the **Tools** menu, point to **Interfaces**, and click **Yokogawa CENTUM CS 3000**.
 2. Under **Data transfer mode**, select **Retrieve Yokogawa CENTUM CS 3000 definitions**, and click **OK**.
 3. In the **Retrieve Yokogawa CENTUM CS 3000 Definitions** dialog box, click **Browse**, navigate to the folder which contains the Yokogawa files, and click **OK**.
 4. In the data window, under **Select**, select the documents that you want to import into SmartPlant Instrumentation, and click **OK**.

5. If the **Fieldbus Instrument Type Association** dialog box opens, do the following at least once for each Yokogawa CENTUM CS 3000 device type that you display in the **Interface entities** data window:
 - a) Click **New** to create a new row in the **SmartPlant Instrumentation definitions** data window.
 - b) Under **Process function**, select the required process function.
 - c) At the right of the new row, click .
 - d) In the **Instrument Types** dialog box, do one of the following:
 - Select an existing fieldbus instrument type for which the **System I/O type** value is **Fieldbus** for association with the current Yokogawa CENTUM CS 3000 device type.
 - To create a new fieldbus instrument type or edit an existing one, see [Defining an Instrument Type](#).

**Caution**

- When you create Yokogawa CENTUM CS 3000-compatible fieldbus tags, the only acceptable values for instrument type are those that you associated with Yokogawa CENTUM CS 3000 device types during the downloading process.
- e) Click **OK** to associate the selected instrument type with the current Yokogawa CENTUM CS 3000 device type and close the **Instrument Types** dialog box.

**Caution**

- When you create a fieldbus tag based on the displayed instrument type, the only acceptable values for manufacturer are those displayed in this dialog box. If you select other manufacturers, this will prevent validation by the Yokogawa CENTUM CS 3000 reconciliation program.
6. In the **Fieldbus Instrument Type Association** dialog box, click **Next** to display each successive Yokogawa CENTUM CS 3000 device type, and then associate SmartPlant Instrumentation instrument types as above.
 7. To close the **Fieldbus Instrument Type Association** dialog box, click **OK**.
 8. In the **Retrieve Yokogawa CENTUM CS 3000 Definitions** dialog box, click **Close**.
 9. In the **Yokogawa CENTUM CS 3000 Interface** dialog box, click **Close**.

Viewing the Yokogawa CENTUM CS 3000 Log

After you import Yokogawa CENTUM CS 3000 entity definition documents into SmartPlant Instrumentation, you can use this procedure to view and save the log. You can then open the .txt file in a word processor or text editor and print it.

➤ To view the Yokogawa CENTUM CS 3000 log

1. In the **Retrieve Yokogawa CENTUM CS 3000 Definitions** dialog box, click **View Log**.
2. In the **Log** dialog box, view the log.
3. To save the log as a .txt file, do the following:
 - a) Click **Save**.
 - b) In the **Select File** dialog box, navigate to the required folder and type the required file name.
 - c) Click **Save**.

Viewing Yokogawa CENTUM CS 3000 Entities in SmartPlant Instrumentation

After you import the Yokogawa CENTUM CS 3000 entity definitions document into SmartPlant Instrumentation, use this procedure to view the Yokogawa CENTUM CS 3000 I/O cards.



Caution

- In the **Reference Explorer**, do not change any of the values in the entities that you retrieved from Yokogawa CENTUM CS 3000.

➤ To view Yokogawa CENTUM CS 3000 entities in SmartPlant Instrumentation

1. Open the **Reference Explorer**.
2. Expand the Yokogawa CENTUM CS 3000 panel to the I/O card level.
3. Right-click an I/O card, and on the shortcut menu, click **Properties**.

Creating Wiring Entities Compatible with Yokogawa CENTUM CS 3000

Use these procedures to create actual Yokogawa CENTUM CS 3000 wiring entities in the plant that you are designing. First you must retrieve Yokogawa CENTUM CS 3000 definitions into your SmartPlant Instrumentation database. (For details, see [Retrieving Yokogawa CENTUM CS 3000 Definitions](#).)



Caution

- For specific guidelines regarding values acceptable for Yokogawa CENTUM CS 3000, see Crucial Fields for the Yokogawa CENTUM CS 3000-SmartPlant Instrumentation Interface.

➤ To create a Yokogawa CENTUM CS 3000 DCS panel in SmartPlant Instrumentation

1. Open the **Reference Explorer** and the **Domain Explorer**.
2. In the **Domain Explorer**, create and populate a Yokogawa CENTUM CS 3000 panel, using the I/O cards that are contained in the Yokogawa CENTUM CS 3000 panel in the **Reference Explorer**. For more information, see [Copying Reference Wiring Entities](#).

➤ To create fieldbus wiring entities compatible with Yokogawa CENTUM CS 3000



Note

- To display the **Fieldbus Instrument Type Association** supporting table of associations that you built among Yokogawa CENTUM CS 3000 device types, instrument manufacturers, and SmartPlant Instrumentation instrument types, see [Retrieving Yokogawa CENTUM CS 3000 Definitions](#).
1. For general guidelines, see [Foundation Fieldbus and Profibus: An Overview](#).
 2. Regarding creation of fieldbus devices, see [Creating Foundation Fieldbus and Profibus Instruments](#).

Crucial Fields for the Yokogawa CENTUM CS 3000 Interface

When you prepare a SmartPlant Instrumentation domain for publishing to Yokogawa CENTUM CS 3000, you must be careful to enter values according to the table that follows.



Caution

- If you diverge from the following table and its notes, the software does not validate the data; however, the Yokogawa CENTUM CS 3000 reconciliation program will reject data values that are incompatible. For complete details of the exact Yokogawa CENTUM CS 3000 values to use, please refer to your Yokogawa CENTUM CS 3000 Hardware Manual.
- Make sure that you set preferences for Yokogawa CENTUM CS 3000. For details, see [Preferences \(Interfaces - DCS Vendors\)](#).



Notes

1. The value **Y** (Yes) is an indication to act according to the column header, as follows:
 - **Accept Yokogawa CENTUM CS 3000 Value** — Do **NOT** change the value of this field.
 - **Enter Valid Value** — Accept the value imported from Yokogawa CENTUM CS 3000, if one exists, or enter a different valid value.
 - **Optional Value** — Accept the value imported from Yokogawa CENTUM CS 3000, if one exists, or enter a different valid value, or enter no value.
2. Although there are additional optional fields in the dialog boxes listed, the table only includes optional fields for which data is imported from Yokogawa CENTUM CS 3000.
3. After you import Yokogawa CENTUM CS 3000 definitions, the **Channel Types** supporting table is populated with Yokogawa CENTUM CS 3000-compatible channel types for Yokogawa CENTUM CS 3000-compatible I/O strip types. These are the only Yokogawa CENTUM CS 3000-compatible values for the **Channel Type** field in the **Channels** dialog box.
4. When you create a fieldbus tag based on an given instrument type, on the **General** tab of the **Tag Number Properties** dialog box, make sure that the value that you select from the **Manufacturer** list is among the acceptable values that you set for this instrument type during importing from Yokogawa CENTUM CS 3000.

5. On the **Fieldbus** tab of the **Tag Number Properties** dialog box, under **Field device address**, you must type a value between **20** and **35 (inclusive)**. If you select the **Backup link master** check box, type the value **20** under **Field device address**.
6. The values available on the **Fieldbus** tab of the **Tag Number Properties** dialog box under **Fieldbus device revision** are determined by the value that you select from the **Manufacturer** list on the **General** tab.
7. On the **Fieldbus** tab of the **Tag Number Properties** dialog box, select the **Backup link master** check box only for a device that you verified is capable of being a backup.
8. You must define virtual tags for fieldbus devices that you want to export where those devices have multiple function blocks.
9. Spaces are not allowed in Yokogawa CENTUM CS 3000 tags, therefore SmartPlant Instrumentation omits spaces in instrument and Control System tags.

Dialog Box	Field	Accept Yokogawa CENTUM CS 3000 Value	Enter Valid Value	Optional Value
DCS Properties	Type	-	-	Y
DCS Properties	Manufacturer	-	-	Y
Racks	Number of Slots		Y See note #3	
Racks	Rack position numbering		Y See note #3	
I/O Card Properties, General tab	Series	Y	-	-
I/O Card Properties, General tab	Type	Y	-	-
I/O Card Properties, General tab	Manufacturer	Y	-	-
I/O Card Properties, Control System tab	System I/O type	Y	-	-
I/O Card Properties, Control System tab	Rack/Carrier	-	Y	-
I/O Card Properties, Control System tab	Controller / Processor	-	Y See note #4	-
I/O Card Properties, Control System tab	Define a Redundant I/O	Y See note #5	-	-
Controllers	Controller	-	Y See note #4	
Controllers	Redundant	-	Y	-
Controllers	Manufacturer	-	Process	-

Dialog Box	Field	Accept Yokogawa CENTUM CS 3000 Value	Enter Valid Value	Optional Value
Terminal Properties	Terminal	-	Y	-
Terminal Properties	Sequence	Y	-	-
Terminal Properties	Terminal color	-	Y	-
Terminal Properties	Channel	Y	-	-
Channels	Channel	Y	-	-
Channels	Enable	-	Y	-
Channels	Channel Type	-	Y See note #6	-
Channel Types	Channel Type	Y See note #6	-	-
Tag Number Properties, General tab	Manufacturer	-	Y See note #7	-
Tag Number Properties, Fieldbus tab	Field device address	-	Y See note #8	-
Tag Number Properties, Fieldbus tab	Fieldbus device revision	-	Y See note #9	-
Tag Number Properties, Fieldbus tab	Backup link master	-	Y See note #10	-

Publishing Data for Yokogawa CENTUM CS 3000

After you complete the process of designing your Yokogawa CENTUM CS 3000-compatible plant in SmartPlant Instrumentation, use this procedure to publish (export) the required data for accurate and efficient Yokogawa CENTUM CS 3000 configuration. You export a partial set of the SmartPlant Instrumentation database, including data such as the Yokogawa CENTUM CS 3000 configuration, I/O assignment, instrument tags, and so forth. (The process does not export specification data, for example.)



Notes

- Before you publish SmartPlant Instrumentation data for Yokogawa CENTUM CS 3000, see [Prerequisites for Working with the Yokogawa CENTUM CS 3000 Interface](#).
- SmartPlant Instrumentation publishes the data associated with each DCS panel into a separate .xml file.
- On publishing data other than for the first time, Yokogawa CENTUM CS 3000 identifies changes as follows:
 - The software identifies new items created in SmartPlant Instrumentation as new items to be created in Yokogawa CENTUM CS 3000.
 - If you move items, cards, CS tags, or if you modify item fields in SmartPlant Instrumentation, the software identifies these as items to be updated in Yokogawa CENTUM CS 3000.
 - The software identifies items deleted in SmartPlant Instrumentation as items to be deleted in Yokogawa CENTUM CS 3000.

➤ To publish SmartPlant Instrumentation data for Yokogawa CENTUM CS 3000

1. From any SmartPlant Instrumentation module, on the **Tools** menu, point to **Interfaces** and click **Yokogawa CENTUM CS 3000**.
2. In the **Yokogawa CENTUM CS 3000 Interface** dialog box, under **Data transfer mode**, click **Publish SmartPlant Instrumentation data**, and then click **OK**.



Note

- If prompted to enable entity registry (although your System Administrator activated this option as required), contact SmartPlant Instrumentation support.

3. In the **Plant Panel Selection** dialog box, do one of the following:
 - To publish all relevant database fields for Yokogawa CENTUM CS 3000, select the **Select all** check box.
 - For publishing of data associated with a given DCS panel, select the **Select** check box next to the DCS panel.
4. In the TEF **Publish to File** dialog box, under **Folder to save XML files**, type the path for Yokogawa CENTUM CS 3000 publishing, and click **OK** to publish the .xml file for the first DCS panel that you selected.
5. For each additional DCS panel that you selected in the SmartPlant Instrumentation **Plant Panel Selection** dialog box, when the TEF **Publish to File** dialog reopens, click **OK**.

SmartPlant Instrumentation - Yokogawa CENTUM CS 3000 Comparative Terminology

Although the Yokogawa CENTUM CS 3000 interface effects automated transfer of definitions and data, it is important to understand some of the differences in terminology between SmartPlant Instrumentation and Yokogawa CENTUM CS 3000. The following is a partial list:

SmartPlant Instrumentation Dialog Box	SmartPlant Instrumentation Terminology	Yokogawa CENTUM CS 3000 Terminology
Distributed Control System (DCS) Properties; Racks	Rack	Node
	Card	Module
Channels; Terminal Properties	Channel (conventional) Channel (fieldbus)	Terminal
	I/O Termination	Termination Board

AutoPlant

Overview

The AutoPlant interface allows you to import P&ID data from Rebis AutoPlant Instrumentation System (known in the industry as AIS) into the SmartPlant Instrumentation database. This way you will be able to add the appropriate instrumentation data after you import the P&ID data.

You import data from the AutoPlant system by executing the AutoPlant import links in the [Import](#) utility. These links become available to you after the SmartPlant Instrumentation Domain Administrator adds the AutoPlant add-in to SmartPlant Instrumentation.

Adding the AutoPlant interface to SmartPlant Instrumentation provides ready-made import links which you can modify according to your needs. Executing these links automatically imports data from AutoPlant **intermediate** DBase III files to your SmartPlant Instrumentation database.

See [Data Import Process](#) to learn how to modify and execute predefined links.

AutoPlant Requirements

To work with the AutoPlant interface you need to comply with the following requirements:

- The AutoPlant external links must be added to SmartPlant Instrumentation by the Domain Administrator prior to executing the AutoPlant import links.
- You must have an existing target unit which contains naming conventions.
- You must have an existing Dbase III file profile defined in your Windows environment.
- You need to add the following two columns to the INST.DBF file (you can do that using any DBF file editor such as DBASE):
 - tag_no (24 characters long)
 - loop_no (10 characters long)
- The AutoPlant INST.DBF file must be located in the <SmartPlant Instrumentation home folder>\Import folder. This file is created by your AutoPlant system. AutoPlant usually keeps this file in the <Project folder>\ProjectData\ folder (see your AutoPlant User Guide for details).
- The following line should appear in the INTOOLS.INI [import] section:

Job=Autoplant



Notes

- The DBase III file profile is defined in the ODBC.INI **registry** folder.
- When you install SmartPlant Instrumentation, you can also install the predefined DBase III file profile which is provided as a part of the SmartPlant Instrumentation package.
- If you do not want to use existing profiles, you can define new profiles using the SmartPlant Instrumentation Internal Setup Utility or other ODBC applications. To learn how to define a new profile and add it to SmartPlant Instrumentation, see [Creating an ODBC Profile](#).

AutoPlant Main Features

The AutoPlant interface incorporates several important features which enable you to export data successfully from SmartPlant Instrumentation to the AutoPlant system and back:

Providing Ready-Made Import Links

When transferring data from AutoPlant to SmartPlant Instrumentation, you use the [Import](#) utility ready-made table links which can be easily modified if required. These links have been specially created to transfer the AutoPlant tables which are required for managing the transferred AutoPlant data in SmartPlant Instrumentation (for details, see [Executing the Import of Data](#)).

Synchronizing AutoPlant Data Deviations

When importing AutoPlant data into SmartPlant Instrumentation for the purposes of updating the information, you may encounter mismatched data. It is therefore imperative to analyze and synchronize the differences between the databases before data is transferred from one database application to another. You synchronize the data structure by using the [Import](#) utility Comparison List feature which allows you to select and transfer the required components as well as control future data transfers. This way any operations performed in the source will be updated in the SmartPlant Instrumentation target data during the import process (for details, see [Import Comparison](#)).

CADPIPE

Overview

The CADPIPE interface is an add-in which allows you to import P&ID data (for example, 3D models, complete with 3D pipe, fittings, structural components, and equipment) from the AEC Design Group (Orange Inc.) CADPIPE 3D DESIGN system into the SmartPlant Instrumentation database. This way you will be able to add the appropriate instrumentation data immediately after you import the P&ID data.

You import data from the CADPIPE system by executing the CADPIPE import links in the [Import](#) utility. These links become available to you after the Domain Administrator adds the CADPIPE add-in to SmartPlant Instrumentation. You can use these links only if you have purchased the appropriate license.

Adding the CADPIPE interface to SmartPlant Instrumentation provides ready-made import links which you can modify according to your needs. Executing these links automatically imports data from CADPIPE **intermediate** DBase III files to your SmartPlant Instrumentation database.

See [Data Import Process](#) to learn how to modify and execute predefined links.

CADPIPE Requirements

To work with the CADPIPE interface you need to comply with the following requirements:

- The CADPIPE external links must be added to SmartPlant Instrumentation by the Domain Administrator prior to executing the CADPIPE import links.
- You must have an existing target unit which contains naming conventions.
- You must have an existing Dbase III file profile defined in your Windows environment.



Notes

- The DBase III file profile is defined in the ODBC.INI **registry** folder.
- When you install SmartPlant Instrumentation, you can also install the predefined DBase III file profile which is provided as a part of the software package.
- If you do not want to use existing profiles, you can define new profiles using the SmartPlant Instrumentation Internal Setup Utility or other ODBC applications. To learn how to define a new profile and add it to SmartPlant Instrumentation, see [Creating an ODBC Profile](#).

CADPIPE Main Features

The CADPIPE interface incorporates several important features which enable to successfully migrate data from CADPIPE into SmartPlant Instrumentation:

Providing Ready-Made Import Links

When transferring data from CADPIPE to SmartPlant Instrumentation, you use the [Import](#) utility ready-made table links which can be easily modified if required. These links have been specially created to transfer the CADPIPE tables which are required for managing the transferred CADPIPE data in SmartPlant Instrumentation (for details, see [Executing the Import of Data](#)).

Synchronizing CADPIPE Data Deviations

When importing CADPIPE data into SmartPlant Instrumentation for the purposes of updating the information, you may encounter mismatched data. It is therefore imperative to analyze and synchronize the differences between the databases before data is transferred from one database application to another. You synchronize the data structure by using the [Import](#) utility Comparison List feature which allows you to select and transfer the required components as well as control future data transfers. This way any operations performed in the source will be updated in the SmartPlant Instrumentation target data during the import process (for details, see [Import Comparison](#)).

PlantSpace

Overview

The PlantSpace interface allows you to import P&ID data from the Jacobus PlantSpace system into the SmartPlant Instrumentation database. This way you will be able to add the appropriate instrumentation data immediately after you import the P&ID data.

You import data from the PlantSpace system by executing the PlantSpace import links in the [Import](#) utility. These links become available to you after the Domain Administrator adds the PlantSpace add-in to SmartPlant Instrumentation.

Adding the PlantSpace interface to SmartPlant Instrumentation provides ready-made import links which you can modify according to your needs. Executing these links automatically imports data from PlantSpace **intermediate** DBase III files to your SmartPlant Instrumentation database.

See [Data Import Process](#) to learn how to modify and execute predefined links.

PlantSpace Requirements

To work with the PlantSpace interface you need to comply with the following requirements:

- The PlantSpace external links must be added to SmartPlant Instrumentation by the Domain Administrator prior to executing the PlantSpace import links.
- You must have an existing target unit which contains naming conventions.
- You must have an existing Dbase III file profile defined in your Windows environment.



Notes

- The DBase III file profile is defined in the ODBC.INI **registry** folder.
- When you install SmartPlant Instrumentation, you can also install the predefined DBase III file profile which is provided as a part of the software package.
- If you do not want to use existing profiles, you can define new profiles using the SmartPlant Instrumentation Internal Setup Utility or other ODBC applications. To learn how to define a new profile and add it to SmartPlant Instrumentation, see [Creating an ODBC Profile](#).

PlantSpace Main Features

The PlantSpace interface incorporates several important features which enable you to successfully migrate data from PlantSpace into SmartPlant Instrumentation.

Providing Ready-Made Import Links

When transferring data from PlantSpace to SmartPlant Instrumentation, you use the [Import](#) utility ready-made table links which can be easily modified if required. These links have been specially created to transfer the PlantSpace tables which are required for managing the transferred PlantSpace data in SmartPlant Instrumentation (for details, see [Executing the Import of Data](#)).

Synchronizing PlantSpace Data Deviations

When importing PlantSpace data into SmartPlant Instrumentation for the purposes of updating the information, you may encounter mismatched data. It is therefore imperative to analyze and synchronize the differences between the databases before data is transferred from one database application to another. You synchronize the data structure by using the [Import](#) utility Comparison List feature which allows you to select and transfer the required components as well as control future data transfers. This way any operations performed in the source will be updated in the SmartPlant Instrumentation target data during the import process (for details, see [Import Comparison](#)).

Defining the PlantSpace Database Profile

The PlantSpace profile in SmartPlant Instrumentation is provided as a ready-made profile where all settings are predefined as required to comply with the PlantSpace conventions. When the Domain Administrator imports the PlantSpace link group, the PlantSpace profile is usually automatically added to SmartPlant Instrumentation. However, if you do not have the PlantSpace database profile defined in SmartPlant Instrumentation you need to define it manually in the [Import](#) utility as shown below.

➤ To define the PlantSpace database profile

1. Start the [Import](#) utility and log on using your user name and password.
2. Select the appropriate unit from the **Open** dialog box (see [Starting the Import Utility](#) for more information.)
3. From the **Service** menu, click **Set ODBC Profile**.
4. Enter the following information:
 - a) From the **Installed Drives** drop-down list, select the [DBASE FILE](#) driver.
 - b) From the **Source** drop-down list, select the [DBASE](#) source type.
 - c) In the **Profile** data field, type in the new profile name.
5. Click **Create**.
6. Enter the following information:
 - a) In the **Description** data field, type in a description for the new profile.
 - b) In the **Database Folder** data field, type in the location of the PlantSpace database file (DBF).
7. Click **OK** to save the profile you have just defined in the SmartPlant Instrumentation database.

Importing Data from PlantSpace

This procedure describes the steps required to import data from the PlantSpace system to the SmartPlant Instrumentation database. You import the PlantSpace data into SmartPlant Instrumentation by first exporting the select drawing P&ID data to intermediate DBase III (DBF format) files using the MicroStation 95 CAD software. Then you import the DBase III files into SmartPlant Instrumentation using the predefined PlantSpace import links in the [Import](#) utility.

➤ To import data from PlantSpace

1. Start the **PlantSpace P&ID Engineering** utility.

The **Main MicroStation 95** window opens briefly. Then the **MicroStation Manager** dialog box opens superimposed on the Main **MicroStation 95** window.

2. In the **MicroStation Manager** dialog box, navigate to the drawing that you want to export and click **OK**.

The **Main MicroStation 95** window displays the selected drawing.

3. From the **Application** menu, point to **Batches** and then select **P&ID**, then from the **Dialog** menu select **Object Engine**.

The **PlantSpace Object Engine** dialog box opens (this dialog box also opens automatically when starting this application) with the files that are associated with the currently displayed drawing highlighted.

4. From the **Reports** menu, click **INtools Export**.

5. In the **Select Report Filename** dialog box, navigate to the location where you want PlantSpace to place the DBF file and click **OK** to export the currently open drawing to the selected DBF file.

6. Start the [Import](#) utility and run the predefined PlantSpace import links to import the DBF file(s) you created in PlantSpace to the SmartPlant Instrumentation database (see [Data Import Process](#) to learn how to modify and execute predefined links).



Notes

- If the naming convention is incorrect or if either the databases or fields have been changed, some of these links may not be made. This is indicated by the lack of source name next to the target name in the **Target** section.

In this case you can link the appropriate field manually by dragging the fields from the **Source** section and dropping them in the **Source Name** data field of the **Target** section.

- You can also modify the current naming convention. Note, however, that defining tag lengths for SmartPlant Instrumentation that are shorter than the actual PlantSpace tag lengths will cause the latter to become automatically truncated.

IDM

IDM Interface Overview

The IDM interface allows you to import instrumentation data into your database from a IDM database.

You import the data first by connecting to the appropriate IDM database from which the [Import](#) utility will import the drawing data. The IDM application produces two databases/schemas from which you need to import data.

- **Project Control Database** - this database contains the unit data and it has the same functions as the SmartPlant Instrumentation Administration data.
- **Instrumentation Source Database** - this database contains the actual instrumentation data.

After you connect to the IDM database you select the source unit. With the source data selected, you can perform the import setup process and import the selected instrumentation data (for details, see [Data Import Process](#)).

IDM Requirements

To work with the IDM interface you need to comply with the following requirements:

- The IDM external links must be added to SmartPlant Instrumentation by the Domain Administrator prior to executing the IDM import links. These are preliminary links and may need to be modified.
- You must have an existing target unit which contains naming conventions in order to be able to import data.
- You must have the required database client (Oracle or SQL Server) installed in your system and the appropriate access rights (that is, the server / database names and passwords required to connect to IDM).
- If you intend to import the IDM data while running SmartPlant Instrumentation in Sybase Adaptive Server Anywhere, you must have an existing Sybase Adaptive Server Anywhere profile defined in your Windows environment.



Notes

- IDM and SmartPlant Instrumentation cannot work from the same Microsoft SQL database server. This is because the sort order is different for the two applications, and databases with different sort orders cannot be located on the same server.
- The source text file profile is defined in the ODBC.INI **registry** folder.
- When you install SmartPlant Instrumentation, you can also install the predefined Sybase Adaptive Server Anywhere profile which is provided as a part of the software package.
- If you do not want to use existing profiles, you can define new profiles using the SmartPlant Instrumentation Internal Setup Utility or other ODBC applications. To learn how to define a new profile and add it to SmartPlant Instrumentation, see [Creating an ODBC Profile](#).

IDM Main Features

The IDM interface incorporates several important features which enable you to successfully migrate data from IDM into SmartPlant Instrumentation.

Providing Ready-Made Import Links

When transferring data from IDM to SmartPlant Instrumentation, you use the [Import](#) utility ready-made table links which can be easily modified if required. These links have been specially created to transfer the IDM tables which are required for managing the transferred IDM data in SmartPlant Instrumentation (for details, see [Executing the Import of Data](#)).

Synchronizing IDM Data Deviations

When importing IDM data into SmartPlant Instrumentation for the purposes of updating the information, you may encounter mismatched data. It is therefore imperative to analyze and synchronize the differences between the databases before data is transferred from one database application to another. You synchronize the data structure by using the [Import](#) utility Comparison List feature which allows you to select and transfer the required components as well as control future data transfers. This way any operations performed in the source will be updated in the SmartPlant Instrumentation target data during the import process (for details, see [Import Comparison](#)).

IDM Code List

The IDM interface supports a user-defined IDM code list. The IDM database stores information as codes that are not recognized by SmartPlant Instrumentation. When exporting data, the IDM application generates a set of files that are used to translate the IDM codes into data that SmartPlant Instrumentation can recognize. By selecting the appropriate option during the import setup process, the [Import](#) utility automatically replaces reference codes with the user-defined data kept in IDM code list files.

Selecting IDM Data for Import


The following procedure describes how to connect to the IDM database for different platforms and how to select the required data for import.



Caution

- When importing IDM data, you must **always** use the IDM interface to connect to the source database before you can run the links from the **Link Explorer**. You cannot create and run links outside of the interface.

➤ To import drawing data from the IDM database

- Start the **Import** utility and log on using your user name and password.
- Do one of the following:
 - Click .
 - On the **Options** menu, click **IDM**.
- In the **Server** section of the **IDM Login** dialog box, select a database platform (**DBMS**) and connection string (**Name**) from the following:

Platform	DBMS	Name
Oracle 8.x	OR8	<alias name>
SQL Server	MSS	<server name>
Sybase Adaptive Server Anywhere	ODBC Sybase Adaptive Server Anywhere	<profile name> (Select from list.)

- If you selected the SQL Server platform, type the name of the database you want to connect to.
- In the **Project control database** section, do the following:
 - In the **Name** data line, type the appropriate IDM Control Database Project name where the source unit and drawing number data is located (for example **IDM_control_db**).
 - In the **Password** data line, type the password required to connect to the IDM Control Database Project.
- In the **Instrumentation source database** section, do the following:
 - In the **Name** data line, type the appropriate IDM source database name where the source loop, tag number, and wiring data is located (for example **IDM_source_db**).
 - In the **Password** data line, type the password required to connect to the IDM source database.

7. Use the **IDM codes** section for importing fields that are defined in IDM by code numbers only. The IDM application generates the export files which are used to translate the IDM codes into data that can be recognized by SmartPlant Instrumentation.

**Notes**

- The IDM export files must be located in two sub-folders: the first sub-folder, named DATA, contains a file called ATTRIBUTES file (with or without a TXT extension) and the second sub-folder, named CODES, contains a set of list files with the field names referenced by the ATTRIBUTES file.
- Both of these sub-folders should be contained in the same parent folder.

8. Do the following:

- a) Type or click **Browse** to browse to the full path of the IDM Codes Description file, for example:

C:\SMARTPLANT\INSTRUMENTATION\IMPORT\CODE\ATTRIBUTES.TXT

**Note**

- The actual file name may or may not have the TXT extension.
- b) Select the **Use code description** check box to replace the IDM codes with their descriptions, after selecting the appropriate IDM Codes Description file in the previous step.

**Note**

- If you choose to use the code description option and an equivalent for the code in SmartPlant Instrumentation is not found, the field code will be imported from the IDM database.

**Tip**

- If you know that SmartPlant Instrumentation will recognize all the source field names, you can clear the **Use code description** check box, in which case the software will not check the ATTRIBUTE and CODES files, thus speeding up the import process.

9. Click **Connect** to connect to the database specified in the **IDM Login** dialog box.

**Note**

- If the connection fails, an appropriate message is displayed, in which case you need to correct the database login information.

10. In the **Unit Selection** dialog box, do one of the following:

- Select the **Select all** check box to select all the IDM units so that all the available IDM data will be imported.
- Select the required IDM source units. Use **Ctrl** or **Shift** to make multiple selections.

11. Do one of the following:

- Clear **Run link group automatically** if you need to modify any of the links before importing the data.
- Select **Run link group automatically** to select a particular link group and run all the links in it automatically.

12. Click **OK** to continue the import process.

If you selected to run the link groups automatically, the **Select Link Group** dialog box opens for you to select the required group of IDM links to import.

If you selected not to run the link groups automatically, the **Unit Selection** dialog box is minimized and you can:

- Open a link to modify it.
- Run an import link or a group of links.

**Note**


- You can select to execute a previously saved link group or link. In these cases the **Import** utility automatically selects all the required instrument data of the source IDM Unit.

Running the IDM Links

After you define the connection to the IDM database, the following link groups and their associated links are available for use:




Group	Description of links
IDM1 Setup	Component (tag) data, including loop function, type, manufacturer, model, and location.
IDM2 Index	Instrument data: loops, tag numbers, and I/O type.
IDM3 Comp Panels	Device panel data.
IDM4 Panels	Other panel data: junction boxes, marshaling racks, and control panels.
IDM5 CS	Control system data: channels, CS tags, and racks.
IDM6 Connectivity	Connection data: cables, cable sets, and wires, and wire - terminal connections.

➤ To run the IDM links

1. Select the required data for import with the IDM interface.
2. In the **Link Explorer**, expand the group **IDM1 Setup** and select the link **IDM10_COMPONENT_TYPE**.
3. Click  to open the **Parameter Settings** dialog box for the link.
4. Click the **Source** tab.
5. Under **Assign process function**, click **Define**.
6. If this is the first time you are running the link, in the **Define Instrument Type Fields** dialog box, do the following:
 - a) From **Source**, drag the field **instr_func_id** to **Instrument type name**.
 - b) From **Source**, drag the field **instr_comp_type** to **Instrument type description**.
 - c) Click **OK**.

7. In the **Process Function Mapping** dialog box, for each instrument type the left section, drag the appropriate process function from the right section to the **Process function** column.

**Notes**

- After the first time you run the link, some of the instrument types will already have process functions defined by default – these are displayed with a gray background, and you cannot reassign the process functions. Unassigned fields are shown with a light blue background, and assigned fields with a white background.
 - Whenever you run either of the import links: IDM10_COMPONENT_TYPE IDM or COMPONENT IDM (INSTRUMENT TYPE), you should check that the mapping is correct and update it if required. (If running both links, you need only check the mapping once.)
8. When done, click **OK** to return to the **Parameter Settings** dialog box.
 9. Click **OK** to close the **Parameter Settings** dialog box.
 10. Click  to open the **Import Link** window for the selected link with the sources you selected (instr_comp_type and instr_func_id) already assigned to database targets.
 11. If required, you can display the source codes for this link (IDM instrument type code and instrument type functional ID) as follows:
 - a) Click .
 - b) On the **File** menu, click **Exit** to return to the **Import Link** window.
 12. Click  to import the data.
 13. For each of the links in this group, and for all the links in Group: 2.IDM, repeat the above steps of this procedure (if prompted to overwrite existing data, click **Yes**).

**Notes**

- For certain links in Group 2.IDM, you are required to enter the source fields for defining naming conventions before running the link.
 - Some links import fields from more than one table. In such cases, the field name (excluding the table prefix) appears in the **Source Name** column. If you attempt to run the import process, an error message is displayed (Condition is not valid). To correct this, delete the field name indicated in the message from the **Source Name** column, and drag the appropriate field name (which includes the table prefix) to the **Source Name** column.
14. Open SmartPlant Instrumentation and examine the imported data in the [Browser](#) or [Instrument Index](#) module.

FIRSTVUE

Overview

The FIRSTVUE interface allows you to export control valve data as ASCII delimited files (with .csv extension) from SmartPlant Instrumentation to the Fisher-Rosemount FIRSTVUE application. Then, after you complete making all the required calculations in FIRSTVUE, you can import the calculation results back to SmartPlant Instrumentation where this data can be used in spec. sheets, reports, and all SmartPlant Instrumentation features, for example, browsers. You can also print out the information as a standard ISA spec. sheet, the same way you do it in FIRSTVUE.

The FIRSTVUE interface supports the Fisher-Rosemount FIRSTVUE application fields and field order, so importing calculation results from FIRSTVUE to SmartPlant Instrumentation automatically updates the fields that you require.

See [Data Import Process](#) to learn how to modify and execute predefined links.

The import and export procedures include the following major stages:

1. General preparatory stages:
 - a) Importing FIRSTVUE fields.
 - b) Importing FIRSTVUE import links.
 - c) Importing FIRSTVUE source codes.
 - d) Opening the TBO.PSR file as a new title block and associating it with SmartPlant Instrumentation spec. form 70.
2. Exporting data from SmartPlant Instrumentation to FIRSTVUE:
 - a) Selecting the control valve tags to export.
 - b) Exporting the selected tags to an ASCII file using the SmartPlant Instrumentation FIRSTVUE export feature.
 - c) Running FIRSTVUE and importing the SmartPlant Instrumentation control valve data from an ASCII file.
3. Calculating and selecting the appropriate Valve in FIRSTVUE (see your [FIRSTVUE User Guide](#) for details).
4. Importing data from FIRSTVUE into SmartPlant Instrumentation:
 - a) Exporting the sizing data from FIRSTVUE to an ASCII file.
 - b) Running the FIRSTVUE import links and importing the sizing data from the ASCII files to the SmartPlant Instrumentation database.
5. Viewing and editing the imported sizing data (if required).

FIRSTVUE General Requirements

To work with the FIRSTVUE interface you need to comply with the following requirements:

- You must have an existing installation of [INTools](#) 4.1 or later, including the [Process Data](#) module with appropriate access rights.
- You must have an installation of FIRSTVUE.
- The FIRSTVUE fields and import links must be added to SmartPlant Instrumentation by the Domain Administrator prior to executing the FIRSTVUE import links.
- The FIRSTVUE source code set must be added to SmartPlant Instrumentation by the Domain Administrator prior to importing data from FIRSTVUE to SmartPlant Instrumentation (you are required to have an appropriate license to be able to import source codes). See [Importing Codes](#) to learn how to import sets of source codes to SmartPlant Instrumentation.
- You must have an existing target unit which contains naming conventions in order to be able to import data.
- You need to open the TBO.PSR file (located in your SmartPlant Instrumentation folder) as a new title block and associate it with SmartPlant Instrumentation ISA Form 70.
- You must have an existing ASCII profile defined in your Windows environment.
- You must have one or more tags that are associated with process data sheets and whose instrument type value is [Control Valve](#).

FIRSTVUE Field Conversion Requirements

The following items describe the conversion conventions used by the SmartPlant Instrumentation FIRSTVUE interfaces when transferring data from SmartPlant Instrumentation to FIRSTVUE and back:

1. For outlet line parameters, SmartPlant Instrumentation uses spec. custom fields.
2. When exporting line data to ASCII delimited files, SmartPlant Instrumentation uses the same values for outlet line parameters as for input line parameters if the following FIRSTVUE fields contain a null value:
 - **pipeoutletdiameter**
 - **outpipelinesize**
 - **outpipelinesched**
3. For the **otherconditionname** FIRSTVUE field, SmartPlant Instrumentation automatically assigns the constant value: [Shut-Off](#).
4. When importing new line data, make sure the **ansi_din** SmartPlant Instrumentation field data complies with the following convention:
 - If the **pipelineuom** FIRSTVUE field value is [in](#), set the **ansi_din** field to [A](#).
 - If the **pipelineuom** FIRSTVUE field value is [mm](#), set the **ansi_din** field to [D](#).

5. The following SmartPlant Instrumentation-to-FIRSTVUE fluid phase relations apply:

SmartPlant Instrumentation (pd_fluid_phase field)	FIRSTVUE (fluidstate field)
L	Liquid
W	Liquid
G	Gas
S	Vapor



Notes

- The source text file profile is defined in the ODBC.INI **registry** folder.
- When you install SmartPlant Instrumentation, you can also install the predefined ASCII file profile for use with FIRSTVUE.
- If you do not want to use existing profiles, you can define new profiles using the SmartPlant Instrumentation Internal Setup Utility or other ODBC applications. To learn how to define a new profile and add it to SmartPlant Instrumentation, see [Creating an ODBC Profile](#).
- When defining a profile for FIRSTVUE data, make sure you use a comma delimiter and the **Column Names** option.



Caution

- If you change an instrument type that was exported from SmartPlant Instrumentation in the FIRSTVUE interface before re-importing it to SmartPlant Instrumentation, the new instrument type will be created in SmartPlant Instrumentation. You can avoid this by modifying the appropriate FIRSTVUE import links.

FIRSTVUE Main Features

The FIRSTVUE interface incorporates several important features which enable you to successfully migrate data from FIRSTVUE into SmartPlant Instrumentation and back.

Providing Ready-Made Import Links

When transferring data from FIRSTVUE to SmartPlant Instrumentation, you use the [Import](#) utility ready-made table links which can be easily modified if required. These links have been specially created to transfer the FIRSTVUE tables which are required for managing the transferred FIRSTVUE data in SmartPlant Instrumentation (for details, see [Executing the Import of Data](#)).

Synchronizing FIRSTVUE Data Deviations

When importing FIRSTVUE data into SmartPlant Instrumentation for the purposes of updating the information, you may encounter mismatched data. It is therefore imperative to analyze and synchronize the differences between the databases before data is transferred from one database application to another. You synchronize the data structure by using the [Import](#) utility Comparison List feature which allows you to select and transfer the required components as well as control future data transfers. This way any operations performed in the source will be updated in the SmartPlant Instrumentation target data during the import process (for details, see [Import Comparison](#)).

Built-in Export Feature

This feature allows you to export Control Valve process and sizing data from your SmartPlant Instrumentation domain to FIRSTVUE as ASCII delimited files which comply with FIRSTVUE's conventions. You export the SmartPlant Instrumentation data by clicking the FIRSTVUE icon and exporting the data.

Adapting FIRSTVUE System and UOM Codes

System and UOM codes are widely used in SmartPlant Instrumentation for purposes such as units-of-measure and internal data indication. These code conventions may not comply with the FIRSTVUE conventions. Therefore, when importing source data from non-SmartPlant Instrumentation databases, you need to be able to compare and adapt the source system and UOM codes to the system and UOM codes used in SmartPlant Instrumentation. You adapt source codes by using the [Import](#) utility System Codes feature which enables you to adapt the required source codes with the codes used in your SmartPlant Instrumentation database. See [System Codes](#) to learn more about this feature. See [Importing Codes](#) to learn how to import sets of source codes to SmartPlant Instrumentation.

ISA Form Compliance

SmartPlant Instrumentation features a standard ISA form which you can use to print out sizing data imported from FIRSTVUE as an ISA spec. sheet. The spec. sheet print out is identical to the one generated by FIRSTVUE, yet retains the SmartPlant Instrumentation revision system.

Exporting Data to FIRSTVUE

This procedure describes how to view and export control valve sizing data from an SmartPlant Instrumentation domain to FIRSTVUE, based on the SmartPlant Instrumentation FIRSTVUE import links which are provided as an add-in to SmartPlant Instrumentation.

The basic idea in the SmartPlant Instrumentation FIRSTVUE interface export feature is to allow you to provide to any third party such a contractor or an engineering company the required process and sizing data in a standard format. When exchanging data with FIRSTVUE, data is exchanged in an ISA standard form which you can view and print out from FIRSTVUE as well as from SmartPlant Instrumentation.

Exporting data from SmartPlant Instrumentation to the FIRSTVUE system involves two steps:

1. Exporting the SmartPlant Instrumentation selected data to ASCII delimited (text) files, using the FIRSTVUE export feature.
2. Importing the ASCII files generated by SmartPlant Instrumentation into FIRSTVUE.

Preparing for Export

Before you start exporting data, you need to enter the required process data (for example, Tag Name and Service) in the appropriate process data sheets. Your choice of the process data parameter values will determine your subsequent selections of the valve sizing data such as Body Material and Bonnet.

At this phase you can also define process data parameters specific to the selected Control Valve (for example, Leakage). (These parameters can be viewed in the **Additional Properties** window in the [Process Data](#) module.)

Also consider the following issues:

1. When exporting data to FIRSTVUE, the SmartPlant Instrumentation Export Utility automatically converts the SmartPlant Instrumentation system and UOM codes to the appropriate system and UOM codes used in FIRSTVUE.

For example: °C in SmartPlant Instrumentation is converted to **deg C** in FIRSTVUE.

However, since SmartPlant Instrumentation contains additional UOMs, some SmartPlant Instrumentation UOMs may not have parallel values in FIRSTVUE and therefore will not be accessible in FIRSTVUE for sizing calculation. In this case an appropriate message is displayed and a note is added in the ERROR.LOG file (located in the same folder where you saved the ASCII file).

2. Fields in SmartPlant Instrumentation and in FIRSTVUE differ in length and SmartPlant Instrumentation fields may be truncated if longer than the corresponding fields in FIRSTVUE. Therefore, you need to make sure that the truncated data does not contain sizing data which is required in FIRSTVUE.

Exporting Data for FirstVue to ASCII Files

You export SmartPlant Instrumentation process and calculation data to an ASCII command delimited file by utilizing the SmartPlant Instrumentation export feature. That file can be later imported to FIRSTVUE where that file's data is used to make sizing calculations and select the appropriate valve(s).

The resulting comma delimited ASCII file contains the following information:


- Fields that are required for sizing calculations, including line data.
- ISA format specification fields.
- Fields that contain export-only data (for example, revision data).
- Fields that allow insertion of new data, when you import data from the ASCII file back to SmartPlant Instrumentation.



Note

- During the export process, the character **U** is added to the FIRSTVUE **unitnumber** field string.

➤ To export data to ASCII files

1. Start SmartPlant Instrumentation and open the [Instrument Index](#) module.
2. Open an Instrument Index Standard Browser view by doing one of the following:
 - Click .
 - On the **Actions** menu, click **Browse Index**.
3. In the browser view, select the tags whose control valve data you want to export to FIRSTVUE. To select more than one tag, hold down either the **Ctrl** key or the **Shift** key and click the fields that you require.
4. On the **Tools** menu, point to **Interfaces** and click **Fisher FirstVue**.

5. Enter data in the **Export to FirstVue** dialog box as follows:
 - a) To select the appropriate FIRSTVUE ASCII file (with a.csv extension) to which the SmartPlant Instrumentation control valve data will be exported, do one of the following:
 - In the **File** text box, type in the path and location of the FIRSTVUE export file name.
 - Click **Browse** to navigate to the FIRSTVUE file location.
 - b) If you selected in the previous step to export to an existing ASCII file, do one of the following:
 - Select the **Overwrite** check box to overwrite the existing ASCII file.
 - Clear the **Overwrite** check box to keep the existing ASCII file. In this case, if you enter an **existing** file in the **File Name** data field, you will be prompted to confirm the overwrite.
 - c) To select the level on which you want to export the SmartPlant Instrumentation data to FIRSTVUE:
 - Click **Plant** to export all the control valve tags and their data belonging to the current plant.
 - Click **Unit** to export all the control valve tags and their data belonging to the current unit (this is the default selection).
 - Click **Filter** to export only the control valve tags and their data that comply with the filter parameters that you have set for the current Instrument Index Standard Browser view.
 - Click **Selected tags** to export only the tags and their data that you selected in the Instrument Index Standard Browser view (see step 3 in this procedure).

**Caution**

- If you select to export selected tags, make sure you select the appropriate tags before clicking **OK** in the **Export to FirstVue** dialog box.
- d) Under **Use field length from**, do one of the following:
 - Click **SmartPlant Instrumentation** to truncate the exported fields to match the lengths indicated in the SmartPlant Instrumentation database.
 - Click **FirstVue** to truncate the exported fields to match the lengths indicated in the FIRSTVUE field table.
6. Click **OK**.

The export process starts, at the end of which a message is displayed indicating that the export process was successful.

7. On completion of the export process, click **Log File** to view in the EXPORT.LOG file, located in the same folder where you exported the ASCII file, any errors that occurred during the export process.

**Caution**

- If the export process is successful, an appropriate message is displayed, notifying you that the Log file is empty.
 - Failing to convert units of measure will generate an error message. This means that the associated data was exported without the required units of measure (that is, the UOM fields in FIRSTVUE will be empty). In this case, you should select the required units of measure manually in FIRSTVUE (see your [FIRSTVUE User Guide](#) for further information).
8. Click **Close** to close the **Export to FirstVue** dialog box and return to the browser view.

Importing ASCII Files into FIRSTVUE

This is the second stage in exporting data to FIRSTVUE. After you successfully exported your SmartPlant Instrumentation Control Valve data to ASCII files, you import these files to FIRSTVUE. This way your SmartPlant Instrumentation data can be used to make sizing calculations in FIRSTVUE. The relations between the imported fields is determined using the SmartPlant Instrumentation-to-FIRSTVUE mapping file: INTOOLS.CSM.

➤ To import ASCII files to FIRSTVUE

1. Start the FIRSTVUE application.

The **Main FIRSTVUE** dialog box opens with the **Header** tab folder active by default.

2. From the **File** menu, click **Import ISA File**.

3. In the dialog box that opens, click **Browse Map** and navigate to the INTOOLS.CSM mapping file.

4. Click **Browse File** and select the appropriate source file (CSV extension file).
This file describes the relations between the FIRSTVUE and SmartPlant Instrumentation fields.

5. From the **File Delimiter** list, select a comma (',').

6. Click **Import** to import the Control Valve from the selected file to FIRSTVUE.

The import process starts and you can monitor its progress in the **Import Log** data window.

You have successfully imported the SmartPlant Instrumentation sizing data to FIRSTVUE. Now you can make the required calculation and select the valve that meets your requirements. See your [FIRSTVUE User Guide](#) for additional information about the FIRSTVUE features.

Specification Form Scenarios

Once the import process is complete, the data you imported from the ASCII file (that was created by FIRSTVUE) will be available in all the appropriate SmartPlant Instrumentation dialog boxes, in reports and in spec. sheets. You can also view and print out ISA format spec. sheets which is based on FIRSTVUE's ISA form.

In SmartPlant Instrumentation, ISA spec. sheets are based on a designated ISA form (form 70). Form 70 is available to you as a standard SmartPlant Instrumentation form.

SmartPlant Instrumentation also uses a customized title block for the ISA spec. form. This title block is stored in the TBO.PSR file which you need to import is located in your SmartPlant Instrumentation folder and which you can modify, if required.

Usually, when you import data to a tag in SmartPlant Instrumentation, it is associated with a control valve and is assigned to a specification based on spec. form 70. In this case you do not need to make any changes to the import links, to the ASCII delimited file, or to the SmartPlant Instrumentation database.

You can also import data to a SmartPlant Instrumentation tag that is not assigned to a specification or a tag that is assigned to a specification which is not an ISA spec. sheet. In these cases, you should do one of the following:

- If the tag does not have a specification, open the import link [Spec Sheet Data](#) and in the **Import Link** window, set the value of the **specformnumber** field to 70.
- If the tag's specification is not an ISA sheet, in the [FirstVue - Index](#) import link, replace the sources for the additional fields as required and in the [Spec Sheet Data](#) import link, set the value of the **specformnumber** field to the required form number.

Exporting Data from FIRSTVUE to ASCII Files

Before exporting the sizing calculation results from FIRSTVUE to an ASCII delimited file, make sure that the following requirements are met:

- FIRSTVUE data fields (for example, **actuatorsize**, **minbenchrange**, and **maxbenchrange**, and so forth) should not contain a period ('.').
- In FIRSTVUE, when using the **User Overrides** option for the ISA_PM spec. form, the following fields must be numeric:
 - ISA line 10 - Maximum, Normal, and Minimum Travel
 - ISA line 11 - Maximum, Normal, and Minimum Predicted SPL
 - ISA line 18 - Maximum Pressure and Temperature
 - ISA line 36 - Trim Rated CV
- The **valvemfr** FIRSTVUE field must contain the appropriate manufacturer name (the FIRSTVUE export process will set the value of this field to **FISHER** by default if it is empty).

➤ To export sizing data from FIRSTVUE to an ASCII file

1. Start FIRSTVUE.
2. In the **Main FIRSTVUE** window, on the **File** menu, click **Export ISA File**.
3. In the **Export ISA File** dialog box, click **Browse Map** and navigate to the INTOOLS.CSM mapping file.
4. From the **File Delimiter** list, select a comma (',').
5. Do one of the following:
 - In the **Fields To Export** section, click **Only Fields in Map**; in the **Field Names To Export** section, click **Custom Names**.
 - Select the **Select All Items** check box to export all the current tags.
6. Click **Export** to start exporting the currently selected sizing data.

Importing FIRSTVUE ASCII Files

This procedure describes how to complete the import of FIRSTVUE sizing and specification data into SmartPlant Instrumentation by importing the ASCII file you previously exported from FIRSTVUE.

You import data to the following entities in SmartPlant Instrumentation:

- [Instrument Index](#) module (includes the Udf_component table fields)
- [Process Data](#) module
- Specification tables

To import the FIRSTVUE data to these entities, the [Import](#) utility utilizes the following predefined import links:

- **FirstVue - Index:** Executing this link imports the appropriate sizing data into the [Instrument Index](#) module.
- **FirstVue - PD/Calcs:** Executing this link imports the appropriate sizing data into the [Process Data](#) module.
- **Spec Sheet Data:** Executing this link imports data into the SPEC_SHEET_DATA table.
- **Spec Sheet Data 0:** Executing this link imports data into the ADD_SPEC1 table.


You need to execute the links in both groups and you do that by performing an automatic import process. Advanced users can perform a manual import process which allows you to carry out a step-by-step procedure. Importing data this way enables you to view and modify the default import parameters and link settings.

The SmartPlant Instrumentation FIRSTVUE import links also provide you with adapted source code. Normally, importing data from a non-SmartPlant Instrumentation platform such as FIRSTVUE requires that you manually adapt the source system codes. In the FIRSTVUE import links, however, the system codes and UOM codes are already adapted to SmartPlant Instrumentation, that is, every source code value in FIRSTVUE is associated with its appropriate target value(s) in SmartPlant Instrumentation. See [Importing Codes](#) to learn more about source code adaptation.

Importing FIRSTVUE Data

This procedure describes how to import FIRSTVUE data, whether for the first time or after a previous data import session.


➤ To import new data from FIRSTVUE ASCII files

1. Start the [Import](#) utility and log on using your user name and password.
2. Do one of the following:
 - Click .
 - On the **Options** menu, click **Fisher FIRSTVUE**.
3. In the **Source file** field of the **Fisher FirstVue** dialog box, do one of the following:
 - Enter the path statement for the file containing details of the data structure.
 - Click **Browse** and navigate to the required file location.
4. Do one of the following:
 - If you are importing FIRSTVUE data into SmartPlant Instrumentation for the very first time, select **Insert new data**.
 - If you previously imported FIRSTVUE data into SmartPlant Instrumentation and you only need to update the existing sizing data in the target database, clear **Insert new data**.
5. Do one of the following:
 - Clear **Run link group automatically** if you need to modify any of the links before importing the data.
 - Select **Run link group automatically** to select a particular link group and run all the links in it automatically.
6. Click **OK** to continue the import process.
7. If you selected to run the link groups automatically, the **Select Link Group** dialog box opens, where you do the following:
 - a) select [FIRSTVUE](#).
 - b) Click **OK** to run each link in the link group in turn.
8. If you selected not to run the link groups automatically, the **Fisher FirstVue** dialog box is minimized and you can:
 - Open a link to modify it.
 - Run an import link or a group of links.


Running the FIRSTVUE Links

After you select the data source, the FIRSTVUE link groups and their associated links are available for use. This procedure describes how to modify the links and import FIRSTVUE data.

➤ To run the FIRSTVUE links

1. Select the required data source in the **Fisher FirstVue** dialog box.
2. In the **Link Explorer**, expand the group **FIRSTVUE** and select the link **FirstVue - PD/Calcs**.
3. Click  to open the **Import Link** window for the selected link.
4. Modify the displayed link settings as follows:
 - a) Link the FIRSTVUE **fluidstate** field with the **Fluid Phase** (pd_fluid_phase) field.
 - b) Select the **Code** check box next to the **Fluid Phase** field to use code adaptation when importing data to this field.
 - c) Link the following source (FIRSTVUE) fields with the appropriate target (SmartPlant Instrumentation) fields:

Link	Source field	Target field
All	plantname	Change if required
All	areaname	Change if required
All	unitnumber	Change if required
All	itemtag	Check that the tag naming convention of each target unit into which you will import data matches the source data (see Matching Naming Conventions)
Spec Sheet Data	specformnumber	SPEC FORM CNUM

5. Click  to import the data.
6. Open SmartPlant Instrumentation and examine the imported data in the **Browser**, **Process Data**, or **Instrument Index** module.

Flowserve Performance!

Overview

The Performance! interface enables you to import valve sizing data for Flowserve-Valtek, Flowserve-Kammer, and Flowserve-Sereg control valves.

You import data from the Performance! system by executing the Performance! import links in the [Import](#) utility. These links become available to you after the Domain Administrator adds the **Performance Spec #1** and **Performance Spec #71** add-ins to SmartPlant Instrumentation.

The import process requires one of two files that the Performance! application can generate: for Performance Spec #1 or for Performance Spec #71.

See [Data Import Process](#) to learn how to modify and execute predefined links.

The import and export procedures include the following major stages:

1. General preparatory stages (to be performed by the Domain Administrator):
 - a) Importing Performance! fields.
 - b) Importing Performance! import links.
 - c) Importing Performance! source codes.
2. Exporting data from SmartPlant Instrumentation to Performance!:
 - a) Selecting the control valve tags to export.
 - b) Exporting the selected tags to an ASCII file using the SmartPlant Instrumentation Performance! export feature.
 - c) Running Performance! and importing the SmartPlant Instrumentation control valve data from an ASCII file.
3. Calculating and selecting the appropriate Valve in Performance! (see your [Performance! User Guide](#) for details).
4. Importing data from Performance! into SmartPlant Instrumentation:
 - a) Exporting the sizing data from Performance! to an ASCII file.
 - b) Running the Performance! import links and importing the sizing data from the ASCII files to the SmartPlant Instrumentation database.
5. Viewing and editing the imported sizing data (if required).

Performance! Requirements

To work with the Performance! interface you need to comply with the following requirements:

- You must have an existing installation of **INTools** 4.3 or later, including the **Process Data** module with appropriate access rights.
- You must have an installation of Performance!.
- The **Performance Spec #1** and **Performance Spec #71** add-ins must be added to SmartPlant Instrumentation by the Domain Administrator prior to executing the Performance! import links.
- The Performance! source code set must be added to SmartPlant Instrumentation by the Domain Administrator prior to importing data from Performance! to SmartPlant Instrumentation (you are required to have an appropriate license to be able to import source codes). See [Importing Codes](#) to learn how to import sets of source codes to SmartPlant Instrumentation.
- The INTOOLS.INI file, under the [Custom] section, must include the parameter Performance=1 to enable the export option under the **File** menu when accessed from an Instrument Index Standard Browser view.
- You must have an existing target unit which contains naming conventions in order to be able to import data.
- You must have an existing ASCII profile defined in your Windows environment.
- You must have one or more tags that are associated with process data sheets and whose instrument type value is [Control Valve](#).



Notes

- The source text file profile is defined in the ODBC.INI **registry** folder.
- When you install SmartPlant Instrumentation, you can also install the predefined text file profile which is provided as a part of the software package.
- If you do not want to use existing profiles, you can define new profiles using the SmartPlant Instrumentation Internal Setup Utility or other ODBC applications. To learn how to define a new profile and add it to SmartPlant Instrumentation, see [Creating an ODBC Profile](#).

Performance! Main Features

The Performance! interface incorporates several important features which enable you to successfully migrate data from Performance! into SmartPlant Instrumentation and back.

Providing Ready-Made Import Links

When transferring data from Performance! to SmartPlant Instrumentation, you use the [Import](#) utility ready-made import links which can be easily modified if required. These links have been specially created to transfer the Performance! data to SmartPlant Instrumentation (for details, see [Executing the Import of Data](#)).

Synchronizing Performance! Data Deviations

When importing Performance! data into SmartPlant Instrumentation for the purposes of updating the information, you may encounter mismatched data. It is therefore imperative to analyze and synchronize the differences between the databases before data is transferred from one database application to another. You synchronize the data structure by using the [Import](#) utility Comparison List feature which allows you to select and transfer the required components as well as control future data transfers. This way any operations performed in the source will be updated in the SmartPlant Instrumentation target data during the import process (for details, see [Import Comparison](#)).

Built-in Export Feature

This feature allows you to export Control Valve process and sizing data from your SmartPlant Instrumentation domain to Performance! as ASCII delimited files which comply with the Performance! conventions.

Adapting Performance! System and UOM Codes

System and UOM codes are widely used in SmartPlant Instrumentation for purposes such as units-of-measure and internal data indication. These code conventions may not comply with the Performance! conventions. Therefore, when importing source data from non-SmartPlant Instrumentation databases, you need to be able to compare and adapt the source system and UOM codes to the system and UOM codes used in SmartPlant Instrumentation. You adapt source codes by using the [Import](#) utility System Codes feature which enables you to adapt the required source codes with the codes used in your SmartPlant Instrumentation database. See [System Codes](#) to learn more about this feature. See [Importing Codes](#) to learn how to import sets of source codes to SmartPlant Instrumentation.

ISA Form Compliance

SmartPlant Instrumentation features a standard ISA form which you can use to print out sizing data imported from Performance! as an ISA spec. sheet. The spec. sheet print out is identical to the one generated by Performance!, yet retains the SmartPlant Instrumentation revision system.

Exporting Data to Performance!

This procedure describes how to view and export control valve sizing data from a SmartPlant Instrumentation domain to Performance!, based on the Performance! import links which are provided as an add-in to SmartPlant Instrumentation.

The basic idea in the Performance! interface export feature is to allow you to provide to any third party such a contractor or an engineering company the required process and sizing data in a standard format. When exchanging data with Performance!, data is exchanged in an ISA standard form which you can view and print out from Performance! as well as from SmartPlant Instrumentation.

Exporting data from SmartPlant Instrumentation to the Performance! system involves two steps:

1. Exporting the SmartPlant Instrumentation selected data to ASCII delimited (text) files, using the Performance! export feature.
2. Importing the ASCII files generated by SmartPlant Instrumentation into Performance!.

Preparing for Export

Before you start exporting data, you need to enter the required process data (for example, Tag Name and Service) in the appropriate process data sheets. Your choice of the process data parameter values will determine your subsequent selections of the valve sizing data such as Body Material and Bonnet.

At this phase you can also define process data parameters specific to the selected Control Valve (for example, Leakage). (These parameters can be viewed in the **Additional Properties** window in the [Process Data](#) module.)

Also consider the following issues:

1. When exporting data to Performance!, the SmartPlant Instrumentation Export Utility automatically converts the SmartPlant Instrumentation system and UOM codes to the appropriate system and UOM codes used in Performance!.

For example: °C in SmartPlant Instrumentation is converted to **deg C** in Performance!.

However, since SmartPlant Instrumentation contains additional UOMs, some SmartPlant Instrumentation UOMs may not have parallel values in Performance! and therefore will not be accessible in Performance! for sizing calculations. In this case an appropriate message is displayed and a note is added in the ERROR.LOG file (located in the same folder where you saved the ASCII file).

2. Fields in SmartPlant Instrumentation and in Performance! differ in length and SmartPlant Instrumentation fields may be truncated if longer than the corresponding fields in Performance!. Therefore, you need to make sure that the truncated data does not contain sizing data which is required in Performance!.

Exporting Performance! Data to ASCII Files

You export SmartPlant Instrumentation process and calculation data to an ASCII command delimited file by utilizing the SmartPlant Instrumentation export feature. That file can be later imported to Performance! where that file's data is used to make sizing calculations and select the appropriate valve(s).



Note

- To enable the SmartPlant Instrumentation export feature, in the INTOOLS.INI file, under the [Custom] section, add the following line:

```
Performance=1
```

The resulting comma delimited ASCII file contains the following information:


- Fields that are required for sizing calculations, including line data.
- ISA format specification fields.
- Fields that contain export-only data (for example, revision data).
- Fields that allow insertion of new data, when you import data from the ASCII file back to SmartPlant Instrumentation.



Note

- During the export process, the character **U** is added to the Performance! **unitnumber** field string.

➤ To export Performance! data to ASCII files

1. Start SmartPlant Instrumentation and open the [Instrument Index](#) module.
2. Open an Instrument Index Standard Browser view by doing one of the following:
 - Click .
 - On the **Actions** menu, click **Browse Index**.
3. In the browser view, select the tags for which you want to export control valve data to Performance!. To select more than one tag, hold down either the **Ctrl** key or the **Shift** key and click the fields that you require.
4. On the **Tools** menu, point to **Interfaces** and click **Flowserve Performance**.

5. Enter the required data in the **Export to Flowserve Performance** dialog box as follows:
 - a) To select the appropriate Performance! ASCII file (with a.csv extension) to which the SmartPlant Instrumentation control valve data will be exported, do one of the following:
 - In the **File** text box, type in the path and location of the Performance! export file name.
 - Click **Browse** to navigate to the Performance! file location.
 - b) Under **Export for**, select the required specification to be used for the exported data, from either:
 - **Spec#1**.
 - **Spec#71**.
 - c) If you selected in the previous step to export to an existing ASCII file, do one of the following:
 - Select the **Overwrite** check box to overwrite the existing ASCII file.
 - Clear the **Overwrite** check box to keep the existing ASCII file. In this case, if you enter an **existing** file in the **File Name** data field, you will be prompted to confirm the overwrite.
 - d) To select the level on which you want to export the SmartPlant Instrumentation data to Performance!:
 - Click **Plant** to export all the control valve tags and their data belonging to the current plant.
 - Click **Unit** to export all the control valve tags and their data belonging to the current unit (this is the default selection).
 - Click **Filter** to export only the control valve tags and their data that comply with the filter parameters that you have set for the current Instrument Index Standard Browser view.
 - Click **Selected tags** to export only the tags and their data that you selected in the Instrument Index Standard Browser view (see step 3 in this procedure).

**Caution**

- If you select to export selected tags, make sure you select the appropriate tags before clicking **OK** in the **Export to Flowserve Performance!** dialog box.
- e) Under **Use Field Length From**, do one of the following:
- Click **SmartPlant Instrumentation** to truncate the exported fields to match the lengths indicated in the SmartPlant Instrumentation database.
 - Click **Performance** to truncate the exported fields to match the lengths indicated in the Performance! field table.

6. Click **OK**.

The export process starts, at the end of which a message is displayed indicating that the export process was successful.

7. On completion of the export process, click **Log File** to view in the EXPORT.LOG file, located in the same folder where you exported the ASCII file, any errors that occurred during the export process.

**Caution**

- If the export process is successful, an appropriate message is displayed, notifying you that the Log file is empty.
 - Failing to convert units of measure will generate an error message. This means that the associated data was exported without the required units of measure (that is, the UOM fields in Performance! will be empty). In this case, you should select the required units of measure manually in Performance! (see your [Performance! User Guide](#) for further information).
8. Click **Close** to close the **Export to Flowserve Performance** dialog box and return to the browser view.

Importing Performance! ASCII Files

This procedure describes how to complete the import of Performance! sizing and specification data into SmartPlant Instrumentation by importing the ASCII file you previously exported from Performance!.

You import data to the following entities in SmartPlant Instrumentation:

- **Instrument Index** module (includes the Udf_component table fields).
- **Process Data** module.
- Specification tables.

To import the Performance! data to these entities, the **Import** utility utilizes the following predefined import links:

- **Performance1 / Performance71 – per module – Index:** Executing this link imports the appropriate sizing data into the **Instrument Index** module for the appropriate specification.
- **Performance1 / Performance71 – per module – PD/Calcs:** Executing this link imports the appropriate sizing data into the **Process Data** module for the appropriate specification.
- **Performance1 / Performance71 – per table – Spec Sheet Data:** Executing this link imports data into the SPEC_SHEET_DATA table.
- **Performance1 / Performance71 – per table – Add Spec 1:** Executing this link imports data into the ADD_SPEC1 table.

You need to execute the links in both groups (per module and per table) and you do that by performing an automatic import process. Advanced users can perform a manual import process which allows you to carry out a step-by-step procedure. Importing data this way enables you to view and modify the default import parameters and link settings.

The Performance! import links also provide you with adapted source code. Normally, importing data from a non-SmartPlant Instrumentation platform such as Performance! requires that you manually adapt the source system codes. In the Performance! import links, however, the system codes and UOM codes are already adapted to SmartPlant Instrumentation, that is, every source code value in Performance! is associated with its appropriate target value(s) in SmartPlant Instrumentation. See Importing Codes to learn more about source code adaptation.

Importing Performance! Data


This procedure describes how to import Performance! data into SmartPlant Instrumentation, whether for the first time or after a previous import.



Caution

- When importing Performance! data, you must **always** use the Performance! interface to connect to the source data files before you can run the links from the **Link Explorer**. You cannot create and run links outside of the interface.

➤ To import data from the Performance! data source

1. Start the [Import](#) utility and log on using your user name and password.
2. Do one of the following:
 - Click .
 - On the **Options** menu, click **Flowserve Performance**.
3. In the **Select source for spec #1** field or the **Select source for spec #71** field of the **Flowserve Performance** dialog box, do one of the following:
 - Enter the path statement for the file containing details of the data structure.
 - Click **Browse** and navigate to the required file location.
4. Do one of the following:
 - If you are importing Performance! data into SmartPlant Instrumentation for the very first time, select **Insert new data**.
 - If you previously imported Performance! data into SmartPlant Instrumentation and you only need to update the existing sizing data in the target database, clear **Insert new data**.
5. Do one of the following:
 - Clear **Run link group automatically** if you need to modify any of the links before importing the data.
 - Select **Run link group automatically** to select a particular link group and run all the links in it automatically.

6. Click **OK** to continue the import process.

If you selected to run the link groups automatically, the **Select Link Group** dialog box opens for you to select the required group of Performance! links to import.

If you selected not to run the link groups automatically, the **Flowserve Performance** dialog box is minimized and you can:

- Open a link to modify it as required.
- Run an import link or a group of links.

7. After performing the data import, view the imported data in SmartPlant Instrumentation in the [Instrument Index](#), [Process Data](#), and [Specification](#) modules.

Masoneilan

Overview

The Masoneilan ValSpeQ interface enables you to import data for Masoneilan control valves.

You import data from the Masoneilan ValSpeQ system by executing the Masoneilan import links in the [Import](#) utility. These links become available to you after the Domain Administrator adds the **Masoneilan Spec #1** and **Masoneilan Spec #75** add-ins to SmartPlant Instrumentation.

The import process requires one of two files that the Masoneilan ValSpeQ application can generate: for Masoneilan Spec #1 or for Masoneilan Spec #75.

See [Data Import Process](#) to learn how to modify and execute predefined links.

The import and export procedures include the following major stages:

1. General preparatory stages (to be performed by the Domain Administrator):
 - a) Importing Masoneilan ValSpeQ fields.
 - b) Importing Masoneilan ValSpeQ import links.
 - c) Importing Masoneilan ValSpeQ source codes.
2. Exporting data from SmartPlant Instrumentation to Masoneilan ValSpeQ:
 - a) Selecting the control valve tags to export.
 - b) Exporting the selected tags to an ASCII file using the SmartPlant Instrumentation Masoneilan ValSpeQ export feature.
 - c) Running Masoneilan ValSpeQ and importing the SmartPlant Instrumentation control valve data from an ASCII file.
3. Calculating and selecting the appropriate Valve in Masoneilan ValSpeQ (see your [Masoneilan ValSpeQ User Guide](#) for details).
4. Importing data from Masoneilan ValSpeQ into SmartPlant Instrumentation:
 - a) Exporting the control valve data from Masoneilan ValSpeQ to an ASCII file.
 - b) Running the Masoneilan ValSpeQ import links and importing the control valve data from the ASCII files to the SmartPlant Instrumentation database.
5. Viewing and editing the imported control valve data (if required).

Masoneilan ValSpeQ Requirements

To work with the Masoneilan ValSpeQ interface you need to comply with the following requirements:

- You must have an existing installation of [INtools](#) 5.3 or later, including the [Process Data](#) module with appropriate access rights.
- The **Masoneilan Spec #1** and **Masoneilan Spec #75** add-ins must be added to SmartPlant Instrumentation by the Domain Administrator prior to executing the Masoneilan import links.
- The Masoneilan ValSpeQ source code set must be added to SmartPlant Instrumentation by the Domain Administrator prior to importing data from Masoneilan ValSpeQ to SmartPlant Instrumentation (you are required to have an appropriate license to be able to import source codes). See [Importing Codes](#) to learn how to import sets of source codes to SmartPlant Instrumentation.
- The INTOOLS.INI file, under the [Custom] section, must include the parameter Masoneilan=1 to enable the export option under the **File** menu when accessed from an Instrument Index Standard Browser view.
- You must have an existing target unit which contains naming conventions in order to be able to import data.
- You must have an existing ASCII profile defined in your Windows environment.
- You must have one or more tags that are associated with process data sheets and whose instrument type value is [Control Valve](#).



Notes

- The source text file profile is defined in the ODBC.INI **registry** folder.
- When you install SmartPlant Instrumentation, you can also install the predefined text file profile which is provided as a part of the software package.
- If you do not want to use existing profiles, you can define new profiles using the SmartPlant Instrumentation Internal Setup Utility or other ODBC applications. To learn how to define a new profile and add it to SmartPlant Instrumentation, see [Creating an ODBC Profile](#).

Masoneilan ValSpeQ Main Features

The Masoneilan ValSpeQ interface incorporates several important features which enable you to successfully migrate data from Masoneilan ValSpeQ into SmartPlant Instrumentation and back.

Providing Ready-Made Import Links

When transferring data from Masoneilan ValSpeQ to SmartPlant Instrumentation, you use the [Import](#) utility ready-made import links which can be easily modified if required. These links have been specially created to transfer the Masoneilan ValSpeQ data to SmartPlant Instrumentation (for details, see [Executing the Import of Data](#)).

Synchronizing Masoneilan ValSpeQ Data Deviations

When importing Masoneilan ValSpeQ data into SmartPlant Instrumentation for the purposes of updating the information, you may encounter mismatched data. It is therefore imperative to analyze and synchronize the differences between the databases before data is transferred from one database application to another. You synchronize the data structure by using the [Import](#) utility Comparison List feature which allows you to select and transfer the required components as well as control future data transfers. This way any operations performed in the source will be updated in the SmartPlant Instrumentation target data during the import process (for details, see [Import Comparison](#)).

Built-in Export Feature

This feature allows you to export Control Valve process and sizing data from your SmartPlant Instrumentation domain to Masoneilan ValSpeQ as ASCII delimited files which comply with the Masoneilan ValSpeQ conventions.

Adapting Masoneilan ValSpeQ System and UOM Codes

System and UOM codes are widely used in SmartPlant Instrumentation for purposes such as units-of-measure and internal data indication. These code conventions may not comply with the Masoneilan ValSpeQ conventions. Therefore, when importing source data from non-SmartPlant Instrumentation databases, you need to be able to compare and adapt the source system and UOM codes to the system and UOM codes used in SmartPlant Instrumentation. You adapt source codes by using the [Import](#) utility System Codes feature which enables you to adapt the required source codes with the codes used in your SmartPlant Instrumentation database. See [System Codes](#) to learn more about this feature. See [Importing Codes](#) to learn how to import sets of source codes to SmartPlant Instrumentation.

ISA Form Compliance

SmartPlant Instrumentation features a standard ISA form which you can use to print out control valve data imported from Masoneilan ValSpeQ as an ISA spec. sheet (spec form #75).

Exporting Data to Masoneilan ValSpeQ

This procedure describes how to view and export control valve sizing data from an SmartPlant Instrumentation domain to Masoneilan ValSpeQ, based on the Masoneilan ValSpeQ import links which are provided as an add-in to SmartPlant Instrumentation.

The basic idea in the Masoneilan ValSpeQ interface export feature is to allow you to provide to any third party such a contractor or an engineering company the required process and sizing data in a standard format. When exchanging data with Masoneilan ValSpeQ, you can view and print out the data from Masoneilan ValSpeQ as well as from SmartPlant Instrumentation.

Exporting data from SmartPlant Instrumentation to the Masoneilan ValSpeQ system involves two steps:

1. Exporting the SmartPlant Instrumentation selected data to ASCII delimited (text) files, using the Masoneilan ValSpeQ export feature.
2. Importing the ASCII file(s) generated by SmartPlant Instrumentation into Masoneilan ValSpeQ.

Preparing for Export

Before you start exporting data, you need to enter the required process data (for example, Tag Name and Service) in the appropriate process data sheets. Your choice of the process data parameter values will determine your subsequent selections of the valve sizing data such as Body Size and Rated Cv.

At this phase you can also define process data parameters specific to the selected Control Valve (for example, Leakage). (These parameters can be viewed in the **Additional Properties** window in the [Process Data](#) module.)

Also consider the following issues:

1. When exporting data to Masoneilan ValSpeQ, the SmartPlant Instrumentation Export Utility automatically converts the SmartPlant Instrumentation system and UOM codes to the appropriate system and UOM codes used in Masoneilan ValSpeQ.

For example: °C in SmartPlant Instrumentation is converted to **deg C** in Masoneilan ValSpeQ.

However, since SmartPlant Instrumentation contains additional UOMs, some SmartPlant Instrumentation UOMs may not have parallel values in Masoneilan ValSpeQ and therefore will not be accessible in Masoneilan ValSpeQ for sizing calculations. In this case an appropriate message is displayed and a note is added in the ERROR.LOG file (located in the same folder where you saved the ASCII file).

2. Fields in SmartPlant Instrumentation and in Masoneilan ValSpeQ differ in length and SmartPlant Instrumentation fields may be truncated if longer than the corresponding fields in Masoneilan ValSpeQ. Therefore, you need to make sure that the truncated data does not contain sizing data which is required in Masoneilan ValSpeQ.
3. When exporting vapor pressure or critical pressure values, you must specify the units of measure of these quantities as absolute (A) and not gage (G) in the specification sheet.

Exporting Masoneilan Data to ASCII Files

You export process and calculation data to an ASCII command delimited file by utilizing the SmartPlant Instrumentation export feature. That file can be later imported to Masoneilan ValSpeQ where that file's data is used to make sizing calculations and select the appropriate valve(s).



Note

- To enable the SmartPlant Instrumentation export feature, in the INTOOLS.INI file, under the [Custom] section, the following line should appear:

```
Masoneilan=1
```

The resulting comma delimited ASCII file contains the following information:


- Fields that are required for sizing calculations, including line data.
- ISA format specification fields.
- Fields that contain export-only data (for example, revision data).
- Fields that allow insertion of new data, when you import data from the ASCII file back to SmartPlant Instrumentation.



Note

- During the export process, the character **U** is added to the Masoneilan ValSpeQ **unitnumber** field string.

➤ To export Masoneilan data to ASCII files

1. Start SmartPlant Instrumentation and open the [Instrument Index](#) module.
2. Open an Instrument Index Standard Browser view by doing one of the following:
 - Click .
 - On the **Actions** menu, click **Browse Index**.
3. In the browser view, select the tags whose control valve data you want to export to Masoneilan ValSpeQ. To select more than one tag, hold down either the **Ctrl** key or the **Shift** key and click the fields that you require.
4. On the **Tools** menu, point to **Interfaces** and click **Masoneilan ValSpeQ**.

5. Enter the required data in the **Export to Masoneilan ValSpeQ** dialog box as follows:
 - a) To select the appropriate Masoneilan ValSpeQ ASCII file (with a.csv extension) to which the SmartPlant Instrumentation control valve data will be exported, do one of the following:
 - In the **File** text box, type in the path and location of the Masoneilan ValSpeQ export file name.
 - Click **Browse** to navigate to the Masoneilan ValSpeQ file location.
 - b) Under **Export for**, select the required specification to be used for the exported data, from either:
 - **Spec#1.**
 - **Spec#75.**
 - c) If you selected in the previous step to export to an existing ASCII file, do one of the following:
 - Select the **Overwrite** check box to overwrite the existing ASCII file.
 - Clear the **Overwrite** check box to keep the existing ASCII file. In this case, if you enter an **existing** file in the **File Name** data field, you will be prompted to confirm the overwrite.
 - d) To select the level on which you want to export the SmartPlant Instrumentation data to Masoneilan ValSpeQ:
 - Click **Plant** to export all the control valve tags and their data belonging to the current plant.
 - Click **Unit** to export all the control valve tags and their data belonging to the current unit (this is the default selection).
 - Click **Filter** to export only the control valve tags and their data that comply with the filter parameters that you have set for the current Instrument Index Standard Browser view.
 - Click **Selected tags** to export only the tags and their data that you selected in the Instrument Index Standard Browser view (see step 3 in this procedure).

**Caution**

- If you select to export selected tags, make sure you select the appropriate tags before clicking **OK** in the **Export to Masoneilan ValSpeQ** dialog box.

e) Under **Use Field Length From**, do one of the following:

- Click **SmartPlant Instrumentation** to truncate the exported fields to match the lengths indicated in the SmartPlant Instrumentation database.
- Click **Masoneilan** to truncate the exported fields to match the lengths indicated in the Masoneilan ValSpeQ field table.

6. Click **OK**.

The export process starts, at the end of which a message is displayed indicating that the export process was successful.

7. On completion of the export process, click **Log File** to view in the EXPORT.LOG file, located in the same folder where you exported the ASCII file, any errors that occurred during the export process.



Caution

- If the export process is successful, an appropriate message is displayed, notifying you that the Log file is empty.
- Failing to convert units of measure will generate an error message. This means that the associated data was exported without the required units of measure (that is, the UOM fields in Masoneilan ValSpeQ will be empty). In this case, you should select the required units of measure manually in Masoneilan ValSpeQ (see your [Masoneilan ValSpeQ User Guide](#) for further information).

8. Click **Close** to close the **Export to Masoneilan ValSpeQ** dialog box and return to the browser view.

Importing Masoneilan ASCII Files

This procedure describes how to complete the import of Masoneilan ValSpeQ sizing and specification data into SmartPlant Instrumentation by importing the ASCII file you previously exported from Masoneilan ValSpeQ.

You import data to the following entities in SmartPlant Instrumentation:

- [Instrument Index](#) module (includes the Udf_component table fields).
- Process Data and specification tables.

To import the Masoneilan ValSpeQ data to these entities, the [Import](#) utility utilizes the following predefined import links:

- **Masoneilan1 / Masoneilan75 – per module – Index:** Executing this link imports the appropriate sizing data into the [Instrument Index](#) module for the appropriate specification.
- **Masoneilan1 / Masoneilan75 – per table – Control Valve Specific Data:** Executing this link imports data into the CONTROL_VALVE table.
- **Masoneilan1 / Masoneilan75 – per table – Control Valve General Data:** Executing this link imports data into the PD_GENERAL table.
- **Masoneilan1 / Masoneilan75 – per table – Spec Sheet Data:** Executing this link imports data into the SPEC_SHEET_DATA table.
- **Masoneilan1 / Masoneilan75 – per table – Add Spec 1:** Executing this link imports data into the ADD_SPEC1 table.

You need to execute the links in both groups (per module and per table) and you do that by performing an automatic import process. Advanced users can perform a manual import process which allows you to carry out a step-by-step procedure. Importing data this way enables you to view and modify the default import parameters and link settings.

The Masoneilan ValSpeQ import links also provide you with adapted source code. Normally, importing data from a non-SmartPlant Instrumentation platform such as Masoneilan ValSpeQ requires that you manually adapt the source system codes. In the Masoneilan ValSpeQ import links, however, the system codes and UOM codes are already adapted to SmartPlant Instrumentation, that is, every source code value in Masoneilan ValSpeQ is associated with its appropriate target value(s) in SmartPlant Instrumentation. See [Importing Codes](#) to learn more about source code adaptation.

Importing Masoneilan ValSpeQ Data


This procedure describes how to import Masoneilan ValSpeQ data into SmartPlant Instrumentation, whether for the first time or after a previous import.



Caution

- When importing Masoneilan ValSpeQ data, you must **always** use the Masoneilan interface to connect to the source data files before you can run the links from the **Link Explorer**. You cannot create and run links outside of the interface.

➤ To import data from the Masoneilan ValSpeQ data source

1. Start the [Import](#) utility and log on using your user name and password.
2. Do one of the following:
 - Click .
 - On the **Options** menu, click **Masoneilan**.
3. In the **Select source for spec #1** field or the **Select source for spec #75** field of the **Masoneilan** dialog box, do one of the following:
 - Enter the path statement for the file containing details of the data structure.
 - Click **Browse** and navigate to the required file location.
4. Do one of the following:
 - If you are importing Masoneilan ValSpeQ data into SmartPlant Instrumentation for the very first time, select **Insert new data**.
 - If you previously imported Masoneilan ValSpeQ data into SmartPlant Instrumentation and you only need to update the existing sizing data in the target database, clear **Insert new data**.
5. Do one of the following:
 - Clear **Run link group automatically** if you need to modify any of the links before importing the data.
 - Select **Run link group automatically** to select a particular link group and run all the links in it automatically.

6. Click **OK** to continue the import process.

If you selected to run the link groups automatically, the **Select Link Group** dialog box opens for you to select the required group of Masoneilan ValSpeQ links to import.

If you selected not to run the link groups automatically, the **Masoneilan** dialog box is minimized and you can:

- Open a link to modify it as required.
 - Run an import link or a group of links.
7. After performing the data import, view the imported data in SmartPlant Instrumentation in the [Instrument Index](#), [Process Data](#), and [Specification](#) modules.

Zyqad

Overview

The Zyqad interface allows you to import stream (flow) information for engineering plants from Aspen Zyqad.

You import data from the Zyqad system by executing the Zyqad import links in the [Import](#) utility. These links become available to you after the Domain Administrator adds the Zyqad add-in to SmartPlant Instrumentation.

The import process requires two files generated by the Zyqad application: a header file with general details of the information to be imported, including header names, and a data file containing the stream information itself.

See [Data Import Process](#) to learn how to modify and execute predefined links.

Zyqad Requirements

To work with the Zyqad interface you need to comply with the following requirements:

- The Zyqad external links must be added to SmartPlant Instrumentation by the Domain Administrator prior to executing the Zyqad import links.
- You must have an existing Zyqad profile defined in your Windows environment.
- You must have a Zyqad structure file (for example, ZYQAD.IMP) and a data file (for example, IDM_STREAM.OLD). These files are created by your Zyqad system, and may be located in the <SmartPlant Instrumentation home folder>\ Import folder.
- You must have an existing target unit which contains naming conventions in order to be able to import data.



Notes

- The source text file profile is defined in the ODBC.INI **registry** folder.
- When you install SmartPlant Instrumentation, you can also install the predefined text file profile which is provided as a part of the software package.
- If you do not want to use existing profiles, you can define new profiles using the SmartPlant Instrumentation Internal Setup Utility or other ODBC applications. To learn how to define a new profile and add it to SmartPlant Instrumentation, see [Creating an ODBC Profile](#).

Selecting Zyqad Data for Import


The following procedure describes how to connect to the Zyqad database for different platforms and how to select the required data for import.



Caution

- When importing Zyqad data, you must **always** use the Zyqad interface to connect to the source data files before you can run the links from the **Link Explorer**. You cannot create and run links outside of the interface.

➤ To import data from the Zyqad database

1. Start the [Import](#) utility and log on using your user name and password.
2. Do one of the following:
 - Click .
 - On the **Options** menu, click **Zyqad**.
3. In the **Structure file** field of the **Zyqad** dialog box, do one of the following:
 - Enter the path statement for the file containing details of the data structure (for example, ZYQAD.IMP).
 - Click **Browse** and navigate to the required file location (the default location is: <SmartPlant Instrumentation home folder>\ IMPORT \ ZYQAD \<file name>).
4. In the **Data file** field, do one of the following:
 - Enter the path statement for the data file (for example, STREAM.OLD).
 - Click **Browse** and navigate to the required file location (the default location is: <SmartPlant Instrumentation home folder>\ IMPORT \ ZYQAD \<file name>).
5. Click **OK** to enable you to continue the import process.
6. Do one of the following:
 - Open a link to modify it.
 - Run an import link or a group of links.
7. After performing the data import, view the imported stream information in SmartPlant Instrumentation in the [Instrument Index](#) and [Process Data](#) modules (for details, see [Working with Imported Zyqad Data](#)).

Working with Imported Zyqad Data

After importing the stream information, you can view the line numbers in the [Instrument Index](#) module under a specially created Line Type called PDF Stream. This line type contains the imported stream data from Zyqad. Each Zyqad stream number is given a corresponding line number in SmartPlant Instrumentation. In the [Process Data](#) module, you can use a source line number that you imported from Zyqad to copy line data to a selected target.

➤ To copy imported line data

1. Open the [Process Data](#) module.
2. From the **Actions** menu, click **Copy Line Data**.
3. In the **Source Line** section, from the **Line Type** list, select [PDF Stream](#) as the source line type.
4. From the **Line Number** list, select a line number.



Note

- The **Line Number** list only includes lines imported from Zyqad.
5. In the **Target Line List** section, do the following:
 - a) In the **Line Type** list, select the line type for the target line.
 - b) Select the required target line numbers (of the selected line type) from the list.
 6. Click **Copy** to copy the data to the selected lines.
 7. When done, click **Close**.