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Intergraph Smart Data Validator

Job Management User's Guide

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Preface

This Intergraph Smart® Data Validator Job Management User's Guide provides details and instructions on the management and configuration of jobs that are created using elements from Smart Data Validator Administration. These jobs are run to import and validate data to match a specific system, as well as export validated data into a target system. This document is intended for users and administrators who have experience and skill using SmartPlant® Foundation.

IMPORTANT You might not see all the commands and functionality documented in this guide, depending on your security configuration, role and access permissions. For any role or access changes, see the *SmartPlant Foundation Desktop Client User's Guide* or contact your system administrator for further information.

Smart Data Validator Product Documentation

Smart Data Validator documentation is available as Help and as PDF files. To view printable guides for Smart Data Validator, click **Help > Printable Guides** in the software.

Hexagon PPM gives its customers permission to print as many copies of the delivered PDF files as they need for their non-commercial use.

Release Bulletin

- *Smart Data Validator Release Bulletin* - Provides information on Smart Data Validator features for the current release.

Installation and Overviews

- *Smart Data Validator Installation and Setup Guide* - Provides installation and setup instructions for Smart Data Validator.
- *Smart Data Validator Getting Started Guide* - Provides overview information to help users know about the Smart Data Validator functionalities.

Administration User's Guide

- *Smart Data Validator Administration User's Guide* - Provides instructions for administering the configuration of Smart Data Validator.

Job Management User's Guide

- *Smart Data Validator Job Management User's Guide* - Provides instructions on the management of jobs that process imported data to a specified workflow and export that data to a target system or target systems.

Customization Guide

- *Smart Data Validator Customization Guide* - Provides instructions for creating and modifying the various areas of customization possible in Smart Data Validator and details on provided samples included with the release.

Troubleshooting Guide

- *Smart Data Validator Troubleshooting Guide* - Provides information about troubleshooting the installation and configuration of Smart Data Validator.

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For the latest support information for this product, use a web browser to connect to *http://hexagonppm.com/ppm-support* (*http://hexagonppm.com/ppm-support*). Also, you can submit any documentation comments or suggestions you might have on our support site.

To access the Technical User Forum, go to

http://www.intergraph.com/ppm/customers/tuf/foundation.aspx (*http://www.intergraph.com/ppm/customers/tuf/foundation.aspx*)

SECTION 1

What's New in Smart Data Validator Job Management?

Version 2018

- You can now control access to Smart Data Validator Job Management by relating any access group to the VTLJobModuleAccess method. For more information, see *Access Permissions* (on page 27). (TR-AM-114014)
- You can now delete multiple jobs simultaneously using Smart Data Validator Job Management. For more information, see *Sort your jobs* (on page 11). (CR-AM-115344)
- Smart Data Validator no longer attempts to process CSV files that do not contain data. A warning message is provided when you select one or more blank CSV files while creating a job, and the blank files are not processed further. (CR-AM-103139)
- You can now create jobs in the desired plant or project in Smart Data Validator Job Management by setting the scope to the required plant or project. For more information on setting the scope, see *Set active scope (on page 9).* (CR-AM-107675)

Version 2016

- You can now view the total number of records available in the input CSV files on the **Summary** tab of a job. For more information, see *Viewing job progress and statistics* (on page 14). (CR-AM-87550)
- You can now suppress the creation of objects with ENS in the target system by selecting the **Suppress ENS** check box in the **Create New Job** dialog box. For more information, see *Create a job* (on page 9). (CR-AM-99789)

Version 2015 R1

- You can now save multiple validation reports to the location of your choice. For more information, see *Download a validation report* (on page 17). (CR-AM-83281)
- You can now view the validation status messages for pre-defined validation rules such as **Report Inconsistent Property Values**, **Report Invalid Action Combinations**, and **Report Multiple Action Check**s for a selected job in the **Properties** window. (CR-AM-87296)
- You can approve the validation, implicit delete, and job cleanup steps by clicking the **Approve Workflow Step** icon in the Smart Data Validator Job Management module without having to access the **To Do List** in SmartPlant Foundation Desktop Client. For more information, see *Approve the validation report* (on page 20), *Approve the implicit delete report* (on page 21), and *Process the Export stage* (on page 22). (CR-AM-88712)
- The confirmation message for forms closed without any modifications has been removed to improve user experience. (CR-AM-78103)

SECTION 2

Defining a Job in Smart Data Validator Job Management

Smart Data Validator Job Management manages the import, validation, and export of the data into a specified target system. Each stage of this process is created using the New Job Wizard and components configured in Smart Data Validator Administration, such as the job definition. All the components are configured together as a **Job**, which includes the workflow that is used to process the data the system.

Before creating a job, you must set your active scope to the required plant or configuration top in the SmartPlant Foundation Desktop Client. The query performed in the Job Management module is based on the **Create Scope** configuration without including higher configuration items.

When you create a new job, it appears in the main application window, which automatically starts the process defined by the workflow. The number of jobs currently being processed and the size of the data set for each job influence the amount of time it takes for a job to run.

Each job run is run concurrently and can also use a different workflow. You can have multiple jobs running set up for the export of data to multiple systems supported by Smart Data Validator Job Management, but only one target system can be used for validation.

What do you want to do?

- *Set active scope* (on page 9)
- *Create a job* (on page 9)
- *Sort your jobs* (on page 11)
- *Search for a job by creation date* (on page 12)

Set active scope

Before you create, modify, or view Smart Data Validator jobs, you must set your SmartPlant Foundation Desktop Client active scope to the required plant or configuration top.

1. Log on to SmartPlant Foundation Desktop Client.
2. Click **File > Set Active Scope** to open the **Set Active Scope** dialog box.

   TIP You can also set the active scope by clicking the text beside **Selected Roles**, **Query Scope**, or **Create/Update Scope** in the SmartPlant Foundation Desktop Client status bar. For more information, see *User Roles* in the *SmartPlant Foundation Desktop Client User's Guide.*
3. In the **Set Active Scope** dialog box, set the scope to the required plant or configuration top, and click **OK**.
4. Select a plant or project from the **Query Scope.**
5. To set the create scope, select the SmartPlant Foundation plant or project from the **Create Scope** list.

   NOTE You can select only one plant or project for the create scope.
6. Click **OK**.

Create a job

CAUTION We recommend using a text editor like Notepad to modify your CSV files to avoid any unexpected results.

1. In the main toolbar, click **Create New Job**  to open the New Job Wizard**.**
2. On the **Basic Settings** page, provide a description for the job.

   NOTE Job Management automatically allocates the job a numerical ID, which is displayed in SmartPlant Foundation. This number can be configured to match an existing engineering numbering system (ENS) found in the target system. For more information, see *Configuring the Engineering Numbering System (ENS)* in the *How to Configure Classified Objects Guide*.
3. In the **Job Definition** box, select a previously configured job definition.
4. In the **Target System for Validation** box, select one of the existing target systems to be used for validating the exported data.
5. In the **Target System for Export** box, select one of more of the existing target systems.

   NOTE The target systems selected for validation and export do not need to be the same. You can have multiple target systems to export data to, but you can only have one target system set up as the validation system.
6. Select the **Suppress ENS** check box to suppress the creation of objects with ENS in the target system for this job.

   NOTE By default, this option is not selected and the objects are created with ENS in the target system after export if ENS is configured in the target system.

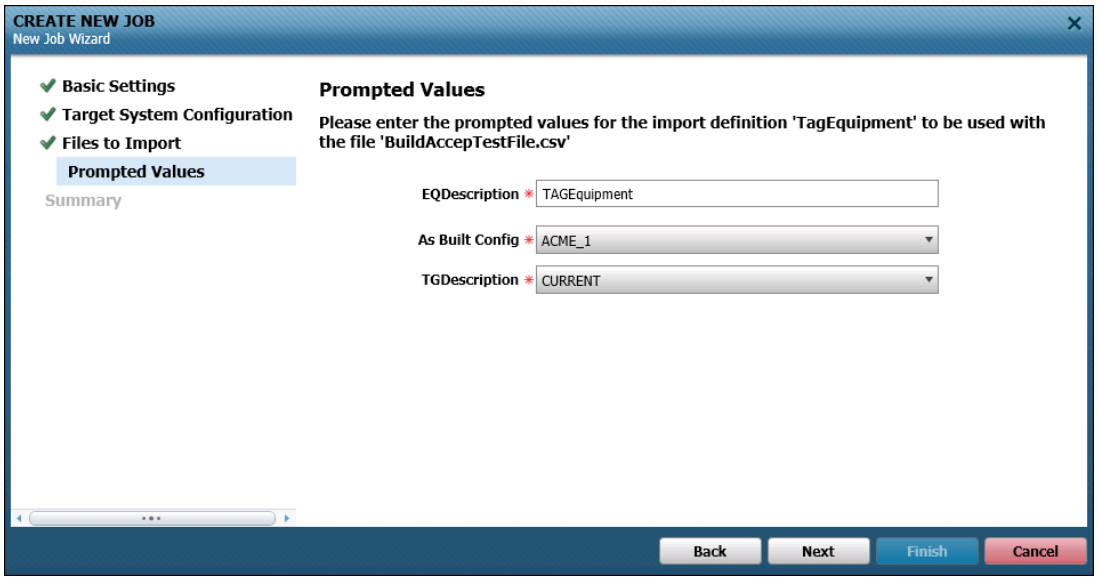
7. Click **Next**.
8. On the **Target System Configuration** page, select the target system configuration level for the new job.
9. Choose the status to use for the data in the target system configuration by clicking the **Selected** check box beside the status required.
10. Click **Next**.
11. On the **Files to Import** page, click **Browse to a file to attach**  to locate the import file, and click **Open** to attach the file to the import definition.

    IMPORTANT As the import file loads, it is validated against the validation rule sets and rules added to the import definition for the target system. If the file does not pass validation, a validation failure is recorded in the validation report. The export is blocked until the validation has been reviewed in SmartPlant Foundation Desktop Client. For more information, see *Validation reports* (on page 18) and *Approve the validation report* (on page 20).

    NOTES

    - A check mark appears in the **Has Headers** column beside any file attached to the import definition that contains column headers.
    - If you want to import a file that does not have any column headers, such as an inverted CSV file that has data in the first row of the file, then click **Browse to a file without headers to attach**  . When selected, this feature allows Smart Data Validator to consider if the first row of any file is a column header or not. For more information about importing data from CSV file without a header row, see *Create Mapping for a CSV Raw Attribute Format File* in the *Smart Data Validator Administration User's Guide*.
    - When files have been imported and attached to the import definition, a green check mark appears in the **Files Attached** column.
12. Click **Next**.
13. On the **Prompted Values** page, add or select values for the import mapping for the file to be imported, as configured in the job definition.

In the following example, you are prompted for values for **EQDescription, As Built Config**, and **TGDescription**.



NOTE When a job is run, the job definition import mapping is dependent on the column type selected for each configured column header. If you selected a column type that included prompted values, you are prompted to select the values when creating a job. For more information on selecting prompted values, see *Create column headers* in the *Smart Data Validator Administration Guide*.

14. Click **Next**. The **Summary** page displays a summary of the complete job.

NOTES

- You can review or edit the job components by clicking on any of the sections to modify the details.
- Modifying any of the previous settings invalidates subsequent settings for the job, which have to be entered again.

15. Click **Finish.** The new job appears in the list in the main job management pane and starts automatically.

Sort your jobs

- Use the following options to sort your jobs in the main application window:
  - **My Jobs** - Displays all of your jobs in the system. Job definitions are added to the list immediately when you create them.
  - **My Running Jobs** - Displays your jobs that are currently being processed. The progress of each running job can be viewed in the **Progress** tab.
  - **All Jobs** - Displays all jobs in the system from all users.
  - **All Running Jobs** - Displays all the jobs that are currently being processed created by any user. The progress of each running job can be viewed in the **Progress** tab.

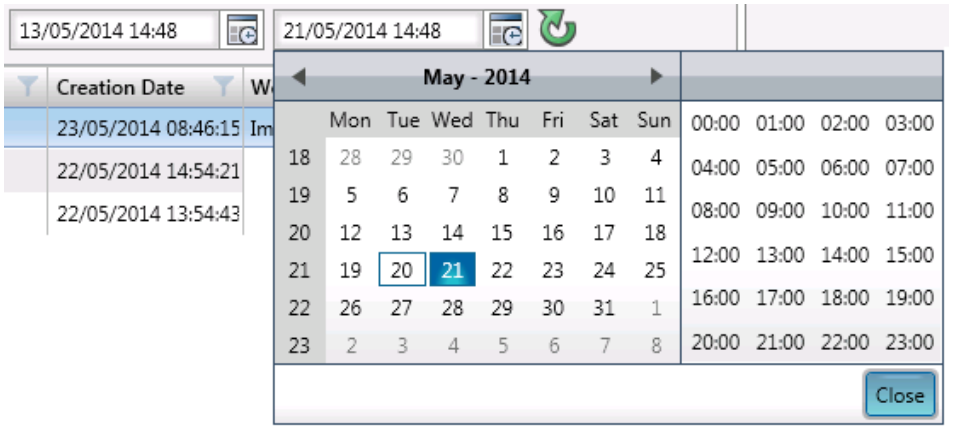
NOTES

- By default, each user can see only the jobs they created. For more information about viewing all jobs using the VTLDataMapper role, see *Access Permissions* (on page 27) or contact your system administrator.
- If necessary, you can select a job and then click **Delete** on the toolbar to cancel the job before it starts and to remove it from Smart Data Validator Job Management. You can also delete jobs irrespective of the status, after the wait time defined in the **System Options** has elapsed. For example, if you have created a job today, and set the wait time to 1 day, you can delete the job anytime tomorrow.
- To delete multiple jobs, use the CTRL or SHIFT key for selection, then click **Delete**.

Search for a job by creation date

You can search for all your jobs that were created during a specific period of time by using the date and time settings.

1. Click **The start date to search from**, and select the start date and time.
2. Click **The end date to search to**, and select the end date and time.

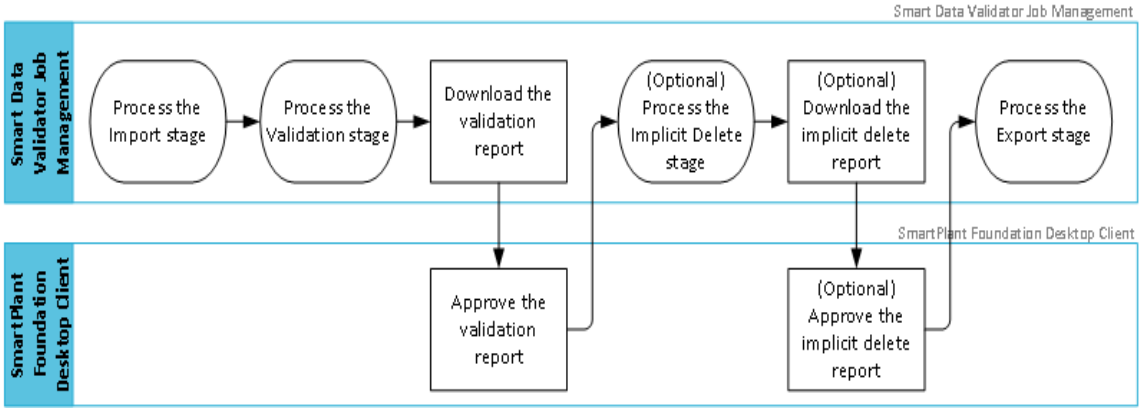


SECTION 3

Processing a Job through Smart Data Validator Job Management

Each job created appears in the main job list window. The job automatically starts to process through the workflow stages defined in the job definition when it is created. When a stage requires a report to be approved before it can progress further, the process stops until the report has been approved in the SmartPlant Foundation Desktop Client.

The following work process diagram illustrates how to process an import, validate, implicit delete, and export job through Smart Data Validator Job Management.



What do you want to do?

- *Process the Import stage* (on page 17)
- *Process the Validation stage* (on page 17)
- *Download a validation report* (on page 17)
- *Approve the validation report* (on page 20)
- *Process the Implicit Delete stage* (on page 21)
- *Download an implicit delete report* (on page 21)
- *Approve the implicit delete report* (on page 21)
- *Process the Export stage* (on page 22)

Pause a workflow

You can pause a workflow and during a Smart Data Validator process by clicking **Pause** on the main toolbar. If a process step is still running when a workflow is paused, the process step runs to completion. The process step then enters the **On hold for signoff** or **On hold for reject** status to stop any forward processing.

Resume a workflow

You can resume a workflow that you paused by clicking **Resume** on the main toolbar. When a workflow is taken off hold, any steps with the **On hold for signoff** or **On hold for reject** status continue from where the workflow was paused.

Viewing job progress and statistics

You can view the progress and statistics of a job in Smart Data Validator Job Management as it progresses through each stage using the three job status tabs: **Progress, Summary**, and **Details**.

View job progress

When a job is created, it appears in the process list, and automatically begins in the selected job management workflow. The **Progress** tab displays the percentage complete of each stage of the workflow for the selected job.

The information provided in each column is as follows:

- **Import** - Displays the name of the imported file, the job definition used, and the percentage of the import process completed.
- **Validation** - Displays the process of the imported data through the validation rules as a percentage complete.
- **Implicit Delete Report** - Displays the progress of the implicit delete report creation.
- **Implicit Delete** - Displays the percentage of the implicit delete operation that has been completed.
- **Export** - Displays the progress of the transfer of data to the target system and the loading of the data into the database.

View job summary

The **Summary** tab displays overview information about the job. This summary information includes the current **Status** of the job and statistics about timings, data objects imported, total number of records in the input CSV files, relationships, properties, rules, objects deleted, and so forth.

TIP You can also copy the details of the summary to the operating system clipboard.

The information provided in each column is as follows:

- **Status** - Current status of the workflow.
- **Import** - Current status of the import stage and statistics.
- **Validation** - Current status of the validation stage and statistics.

- **Implicit Delete Report** - Current status of the implicit delete report stage and statistics.
- **Implicit Delete** - Current status of the implicit delete stage and delete statistics.
- **Export** - Current status of the export stage and object statistics.

NOTES

- The number of items listed as imported or exported in the **Summary** tab might differ from the totals you expect to see.
- For more information on import and export counts, see *Job summary import and export counts* (on page 15).

View job details

The **Details** tab displays information about the job and the configuration components used to create it.

The information provided in each column is as follows:

- **Name** - The numerical identifier assigned to the job by the ENS in SmartPlant Foundation.
- **Description** - The description of the job.
- **Creation Date** - The date and time when the job was created.
- **Creation User** - The user name of the user who created the job.
- **Workflow** - The workflow used to run the job.
- **Status** - The current status of the job.
- **Job Definition** - The job definition used to configure the job.
- **Validation Target System** - The target system used to provide the validation rules.
- **Export Target System (s)** - The target system that is the destination of the export process.

Job summary import and export counts

Import counts

These are determined on import as follows:

- One object on multiple lines in one file is counted only once where the values for the properties are the same. However, if the same data is included in two different input files, it will be counted twice. This rule is in place to support the tracking of the data back to its source (file and line number) for error reporting.
- Blank cells for a property will still create the property but define no value for it.
- Blank cells for an object are ignored, assuming it is not mandatory. The object is not generated, the relationship is not created, and nothing is added to the counts. If the object is mandatory and has blank cells, the object is not created and an error is recorded in the validation report.
- The action defined on an item has no effect on whether an item is included in the import count, as everything is imported. This is unlike the export count, which is selectively based on the defined action.

- Constants are counted like a property on each applicable object, as per the mapping. For example, if a constant is defined for each tag and 1000 tags are created, the count will include 1000 properties for adding the constants, unless multiple lines reference the same tag.

Export counts

These are determined on export as follows:

- Information sent to the landing tables is dependent on the export map. If an object is not configured to be exported, it will not be sent.
- The export filter prevents objects with errors of a certain severity or greater from being exported.
- The action set for the item determines whether it is included in the export and the export count.
  - NoAction - The objects are not sent during export and they are not counted.
  - CheckExists - The object is not exported, but the relationship is sent. The object is counted.
  - Delete and Terminate - The object UID is sent, but not the properties. The object is counted.
  - CompareValue, CheckStagingFileExists, and CheckTargetSystemFileExists - The object's properties are not sent and the object is not counted.
- Relationships with an export action are sent to the target system, unless:
  - An object on one end of the relationship fails a CheckExists check.
  - An object on one end of the relationship does not pass the export filter.

  NOTE If either of this issues exist, the relationship is not sent and the object is not counted.
- Objects, properties, and relationships are included in the count if they are processed, even if no update was made to the item.
- Extra items may be created that are not included in the count. For example, additional relationships and other objects created due to claiming, and an export of a Primary Classification relationship will cause SmartPlant Foundation to fill in all relevant SPFClassificationLevel relationships.
- Implicit delete counts can vary between the summary and the actual implicit delete report generation. For more information on why this can vary, see *Summary shows a different amount of implicit deleted objects* in the *Smart Data Validator Troubleshooting Guide*.

Process the Import stage

The **Import** stage uses import definitions created in Smart Data Validator Administration to import the data contained in one or more CSV data files. The data is placed in the staging area (an isolated domain) in the form of objects, properties, and relationships. Normally, there will be an export mapping between the information in the staging area and the objects, properties, and relationships in the target system.

NOTE When the process finishes, the stage shows as **Completed** in the **Progess** tab.

For more information on the import mapping, see *Define Import Mapping* in the *Smart Data Validator Administration User's Guide*.

Process the Validation stage

The **Validation** stage uses validation rule sets to verify the data in an imported record and ensure that it meets the data standards specified for the target system or other specific requirements. Each validation rule evaluates the imported data and verifies that it matches the existing criteria and hierarchy found in the target system database. Some rules will run against the staging area and some will run against the target system. For more information, see *Validation rule description* in the *Smart Data Validator Administration User's Guide*.

For more information on validation rules, see *Define Validation Rules and Rulesets* in the *Smart Data Validator Administration User's Guide*.

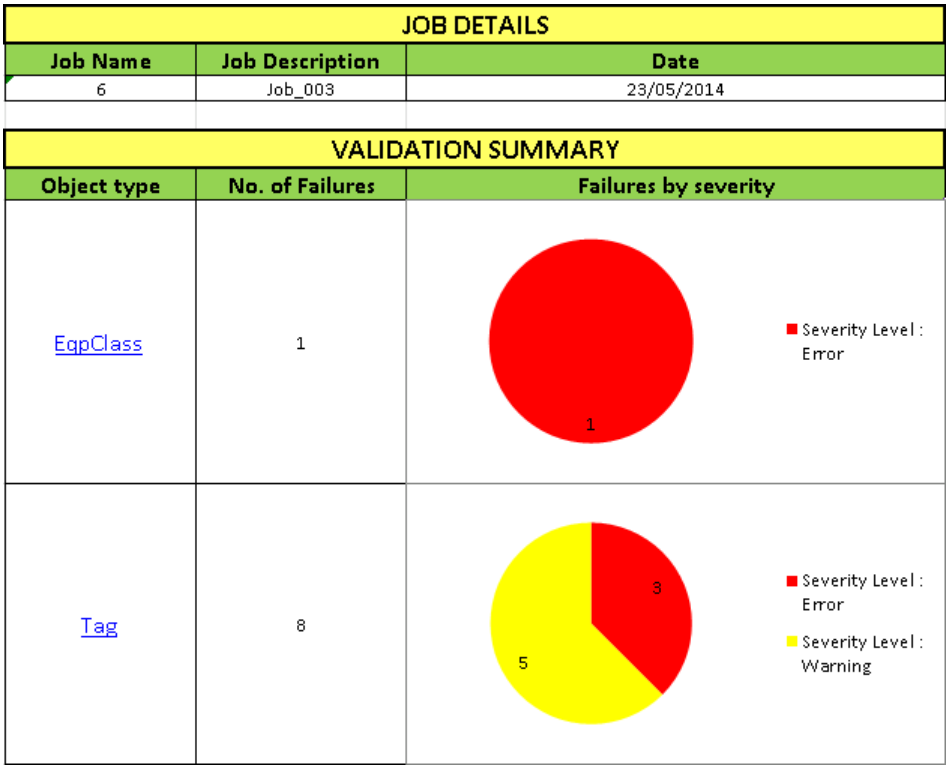
Download a validation report

If the workflow is configured to produce a validation report, SmartPlant Foundation produces the report each time a job is processed. You can download and view the validation report and take any necessary corrective actions.

1. In the main toolbar, click **Download Validation Report**  .
2. Save the validation report to the location of your choice. The report is downloaded as a Microsoft Excel file.
3. Open and review the report in Microsoft Excel.

Validation reports

When a validation report is generated by SmartPlant Foundation, you can download it as a Microsoft Excel spreadsheet using **Download Validation Report** on the main toolbar. The contents of the report include details about the job and validation summary information, as illustrated in the following image:



JOB DETAILS		
Job Name	**Job Description**	**Date**
6	Job_003	23/05/2014

VALIDATION SUMMARY		
Object type	**No. of Failures**	**Failures by severity**
EqpClass	1	1 — Severity Level : Error
Tag	8	3, 5 — Severity Level : Error; Severity Level : Warning

By default, there are two severity levels for issues.

- **Error** - Displayed as red in the graph.
- **Warning** - Displayed as yellow in the graph.

NOTE It is possible to configure new severity levels and colors using the system option settings in Smart Data Validator Administration. For more information on system options, see *Setting Smart Data Validator default options* in the *Smart Data Validator Administration User's Guide*.

The validation summary sheet provides information regarding the number of warnings and errors for each type of object. Additional sheets in the validation report provide more detail on these objects through either clicking the hyperlink, such as EqpClass, or by selecting the **Worksheet** tab.

Object types

The following details are also available in separate tabs for each of the object types in the Excel file:

Name	Description
Name	The name of the object that caused the error.
UID	The unique identifier of the object that caused the error, used to identify potential issues with the mapping.
Column name	The column name in the import mapping CSV file that created the object.
Action	The action for the object, property, or relationship as identified in the import map.
Message	The default failure message, as defined on the validation rule that failed. Auto-generated rules have hard-coded default messages that may be changed by editing the rule.
Severity	The severity level of the rule that failed, such as Warning, Error, or a custom severity.
Propagated From	Indicates that this object is in error because another object or property had an error that was propagated to this item.
Line Number	The line in the CSV file that created the object. Smart Data Validator reports the first instance of the object in the file only. If the same object is mentioned many times, it is reported only once. If the same object appears in two files, it is reported only once.
File Name	The name of the file that contains the data.
Rule Name	The name of the rule that failed.
Value	The value of the property if this is a property rule, or the UID of the object if this is an object rule.
Error Type	The type of error encountered, as defined in Possible error types.
Property or RelDef name in Smart Data Validator	If the rule is based on a property or relationship, this field displays the property or relationship definition name as it appears in Smart Data Validator, as opposed to the target system.
Additional Info	Any additional information relevant to a rule. Some rules can provide extra information that is not overridden by the user message, such as concurrent engineering rules reporting the other configurations in which the item has been found.

Possible error types

Name	Description
Native Object Error	An error that happened to that object.

Name	Description
Property Error	An error that happened to a property.
Propagated Property Error	An error that was propagated from a property to an object.
Propagated Object Error	An error that was propagated from a related object.

For more information on propagation settings, see *Export Mapping* and *Setting Smart Data Validator default options* in the *Smart Data Validator Administration User's Guide*.

Approve the validation report

You must approve the validation report in your **To Do List** window in SmartPlant Foundation Desktop Client to continue to the next workflow stage. After downloading the validation report and reviewing the results, continue the workflow or delete the job, correct the imported data, and create a new job to process the imported data again.

TIP You can approve the validation step in the Job Management module by using the **Approve Workflow Step** icon, without having to access the **To Do List** in SmartPlant Foundation Desktop client.

NOTES

- You can export objects with errors and make any necessary corrections later in SmartPlant Foundation Desktop Client.
- Depending on the configuration of the workflow, some objects with an error or warning may not be imported into the target system. The data is rejected until any errors or warnings have been corrected.

1. Click **View the To Do List**  on the main toolbar to open the **To Do List** in SmartPlant Foundation Desktop Client.
2. Right-click the validation report, and select either **Approve** or **Reject** from the shortcut menu.
   - If you select **Approve**, provide any useful information for the sign off step task.
   - If you select **Reject**, provide any useful information for the reject step task. The data is retained in the Smart Data Validator staging area ready to be run again in a new job.

For more information on using the **To Do List**, see *To Do List* in the *SmartPlant Foundation Desktop Client User's Guide*. For more information on setting up workflows, see *Workflows* in the *SmartPlant Foundation Administrator's Guide*.

Process the Implicit Delete stage

During the **Implicit Delete** stage, Smart Data Validator Job Management processes the data based on mappings and groupings and implicitly deletes a group of objects in the target system if they are not supplied in the input file. The system searches for missing objects in the input data, and then tells the target system to delete or terminate those objects that are no longer required.

For more information on **Implicit Delete**, see *Implicit Delete* in the *Smart Data Validator Administration User's Guide*.

Download an implicit delete report

Each time a job is processed using a workflow containing implicit delete, an implicit delete report is created in SmartPlant Foundation. This report details any objects, properties, or relationships that are to be deleted in the target system. You can view the implicit delete report and then take any necessary corrective actions.

1. In the main toolbar, click **Implicit Delete Report**  .
2. Save the implicit delete report to the location of your choice. The report is downloaded as a Microsoft Excel file.
3. Using the implicit delete report, check all the files intended for deletion.

NOTE You can view a list of claimed objects that are not deleted when the **Exclude Claimed Items** option is selected for an implicit delete rule.

For more information on the implicit delete functionality, see *Define Implicit Delete Rules* in the *Smart Data Validator Administration User's Guide*.

Approve the implicit delete report

You must approve the implicit delete report in your **To Do List** window in SmartPlant Foundation Desktop Client to continue to the next stage of the workflow. After downloading the implicit delete report and reviewing the results, continue the workflow or delete the job, correct the imported data, and create a new job to process it again.

TIP You can approve the implicit delete step in the Job Management module by using the **Approve Workflow Step** icon, without having to access the **To Do List** in SmartPlant Foundation Desktop client.

NOTE If some objects have been included in the implicit delete report incorrectly, you can correct the imported data or modify the implicit delete rule, as necessary.

1. Click **View the To Do List**  in the main toolbar to open the **To Do List** in SmartPlant Foundation Desktop Client.
2. Right-click the implicit delete report, and select **Approve** or **Reject** from the shortcut menu.

- If you select **Approve**, provide any useful information for the sign off step task.
- If you select **Reject**, provide any useful information for the reject step task. The data is retained in the Smart Data Validator staging area ready to be run again in a new job.

For more information on using the **To Do List**, see *To Do List* in the *SmartPlant Foundation Desktop Client User's Guide*. For more information on setting up workflows, see the *SmartPlant Foundation Administrator's Guid*e.

Retry a failed implicit delete process

If an error occurs during the **Implicit Delete** step, such as when a database timeout error occurs, the job fails. You can retry the implicit delete by completing the failed step related to this job from the **To Do List**. Smart Data Validator attempts to resume the implicit delete process from the last good state.

1. Select the failed job in the main window of Smart Data Validator Job Management, and click **View the To Do List**  in the main toolbar.
2. Right-click on the failed implicit delete task for the job, and click **Complete**.

Process the Export stage

The **Export** stage of the workflow runs automatically after the implicit delete report is approved in SmartPlant Foundation Desktop Client and consists of two stages:

- **Export transfer** (on page 22) - The mapped object data in the staging area is transferred to the target system landing tables, and the target system data is loaded into the database.
- **Export target system checks** (on page 23) - This stage consists of a set of checks on the incoming data that raise warnings or errors into an export report.

TIP After the successful completion of the export step, you can approve the **Job Clean Up** step in the Job Management module by using the **Approve Workflow Step** icon.

Export transfer

The **Export** stage transfers the data to the target system landing tables before loading the data into the target system database. The **Summary** tab displays the **Export** stage status and the number of objects, properties, and relationships that have been processed. When the transfer is complete, the tab displays a green check mark.

NOTE Smart Data Validator does not support reviving an object using the **Revive** functionality in SmartPlant Foundation Desktop Client, this includes reviving any data that was created as the result of a claim.

Export target system checks

When the data transfer to the target system landing tables is complete, the export process runs a set of target system rules for the incoming data. If the data passes these checks, the load process continues. The **Summary** tab displays the stage status as **Complete,** and a green check mark is displayed.

Errors

If the export target system checks result in errors, the export process is stopped, and the export workflow step fails. The system creates an export report that includes a list of the errors and quantities that you can review from the **Summary** tab. The details of the summary tab can also be copied to the operating system clipboard.

Warnings

If the export target system validation rules generate warnings only, the export process continues. The system creates an export report that includes a list of warnings and the number of each you can review from the **Summary** tab.

NOTES

- After any errors in the exported data have been corrected, you can retry the export process. For more information, see *Retry a failed export process* (on page 25).
- The export process claims non-document objects where it is deemed appropriate. For more information on the claiming process, see the *SmartPlant Foundation How to Configure Concurrent Engineering Guide*.

Export checks list

The following export target system checks are run on the data transferred to the target system landing tables.

Name	Description	Severity
Cardinality Check	Relationships are checked to see if the cardinality of the relationship definition has been breached. If that occurs, the export is blocked.	Error
Exclusively Claimed	If the object being updated exists outside the user's selected configuration and it is claimable, but has been exclusively claimed to a different sub configuration, the export is blocked.	Error

Name	Description	Severity
File Object Internal System Property Values	Changes to the following internal system property values on ISPFFile are ignored: ▪ SPFLocalDirectory ▪ SPFLocalHostName ▪ SPFLocalFileName ▪ SPFRemoteFileName These values are all set automatically so do not need to be mapped.	Warning
File Property Action Check	Only one **Check Staging File Exists** property action or one **Check Target System File Exists** property action is allowed per object. If there is more than one, an error is raised and the export is blocked.	Error
Future Issue Dates	Future issue dates are not allowed. If any are found, the export is blocked. Dates are validated against the UTC time zone.	Error
Master Document Updates	If the load includes a master document with a revision and the master exists outside of the user's selected configuration, the system assumes that the user is revising the document to the configuration and does not want the previous 'Updating item from lower configuration' rule to block the export. If this occurs, a warning message is produced, but the load is not blocked. Subsequent updates to the master are ignored.	Warning
Object Identification	If the object being exported is identified by a UID, the target system's class definition it is mapped to is checked to see if it has a UID definition. Also, if you are exporting an object using a unique key, the target system's class definition is checked to see if it has a unique key definition.	Error
Revision Code Check	If a revision is using a non-custom revision scheme and the order of the issue dates do not match the order of the revision codes, the export is blocked.	Error
Revision Issue Date	If there are two revisions for the same master with the same issue date, the export is blocked. This check applies to working (null) issue dates as well.	Error
Updating item from lower configuration	If the object being updated exists outside the user's selected configuration and the object is not claimable, the export is blocked. If the object was claimable, the export claims it when updating the object in the load.	Error

Retry a failed export process

If an error occurs during the **Export** step, such as when a database timeout error occurs, the job fails. You can retry the export by completing the failed step related to this job from the **To Do List**. Smart Data Validator Job Management attempts to resume the export process from the last good state, re-exporting data, if necessary.

1. Select the failed job in the main window of Smart Data Validator Job Management, and click **View the To Do List**  in the main toolbar.
2. Right-click on the failed export task for the job, and click **Complete**.

SECTION 4

Viewing the Job in SmartPlant Foundation

Once the import, validation and export processes are complete, you can review the data and its status in the SmartPlant Foundation Desktop Client. You can search for the recently imported data in the target system and confirm the deletion of objects that were marked to be removed using implicit delete, if applicable. You can make further changes as necessary to the imported data in SmartPlant Foundation Desktop Client.

In Smart Data Validator Job Management, select the completed job and click **Open the job in SmartPlant Foundation Desktop Client**  on the main toolbar. You can review the properties, relationships, and workflow details of the job in SmartPlant Foundation Desktop Client.

For more information using SmartPlant Foundation Desktop Client, see the *SmartPlant Foundation Desktop Client User's Guide*.

SECTION 5

Access Permissions

By default, each Smart Data Validator Job Management user can see only the jobs they created. However, you can view all the jobs being processed by Smart Data Validator Job Management if you have been assigned to the VTLDataMapper role.

NOTE Access is controlled by using an access method that uses the **VTLViewAllJobs** client API.

Delete permission

Each user can delete only the jobs he or she created. Permission to delete jobs created by others is controlled through the **VTLDeleteJob** client API. Any user with the VTLDataMapper role has access to delete other users' jobs.

NOTE For more information on your access role and permissions, contact your system administrator.

Method access

Access to Smart Data Validator Job Management is controlled by relating access groups to the **VTLJobModuleAccess** method.

By default, only the VTLDataController access group is related to this method. Any user mapped to the VTLDataController role and access group can create and process jobs.

NOTE If any other access group is needed to create and process jobs using Smart Data Validator Job Management, you must relate that access group to the **VTLJobModuleAccess** method.

Glossary

actions

An indicator of what Smart Data Validator will do with the object data in the validation and export process, such as update and delete. These kinds of operations vary, depending on whether the column header is mapped to an object, a property, or a relationship.

auto-generate

An option to automatically generate validation rule definitions, export mappings, and rules, based on actions. The validation rules are used to validate imported and exported data and the export mappings ensure that the column headers match the objects and properties found in the target system.

brownfield

An existing project or area that has constraints imposed due to prior work and contains existing data.

cardinality

A setting on a relationship definition that specifies how many instances of a relationship are valid for the objects at the end of the relationship. For example, a tag cannot exist without a primary classification relationship, and also cannot have more than one primary classification.

column headers

They are used in Smart Data Validator as the basis for mapping new data in columns to match an existing structured database.

configuration tree

A representation in a tree list, which may include plant, areas, units, and projects, that indicates the structure in which the data is stored in SmartPlant Foundation.

CSV file

A comma-separated value (CSV) file, which stores tabular data in plain-text format.

data files

A job can process multiple input files and therefore use multiple input mappings. Import mappings are defined on the job definition.

export mapping

The process that maps the imported objects, classes, and properties to the existing structure of the objects, classes, and properties found in a target system.

export process

The Export process uses a defined mapping, based on the structure of the target system, to manage the loading of the data into the final destination system.

function

A computed functional code run at import, where the output value of a function depends only on the arguments that are input to the function.

greenfield

A project or area that is completely new and does not have any constraints imposed by prior work or existing data.

implicit delete

A component process used by Smart Data Validator, where a user can decide to implicitly delete or terminate a group of objects from the target system, because they are no longer in the supplied input data submission.

import definition

A defined mapping of imported file objects, properties, and relationships from existing column headers to objects, properties, and relationships found in the staging area database during the import process.

import process

The process that manages the import of data in the data file or files to the staging area database using a defined mapping.

inverted CSV file

See *raw attribute format* (on page 30).

job

A defined object that carries information for the progress of data through a selected workflow in Smart Data Validator Job Management, such as when data is imported, validated, and exported to a target system.

job definition

A combined set of components configured for the import, validation, and export of data to a specific target system or multiple target systems.

mapping

A defined process where data is correlated from existing column headers for the objects, properties, and relationships in the imported data to the correct column headers for the objects, properties, and relationships found in another database, such as the staging database or target system. For more information, see *import definition* (on page 29) and *export mapping* (on page 28).

object weighting

A process that emphasizes the contribution of an object in a set of data to a final effect or result, thereby deciding its weight in the analysis. This affects the order in which the data is exported, helping to achieve the desired result.

query definition

A comma separated list of properties that can be entered in the **Target System Query Definition** field, which identifies the object in the target system along with the class definition. These properties can be retrieved by navigating the relationships.

raw attribute format

Where the data in a CSV file is organized in a vertical format and each row contains properties and relationships for the same object. The data in a standard CSV file is typically organized horizontally. Also referred to as an inverted CSV file.

relationship definition

A defining object that relates items together in a database which are stored in different tables.

relationship property

A property on the link interface which is part of the relationship definition. The link interface allows properties to be created on the relationship itself.

rules

A logical formula used to evaluate and verify whether the data in an imported record meets the requirements and data standards specified for the target database system.

rulesets

A combined set of rules that can be run as a set during job processing.

SDV

Smart Data Validator, the software used for importing data into the staging area, validating the data, and/or exporting data to a target system.

staging

The staging or staging area or staging database used is the first part of a combined set of processes in Smart Data Validator, where imported data is held and validated before being exported to a Smart Data Validator site.

target system

The system or database used as the destination for exported data that has been validated before export. It is also used as the basis for creating import mappings, implicit delete, and validation rules.

terminate

The action of changing an object's status to terminated without removing it from the database. Terminating objects, instead of deleting them, allows you to continue to see the history of the object after termination.

UID

Unique Identifier is used to uniquely identify an object within a system. UID definitions must be set on all objects that Smart Data Validator exports from the staging area if the unique key or query definition is left blank. The staging area UID definitions must match the UID definitions in the target system.

unique key

A set of values guaranteed to be unique for each object in a relation, and can be used to identify objects in the target system.

URL

A Uniform resource locator is a web address that contains a specific character string that references a resource.

validation process

A process that evaluates the imported data against a defined set of rules to ensure the validity of the data.

validation rule

A logical formula used to evaluate the imported data in one or more fields to determine whether it matches the existing criteria and hierarchy found in the target system database. There are two types of validation rules:

1. Rules that determine if the data is valid for the target system schema (these rules can be autogenerated.
2. Rules that determine if the data meets specific business criteria, such as naming format.

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