SmartPlant Fusion

Document Controller's Guide

Version 2016 R1 (4.1)

July 2016

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Contents

Preface

This document provides information and procedural instructions for using the SmartPlant® Fusion document control functionality in the SmartPlant Fusion Data Capture Task Manager module and SmartPlant Foundation Desktop Client.

SmartPlant Fusion Product Documentation

SmartPlant Fusion documentation is available as Help and as Adobe® PDF files. To view printable guides for SmartPlant Fusion, click **Help** > **Printable Guides** in the software.

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Installation and Overviews

- *SmartPlant Fusion Release Bulletin* - Provides information on the SmartPlant Fusion features for the current release.
- *SmartPlant Fusion Installation and Configuration Guide* – Provides installation, set up, and configuration information. It also provides information about troubleshooting the software.
- *SmartPlant Fusion Getting Started Guide* - Provides overview information to help users start working in SmartPlant Fusion.

Administrative Guide

- *SmartPlant Fusion Administrator's Guide* - Provides information such as general conceptual information, procedures, and vocabulary necessary to use the SmartPlant Fusion Data Capture Administration module.

User's Guides

- *SmartPlant Fusion Reviewer's Guide* - Provides information such as general conceptual information, procedures, and vocabulary necessary for the reviewer to use the SmartPlant Fusion Quality Control module.
- *SmartPlant Fusion Document Controller's Guide* - Provides information such as general conceptual information, procedures, and vocabulary necessary for the document controller to use the SmartPlant Fusion commands available in the SmartPlant Foundation Desktop Client and SmartPlant Fusion Data Capture Task Manager module.
- *SmartPlant Fusion Viewer's Guide* - Provides information such as general conceptual information, procedures, and vocabulary necessary for the viewer to use the SmartPlant Fusion commands and functionality available in the SmartPlant Fusion Data Capture Task Manager module, SmartPlant Fusion Web Portal and SmartPlant Foundation Desktop Client.
- *SmartPlant Fusion Pre-Processor Utility Guide* – Provides information such as general conceptual information, procedures, and vocabulary necessary for the administrator and document controller to use the SmartPlant Fusion commands available in the SmartPlant Fusion Pre-Processor Utilities module.

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SECTION 1

What's New in SmartPlant Fusion for Document Controllers?

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- FDW Document Controllers can now access the Database Domain Discovery Task and Managed Data Tasks modules. (CR-AM-104576)
- You can now check a document in to the SmartPlant Foundation Desktop Client using content extraction by right-clicking the document, and clicking **Edit** > **CheckIn with Content Extraction**. For more information, see *Check in a document using content extraction* (on page 48). (CR-AM-96802)
- You can now view the log information for the loaded and processed files in **SmartPlant Fusion Data Capture Task Manager** module. For more information, see *Create a new document discovery task* (on page 22), *Create a new content discovery task* (on page 24), and *Create a new database domain discovery task* (on page 27). (CR-AM-105067, CR-AM-103727)
- You can now use the **Managed Data Tasks** module to transfer existing documents from the staging domain (SmartPlant Fusion or Smart Data Validator) to the approval domain (Facility Data Warehouse). You can also create a new managed data task and the associate documents in the **Managed Data Tasks** module**.** For more information, see *Managed data task* (on page 28). (CR-AM-105012, CR-AM-100080))
- You can now use the Data Capture Task Manager Scheduler to start or stop the SmartPlant Fusion schedulers when they are running scheduled tasks in the document discovery task, content discovery task, and the database domain discovery task in the **SmartPlant Fusion Data Capture Task Manager**. For more information, see *Start or stop the SmartPlant Fusion scheduler* (on page 20) (CR-AM-103446)
- You can now view the native files on the **Progress** tab for a document processed through a document discovery task. For more information, see *Create a new document discovery task* (on page 22). (CR-AM-96932)
- You can now view the relationship details for a document processed through a content discovery task in the **Relationship Details** page. For more information, see *Create a new content discovery task* (on page 24). (CR-AM-96927, CR-AM-96804, CR-AM-96930)
- You can now create a relationship between two business objects if an attribute has a relationship configured on it. For more information, see *Create a new content discovery task* (on page 24). (CR-AM-101698)
- You can now click the **Progress** tab to view the progress of each and every individual database pattern. You can view the time taken to process the database task and the corresponding items processed. For more information, see *Create a new database domain discovery task* (on page 27). (CR–AM–96832)

- You can now import the SDV Job Definition to validate, and export data to one or more target systems. For more information, see *Database domain discovery tasks* (on page 26). (CR–AM–98288)
- The content discovery task now uses the Content and GraphicsMap file present in the PreProcessedAlternateRenditions\PreProcessedContentFiles folder for content extraction. For more information, see *Create a new content discovery task* (on page 24) and *View relationships in the Document Workbench* in *SmartPlant Fusion Reviewer's Guide*. (CR-AM-96801)
- You can now create a content discovery task for selected documents from the **Document Discovery Task** page. For more information, see *Create a new document discovery task* (on page 22). (CR-AM-96931)
- You can now update the Fusion database once the initial load of data has occurred and can extract the data that has been updated from a set point in time. For more information, see *Create a new content discovery task* (on page 24). (CR-AM-96673)
- You can now view all the tags related to the selected document by clicking **View Document Relations**. For more information, see *Create a new document discovery task* (on page 22). (CR-AM-96928)
- The Database Tag Discovery Task is renamed to Database Domain Discovery Task. (CR-AM-96824)
- You can now view the details about a Document Discovery Task, Content Discovery Task, and Database Domain Discovery Task in the **Progress** tab. For more information, see *Create a new document discovery task* (on page 22). (CR-AM-96833)
- You can now view the tag properties and documents in the **SmartPlant Fusion Data Capture Task Manager** module. For more information, see *SmartPlant Fusion Data Capture Task Manager* (on page 20). (CR-AM-96834)

Version 2016

- You can now use the Fusion Task Manager module to manage and run the Document Discovery Task, Content Discovery Task, Database Tag Discovery Task. For more information, see *SmartPlant Fusion Task Manager*. (CR-AM-79645, CR-AM-79646, CR-AM-79648, CR-AM-80035, CR-AM-94063, CR-AM-94064)
- You can now create a report to preview the data that is loaded when the Document Discovery task is run. For more information, see Document discovery task. (CR-AM-79259)
- You can now generate PDF files within the Document Discovery Task. For more information, see Document discovery task. (CR-AM-91865)
- You can now select the file types to be processed in the Content Discovery Task. In addition, you now have support for tag attribute creation for named properties and relationship creation. For more information, see Content discovery task. (CR-AM-88014, CR-AM-92911, CR-AM-89578)
- Relationships are now created during processing of tags within the Database Tag Discovery Task. In addition, fields are now mapped to pre-defined fields in the database and can be consolidated down to the primary Fusion obj*ect.* For more information, see Create a database tag discovery task. (CR-AM-91528)
- The File Index now includes the file path for the files that are loaded and file names are case-insensitive. For more information, see *File Index* (on page 14). (CR-AM-89304, CR-AM-88055)

Version 2015

- The document discovery task is enhanced to attach preprocessed thumbnails that have been generated through third-party applications with the files that are loaded into the SmartPlant Fusion database. For more information, see Create a content discovery task. (CR-AM-80452)
- The drawing reader is enhanced to extract content from preprocessed content files. If the preprocessed content files are not found then it uses the SmartConverter to process the files. For more information, see *Drawing reader* topic in the *SmartPlant Fusion Administrator's Guide*. (CR-AM-79745)
- The 3D reader is enhanced to extract content from preprocessed content files. For more information, see *3D reader* topic in the *SmartPlant Fusion Administrator's Guide*. (CR-AM-80114)
- The content discovery task is enhanced to filter out the documents that fail due to the unavailability of the preprocessed content files and the statuses for such content discovery tasks are set to **Passed - Missing pre-processed content files**. A Child- 0 task is created and all the documents that lack preprocessed content files are related to it. For more information, see Learn more about content discovery. (CR-AM-79174)
- You can select one or more documents with the **Document Loaded** status, and then select **Create Content Discovery Task** from the shortcut toolbar to create a content discovery task for the selected documents. For more information, see Create a content discovery task. (CR-AM-79224)
- When you create a document discovery task without a description, the description from the selected document discovery pattern is populated on the task. For more information, see Document discovery task. (CR-AM-79184)
- The document index functionality is enhanced and allows the user to do the following:
  - Rename documents existing in the SmartPlant Fusion database
  - Identify the missing values and error messages by viewing the color-coded document index file
  - Automatically update relationships for the processed documents

  For more information, see *Document Index* (on page 17). (CR-AM-80481, CR-AM-82780, CR-AM-82097)
- A new text reader is added to the application to support the processing of text files and content extraction. For more information, see *Text reader i*n the *SmartPlant Fusion Administrator's Guide*. (CR-AM-80275)
- You can use the **Update Relationships** command to update the document attributes of the processed documents. For more information, see *Manage Document Relationships* (on page 45).
- The content discovery task is enhanced to extract additional tag properties from the content file available in XML format. For example, tag properties like pressure, temperature, and diameter along with the tag name and tag description can be extracted. (CR-AM-70954)
- The content discovery task is enhanced to extract multiple tags from a group tag pattern that has been configured in the Tag Discovery Pattern module. (CR-AM-79159)

- The document reader is enhanced to extract the title block information from the preprocessed files. For more information, see *Document reader* in the *SmartPlant Fusion Administrator's Guide*. (CR-AM-82393)
- You can now run a content discovery task to only process documents with Documents Processed status. (CR-AM-82750)
- If a master tag has no description, then the description from the alias tag gets copied to the master tag when either of the following cases are true.
  - A single alias tag with description is related to the master tag.
  - More than one alias tag with the same description are related to the master tag.

  For more information, see Content Discovery. (CR-AM-79257)
- If more than one document exists that has additional information for a master document, you can now create a document to document relationship between the master document and those documents. Any documents related to the master document are called Off Page documents. For more information, see *Master and Off Page documents* (on page 40). (CR-AM-83064)
- A **Renamed Documents** tab is now included in the View Related Items For CDT-<Number> window to display the documents that are renamed due to the title block information. For more information, see Learn more about content discovery. (CR-AM-84901)
- The SPFNContentDiscoveryWF workflow is enhanced with an additional workflow step to extract any tag properties from the file. It then adds them to the SmartPlant Fusion tag if the property can be found in the SmartPlant Fusion schema. For more information, see Learn more about content discovery. (CR-AM-82905, CR-AM-81517)
- You can create a Data Tag Discovery Task to import tags from a custom database, as per the query defined in the associated data reader pattern. For more information, see *SmartPlant Fusion Tags* (on page 34). (CR-AM-79753)

Version 2014

- The Document Discovery Task (DDT) allows you to selectively load files from the file system into the database. Each file loaded into the database gets attached to a document. For more information, see Document Discovery.
- You can schedule the Document Discovery Task so that it looks for files in the file system at equal intervals and loads the new files into the database that are added in the polling directories. For more information, see Start or stop the scheduler task.
- You can load the files from the file system and process them for content extraction and tag extraction in a single click. You can configure the Document Discovery Task to automatically create a Content Discovery Task for the files that have been processed by it. For more information, see Document discovery task.
- You can add additional attributes to the document, such as the title or author, by loading a Document Index spreadsheet if this information is available. For more information, see *Document Index* (on page 17).
- You may use the File Index spreadsheet when you have some files with file names that have no relationship to the document, and you can load the File Index to associate the file name to the document. For more information, see *File Index* (on page 14).
- The Content Discovery Task (CDT) extracts the content from different file types available in the database with the various readers that are available in the SmartPlant Fusion

application. The tags are extracted from the content file. For more information, see Content Discovery.

- You can schedule the Content Discovery Task to run at a later date. For more information, see Create a content discovery task.
- The Content Discovery Task (CDT) does the following:
  - Relates the documents processed in it with the organizational items
  - Determines the master and alias tags
  - Relates the extracted tags to the documents
  - Classifies the extracted tags

  For more information, see Learn more about content discovery.
- When you have large volumes of data, you can improve the performance of the Content Discovery Task by using preprocessed files. For more information, see *Document reader*, *Drawing reader*, and *Image reader* in the *SmartPlant Fusion Administrator's Guide.*

SECTION 2

Welcome to SmartPlant Fusion

SmartPlant Fusion consists of a server application and end-user applications for rapidly capturing and indexing unstructured data sources, such as documents and drawings. Built on top of SmartPlant Foundation, SmartPlant Fusion captures the objects and the various relationships between the document and tags, to create an object-relationship model for intuitive navigation across the entire database system. For example, a relationship is created between an equipment item and the documents that have the equipment in them. This relationship enables the user to search for the equipment within folder structure, file name, tags, and content from other documents.

The users can access the data as task-based modules in the SmartPlant Dashboard and in the TruView Integrator Web Portal. The server application uses either a Microsoft SQL or Oracle relational database management system for meta-data and object-relationship storage, vaults for file storage, and a web server for web portal execution and presentation.

The SmartPlant Fusion server runs a number of server processes:

- Workflow - For the execution of the various processes.
- SmartPlant Markup - For the extraction of tag numbers from vector file formats.
- SmartSketch® – For the extraction of drawings from drawing file formats.

IMPORTANT Before you create, modify, or view SmartPlant Fusion objects, you must set your SmartPlant Foundation Desktop Client active scope to the SmartPlant Fusion project. For more information on setting the active scope, see *Learn more about setting the active scope* in the *SmartPlant Desktop Client User's Guide*.

SECTION 3

File Index

The nomenclature data for the file names and the document names may be specific to the organization. Some organizations create and maintain a document or file registry that stores information about the file name and the document, including properties like title, revision, author, and so forth. If such an index exists for your organization, you can extract this information into the supplied SmartPlant Fusion spreadsheet and load it into SmartPlant Fusion. If any file loaded into SmartPlant Fusion matches a file name in the index, the application uses the information stored in the index to create the document and its relevant properties. The file index functionality allows the users to load the nomenclature data into the system.

This feature allows you to define the following:

- A list of file names
- The document name that should result from each file name
- The client and document parameters for each file name

What do you want to do?

- *Create a SmartPlant Fusion file index* (on page 14)
- *Load a SmartPlant Fusion file index* (on page 15)
- *Update the file index to include additional properties* (on page 15)

Create a SmartPlant Fusion file index

1. Click **File > New > Fusion Items > File Index** to open the **New File Index** dialog box.
2. Type the file name with a file extension in the **Name** box.

   IMPORTANT The name of the SmartPlant Fusion file index should be the file name that the application is searching for in the file system. A file index without a file extension will not match to any file existing in the file system.
3. Type the document name that you want to specify for each file in the **Document name** box. A document will be created in the database with this name, and the file will be attached to it.
4. Type the location of the file in the **File Location** box if you want to create the document for the file.
5. Update the client parameters and document parameters information for the file index as necessary.
6. Click **Finish** to create a new file index.

NOTES

- File index item names must be unique.

- You can create multiple file index items having the same document name.
- The client and document properties defined in the SmartPlant Fusion file index take precedence over the client and document properties defined in the document discovery patterns. If a property is missing in the file index but exists in the document discovery pattern, then the property from the file is added to the file.

Load a SmartPlant Fusion file index

The **Load Fusion File Index** command allows you to load file index information into the application. The Excel file used to add the file index items is based on a default template called **FileIndexList**. The SPFNFileIndexTemplateFile Excel spreadsheet is attached to this default template and contains the defined names for the file index information.

IMPORTANT If you have added additional parameters in the Document Naming System module, then you need to manually add them to the Excel file.

NOTE This functionality allows bulk loading of the file index items into the application.

1. Click **Administration** > **Load Fusion File Index** to open the Excel Import Wizard.
2. Click  to find the file to load.
3. Click **Finish** to load the file index items.

   NOTES

   - If a file is present in the **File Location** mentioned in the SmartPlant Fusion file index, only then the corresponding document is created, and the file is attached to the document.
   - If a document is created for a file, the **Is Document created** property of the file is set to **True**.
   - The file properties mentioned in the SmartPlant Fusion file index are mapped as the properties of the file loaded into the SmartPlant Foundation Desktop Client.

Update the file index to include additional properties

The file index template can be extended to include the additional parameters that can be added in the **Document Naming System** page of the SmartPlant Fusion Data Capture Administration module.

NOTES

- Template documents are typically created by system administrators.
- Template documents may be created at the site level and available for use in any plant. Set your **Create Scope** to **Scope Not Set** before you use the steps below.

Modify the File Index template

1. Click **Find** > **Template Documents**.
2. In the **Find Template Documents** dialog box, type ***File Index*,** and click **OK**.
3. Right-click the **File Index Template**, and on the shortcut menu, select **Edit** > **Check Out**.

4. Right-click the checked out **File Index Template**, and on the shortcut menu, select **Launch DataSheet Definer**.
5. In the **DataSheet Definer** dialog box, select a column header.
6. In the **Datasheet Definitions** section, select the newly added attribute.
7. Click **File** > **Save** to add the new attribute to the template**.**

SECTION 4

Document Index

A customer may have a predefined nomenclature for specific documents. Document index functionality allows you to append the predefined nomenclature onto the loaded documents. Ideally, you should load the document index into the application after the files have been loaded and before running the content discovery task.

IMPORTANT In order to set the properties for the specific document names, you must load the document index into the system.

NOTES

- The properties defined on the document index file are set on the documents that match the document names when the property **SPFNIsDocTakesPrecedence** is set to TRUE or BLANK or any value other than FALSE.
- Unlike the file index, which is used to name documents and add other document properties as the file is being loaded, the document index is used to alter the document properties after the files have been loaded and the document has been created.

What do you want to do?

- *Load a SmartPlant Fusion document index* (on page 17)
- *Edit the DocumentIndex.xlsx file* (on page 19)

Load a SmartPlant Fusion document index

The **Load Fusion Document Index** command allows you to load document index information into the application. The Excel file used to add the document index items must have column headers with defined name as predefined column headers and is called DocumentIndex.xlsx.

The DocumentIndex.xlsx file is delivered with SmartPlant Fusion. By default, it is available in the location: <installation directory>:\Program Files\SmartPlant\Fusion\2016\SampleData\Sample Project Setup. This file is used to set the properties on the documents from the document index.

1. Click **Administration > Load Fusion Document Index**.
2. In the **Fusion Document Index Loader** dialog box, browse to the file to load.
3. Click **Load** to update the properties of the documents and rename the documents existing in the database. If the document names defined in the document index are updated in the application, a message appears to tell you the update was successful.

NOTES

- All the properties from the document index are applied to the documents by default. A content discovery task sets the property values from the document index and creates relationships depending on the value mentioned in the **Document Index Precedence**

column against each document name. The value set in the **Document Index Precedence** column are:

- TRUE / BLANK / Any value - Properties defined in the document index are displayed on the documents in the database and are set to TRUE
- FALSE - Properties defined in the document index are displayed on the documents in the database and are set to FALSE

- The client properties and document properties defined in the document index take precedence over the client and document properties derived from the file properties. If a property is missing in the document index, but is available from the file properties, then the property from the file is added to the document.
- In the content discovery task, the document index properties set on the documents are matched with corresponding objects existing in the database, and a relationship is created when a match is found. Relationships are created only when the document index properties are set to **TRUE** on the document. The only exception is the **Revision** property, which is always taken from the file.
- If the document index properties are set on a document that is in Document Processed state, then the document index properties set on the documents are matched with corresponding objects existing in the database, and a relationship is created when a match is found. If relationship creation fails, then the document index property text is displayed in red color in the document index excel file.

Understanding the document index color coding

After you have loaded the document index for selected documents, you can view the document index Microsoft Excel file to identify the missing values and their corresponding error messages.

The color coding in the document index file is explained in the following table:

Value	Mandatory attribute	Color code	Notes
Passed	Yes	▪ Cell color highlighted in Red ▪ Text color highlighted in Black	An error message is displayed as a comment in that cell. The mandatory attribute and relationship do not get updated.
Passed and does not exist in the database	Yes	▪ Text color in Red	The mandatory attribute and relationship do not get updated as the object mentioned in the document index does not exist in the database.

Value	Mandatory attribute	Color code	Notes
Passed and does not exist in the database	No	▪ Cell color highlighted in Yellow ▪ Text color in Red	The attribute values are updated and the relation with the existing object is terminated, but a relationship is not created with the new object as it does not exist in the system.

Edit the DocumentIndex.xlsx file

The document index file has a predefined template that maps the defined names for the column header of the Microsoft Excel worksheet with the properties in the SmartPlant Fusion database. The document index template is enhanced to allow the user to rename the documents that are listed in it.

IMPORTANT To update a property in the database, you must assign the property as the defined name for the column header.

1. Open the DocumentIndex.xlsx file.

   NOTE The Microsoft Excel file used to load the document index can have any name, but the sheet name for the data must be **DocumentIndex**.

2. Add the document names that need to be updated with the property from the document index in the **Name** column.
3. Add new names for the documents that you want to update in the **New Document Name** column.
4. Set the **Document Takes Precedence** column to **TRUE** against the document name that need to be updated in the database.
5. To add a new property, right-click the cell named as the column header and select **Define Name** from the shortcut menu.
6. In the **New Name** dialog box, type the property name in the **Name** filed and Click **OK**.
7. Save the Microsoft Excel template.

NOTE While running the content discovery task, if the **Document Takes Precedence** column is set to **FALSE** then the properties in the Document Index for the document are not changed to relationships, and so therefore are not applied on the documents. If you enter anything other than **FALSE,** or leave the **Document Takes Precedence** column empty, then the document index attributes are updated on the documents available in the database.

TIP If you are using the document index template file prior to SmartPlant Fusion 2016, please refer to the documentation provided with the application.

SECTION 5

SmartPlant Fusion Data Capture Task Manager

The SmartPlant Fusion Data Capture Task Manager module allows you to create document discovery tasks, content discovery tasks, relationship completion tasks, database domain discovery tasks, and Managed document tasks. You can also view the documents and tags that are available in the database.

Start or stop the SmartPlant Fusion scheduler

You can use the Data Capture Task Manager Scheduler to start or stop the SmartPlant Fusion schedulers when they are running scheduled tasks in the document discovery task, content discovery task, and the database domain discovery task in the SmartPlant Data Capture Task Manager.

1. Click **Fusion Data Capture Task Manager** to open the SmartPlant Fusion Data Capture Task Manager module.
2. Click **Show Settings**  .
3. In the **Fusion Data Capture Task Manager Scheduler Settings** window, do one of the following:
   - Click **Start the Scheduler**  to start the Fusion Scheduler.
   - Click **Stop the Scheduler**  to stop the Fusion Scheduler.
   - Click **Restart the Scheduler**  to re-start the scheduler.

   NOTE You must start the scheduler in the Data Capture Task Manager Scheduler Settings pane to run the SmartPlant Fusion scheduled tasks in the document discovery task, content discovery task, and the database domain discovery task.
4. Click **Ok.**

Document discovery tasks

The document discovery functionality ensures that the files that satisfy the rules provided by the user with administrator rights in the document discovery pattern are selected and loaded into SmartPlant Fusion. For each file that resolves to a unique document name, SmartPlant Fusion creates the new document and attaches the file to the document version. When multiple files resolve to the same document name, the document is created and all the matching files are attached to the document version as duplicate files. These duplicate files must be resolved and one master file must be selected before you can run a content discovery task.

The Document Discovery Tasks module allows you to create, update, schedule, and re-run document discovery tasks. You can also preview the summary of the files in the folder that is mapped to the document discovery pattern of a selected document discovery task.

What do you want to do?

- *View document discovery tasks* (on page 21)
- *Create a new document discovery task* (on page 22)

View document discovery tasks

1. Log on to SmartPlant Dashboard.
2. Click **Fusion Data Capture Task Manager** to open the SmartPlant Fusion Data Capture Task Manager module.
3. Click **Document Discovery Tasks**.
4. In the **Document Discovery Tasks** page, you can view all the document discovery tasks.

NOTES

- You can select a document discovery task and click **Stop selected document discovery task**  to pause the processing of the document discovery task.
- You can select a document discovery task and click **Start selected document discovery task**  to resume the processing of the document discovery task.
- You can select a document discovery task and click **Rerun Document Discovery Task**  to run the document discovery task again.

Create a new document discovery task

1. Log on to SmartPlant Dashboard.
2. Click **Fusion Data Capture Task Manager** to open the SmartPlant Fusion Tasks module.
3. Click **Document Discovery Tasks** to view the existing document discovery jobs.
4. In the **Document Discovery Tasks** page, click **Create Document Discovery Tasks**  .
5. Click **Job Start Date**  to select a start date for the job.
6. Select a frequency from the **Task Frequency** list.

   NOTE The following types of tasks are created in the SmartPlant Fusion Data Capture Task Manager depending on the start date and frequency you select:

Start Date	Frequency is Set	Type of Task
Future	No	Scheduled task
Past	Yes	Scheduled task
Present	No	Non-Scheduled task

7. Select a document discovery pattern from the list displayed in the grid and click **Apply**.

   TIP On the **Progress** tab, you can click **Create Content Discovery Task**  to create a content discovery task for the selected document.

NOTES

- The Microsoft Excel file displays the summary and the details of the files in the following five worksheets:

Name of the worksheet	Description
Summary	Displays the overall summary of the files loaded by the document discovery task
Files can be loaded	Displays the details of the files that match the criteria of the document discovery pattern
Files cannot be loaded	Displays the details of the files that do not match the criteria of the document discovery pattern

Name of the worksheet	Description
Files already loaded	Displays the details of the files that matched the criteria for this document discovery pattern and were loaded in an earlier document discovery task
Files failed to load	Displays the details of the files that have the .err extension

- The files that do not have preprocessed files are prefixed by Ø. For example, Ø1409-10-002-1.dwg.
- The files that have preprocessed files are prefixed by Ⓟ. For example, Ⓟ1409-55-122-1.dwg.
- Select the **Auto Process Content Discovery Task** check box to create a content discovery task for all the files loaded into the system with this document discovery task.
- You can click the **Progress** tab to track the progress of Document Discovery Task and its related documents.
- The **Summary** tab displays the summary of the selected document discovery task.
- You can click the **Preview pattern** hyperlink of the document discovery task in the **Summary** tab to view the **Preview** report of the files processed in the selected document discovery task.
- You can click the **View error log** hyperlink of the document discovery task in the **Summary** tab to view the Error Log in the Document Discovery Task.
- You can click the **View Information Log** hyperlink of the document discovery task in the **Summary** tab to view the log information of files in the Document Discovery Task module.

View Native

On the **Progress** tab, select a document, and click **View Native**  to view the native file for the selected document.

NOTE You cannot view the native file for a duplicate document. You can view the native files attached to duplicate documents in the **Resolve Duplicates** module.

Content discovery tasks

The content discovery functionality ensures that the tag naming rules are applied to the content extracted from the files that satisfy the query criteria defined in the content discovery task. This functionality also ensures that the tags are extracted from the content, and that the master tags and alias tags are related to the corresponding documents.

NOTE If a tag name contains special characters, such as * (asterisk), ? (question mark), or /(forward slash), the CDT will not process the document.

IMPORTANT If a description is not extracted for a master tag, then the master tag description is updated with the description of the alias tag. If multiple alias tags with the same description are extracted, then the empty description of the master tag is updated with that description. If multiple alias tags with different descriptions are extracted, then the empty description of the master tag is not updated.

The Content Discovery Tasks module allows you to create, update, schedule, pause, and start content discovery tasks.

What do you want to do?

- *View content discovery tasks* (on page 24)
- *Create a new content discovery task* (on page 24)

View content discovery tasks

1. Log on to the SmartPlant Fusion Data Capture Task Manager module.
2. Click **Content Discovery Tasks**.
3. In the **Content Discovery Tasks** page, you can view all the content discovery tasks.

Create a new content discovery task

1. In the **Content Discovery Task** page, click **Create Content Discovery Tasks**  .
2. Select the **Document Criteria** filter and **Document Reader** filter to process the documents that match the selected criteria.
3. Select one or more file types for the selected document reader filter.
4. Type a search text in the **Document Name Pattern** box to process the documents that match the selected criteria.

   TIP If you want to schedule the content discovery task to process at a later date, click **Tasks Start Date**  .
5. Click **OK** to view the list of document that will be processed. You can filter the documents for processing in this window.

6. Click **OK**.

NOTES

- You can select a content discovery task and click **Rerun Content Discovery Task** to rerun a content discovery task and process all the documents attached to it.
- After the content discovery task processes the documents those have a reader as a base reader, the reader gets changes to the Image or Document reader. If you have to process these documents by the content discovery task, you must specify the reader as Image or Document without specifying the actual file type.
- You can select a content discovery task and click **Rerun Content Discovery Task for selected documents** to process the selected document.
- If the Content File and the GraphicsMap file are available in **\\PreProcessedAlternateRenditions\PrepProcessedContentFiles** folder and the **\\PreProcessedContentFiles** folder, then the content discovery task looks for the Content Files in **\\PreProcessedAlternateRenditions\PrepProcessedContentFiles** folder**.**

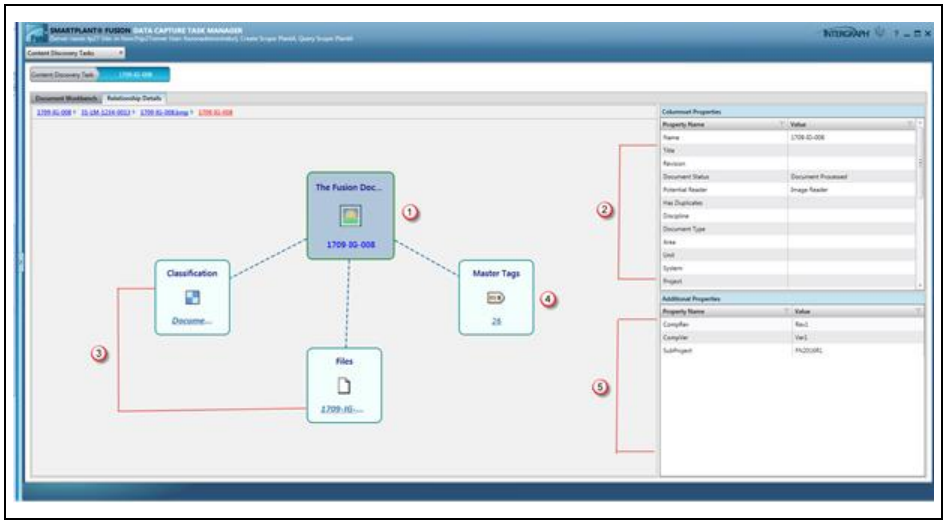
Processing .sha files

You must perform the following steps to process the .sha files:

1. In the **Central Fusion Settings** module, map the .sha file type to Image Reader in the **File Type** page.
2. In the **Fusion Pre-Processor Utilities** module, process the .sha file using the Drawing Reader Pre-Processor, and generate the content file.
3. In the **Fusion Data Capture Task Manager** module, process the content file with Content Discovery Task.

View Document Relations

Click the **Relationship Details** tab to view the relationship details of the document as shown in the following example:



1	The central node represents the master object on which the view related items service is based.
2	The **Columset Properties** pane displays the properties based on the column set configured for the master object.
3	The terminal nodes represent the related objects.
4	Represents the number of the related objects. You can click the hyperlink to view the properties of the object or click **View Related Items**  to view the object related items.
5	The **Additional Properties** pane displays the properties configured in the Property Lists module.

NOTES

- The terminal nodes displayed are based on the EdgeDefs configured on the view related items client API method. The EdgeDefs can be configured as a parameter (Arg1) for the view related items client API method in SmartPlant Foundation Desktop Client.
- The **View Related Items** client API method must be related to the interfaces realized by the selected document. If this method is not related to any of the selected document interfaces, then the terminal nodes in the diagram represent objects expanded from the relationship and user-defined edge definitions related to the master object.
- When a tag is selected in the Document Workbench, the tag is highlighted in the PDF rendition file if a rendition already exists for the document.
- If a property created in either the Tag Naming System or in the Property Lists module has a relationship configured against it, that relationship is created during the content discovery task.
- You can click the **View error log** hyperlink of the content discovery task in the **Summary** tab to view the Error Log in the Content Discovery Task.
- You can click the **View Information Log** hyperlink of the content discovery task in the **Summary** tab to view the log information of files in the Content Discovery Task module.

Database domain discovery tasks

SmartPlant Fusion allows you to connect to an existing database and extract documents and tags along with their properties that are stored in a new domain. This data is known as the domain data.

If a domain object name matches the SmartPlant Fusion object name, the domain object is related to the SmartPlant Fusion object. If the domain object does not match any existing SmartPlant Fusion object name, a SmartPlant Fusion object is created with the same name and related to the corresponding domain object.

The Database Domain Discovery Tasks module allows you to create and schedule database domain discovery tasks. You can also preview the validation report of a selected database domain discovery task.

What do you want to do?

View database domain discovery task

1. Log on to SmartPlant Fusion Data Capture Task Manager module.
2. Click **Database Domain Discovery Tasks**.
3. In the **Database Domain Discovery Tasks** page, you can view all the database domain discovery tasks.

NOTE To view a report with invalid data, select a database domain discovery task with invalid properties and click **Generate Validation Error Report** .

Create a new database domain discovery task

1. In the **Document Domain Discovery Task** page, click **Database Domain Discovery Task** .
2. Click **Tasks Start Date** to schedule the database domain discovery task at a later date.
3. Click **Rerun Database Domain Data Discovery Task** to update the SmartPlant Fusion database after the initial load of data is occurred.
4. Select the interval of occurrence for the database domain discovery task from the **Task Frequency** list.
5. On the **Create Database Domain Discovery Task** page, select a job definition from the **SDV Job Definition** list to generate the control file and the csv file. The SDV application reads these files and imports data into the target system.
6. Select one or more data reader patterns from the list of available data reader pattern items.

   TIP Type a search text in the **Data Reader Pattern** box to filter the data reader patterns that match the search criteria.
7. Select the **Automatically complete relationships** option to create the relationships between the domain objects and the objects available in the SmartPlant Fusion database.
8. Select the **Drop existing domain** option to remove any data that exists in the SmartPlant Fusion data source, which is defined in the data reader pattern, and load data into it.
9. Select the **Run incremental** to extract the data that has been updated from the last Database Domain Discovery Task to the content run.

NOTE You can preview the files in two tabs: Create And Update and Terminate provided if you specify the properties in the Database Domain Discovery Task. These options are applicable to SmartPlant Foundation Database only.

NOTES

- You can click the **View error log** hyperlink of the database domain discovery task in the **Progress** tab to view the Error Log in the Database Domain Discovery Task.
- You can click the **View Information Log** hyperlink of the database domain discovery task in the **Summary** tab to view the log information of files in the Database Domain Discovery Task module.
- You cannot process a document through database domain discovery task if the document is a transferred fusion document or a FDW document.

Managed data task

The Managed Data Tasks module transfers existing documents from the staging domain (SmartPlant Fusion or Smart Data Validator) to the approval domain (Facility Data Warehouse). It allows you to create a new managed data task and the associated tags and documents. You can also alter the revision schemes for documents, and validate documents or tags before transferring data to the Facility Data Warehouse. The results of the validation and export process will be available as reports.

What do you want to do?

- *View managed data task* (on page 28)
- *Create a new managed data task* (on page 28)

View managed data task

1. Log on to SmartPlant Data Capture Task Manager module.
2. Click **Managed Data Tasks**.
3. In the **Managed Data Tasks** page, you can view all the managed document tasks.

Create a new managed data task

Create a new managed data task if Fusion and FDW are in the same system

1. Click **Managed Data Tasks** in the **Fusion Data Capture Task Manager.**
2. In the **Managed Data Tasks** page, click **Create Managed Data Tasks**  .

   NOTE Properties and relations of fusion documents can be mapped to properties and relations of FDW documents. For more information, see *Property and Relationship Mapping* (on page 49).
3. Type the description of the managed data task in the **Description** box.

TIP You can select the **Transfer Data without preview** check box to transfer the documents or tags without preview.

4. Click **Next**.
5. Click **Search** to search for the existing documents based on the document name pattern.
6. Select a document in the **Fusion Documents** pane, and do one of the following:
   - Click **View Document in Workbench** to view the document in the **Resolve Relationships** module.
   - Click **View Document Relationships** to view the relationships of the document in the **Resolve Relationships** module.

   NOTE For more information on Document Workbench, see *View relationships in the Document Workbench* in the *SmartPlant Fusion Reviewer's Guide.*
7. Click **Export to FDW Domain**.
8. Select one or more documents in the **Documents To Be Exported to FDW** pane, and click **Configure Document Revision Scheme** to apply a revision scheme to the selected documents.
9. Click **Validate** before transferring the data to the Facility Data Warehouse.
10. Click **Export** to export the documents to the Facility Data Warehouse.

    You can validate and export the documents as long as they are related to the Managed Data Task module.

    NOTE After the documents are moved into the Facility Data Warehouse, the corresponding Fusion documents will be deleted.

TIPS

- You can click **Validate Report** to see validation details for each document.
- You can click **Transfer Report** to see transfer details of each document.

Create a new managed data task if Fusion and FDW are in different systems

1. Click **Managed Document Tasks** in the **Fusion Data Capture Task Manager.**
2. In the **Managed Data Tasks** page, click **Create Managed Data Tasks**.
3. Type the description of the managed data task in the **Description** box.
4. Select the SDV Job Definition from the **SDV Job Definitions** list.

   NOTE The SDV Job Definitions are created in the Central Fusion Settings module in the SmartPlant Fusion Data Capture Administration module.
5. Click **Search** to search for the view definitions SDV Job Definition.
6. Select view definitions in the **View Definitions** pane, and click **Select View Definitions**.

7. Select **Is Transfer Data of Document Type** if the transferred data is of document type.
8. In the **Pattern** box, type a name pattern for which you want to configure the revision schema to process documents matching the specified file pattern.
9. Click **Create** to create the managed data task.
10. After the document is moved into the Facility Data Warehouse, the corresponding Fusion will be deleted.

TIPS

- You can click **Validate Report** to see validation details for each document.
- You can click **Transfer Report** to see transfer details of each document.

Transfer Data without preview

1. On the **Task Details** tab, select **Transfer Data without preview** to configure a revision scheme for the existing documents.
2. In the **Pattern** box, type a name pattern for which you want to configure the revision scheme to process documents matching the specified file pattern.
3. Click **Configure Document Revision Scheme**  to apply the revision scheme to the selected documents.
4. In the **Configure Document Revision Scheme** window, do one of the following:
   - In the **Revision Scheme** list, select a revision scheme.

     TIP Select the **Auto-Extract major and minor revision values** check box to extract the major and minor revision values.
   - Type names for the major and minor revision values in the respective boxes.
   - Click **OK**.
5. Click **Validate** to validate documents before transferring the data to the Facility Data Warehouse.

SECTION 6

Viewing tag and document properties

The Tag module allows you to search for tags that are available in the database and view the tag properties.

The Documents module allows you to search for documents that are available in the database and view the document properties and relationships. You can view the thumbnails of the files and also open the actual files in their native application. You cannot view the duplicate documents in the document explorer module.

IMPORTANT You must set the active scope before using the SmartPlant Fusion Data Capture Task Manager module. For more information, see Setting the active scope

NOTE You can customize the icons for the sub-modules in the SmartPlant Fusion Data Capture Task Manager module by adding the corresponding GIF files to the [*drive*]:\SmartPlant Foundation 2016 Server Files\Web_Sites\[site_name]\Icons folder.

- The name of the GIF files for the Data Capture Task Manager modules must follow this naming convention: Explorer_DisplayAs. For example, Explorer_Documents.gif for the Documents module.
- The name of the GIF files for the Data Capture Task Manager sub-modules must follow this naming convention: Explorer_GroupName_DisplayAs. For example, Explorer_Tags_Mastertags for the Master Tags sub-module.

What do you want to do?

- *View master tag properties* (on page 31)
- *View alias tag properties* (on page 32)
- *View documents* (on page 32)

View master tag properties

Master tag patterns and alias tag patterns are defined in the Tag Discovery Pattern module. A master tag pattern can exist by itself or may be related to one or more alias tag patterns. A tag that matches the master tag pattern results in a master tag. The master tag represents an actual object in an engineering plant.

1. Log on to **SmartPlant Dashboard**.
2. Click **Data Capture Task Manager.**
3. Click **Tags** > **Master Tags**.
4. Search for the master tag that you want to view.
5. Select a value from the **Column Set** box, and then enter the name of the tag in the **Search Master Tags** box to view the properties of the master tag.

NOTE To generate a document report, select a tag, and then click **Generate Report**  . A tag document report includes the following: tag properties, documents related to the tag, list of the laser scans related to the tag, and list of alias tags related to the master tag.

View inconsistencies in master tag properties

You can view the inconsistencies in the properties and the property values of a selected tag available in different domains. If the property values of a tag do not match the corresponding values in the domain tag, the tag name and the property values of the tag appear in red.

You can use the **Generate Inconsistency Report**  option to create a tag inconsistency report of the master tags in Microsoft Excel.

1. On the **Master Tags** page, select a value in the **Column Set Only** box.
2. Search for the master tag that you want to view.
3. Select one or more tags from the search results, and then click **View Inconsistency**  . The **Tag Inconsistency** dialog box displays the tag information for the first tag selected in the list.

View alias tag properties

A tag that matches the alias tag pattern results in an alias tag. An alias tag does not represent an actual object and is always related to a master tag. It interprets the master object that is represented by the master tag that it is related to.

1. Click **Tags** > **Alias Tags**.
2. Search for the alias tag that you want to view.

View documents

You can search for documents by name. The search results display the thumbnail of the master file attached to the documents. If a thumbnail does not exist for the master file, then an empty tile is displayed with the document name as the header.

1. Click **Documents**.
2. In the **Search Documents** box, type the name of the document that you want to search for.
3. Click **Search**  . The document relationships and all the configured document naming system items are displayed in the grid view.
4. Select one or more documents and then click **Create Content Discovery Task**  to create a content discovery task for the selected documents.

NOTES

- In the **Grid View**, click the name of the file to view the file in the native application.
- Using the thumbnail tile, you can do the following:
  - Click the document name in the header to open the file in the native application
  - Double-click the header to maximize the thumbnail of the file

- To open selected items in SmartPlant Foundation Desktop Client, select the objects in the item list and then click **Open Items in SmartPlant Foundation Client**  .
- You can click **Export to Excel**  to export the contents of the current view to a Microsoft Excel file.
- To generate a document report, select a document, and then click **Generate Report**  . For more information, see *View an Open XML report in the Desktop Client.*

SECTION 7

SmartPlant Fusion Tags

You can classify the tags extracted from the documents into different tag classes. You can create tag classes and relate the tag classes to master tag patterns.

NOTE In the SmartPlant Desktop Client, you can view the tag classes in the tree view. It contains the hierarchy used for navigating the data in the SmartPlant Fusion database.

For more information about the classification tree and classified objects, see *Classification Trees* in the *SmartPlant Foundation Administrator's Guide*. For more information on the tree view, see *Tree view* in the *SmartPlant Foundation Desktop Client User's Guide*.

Master and alias tags

SmartPlant Fusion creates the relationships from the document to the master tags and the alias tags during the content discovery task. All the SmartPlant Fusion readers extract the file content as xml, and if any data is extracted from the content file that matches the tag mapping pattern, a tag is created. The application looks into the FusionPartMapFile.xml to determine if the tag extracted from the content file is a master tag or an alias tag.

After tag extraction, tags are created as either master or alias tags. The interfaces described here are added to the tags:

- **ISPFNTaggedItem** – This interface is added to all tags and allows tags to be related to documents.
- **ISPFNTag** – This is the primary interface for a tag and is added to all tags that are created.
- **ISPFNMasterTag** – If it is established through the rules engine that a tag is a master tag, then the ISPFNMasterTag interface is added to the tag.
- **ISPFNChildTag** – If it is established through the rules engine that the tag is an alias tag (such as P/100 instead of P100) then the ISPFNChildTag interface is added to the tag.
- **ITruViewHotspottedItem** - If a tag appears on a laser scan, then the ITruViewHotspottedItem interface is added to the tag.
- **I3DRange -** If a tag is in a 3D model originating from Smart 3D, then the I3DRange interface is added to the tag.

After the creation of the master and alias tags, the following relationships are created.

- **SPFNAliasedTag** – This relationship is created between the master tag and the alias tag.
- **SPFNTagDocument** – This relationship is created between the master tag and the document (except for laser scan tags).
- **TruViewScanRepresentationHotspottedItem** and **TruViewScanScanRepresentation** – These relationships are created between a laser scan document and the tags appearing in the laser scan.

- **SPFNChildTagDocument** – This relationship is created between the alias tag and the document.

NOTES

- If any attribute matches an item on a corresponding object, such as a unit, document type, project code, or discipline, then the relationships are created between these document attributes and the matching objects.
- During the content discovery task, if an attribute on a tag represents a relationship to another object, and that object already exists in the database, a relationship is created between the tag and that object. For example, if the unit attribute on the tag is SPFNTagObjUnit and SPFNTagObjUnit exists as a functional unit in the database, then a relationship of the type SPFNUnitTag is created between the tag and the unit.
- During the content discovery task, the document attribute value is set as the master tag part, if the corresponding tag naming system is associated with the document attribute.
- You can drag one or more selected master tags onto a document to create a relationship between the tag and the document.

What do you want to do?

- *Create and relate tags* (on page 35)
- *Create a new tag and hotspotted item* (on page 36)
- *Find a tag* (on page 37)
- *View an item in the 3D model* (on page 37)
- *Find laser scan tags and representations* (on page 38)
- *View related documents* (on page 38)

Create and relate tags

For each extracted tag, the master tag name is determined using the rules defined in the tag discovery pattern. If an extracted tag name and the mater tag name determined from the part map file are the same, then a master tag is created with that name. If an extracted tag name is different from the master tag name determined from the part map file, then an alias tag is created with the extracted name and it is related to a master tag name determined from the part map file.

For example, the tags P-100, P/100, and P_100 are extracted from a drawing. The rules defined in the tag discovery pattern indicate that P-100 is a master tag and P/100 and P_100 are alias tags. If changes are made to these rules, the creation and deletion of the master and the alias tags is described in the following cases.

Case I

Scenario: An alias tag is determined to be a master tag. For example, after a change to the rules defined in the tag discovery pattern, P_100 is determined to be a master.

Result: A master tag is created and the existing relationship between the alias tag (which has been changed to a master tag) and its corresponding master tag is terminated. In the above example, P-100 and P_100 are master tags and P-100 is related to the alias tag P/100.

Case II

Scenario: A master tag is determined to be an alias tag and the master tag has alias tags related to it. For example, after changes to the rules defined in the tag discovery pattern, P-100 is determined to be an alias tag, and alias tag P/100 is related to a new master tag 1409-P-100.

Result: An alias tag is created from a master tag only when the alias tags related to it are related to one or more new master tag names. If a new master tag name is determined for an alias tag, then the relationship with the previous master tag (which has been determined to be an alias tag) is terminated and a relationship is created with the new master tag. As long as an alias tag is related to the master tag (which has been determined to be an alias tag), then the master tag is not changed to be an alias tag, and this is recorded in the log file. For example, P-100 becomes an alias tag, and the alias tag P/100 gets related to the master tag 1409-P-100.

IMPORTANT The change of tag naming rules may result having documents related to master tags which are not extracted from the file directly but are set to be master tags for alias tags that have been extracted from the file. In this case, if due to subsequent change in the tag naming rules, the alias tags are changed to master tags, then the document status is set to **DocumentOutOfDate**. These documents can be processed in the content discovery task by selecting the **OutOfDate** option from the **Filter document status** list.

Create a new tag and hotspotted item

1. Click **File > New > Fusion Items > Master Tag**.
2. Type a name for the tag in the **Name** box. For example, 1409-CV-1202.
3. Click **Finish**.
4. Right-click a document attached to a Laser scan representation file, and click **Files > View in Laser Scan Document** on the shortcut menu.
5. Select the tag in the **New Items** window, and drag it onto an object in the **View Scan** window.

   The hotspotted item  and the tag name are displayed in the **View Scan** window. The laser scan registers that one action has been done by displaying **1 Modified** on the bottom of the image.
6. Click  and select **Commit** to save the hotspotted item to the laser scan and database.

NOTES

- You can right-click a master tag, and click **View Item in Laser Scan** option on the shortcut menu to view the tag in the **View Scan** window.
- The **View Item in Laser Scan** option is not available on the alias tags.

Find a tag

When you search for tags, SmartPlant Fusion displays a list of master and alias tags that were created in the content discovery task and are related to the corresponding documents.

1. Click **Find** > **Fusion Items** > **Tags**.
2. On the **Find** dialog box, enter the name, or part of the name plus wildcards, of the tag that you want to find.
3. Click **OK** to find objects with the criteria you specified and display them in the list view window.

NOTES

- You can right-click a master tag, and click **Show Alias Tags** on the shortcut menu to view the alias tags related to it.
- You can right-click an alias tag, and click **Show Master Tag** on the shortcut menu to view the master tag for the selected alias tag.

View an item in the 3D model

1. Click **Find** > **Fusion Items** > **Fusion Documents**.
2. On the **Find** dialog box, enter the name, or part of the name plus wildcards, of the document related to the item you want to view.
3. Click **OK**.
4. Locate a document with a 3D model file (.zvf extension) attached to it and a document status set to **Processed** in the results window.
5. Right-click the document, and click **View Related Items** on the shortcut menu to display the related tags in the **Master Tags** tab.
6. Right-click a tag, and click **View Item in 3D model** on the shortcut menu to open the 3D model in the **View and Markup** window.

NOTES

- The selected tag is highlighted and displayed in the center of the 3D model view.
- If you select a master tag, then the alias tags related to the master tag is also highlighted in the 3D model.

Find laser scan tags and representations

1. Click **Find** > **Fusion Items** > **Fusion Documents**.
2. On the **Find** dialog box, enter the name, or part of the name plus wildcards, of the document that you want to find.
3. Click **OK**.
4. Locate a document with a laser scan representation file attached to it and a document status is set to **Processed** in the results window.
5. Right-click the document, and click **Show Laser Scan Tags** on the shortcut menu to display the related tags in the **Laser Scan Tags** tab.

   NOTE The tags in the laser scan document are related to a representation and the representation is related to the laser scan representation. Right-click on the document, and click **Show Representations** on the shortcut menu to view the representations.
6. In the **Laser Scan Tags** tab, right-click a tag and click **View Item in Laser Scan** on the shortcut menu to open the laser scan in the **View Scan** window.

NOTES

- The selected tag is centered in the TrueView image.
- Each tag is related to a representation.
- You can navigate from a scan representation to the laser scan image by clicking the **Show Hotspotted Item** on the shortcut menu.
- You can move the image in the **View Scan** window by clicking and dragging the mouse anywhere in the window.

View related documents

The **View Related Documents** command allows you to navigate to and view the file that contains the selected tag. This command is available when you right-click one or more master or alias tags.

- Right-click one or more master or alias tags in the list view, and click **View Related Documents** on the shortcut menu.
  - If the selected items are available in more than one file, the **View Attached Files** dialog box appears. Select one or more files from the **Select files for viewing** list, and click **OK**. A **View and Markup** window appears for each file selected from the list.
  - If only one file is related to the selected items, then the related file opens in the **View and Markup** window.
  - If no file is related to the selected item, a message appears indicating that no documents will be displayed.

SECTION 8

Document Processing

Duplicate Documents

Duplicate documents are created during the document discovery task when more than one file is given the same document name. As a result, all the files resulting in the same document name are attached to the document master.

The duplicate documents are identified by the application depending on the files attached to documents within the SmartPlant Fusion database and the files that are picked in the document discovery task.

NOTE For example, a document discovery task may only process files with the file name abc from the file folder and create documents in SmartPlant Fusion where the document name will be the same as the file name. The creation of duplicate documents in the application is described in the following cases.

Case I

Scenario: No document exists in SmartPlant Fusion with the name abc and two files with the same name abc.dwg from two different locations are found in the current document discovery task.

Result: A duplicate document will be created in SmartPlant Fusion, and both the files will be attached to the document master. The document with more than one file attached to it will have all the files attached to it as duplicate files. You can view the duplicate files by right-clicking on the duplicate document and clicking **Show all duplicate files** on the shortcut menu.

Case II

Scenario: A document with name abc already exists in SmartPlant Fusion and has one file attached to it, and two files with the same name abc.dwg from two different locations are found in the current document discovery task.

Result: The existing document will be set to duplicate document with the three files attached to the document master, where two files are from the document discovery task and one file is the one already attached to the document. You can view the duplicate files by right-clicking on the duplicate document and clicking **Show all duplicate files** on the shortcut menu.

NOTES

- The potential reader on a duplicate document is set to MULTI regardless of the of file types attached to the document master.
- The document status will be set **Document Loaded** on a duplicate document.

Find duplicate documents

When you search for duplicate documents, SmartPlant Fusion displays a list of duplicate documents that were created in the document discovery task and have duplicate files attached to them.

1. Click **Find > Fusion Items > Fusion Duplicate Documents**.
2. On the **Find** dialog box, enter the name, or part of the name plus wildcards, of the document that you want to find.
3. Click **OK**.

Master and Off Page documents

If more than one document exists that has additional information for a master document, you can create a document to document relationship between the master document and these other documents.

Any documents related to the master document are called **Off Page** documents.

NOTE The master document is related to the off page documents by using the SPFNDocumentDocument relationship.

Create a document to document relationship

1. Click **Find > Fusion Items > Fusion Documents and Drawings**.
2. On the **Find** dialog box, enter the name of the document that you want to find and click **OK**.

   TIP You can refine your search by typing the entire name, part of the name, a wildcard character (%, *, or ?), or a combination of the name and wildcard character (for example, n%).
3. Select one or more documents from the list view and drag them onto another document to make the relationship.
4. In the **Relationship Name** column, select the appropriate option from the list to indicate whether you want to relate the selected documents to the other document as off page documents or as a master document.
   - **Off Page Documents – Parent Document to Off Page** - Select this option to make the document with its name in the **Related Object** column, the off page document.
   - **Parent Documents – Parent Document to Off Page** - Select this option to make the document with its name in the **Related Object** column, the parent or master document.
5. On the **New Relationship** dialog box, click **OK**.

TIP You can select a document and click **Show All Relationships** to view the related documents.

SECTION 9

SmartPlant Fusion Document Status

The status of the SmartPlant Fusion document changes when it is processed through the SmartPlant Fusion workflows.

The SmartPlant Fusion document is processed through the following workflows:

- **SPFNDocumentDiscoveryWF** - The workflow for the document discovery task.
- **SPFNContentDiscoveryWF** - The workflow for the content discovery task.

SmartPlant Fusion Document Status	Description
DocumentLoaded	First status given to a document loaded after having been generated from one of the document discovery tasks.
ExtractContentPassed	Indicates that the content file was successfully extracted during the Extract Content workflow step of the SPFNContentDiscoveryWF workflow.
ExtractContentFailed	Indicates that a failure occurred during the Extract Content workflow step of the SPFNContentDiscoveryWF workflow. In this case, in addition to this status, an error message is raised and attached to the document.
ExtractDataPassed	Indicates that the tags were successfully extracted during the Extract Data workflow step of the SPFNContentDiscoveryWF workflow.
ExtractDataFailed	Indicates that a failure occurred during the Extract Data workflow step of the SPFNContentDiscoveryWF workflow. In this case, in addition to this status, an error message is raised and attached to the document.

SmartPlant Fusion Document Status	Description
DocumentLoaded	First status given to a document loaded after having been generated from one of the document discovery tasks.
DocumentProcessed	Indicates that the document passed through each step in the SPFNContentDiscoveryWF workflow successfully and reached the end without any errors.

SECTION 10

Document Creation with Title Block Information

The image reader uses a third-party Optical Character Recognition (OCR) engine, such as ABBYY, to extract the data content from the file. Image files are extracted by ABBYY in a structured way, as an XML file, which determines if they are tags, documents, title block items, or other item types. The keyword "Tag" is used to identify tags and the keyword "Doc" is used to identify documents. The title block support for ABBYY content files includes the following keywords:

- Titleblock_DrawingNo
- Titleblock_DrawingTitle
- Titleblock_Revision
- Titleblock_Discipline
- Titleblock_Project
- Titleblock_Unit
- Titleblock_DrawingDesc
- Titleblock_DocType
- Titleblock_Arg1 to Titleblock_Arg9

An image reader may extract a file name from the title block that does not correspond to the document name of the original file. In such a case, the set of files attached to the existing document are moved to the document that results from the title block of the content file.

For example, a set files abc.bmp, abc.OCR.pdf, and abc_SPFNContent.xml are attached to a document "abc". A rule exists that indicates the document name will be the same as the file name. The document "abc", when processed by the image reader, extracts the file name to be "xyz" from the title block, and as a result, a new document "xyz" will be created, and the files abc.bmp, abc.OCR.pdf, and abc_SPFNContent.xml will be attached to the document "xyz". In addition to this, if the document "abc" has no other files attached to it, then it will be deleted.

The creation of new documents, deletion of existing documents without any files attached to it, and the various document statuses with respect to this example are described in the following cases.

Case I

Scenario: The document "abc" has the files abc.bmp, abc.OCR.pdf, abc_SPFNContent.xml, and abc.tiff attached to latest version, and no document exists in SmartPlant Fusion with the name "xyz". The image reader extracts the file name to be "xyz" from the title block of the document.

Result: A new document "xyz" will be created and the files abc.bmp and abc.tiff will be attached to the document "xyz". The status for the document "xyz" will be set to Document Loaded. The document "abc" will be deleted.

Case II

Scenario: The document "abc" has the files abc.bmp, abc.OCR.pdf, abc_SPFNContent.xml, and abc.tiff attached to latest version and abc.pdf attached to the previous version. In addition to this, no document exists in SmartPlant Fusion with the name "xyz". The image reader extracts the file name to be "xyz" from the title block of the document.

Result: A new document "xyz" will be created and the files abc.bmp and abc.tiff will be attached to the document "xyz". The status for the document "xyz" will be set to Document Loaded. The document "abc" will be available with the file abc.pdf attached to the latest version, and the status will be set to Document Superseded.

Case III

Scenario: The document "abc" has the files abc.bmp, abc.OCR.pdf, abc_SPFNContent.xml, and abc.tiff attached to latest version and abc.pdf attached to the previous version. In addition to this, the document "xyz" with one or more files attached to it already exists in SmartPlant Fusion. The image reader extracts the file name to be "xyz" from the title block of the document.

Result: The existing document "xyz" will be set to duplicate document. All the files already attached to the document "xyz" and the files abc.bmp and abc.tiff will be attached to the document master. The document "abc" will be available with the file abc.pdf attached to the latest version, and the status will be set to Document Superseded.

NOTE The description for the documents for which the status is set to Document Superseded is updated with Superseded by - <*Document Name*>, where <*Document Name*> stands for the name of the new document that has been extracted from the title block.

SECTION 11

Manage Document Relationships

During the content discovery task, if the attributes defined on the document match with an existing object in the database, a relationship is created with that object. For example, if the Unit attribute on the document is SPFNUnit and SPFNUnit exists as a functional unit in the database, then a relationship of type SPFNDocumentUnit is created between the document and the unit. The **Update Relationships** command allows you to update the relationship of the documents to objects in the database.

1. Click **Find > Fusion Items > Documents**.
2. On the **Find** dialog box, type the name or part of the name of the document you want to find. You can use wildcards.
3. Click **OK** to find objects with the criteria you specified.
4. Right-click on a processed document and click **Update Latest Version** in the shortcut menu to update the attributes of the document.

   NOTE You can update the document attributes with the document index and click **Update Relationship**s on the shortcut menu to update the document relationships.
5. Select one or more documents for which you have updated attributes and click **Update Relationships** on the shortcut menu to update the document relationships.

SECTION 12

Run Content Discovery Task from the Command Line

The content discovery task can be started using the Windows command prompt.

NOTE The content discovery task creation executable file, **SPFNCreateCDT.exe**, is delivered in the product installation folder. By default, it is located at <*installation directory*>:\Program Files\SmartPlant\Foundation\2016\SPFDesktopClient\CurrentVersion, but this location may be changed at installation.

IMPORTANT You can only create a content discovery task when you have SmartPlant Fusion installed on the computer.

Command line arguments

The arguments that can be used with SPFNCreate.exe are listed below.

/U - identifies the database user name (required).

/P - identifies the database password (required).

/S - identifies the SmartPlant Fusion site (required).

/H - identifies the server host computer (required).

/SECURE - indicates if the SmartPlant Fusion site is secured.

/DS - identifies the document status set on the document.

The following table displays the string that corresponds to each SmartPlant Fusion reader.

Character	Document Status
0	DocumentLoaded
1	DocumentResolved
2	Document OutOfDate
3	DocumentContentExtractionFailed
4	DocumentDataExtractionFailed
5	DocumentRelationshipsCreationFailed
6	DocumentStatusTagDataExtractionFailed
7	DocumentStatusProcessed

/DR - identifies the file types related to the SmartPlant Fusion reader.

The following table displays the string that corresponds to each SmartPlant Fusion reader.

String	SmartPlant Fusion reader
3DModel	3DModel Reader
Document	Document Reader
Drawing	Drawing Reader
Image	Image Reader
Text	Text Reader
LaserScan	Laser Scan Reader
Default	Base Reader

/DP - identifies the document name pattern.

This example creates a document discovery task that processes all the documents that have the **Document Loaded** status, are Drawing files, and have a pattern that matches *doc*.

```
SPFNCreateCDT.exe /U fusionadministrator /P   /S spfnserver /H localhost
/DS 0 /DR Drawing /DP *doc*.
```

Start a content discovery task from a command prompt

1. Open a **Command Prompt** window.
2. In the **Command Prompt** window, change the folder to the product folder, for example: `C:\Program Files\SmartPlant\Foundation\2016\SPFDesktopClient\CurrentVersion.`
3. Type the following command:

   ```
   "SPFNCreateCDT.exe /U fusionadministrator /P   /S spfnserver /H
   localhost /DS 0 /DR Drawing /DP *doc*"
   ```

   NOTE A message appears to indicate the successful creation of content discovery task.

NOTES

- If the creation of the content discovery task fails, review the log file output.txt in the installation folder location for more information.
- When launching the SmartPlant Desktop Client from the command line, all parameters that begin with a slash (/) are uppercase and require a space between the parameter and the value. If the value contains spaces, it must be enclosed inside double quotation marks (“ ”).
- Please provide access for the user provided to the method `SPFNProcessJob_Create`

APPENDIX A

Use SmartPlant Desktop Client to manage documents

The SmartPlant Foundation Desktop Client provides you with the following document management features:

- Document revision and version control
- Access control, including check in and check out

Check in a document using content extraction

1. Find the FDW document, right-click it, and click **Edit** > **CheckIn with Content Extraction**.
2. In the **CheckIn with Content Extraction** dialog box, select a file and reader from **Select Master File** and **Pre-Processor** lists, respectively.

   TIP To use the existing pre-processed files, select the **Use Existing PreProcessed Content Files** check box
3. Select the **Match Tag Patterns** check box to extract the tags that are defined in the **Tag Discovery Patterns** module.

   NOTE If the selected document contains a Smart 3D file, type the connection string in the **OleDB Provider** box to connect to the Microsoft Access database.
4. Select a template/template group from the **Template Groups/Templates** list.

   NOTE To replace the previous document version with the checked-in document, select the **Replace Document Version** check box.
5. Click **CheckIn**.

NOTE In case of laser scanned documents, use **Edit** > **CheckIn** to check a document in to the Desktop Client.

Check in and check out a document

The **Check In** command allows you to check in documents that previously have been checked out for editing. This command is available when you right-click one or more checked-out document.

1. Right-click the document that you want to check in to SmartPlant Foundation Desktop Client, and click **Check in with Content Discovery Task**.

APPENDIX B

Property and Relationship Mapping

Properties on the SmartPlant Fusion document master, revision, and version can be mapped to any of the properties on the FDW document master, revision, and version. This can be done by using the XLST_Data_FusionFDWPropertyMappings.xlsm file located at *[drive]*:\SmartPlant Foundation 2016 Server Files\Web_Sites\[site_name]\SampleData\FusionFDWMappings folder.

1. Add property mappings in the FusionFDWPropertyMapping sheet.
2. Navigate to the Read Me sheet, and click **Create All Load Files** to generate an XML file.
3. Load the generated XML file into the SmartPlant Desktop Client using the Loader to generate property mapping objects. For example, by default the SPFNClientDocTitle property of the SPFNDocumentVersion class definition in SmartPlant Fusion is mapped to the SPFTitle property of FDWDocumentMaster class definition in FDW.

Relationships can also be copied to the FDW document from the SmartPlant Fusion document using relationship mapping. SmartPlant Fusion document master, revision and version relationships must be configured to FDW document master, revision and version respectively.

Relationship mapping is configured like property mapping, but is done using the XLST_Data_FusionFDWRelationshipMapping.xlsm file, delivered in the same location and the file used for property mapping.

1. Copy the existing relationships from the SmartPlant Fusion document to the FDW document using the XLST_Data_FusionFDWRelationshipMapping.xlsm file located at [drive]:\SmartPlant Foundation 2016 Server Files\Web_Sites\[site_name]\SampleData\FusionFDWMappings.
2. In the .xlsm file, provide the values for the columns as listed below:
   - **FusionClassdef** - must be one of the document part class definitions of the Fusion object (SPFNDocumentMaster, SPFNDocumentRevision, or SPFNDocumentVersion).
   - **FusionReldef** - must be a SmartPlant Fusion relationship definition UID that the FDW relationship definition should be mapped with.
   - **IsFusionRelDefDirection12** - must be set to TRUE if the interface of the specific document part (master, revision, or version) is on End1 of the relationship definition are you copying. False indicates that the document object is at End2 of the relationship.
   - **FDWRelDef** - must be a FDW relationship definition uid with which the FusionRelDef column value should be mapped with.
   - **FDWClassDef** - must be a FDW class definition that realizes the interface at the other end of the FDWRel from the document part. It cannot be a document part.
   - **IsFDWRelDefDirection12** - must be set to TRUE if the interface of the specific document part (master, revision, or version) is on End1 of the relationship definition. False indicates that the document object is at End2 of the relationship.
   - **CreateFDWObject** - must be set to TRUE if the object other than the document part object should be created.

For example, SPFNFDWDocDiscipline is mapped to SDADocDiscipline by default by specifying the following:

Column	**Value**
FusionClassDef	SPFNDocumentMaster
FusionRelDef	SPFNFDWDocDiscipline
IsFusionRelDelDirection12	True (since SPFNFDWDocDiscipline has the document master interface, ISPFNDocumentMaster, at End1)
FDWRelDef	SDADocDiscipline
FDWClassDef	SDADiscipline (the class definition of the object in the FDW domain at the other end of the relationship)
IsFDWRelDefDirection12	True (since the ISDADocMasterStructure interface is on End1)
CreateFDWObject	False (since the discipline object is the same in SmartPlant Fusion and the FDW domain)

Property mappings can be created between different document parts, but for relationship mapping, the SmartPlant Fusion and FDW document parts specified in the mapping must be the same level: master, revision, or version.

Glossary

3D reader

Validates tags, creates and cross-references the tags to the documents, and extracts visual file and tag data from the 3D models.

alias tag

A tag that is named differently, but represents the master tag in the system.

business objects

Complex objects representing more than one class definition.

content discovery task

Extracts content from the master file, creates and relates, relates master and alias tags to the documents, and relates documents to the organizational items.

database domain discovery task

A process that uses a defined database reader pattern to connect to a database and extract documents and tags along with their properties as defined within the pattern.

database reader

Reads data directly from a database. Administrators can define specific tables and fields to be transferred so that they can be used for data comparisons.

database reader pattern

Defines the database tables and properties that need to be extracted and mapped to classes and properties within SmartPlant Fusion.

delimiter

Identifies the end of a tag.

document attribute

A constant which allows additional information to be added to the data created in SmartPlant Fusion.

document discovery

Reads documents (typically office generate files) and using patterns loads them into SmartPlant Fusion.

document discovery pattern

Defines the base directory that needs to be crawled, the file name pattern to extract and the document name pattern that needs to be created. Additionally, document attributes can also be defined.

document discovery task

A process that uses a document discovery pattern to crawl a directory system and load documents and files that match the specified file pattern. After which thumbnails are created and related to the document.

document index

A defined excel list or a defined data object within SmartPlant Fusion that defines metadata about a file. This is referenced when files are loaded into the system and if a match is found the file will be loaded with the properties defined from the document index.

document name pattern

Defines a document name for files with a specific file name pattern comprised of the parts, constants, and documents attributes.

document naming system

Defines the parts of a file name. Additional information can be defined to define constants and relate them to existing objects in the database when data extraction occurs.

domain tag

A representation of the tag, specifically from a discipline within a domain.

drawing reader

Extracts cross-referenced and linked information contained in a drawing file.

duplicate document

A document with multiple files attached but different file types or multiple versions of the same document attached to it.

file index

Specifies the file name, associated name, and attributes for a document before it is processed by the document discovery task.

file name parts

Sections that represent data in a file name.

file name pattern

Consists of one or more file parts with each file part being defined as a document naming system item.

file properties or attributes

Values that are stored on the file object. The data is transferred to the document if the file is selected for data extraction.

hotspotting

Hyperlinks in a document on the area where the tag exists in the file.

image reader

Extracts tag and other related information contained within any image using an Optical Recognition (OCR) engine.

laser scan reader

Captures Leica TruView HDS information created form plant scans.

master file

The file that is used for data and content extraction.

master tags

Extracted tags that follow a set of standard naming conventions in a project or a plant that the engineers should follow for defining tag names.

orphan tags

Tags that are not related to any document or domain tag.

property group

A group of properties.

property list

Allows you to create property group names (interface definition names) and properties (property definitions), which can be related to a business object (class definitions).

regular expression

A pattern that is used for tag matching and defining selected file parts.

separator

Separates file parts and tag parts. Common separators include a dash (-), slash (/), tilde (~), and so forth. For example, the instrument tag LCV-157 uses the separator to separate the tag name (LCV) from the drawing name (157).

tag discovery pattern

Used to extract the master and alias tags from the content of a master file.

tag naming system

Defines the parts of a tag name and relates them to existing objects in the database.

text reader

Captures simple text files and processes the data directly without needing an application to extract the data.

thumbnail

A small size image representation of a larger file intended to make it easier and faster to manage it.

thumbnail rendition

Generates .png images for various file extensions.

title block

The portion of a drawing that contains information about the drawing, such as who created the drawing, when it was created, who approved it, and so on. The type of information included in the title block varies by drawing type, industry, and organization.

transpose

Returns a vertical range of range of cells as a horizontal range, or vice versa.

UoM

A unit of measurement.

Index

R

S

T

U

V

W