The Engineering Framework

Overview

The purpose of The Engineering Framework (TEF) is to standardize and improve the communication of the various tools that you use in the course of designing, building, and implementing a plant. TEF acts as a repository for data and a medium through which information is shared between other tools, such as SmartPlant Instrumentation, SmartPlant P&ID, and Aspen Zyqad.

Various tools publish the data to TEF in .xml format. These tools include SmartPlant Instrumentation. You can then retrieve the same information from TEF into other applications.

Before you can publish and retrieve information from The Engineering Framework database, your Domain Administrator must register your SmartPlant Instrumentation plant with TEF. This process needs to be done only once with each SmartPlant Instrumentation plant, but is required for the software to be able to communicate with the other products.

The **Framework** menu in SmartPlant Instrumentation provides commands that allow you to register your active plant with TEF and to access the common interface.

You use the **Retrieve** command to create a document containing information copied from TEF. After you retrieve the data, the software automatically creates a set of tasks that you can run to update the SmartPlant Instrumentation database. These tasks appear in the To Do List.

The **Publish** command extracts information from SmartPlant Instrumentation to TEF. SmartPlant Instrumentation allows you to publish and print out the following types of documents:

- Instrument Index data for a particular <unit>
- Specification sheets
- Process data
- Loop drawings
- Dimensional data sheets

Caution

- When working with TEF, there are certain requirements relating to AsBuilt and projects. For a complete list of these requirements, see Integrating SmartPlant Instrumentation with The Engineering Framework.

Prerequisites for Working with The Engineering Framework

Before you can use The Engineering Framework (TEF), your administrators must configure SmartPlant Instrumentation to work with TEF. For details, please refer to Installation Guide, Configuring SmartPlant Instrumentation for The Engineering Framework.

Integrating SmartPlant Instrumentation with The Engineering Framework

The following lists include rules that must be followed when using SmartPlant Instrumentation in The Engineering Framework (TEF) environment. Following these rules allows SmartPlant Instrumentation data to be shared correctly with SmartPlant P&ID and the other tools that are part of The Engineering Framework. Other tools that are not listed here have no known SmartPlant Instrumentation/TEF integration issues.

The software retrieves data to the current project in the lowest level plant hierarchy item that you logged on to in SmartPlant Instrumentation, for example a unit. So long as a project is active in TEF, you can publish and retrieve data and edit entities in SmartPlant Instrumentation, subject to the limitations indicated in the following section.

Working with SmartPlant P&ID

Editing Entities

- You may edit entities in the project in which you are publishing or retrieving data, however, you MUST NOT edit AsBuilt entities, except for publishing data.

Claiming and Merging Entities

- You may not claim entities to multiple projects.
- You may not perform a manual claim of any of the following entities that are shared between SmartPlant Instrumentation and SmartPlant P&ID: tag numbers, loops, lines, equipment, and control system tags. This requirement exists because SmartPlant P&ID performs the scoping and SmartPlant Instrumentation automatically claims scoped items when you retrieve data. You can manually claim any unshared entity such as panels, strips, terminal, cables, cable sets, wires, and so forth.
- In SmartPlant Instrumentation, the software automatically claims control systems tags for pre-assigned instruments to the project whenever the instruments are claimed. However, for unassigned instruments, you must claim the control system tags separately in order to assign them to these instruments in the project.
- You must merge all shared entities at the same time; you may not perform a partial merge of shared entities.

Publishing

- You are not allowed to publish data from AsBuilt. Doing so results in entities appearing more than once (for AsBuilt and for each project where the entity is claimed). Instead, you must open the specific project from which you want to publish the data.

Naming Convention Requirements when Publishing and Retrieving Entities

Instruments, Loops, Control System Tags and other objects in SmartPlant Instrumentation have a naming convention. The names of these objects are made of segments with predefined length and separators between the segments.

The mapping between the segments of the name and properties in TEF schema is hard coded.

Instrument Retrieval

When you retrieve an instrument, the software populates the tag number segments from the retrieved instrument object properties according to the following mapping:

Segment	Property
1	InstrTagPrefix
2	MeasuredVariable+InstrFuncModifier
3	InstrTagSequenceNo
4	InstrTagSuffix

Segment 1 is populated with the InstrTagPrefix

Segment 2 is populated with the concatenation of MeasuredVariable and InstrFuncModifier

Segment 3 is populated with the InstrTagSequenceNo

Segment 4 is populated with the InstrTagSuffix

The segments are then trimmed and put together according to the naming convention to create the tag number.

If the naming convention in other tools (for example, SmartPlant P&ID) does not include a prefix, the first segment length needs to be set to 0.

Loop Retrieval

When you retrieve a loop, the software populates the loop name segments from the retrieved instrument object properties according to the following mapping:

Segment	Property
1	LoopPrefix
2	LoopIdentifier
3	
4	LoopSequenceNo
5	LoopSuff

Segment 1 is populated with the LoopPrefix

Segment 2 is populated with the LoopIdentifier

Segment 4 is populated with the LoopSequenceNo

Segment 5 is populated with the LoopSuff

Segment 3 is not populated and needs to be set to length 0

Instrument Publishing

When you publish an instrument, the software populates the published object properties by the naming convention segments as follows:

Property	Segment	Comment
InstrTagPrefix	1	
MeasuredVariable	2	Left side of segment 2
InstrFuncModifier	2	Right side of segment 2
InstrTagSequenceNo	3	
InstrTagSuffix	4	

The object name is populated by the tag number with all spaces removed. If the length of prefix is more than 0, the prefix will be part of the object name. Other applications that publish instruments (for example, SmartPlant P&ID) need to be configured to publish the instrument object name with the prefix.

The MeasuredVariable and InstrFuncModifier are both populated be the second segment. If the first two characters of segment 2 are included in the TwoLetterMeasuredVariable list that was defined in the SmartPlant Instrumentation mapping file, then the MeasuredVariable is getting these two letters; if not then the MeasuredVariable is getting the first character of segment 2. In both cases the InstrFuncModifier is getting the rest of the characters of segment 2. This allows correct publishing of instruments such as PDT or DPT

TwoLetterMeasuredVariable
DP
PD
FQ
FF
TD
WD
ZD
FO

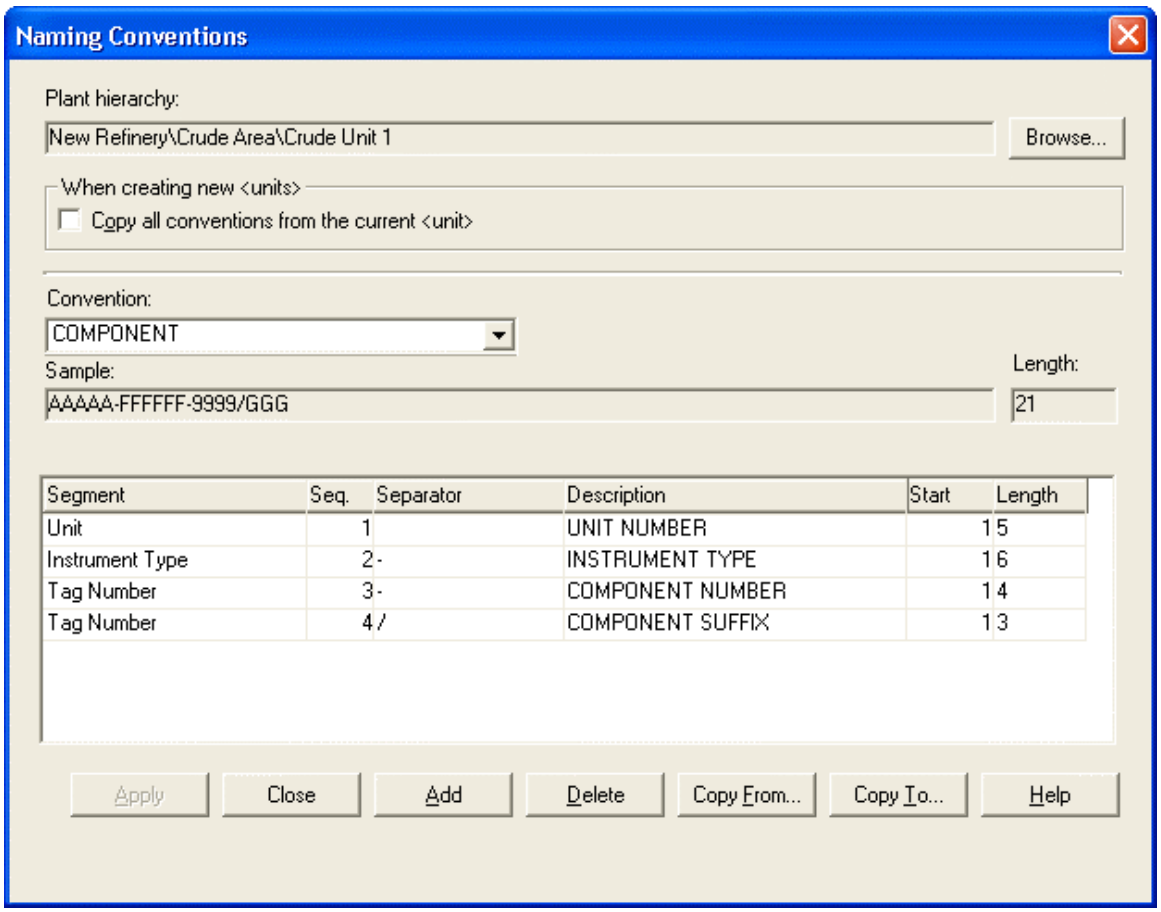
Loop Publishing

When you publish a loop, the software populates the published object properties by the naming convention segments as follows:

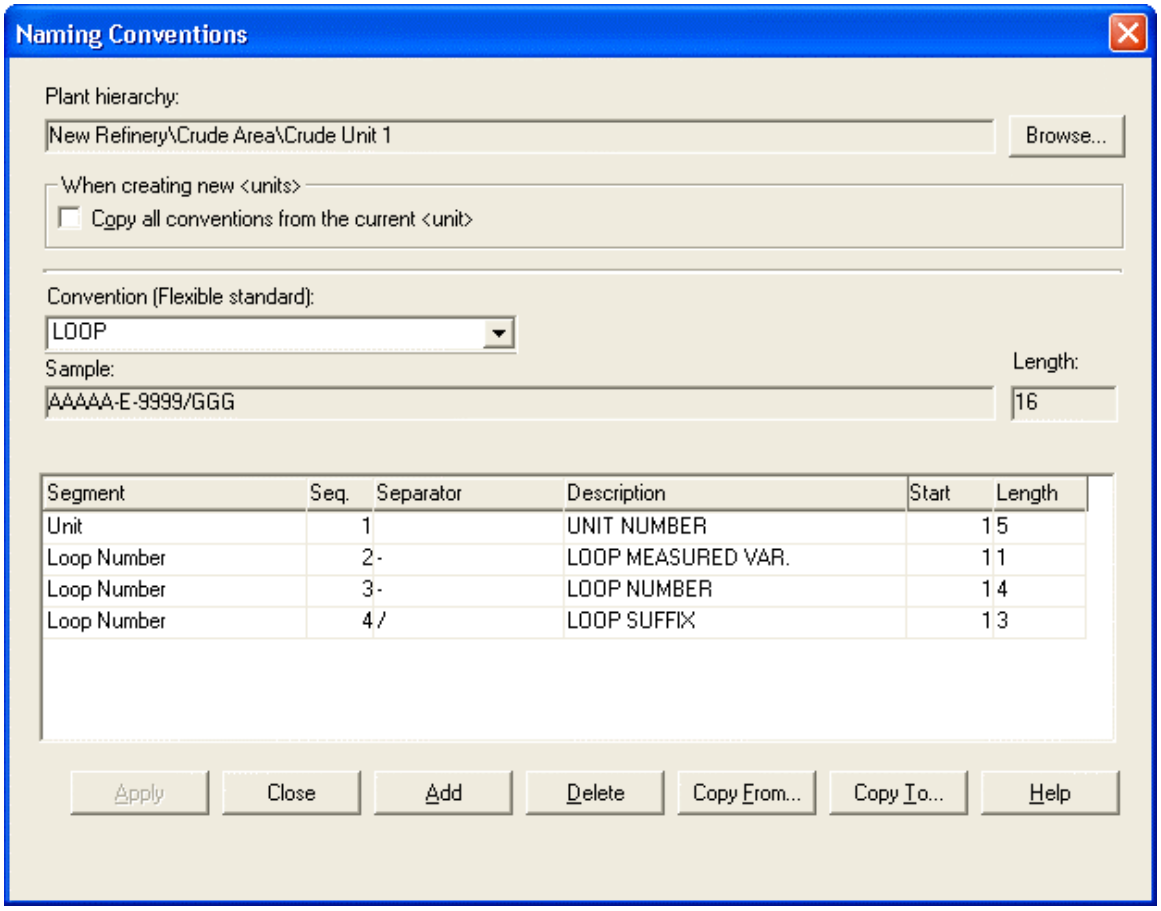
Property	Segment
LoopPrefix	1
LoopIdentifier	2+3
LoopSequenceNo	4
LoopSuff	5

The object name is populated by the loop name with all spaces removed. If the length of prefix is more than 0, the prefix will be part of the object name. Other applications that publish loops (for example, SmartPlant P&ID) need to be configured to publish the loop object name with the prefix.

An example of an instrument naming convention:



An example of a loop naming convention:



Access SmartPlant Foundation Web Client

- From the main SmartPlant Instrumentation window, with no modules open, on the **Framework** menu, click **Browser**.

Notes

- The **Browser** command is available only if your Domain Administrator has registered the active authoring tool database with TEF.

- From the SmartPlant Foundation Web Client, you can perform a number of tasks, such as publish or retrieve documents, select documents to publish or retrieve, compare documents, and subscribe or unsubscribe to document changes. Many of these tasks can be performed from SmartPlant Instrumentation, but the Web Client provides unique access to other features such as the Web Client To Do List and search functionality.

Retrieving Documents

Retrieving from The Engineering Framework: An Overview

General Features

You can retrieve documents from The Engineering Framework (TEF) into SmartPlant Instrumentation for subsequent work. SmartPlant Instrumentation supports the retrieval of engineering information from a published P&ID into the SmartPlant Instrumentation database and also from SmartPlant Foundation by means of Plant Breakdown Structure (PBS) and Work Breakdown Structure (WBS) documents.

When you use the command from SmartPlant Instrumentation, the software searches the SmartPlant Foundation project for documents to retrieve, and these are presented in a list on the **Retrieve** dialog box.

Notes

- You must be working on Oracle 8i or 9.0.2 or on SQL Server 2000 or later to be able to retrieve documents.
- When using the **Retrieve** option after logging on from a domain other than the SmartPlant Foundation server, the software prompts you for your user name and password.

You can retrieve a document in two ways:

- **As published** - Retrieves only the data the authoring tool originally published with the selected revision and version of the document.
- **With the latest data** - Retrieves the latest data associated with the selected document in the SmartPlant Foundation database. If another, more-recently published document contains updates to objects in the selected document, the software retrieves the most current data in the SmartPlant Foundation database for those shared objects.

Data Handling After Retrieval

When you retrieve a document, SmartPlant Instrumentation analyzes the impact of the newly retrieved data on the existing database. Then, it places tasks that allow you to create, delete, or modify items at the appropriate time in the design process on the To Do list. The To Do list gives you the opportunity to view and understand potential changes before accepting, deleting, or modifying those changes.

Design Basis

Objects that SmartPlant Instrumentation retrieves from other authoring tool documents can become the design basis for objects in SmartPlant Instrumentation. Objects that become the design basis for other objects can be specific objects that get richer as they move through the lifecycle of schematic or logical objects in one application that evolve into more detailed objects downstream. Design basis is implicit based on retrieval; you do not have to define it.

For example, a pipe run retrieved from SmartPlant P&ID becomes the design basis for a line in SmartPlant Instrumentation. When you change common properties for the pipe run and retrieve the changes into SmartPlant Instrumentation, tasks to update property values automatically appear in the To Do list. Likewise, a logical item such as a P&ID tag in SmartPlant P&ID can evolve into a control loop with associated tag numbers in SmartPlant Instrumentation.

Document Types for Retrieval

SmartPlant Instrumentation can retrieve documents that originate in SmartPlant Electrical and SmartPlant P&ID, as well as SmartPlant Foundation documents used for maintaining consistency of information across all authoring tools.

In SmartPlant Instrumentation, you can retrieve the following SmartPlant Foundation documents:

- Plant Breakdown Structure document – This document contains information about the plant hierarchy items that need to be created in SmartPlant Instrumentation. You need to retrieve this document every time a plant hierarchy item is created or modified in the source.
- Project Definition document – This document contains information about the concepts of the project in a plant / project structure. When you retrieve the document, it results in the creation in SmartPlant Instrumentation of any new projects that were created in the source. For this reason, you need to retrieve this document every time a project is created in the source.
- Moved and Deleted Objects document – This document tracks moved and deleted items, and is useful, for example, for synchronizing items that were claimed for a project, and then moved or deleted prior to publishing.

Notes

- Retrieving the Plant Breakdown Structure document and Project Definition document into SmartPlant Instrumentation creates tasks in the To Do List. Create the appropriate structures by running these tasks.
- Retrieving the Moved and Deleted Objects document creates **Delete** tasks in the SmartPlant Instrumentation To Do List for those items that were deleted in the source.

Retrieve Documents from The Engineering Framework

The Retrieve command enables you to access documents that were published to TEF. SmartPlant Instrumentation supports retrieval of documents that originate in SmartPlant P&ID and documents that were created in SmartPlant Foundation.

➢ To retrieve documents from The Engineering Framework

1. After opening an Instrument Index Standard Browser view, on the **Framework** menu, click **Retrieve**.

   Tips

   - This command is available only if the active SmartPlant Instrumentation database has been registered with TEF.
   - TEF searches the SmartPlant Foundation project for documents that are ready to be retrieved into SmartPlant Instrumentation. These documents appear in the **Documents to retrieve** list on the **Retrieve** dialog box.

2. Determine what documents appear in the list by choosing either **Only documents to be retrieved** or **All documents** in the SmartPlant Foundation project or by selecting the types of files that are displayed using the **Document type** drop-down list.

3. Select the documents from the list you want to retrieve by activating the corresponding check box.

   Tip

   - You can quickly select the entire list by clicking **Select All**, or you can cancel the selection of the entire list quickly by clicking **Clear All**.

4. Using the **Retrieve Option** drop-down list for each document you are retrieving, select whether you want to retrieve the latest data or the document as it was published.

Note

- You can select the **Batch retrieve** option to indicate that the retrieve process should be run in batch mode. With this feature, an e-mail message will alert you when the process is complete. Otherwise, the retrieval process will begin when you click **OK**.

Working with the To Do List

Overview

The **To Do List** keeps track of tasks required to keep your plant updated with information that you retrieve using The Engineering Framework (TEF). Specifically, this feature provides a list of all the items that must be added, deleted, or modified to bring the database into agreement with the newest information retrieved. The software accomplishes this goal by creating, updating, or deleting items in the SmartPlant Instrumentation database. You can also compare data for each task with the current data in SmartPlant Instrumentation and specify which properties to update in the SmartPlant Instrumentation database.

All the users of a plant database share a single **To Do List**. You can view the entire **To Do List** to see the tasks that have been completed and those that are still pending. Some types of tasks have code associated with them, and if you run those tasks, the software modifies the database.

From the **To Do List**, you can perform tasks, defer them, or delete them. Additionally, you can view properties for each task in the **To Do List**. The information that is available is specific to the type of task that is selected: **Create** tasks, **Update** tasks, and **Delete** tasks, but certain information is provided for all types.

Each task in the **To Do List** has a status. Initially, the status is **Open**. If you successfully run the task, the status changes to **Completed**  . If you attempt to run a task, but the process is not completed successfully, the status is changed to **Error**  . You can also postpone running a task and change its status to **Deferred**  .

For details about the operations you can perform in the To Do List, see the following topics:

- Running Tasks from the To Do List
- Updating the To Do List Display
- Finding Tasks in the To Do List
- Selecting Task Properties
- Sorting Tasks in the To Do List
- Filtering Tasks in the To Do List
- Deleting Tasks from the To Do List

Running Tasks from the To Do List

You run tasks to create, update, or delete data in the SmartPlant Instrumentation database with the data from TEF in a retrieved document.

Tips

- Before running tasks, you can select a filter to run only tasks that fulfill certain criteria, for example **Update** tasks only.
- If you want to select specific data columns for which to transfer data values, you can run each task individually from the **Task Properties** dialog box.

➢ **To run tasks from the To Do List**

1. On the **Framework** menu, click **To Do List**.
2. From the **To Do List** window, select the tasks to run.

   Note

   - You can select all the tasks on the **To Do List** by pressing **Ctrl + A**.

3. Do one of the following:

   - On the **To Do List** toolbar, click  .
   - On the **Actions** menu, click **Run**.

Note

- When creating process data for which minimum, normal, and maximum values of a property apply, the software converts the minimum and maximum values to the normal units of measure, if different. If there is no normal value, the software converts to the maximum units of measure, and if there are no normal and maximum values, only the minimum value is used. For updates, the software converts all values to the existing units of measure in SmartPlant Instrumentation.

Updating the To Do List Display

Updating the To Do List display is useful when several users can access the To Do List, and you want to refresh the display with the latest information from the SmartPlant Instrumentation database after another user has modified the item specified by the task.

➢ **To update the To Do List display**

1. On the **Framework** menu, click **To Do List**.
2. On the **To Do List** toolbar, click  .

Note

- If you changed the display in the list, for example if you displayed the deleted task list, this command redisplays the current task list for the project.

Finding Tasks in the To Do List

Finding tasks is useful where there are a large number of tasks in the To Do List and you want to locate a specific task quickly.

➢ **To find a task in the To Do List**

1. In the **To Do List** window, select from the **Property** list the property that you require corresponding to the column headers in the data window.
2. In the **Find value** box, type the string corresponding to the value of the selected property that you want to find. As you type, the cursor moves dynamically to the first row for which all or part of the property value string matches the string you typed.

Selecting Task Properties

You can select a task and view the task properties. The properties available for each task vary depending on the task type. For Create and Update tasks, you can select the properties for which you want to enter the values in the SmartPlant Instrumentation database.

➢ **To view the properties of a task in the To Do List**

1. On the **Framework** menu, click **To Do List**.
2. Select the task to edit.
3. On the **To Do List** toolbar, click  .
4. In the **Task Properties** dialog box, click the **Details** tab and select the check box beside each property for which you want to create or update the value in the SmartPlant Instrumentation database when you run the task.

Sorting Tasks in the To Do List

This procedure enables you to sort the To Do List tasks by task properties such as Action, Item type, and Item tag.

➢ **To sort the tasks in the To Do List**

1. On the **Framework** menu, click **To Do List**.
2. On the **To Do List** toolbar, click  .
3. Select the task properties by which you want to sort the tasks, and for each property, specify whether to sort in ascending or descending order.

Filtering Tasks in the To Do List

This procedure enables you to filter the To Do List tasks by task properties or for tasks with specific values. For example, you can filter only those tags where the action to be performed is **Create**.

➢ To filter the tasks in the To Do List

1. On the **Framework** menu, click **To Do List**.
2. On the **To Do List** toolbar, click  .
3. Select the data properties and specify the conditions for filtering the tasks; for example:

```
Action = Create
```

Deleting Tasks from the To Do List

This procedure enables you to delete tasks that are no longer needed from the To Do List. Deletion is a two-stage operation. First, move the task from the To Do List to a buffer that displays tasks intended for deletion. If necessary, you can restore tasks in the buffer to the To Do List. Second, delete the task from the buffer. When you delete the task from the buffer, you remove it from the database, and you cannot restore it.

➢ To delete a task from the To Do List

1. On the **Framework** menu, click **To Do List**.
2. To move a task from the To Do List to the buffer, do the following:
   a) From the **To Do List** window, select the tasks you want to delete.
   b) On the **To Do List** toolbar, click  .
3. On the **To Do List** toolbar, click  to display the list of tasks intended for deletion.
4. To delete tasks permanently, do the following:
   a) Select the tasks that you want to delete.
   b) On the **To Do List** toolbar, click  .

Publishing Documents

Publishing to The Engineering Framework: An Overview

In The Engineering Framework (TEF), SmartPlant Instrumentation shares data and relationships when users publish documents containing the data and relationships. The publishing process involves selecting a document to publish, assigning it to a workflow (if necessary), and specifying a version and revision of the document. For most documents, the software also publishes the data that is associated with the document when a user publishes the document.

SmartPlant Instrumentation publishes data to TEF in .xml format. The software converts the data to the SmartPlant Foundation database format as it is loaded. After the data is loaded in to SmartPlant Foundation, users can retrieve the data from TEF into other authoring tools.

Notes

- You must be working on Oracle 8i or 9.0.2 or on SQL Server 2000 or later to be able to publish documents.
- When using the **Publish** option, you must first run SmartPlant Instrumentation in Server mode.

When you publish documents, the software does the following things:

- Publishes a visual representation of the document that you can view without the authoring tool. For many applications, this is an Intergraph proprietary file, called a RAD file. The viewable file can also be an Excel spreadsheet or another viewable file type, such as .pdf or .doc. Users can review and mark up the visual representation of the document using SmartPlant Markup.
- Publishes associated data into TEF for reporting and subsequent retrieval by downstream applications. The software publishes only meaningful engineering data to TEF. The published data is not enough to recreate the document in the originating tool.
- The software publishes some document types without the associated data, such as reports from authoring tools (for example, line lists in P&ID). Users can submit documents published without data to workflows just like documents with data. The document types and data that you can publish depend on the authoring tool you are using. For more information about publishing previously published documents and documents that are not in the SmartPlant Instrumentation database, see *SmartPlant Foundation Web Client Help*, *Publish a Document*
- Creates a new master document and the first revision in SmartPlant Foundation the first time you publish a particular document. From that point on, the software creates new versions and revisions when users publish the document. The software relates revisions to the master document. Users can publish subsequent revisions into a workflow, which can be a different workflow than the original publish. Changes in the document status of a related revision change the status of the master document. For more information about revisions and versions, see *SmartPlant Foundation Web Client User's Guide*.

Reasons to Publish Documents to the Framework

You should publish documents and associated data into TEF for any of the following reasons:

- To exchange and enhance data among tools, allowing users to avoid creating multiple data sets in multiple authoring tools.
- To report on common data originating in multiple tools.
- To provide enterprise-wide accessibility to published documents.
- To manage change, including workflow history and revision management.

You can also publish documents to share information with users in other tools without going through a formal workflow. To share data, you can publish a document to a "for sharing" workflow that has only a load step, so that the data in loaded into SmartPlant Foundation as soon as you publish the document.

You can also publish a document for sharing by not assigning the document to a workflow. When you do not select a workflow for a document during publishing, the Framework Loader loads the document into SmartPlant Foundation as soon as it reaches the top of the Loader queue.

Document Types for Publishing

Each authoring tool publishes different documents and data. The following list contains the document types that SmartPlant Instrumentation publishes and information about whether data is also published with each document type:

- Instrument Index documents and data
- Dimensional data sheets
- Instrument Specification documents
- Instrument Process Data Sheet documents
- Instrument Loop Drawings

SmartPlant P&ID is able to retrieve data from Instrument Index documents and I/O Assignment documents that you publish from SmartPlant Instrumentation.

Publishing Files without Data

You can also browse to other file types on the file system, such as Microsoft Word, Microsoft Excel, or SmartSketch® files, to publish. These documents are always published without data. The primary reason to publish documents without data is to submit them to workflows so that the SmartPlant Foundation Change Management functionality can manage document changes and reviews.

Prerequisites for Publishing

Before you can publish SmartPlant Instrumentation engineering documents to The Engineering Framework, the following conditions must be met:

- Your System Administrator must register SmartPlant Instrumentation with TEF. Registration is performed only once.
- You must make a revision for each document you want to publish. The software finds only those documents for which you have made revisions. If you have made several revisions for one document, the software finds a document containing the most recent revision. For more information about revisions in SmartPlant Instrumentation, see Revision Management: An Overview.

Publish Documents

Caution

- When publishing documents, you select a <unit> from a plant hierarchy.
- After you start to publish documents in TEF from an Instrument Index Standard Browser view, you should not change the default view. Changing the view can result in incorrect revision numbers and inconsistencies between the graphical and XML output files.

Notes

- This feature is also available through the SmartPlant Foundation Web Client.
- When publishing data from different <units>, you must specify separate document numbers and sets of revisions for each unit. To do so, open the INTOOLS.INI file, and under the [Index] section, type the following line:

```
DrawingPerLevel = Y
```

➢ **To publish new SmartPlant Instrumentation documents to The Engineering Framework**

1. Display one of the following:
   - An Instrument Index Standard Browser view.
   - An open specification sheet.
   - An open process data sheet.
   - An open dimensional data sheet.
   - A loop drawing.

2. On the **Framework** menu, click **Publish**.

   Tips

   - From some of the modules, you can also activate this command from a shortcut menu by pointing to **Framework** and clicking **Publish**.
   - This feature is also available through the SmartPlant Foundation Web Client.
   - This command is available only if the active SmartPlant Instrumentation database has been registered with The Engineering Framework (TEF).
   - The documents that appear in the **Selected documents** list on the **Publish** dialog box when it first appears are documents that were selected within SmartPlant Instrumentation before you accessed the **Publish** command.

3. Add any additional documents to the **Selected documents** list by using the buttons in the **Add** section of the dialog box. The next steps in this procedure explain how to add documents from SmartPlant Instrumentation. For more information about other commands, see the Online Help for the **Publish** dialog box.

   Note

   - You can select the **Batch publish** option to indicate that the publish process should be run in batch mode. With this feature, an e-mail message will alert you when the process completes. Otherwise, the publishing process begins when you click **OK**.

4. In the Publish Wizard, navigate to the **Documents to Publish** page and click **Engineering Tool**.
5. In the **Document Selection Wizard**, navigate to the **Select Document Type** page and select the check boxes as required for the types of documents you want to publish.
6. Click **Next**.
7. On the **Select Plant Hierarchy Item** page, expand the hierarchy as needed by clicking ⊞ and select the desired <unit> from which you want to publish documents.
8. Click **Next**.

9. Depending on your document type selection, select engineering documents as follows:

   - On the **Select Process Data Sheets** page, do the following:

     a) Find the process data sheets that you require.

     b) In the **Search results** data window, select the rows for the documents that you want to publish.

     c) Click **Next**.

   - On the **Select Instrument Specification Sheets** page, do the following:

     a) Find the specification sheets that you require.

     b) In the **Search results** data window, select the rows for the documents that you want to publish.

     c) Click **Next**.

   - On the **Select Loop Drawings** page, do the following:

     a) Find the Enhanced SmartLoop reports that you require.

     b) In the **Search results** data window, select the rows for the Enhanced SmartLoop reports that you want to publish.

     c) Click **Next**.

   Note

   - If you select the **Instrument Index** check box on the **Select Document Type** page, the software automatically finds the instrument index document that exists in the <unit>.

10. On the **Document Selection Summary** page, review your selections, and click **Finish** to exit the **Document Selection Wizard** and return to the **Publish Wizard**.

    Tip

    - To redefine your selections, click **Back**.

11. On the **Documents to Publish** page, review the documents you want to publish, and click **Next**.

    Tip

    - If you do not want to publish certain documents, highlight those documents and click **Remove**.

12. On the **Operation Type** page, do one of the following:

    - Select **Synchronous** to publish documents while you wait. You will not be able to switch to other programs while publishing.

    - Select **Asynchronous** to perform publishing as a batch job. You can use other programs while publishing.

13. Click **Next**.

14. On the **Summary** page, review the information about the published documents, and click **Finish** to complete the publishing procedure.

Find Documents to Publish

1. On the **Framework** menu, click **Find Documents to Publish**.

   Tips

   - This feature is also available by clicking the **Find** button on the **Publish** dialog box from within an authoring tool.
   - This command is available only if the active authoring tool database has been registered with TEF.
   - TEF communicates with SmartPlant Instrumentation to determine which documents need to be published or re-published to TEF. These documents appear in the **Documents to retrieve** list on the **Retrieve** dialog box. When the results of this search are available, the documents appear in lists in the **Find Documents to Publish** dialog box.

2. From the **Select documents to publish** list, indicate what documents you want to publish to TEF by activating the corresponding check box for that document.

   Tips

   - You can quickly select the entire list by clicking the **Select All** button, or you can cancel the selection of the entire list quickly by clicking the **Clear All** button.

3. From the **Select documents to terminate** list, indicate which documents should be removed from TEF. Documents in this list were found in TEF but are no longer present in SmartPlant Instrumentation.

4. Click **OK** to accept the selections.

Note

- The lists displayed on the **Find Documents to Publish** dialog were compiled at the time indicated in the **Last search performed** field. You can update the lists by clicking **Update**, but this process may be time consuming, depending on whether you are running the applications in the **synchronous** or **asynchronous** mode.

Finding Process Data Sheets for Publishing

This procedure enables you to find process data sheets you want to publish using the **Document Selection Wizard**. When searching for instruments that have process data sheets, you can either use search parameters or display all the corresponding tag numbers in the specified <unit>. A published process data sheet allows you to view instrument process data details in PDF documents.

Entering search parameters allows you to narrow your search. You can narrow your search as much as possible by entering all the search parameters. Leaving some of the **Search parameter** fields empty widens the search.

You can use wildcards in the fields where you type values: underscore (**_**) for single characters and percent (**%**) for multiple characters.

Note

- The software displays only those tag numbers for which instrument process data sheets contain revisions.

➢ To find process data sheets for publishing

1. On the **Select Process Data Sheets** page, do one of the following:
   - Leave the search parameter fields empty for a wide search.
   - Use the search parameters below to narrow your search:

Search Parameter	Explanation	Example
Tag number	Type the whole tag number you are looking for. Include any prefix, suffix, and separator characters. You can use wildcards if needed.	101-FT –2225/1 Or use a wildcard: 101-FT%
Number	Type the numeric segment of a tag number to find all the tag numbers that contain this numeric segment. You can also use wildcards if needed.	2225
Instrument type	Select an instrument type to narrow your search to tags belonging to this instrument type.	D/P Type Flow Element (FE), Mass Flow Transmitter (FT)
Status	Select a tag status to narrow your search to tags associated with this status.	An existing device, a new instrument, a relocated device
Location	Select a tag location, such as Field, to narrow your search to tags for which you have defined this location.	Equipment room, junction box
Process function	Select a process function to narrow your search to tags belonging to this process function.	Flow Pressure

2. Click **Find** to display all the process data sheets existing in the specified <unit>.

3. In the **Search results** table, view the process data documents you can select for publishing.

Note

- In the **Search results** table, the **Revision** column displays the number of the latest revision for process data sheet.

Finding Specification Sheets for Publishing

This procedure enables you to find instrument specifications you want to publish using the **Document Selection Wizard**. When searching for specifications, you can either use search parameters or display all the tag numbers associated to specifications in the specified <unit>. A published specification allows you to view specification details in ISF (Instrument Specification File) format.

Entering search parameters allows you to narrow your search. You can narrow your search as much as possible by entering all the search parameters. Leaving some of the **Search parameter** fields empty widens the search.

You can use wildcards in the fields where you type values: underscore (**_**) for single characters and percent (**%**) for multiple characters.

Note

- The software displays only those tag numbers for which specifications contain revisions.

➢ To find specification sheets for publishing

1. On the **Select Instrument Specification Sheets** page, do one of the following:
   - Leave the search parameter fields empty for a wide search.
   - Use the search parameters below to narrow your search:

Search Parameter	Explanation	Example
Tag number	Type the whole tag number you are looking for. Include any prefix, suffix, and separator characters. You can use wildcards if needed.	101-FT –2225/1 Or use a wildcard: 101-FT%
Number	Type the numeric segment of a tag number to find all the tag numbers that contain this numeric segment. You can also use wildcards if needed.	2225
Instrument type	Select an instrument type to narrow your search to tags belonging to this instrument type.	D/P Type Flow Element (FE), Mass Flow Transmitter (FT)
Status	Select a tag status to narrow your search to tags associated with this status.	An existing device, a new instrument, a relocated device
Location	Select a tag location, such as Field, to narrow your search to tags for which you have defined this location.	Equipment room, junction box
Form number	Select a form number to narrow your search to documents that have this specification form number.	

2. Click **Find** to display all the specifications existing in the specified <unit>.

3. In the **Search results** table, view the specification documents you can select for publishing.

Note

- In the **Search results** table, the **Revision** column displays the number of the latest revision for each specification.

Finding Loop Drawings for Publishing

This procedure enables you to find Enhanced SmartLoop drawing documents you want to publish using the **Document Selection Wizard**. When searching for Enhanced SmartLoop drawings, you can either use search parameters, or display all the loops for which you generated loop drawings in Enhanced SmartLoop in the specified <unit>. A published loop drawing allows you to view loop drawing details in SMA format.

Entering search parameters allows you to narrow your search. You can narrow your search as much as possible by entering all the search parameters. Leaving some of the **Search parameter** fields empty widens the search.

You can use wildcards in the fields where you type values: underscore (**_**) for single characters and percent (**%**) for multiple characters.

Note

- The software displays only those loops for which Enhanced SmartLoop drawings contain revisions.

➢ To find loop drawings for publishing

1. On the **Select Loop Drawings** page, do one of the following:
   - Leave the search parameter fields empty for a wide search.
   - Use the search parameters below to narrow your search:

Search Parameter	Explanation	Example
Loop name	Type the whole loop number you are looking for. Include any prefix, suffix, and separator characters. Use wildcards if needed.	101F -2225\A 101F-%
Loop number	Type the numeric segment of the loop number to find all the loop numbers that contain this numeric segment. Use wildcards if needed.	2225
Measured variable	From the list, select a measured variable to find all the existing loop numbers that have this measured variable.	Density (D) Pressure (DP)

2. Click **Find** to display all the Enhanced SmartLoop drawings existing in the specified <unit>.

3. In the **Search results** table, view the loop drawings you can select for publishing.

Note

- A row in the **Search results** table displays the loop number for which you have generated the drawing, the loop drawing name, and the number of the latest revision.

Document Selection Wizard

The **Document Selection Wizard** is accessible from the **Publish Wizard**, which is part of The Engineering Framework interface. Using the **Document Selection Wizard**, you find engineering documents in a specific <unit> of the current domain and display these documents in the **Publish Wizard**. Then, you publish the selected documents to The Engineering Framework server for subsequent retrieval from another software program that can communicate with TEF. You can publish the following types of documents:

- Instrument Specification sheets — Documents published as ISF files. These documents contain detailed information about specification sheet data associated with a particular tag number. You can select a tag number and view the corresponding specification sheet as a read-only ISF file.
- Process Data sheets — Documents published as PDF files. These documents contain detailed information about process data values for a specific instrument you have associated with a particular tag number. You can select a tag number and view the corresponding process data sheet for a specific instrument as a read-only PDF file.
- Loop drawings and reports generated in Enhanced SmartLoop — Documents published as SMA files. These documents contain detailed information about a loop drawing you generated using Enhanced SmartLoop. You can select a loop name and view the corresponding loop drawing as a read-only SMA file.
- Instrument Index data — A document published as a PDF file (one PDF file per <unit>). Each instrument index document contains data about all the instruments and loops existing in a SmartPlant Instrumentation database and defined for a specific <unit>.

Note

- You can publish a new instrument index document each time you make a revision for that document. The source data for the instrument index document is located in the current Instrument Index Standard Browser view.