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Smart3D 2014 R1

Using the Catalog Checker and
Dimensional Report with
Intergraph Smart3D

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Introduction

Specs and part data in Smart3D undergoes lot of change in a project lifecycle depending on availability of vendor data. Changing reference data in Smart3D Catalog requires update in Model database so that existing parts in Model are updated to account for changes in Reference data. Some changes, typically changes which affect physical dimensions of a part, need to be carefully reviewed by your designers before propagating to Model Database. The Catalog Checker and Dimensional report in Smart3D provide information about such changes by comparing Model with Catalog. Using both of these tools, designer can take informed decision about applying changes to Model or informing Spec Writer to roll back changes.

Modifying Catalog Data

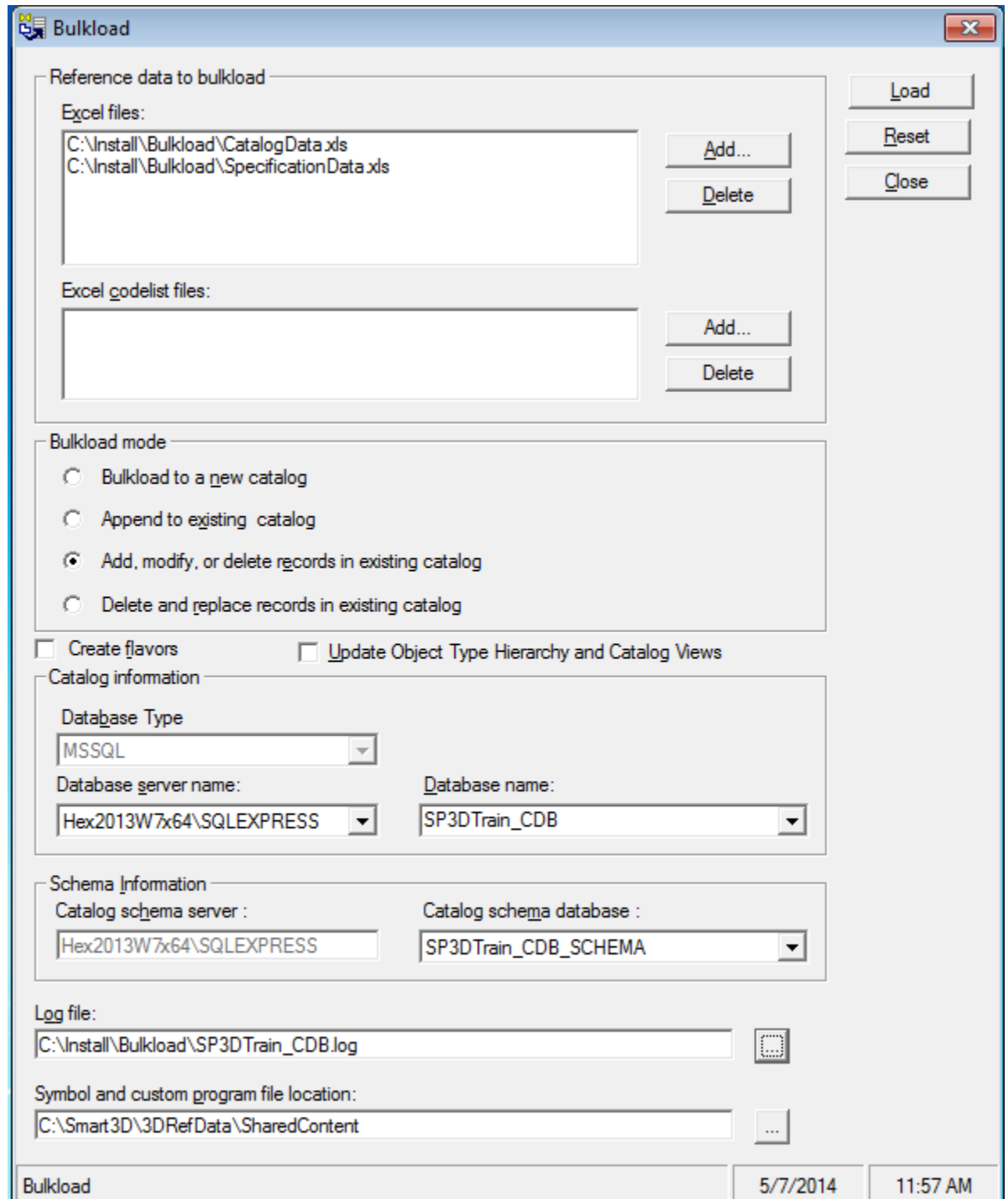
You will bulkload excel files containing modifications to Part Data and Spec Data in this section. Once changes are bulkloaded to Catalog, you will use Catalog Checker to review impact of these changes in Model in next section.

- Open Bulkload file SpecificationData.xls located in C:\Install\Bulkload folder. This file contains two changes to piping spec.
 - Commodity code for "Blind Flange" has been modified in PipingCommodityFilter . See row highlighted in yellow in "PipingCommodityFilter" sheet.
 - ShortMaterialDescription for "Concentric Reducer" has been modified in sheet "PipingCommodityMaterialControlData". See row highlighted in yellow.
- Open Bulkload file CatalogData.xls located in C:\Install\Bulkload folder. All rows associated to changes have been highlighted in yellow.
 - FaceToFace dimension for a 10 in Gate Valve (see GateValve sheet) has been changed from 13in to 14in.
 - Part data for 10 in Tee with S-STD ScheduleThickness is marked for deletion in Tee Sheet.
 - OperatorHeight and OperatorDiameter for "GAT-Bolted-150-3" Operator used for 10 in Gate Valve have been modified in Operator3 sheet. Note that base part (Gate Valve) for this operator has also been marked for modification in above step. Because base part is modified, modifications in this operator will be applied to Model when "Synchronize Model with Catalog" command is run.
 - OperatorHeight and OperatorDiameter for "GLO-Bolted-150-3" Operator used for 3 in Globe Valve have been modified in Operator3 sheet. Note that base part (Globe Valve) for this operator **has not** been marked for modification. Because base part is not modified, "Synchronize Model with Catalog" command will not recognize modifications to Operator dimension data. This is where "Dimensional Report" will come in handy as this report also shows differences in Operator data in Model & Catalog.

Bulkloading data to Catalog

You will bulkload bulkload sheets for Spec and Catalog data to Smart3D Catalog in this section.

- Make sure to close all excel files and close Excel application.
- Open Bulkload Utility by double-clicking Shortcut "Bulkload Reference Data" on your desktop.
- Add CatalogData.xls and SpecificationData.xls in "Excel files" section as shown below.



The screenshot shows the Bulkload utility window with the following configuration:

- Reference data to bulkload:**
 - Excel files: C:\Install\Bulkload\CatalogData.xls, C:\Install\Bulkload\SpecificationData.xls
 - Excelodelist files: (empty)
- Bulkload mode:**
 - ☐ Bulkload to a new catalog
 - ☐ Append to existing catalog
 - ☒ Add, modify, or delete records in existing catalog
 - ☐ Delete and replace records in existing catalog
- ☐ Create flavors ☐ Update Object Type Hierarchy and Catalog Views
- Catalog information:**
 - Database Type: MSSQL
 - Database server name: Hex2013W7x64\SQLEXPRESS
 - Database name: SP3DTrain_CDB
- Schema Information:**
 - Catalog schema server: Hex2013W7x64\SQLEXPRESS
 - Catalog schema database: SP3DTrain_CDB_SCHEMA
- Log file:** C:\Install\Bulkload\SP3DTrain_CDB.log
- Symbol and custom program file location:** C:\Smart3D\3DRefData\SharedContent

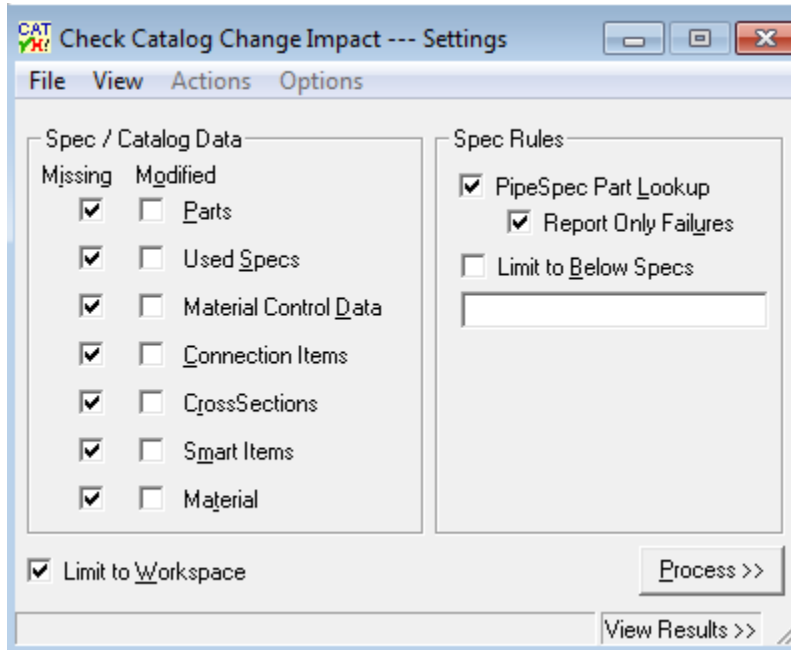
At the bottom, the window title is "Bulkload", the date is "5/7/2014", and the time is "11:57 AM".

- d. Make sure to uncheck "Update Object Type Hierarchy and Catalog Views" checkbox.
- e. Populate database server and database name information as shown in above picture.
- f. Click Load to load data from excel sheets to Catalog.
- g. Review log file to make sure changes were loaded successfully to Smart3D Catalog.

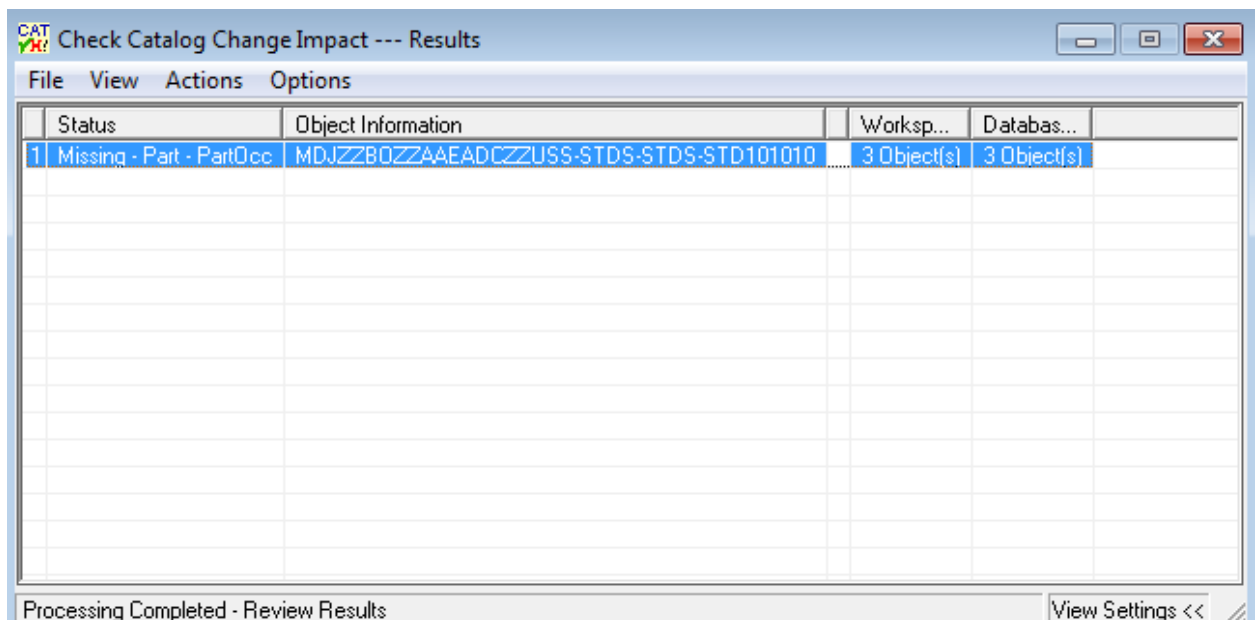
Using Catalog Checker

You will use Catalog Checker to review changes done in Catalog and how these changes are affecting parts in Model. Catalog Checker can show impact of changes limited to workspace as well. This way designer can focus on small area by limiting workspace filter to specific area.

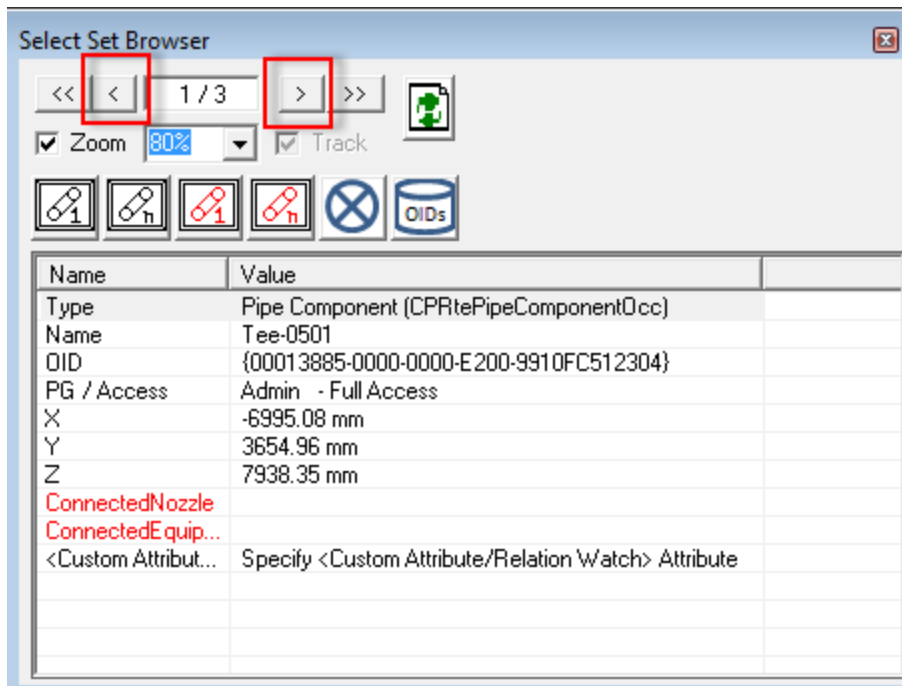
- Open SP3DTrain.ses session file located on desktop.
- Once Smart3D opens, start Automation Toolkit by hitting “SHIFT” key there times consecutively.
- Start Catalog Checker by using menu Tools → Automation Services → Catalog Checker...
- “Check Catalog Change Impact --- Settings” dialog will open as shown below.



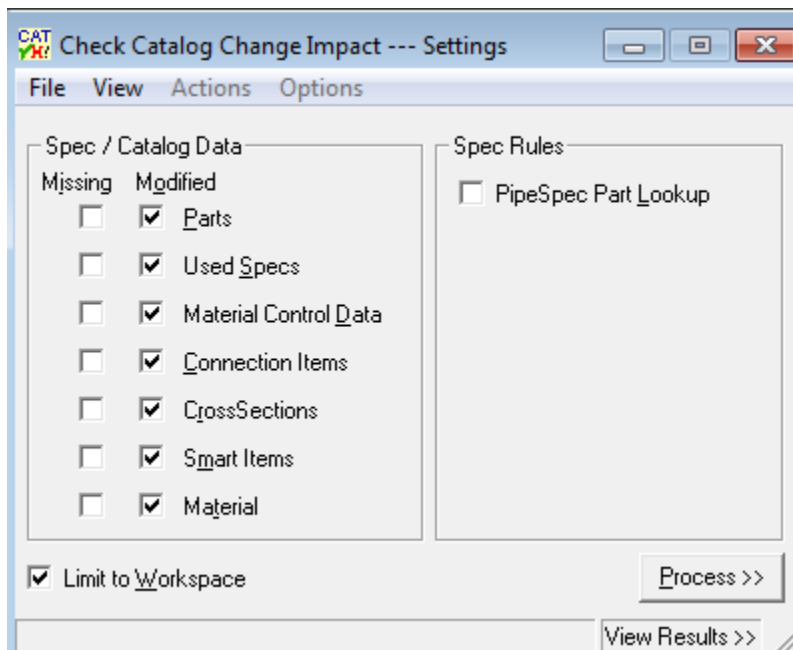
- Uncheck “PipeSpec Part Lookup” checkbox and Click “Process” button.



- Result pane shows that 3 instances of 10in, S-STD Tees in Model are missing part definition in Catalog. Click on “Actions→Select→Workspace Instances” to select all affected Tees in Model.
- Open “Select Set Browser” from Automation toolkit’s vertical toolbar. Use settings shown below.



- Use arrows (inside red box in picture above) to navigate through each Tee.
- Close Select Set Browser and open Catalog Checker. Click on View→Settings in “Check Catalog Change Impact – Results” dialog box of Catalog Checker.
- Uncheck every checkbox from “Missing” column and check all from “Modified” column like shown below and click Process button.



- You will see several entries for parts related to modified Catalog definition. Rows highlighted below are for parts related to modified part definition (change in FaceToFace dimension of Gate Valve modified part definition of reducer). Uncheck every checkbox from “Missing” column and check all from “Modified” column like shown below and click Process button.

	Status	Object Information	Workspac...	Database I...
1	Modified - Part - PartOcc	MBCZZBOZZAAEADCZZUSS-STD5-STD43	11 Object(s)	11 Object(s)
2	Modified - Part - PartOcc	VAAAHABAHADJADAZZZUS1010	3 Object(s)	3 Object(s)
3	Modified - Part - PartOcc	MBCZZBOZZAAEADCZZUSS-STD5-STD108	11 Object(s)	11 Object(s)
4	Modified - Part - PartOcc	MBCZZBOZZAAEADCZZUSS-STD5-STD64	8 Object(s)	8 Object(s)
5	Modified - Part - PartOcc	MBCZZBOZZAAEADCZZUSS-STD5-STD86	6 Object(s)	6 Object(s)
6	Modified - Part - PartOcc	MBCZZBOZZAAEADCZZUSS-STD5-STD63	1 Object(s)	1 Object(s)
7	Modified - Part - PartOcc	MBCZZBOZZAAEADCZZUSS-STD5-STD32	1 Object(s)	1 Object(s)
8	Modified - Spec - Run	1C0031	160 Object(s)	160 Object(s)
9	Modified - Material Control Data	MBCZZBOZZAAEADCZZUS - , -	38 Object(s)	38 Object(s)

Processing Completed - Review Results View Settings <<

- 8th row is for modification to spec due to modified Piping Commodity Filter and last row is for modified Material Control Data of Reducer.
- You can select any row in above dialog box and click Actions→Select→Workspace Instances to bring all parts related to selected row in Smart3D SelectSet. Select Set Browser can be used to navigate through each affected part.
- Go back to Settings dialog by clicking View→Settings menu in Catalog Checker. Now uncheck everything and check “PipeSpec Part Lookup” checkbox in Catalog Checker dialog.

Check Catalog Change Impact --- Settings

File View Actions Options

Spec / Catalog Data

Missing Modified

☐ ☐ Parts

☐ ☐ Used Specs

☐ ☐ Material Control Data

☐ ☐ Connection Items

☐ ☐ CrossSections

☐ ☐ Smart Items

☐ ☐ Material

Spec Rules

☒ PipeSpec Part Lookup

☒ Report Only Failures

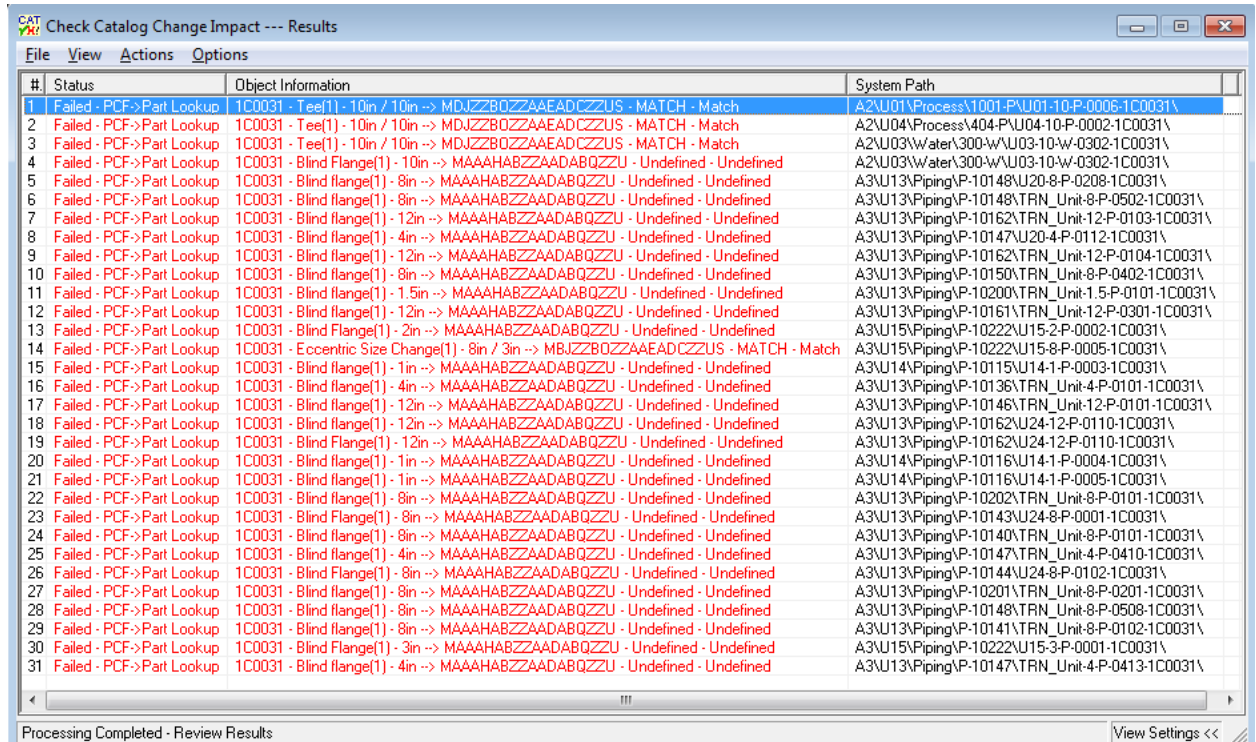
☐ Limit to Below Specs

☒ Limit to Workspace

Process >>

Processing Completed - Review Results View Results >>

- Click “Process” button to see results. Catalog Checker does Spec to Part lookup (like in Smart3D piping) to arrive at results.



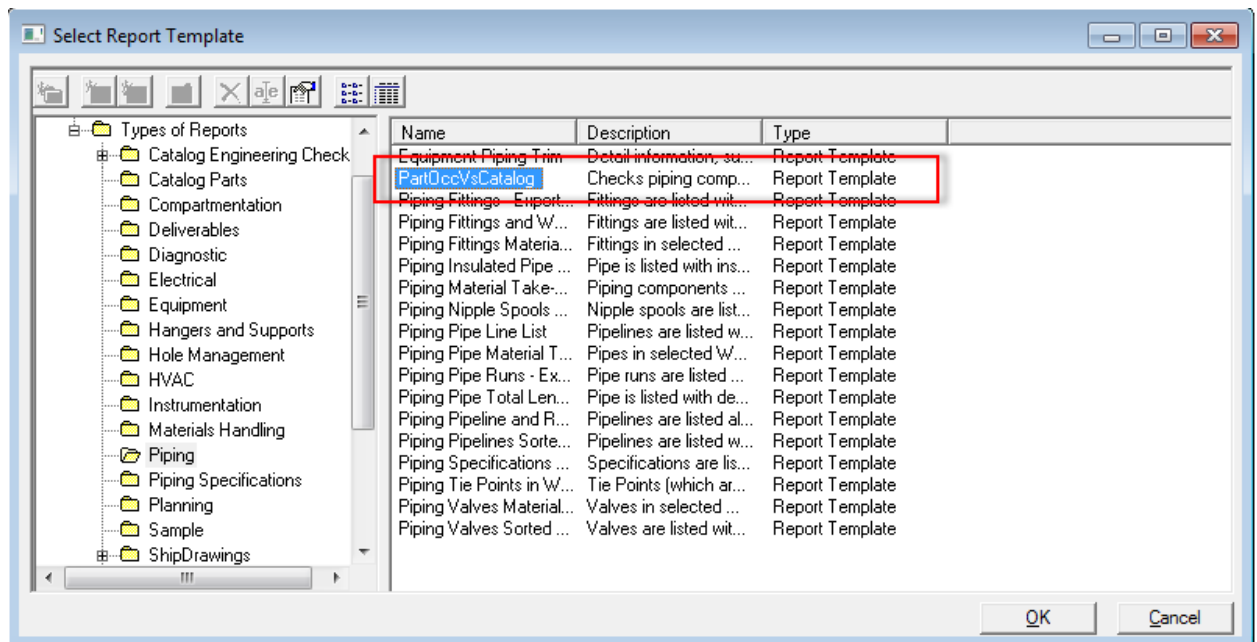
#	Status	Object Information	System Path
1	Failed - PCF->Part Lookup	1C0031 - Tee(1) - 10in / 10in -> MDJZZB0ZZAAEADCCZUS - MATCH - Match	A2\U01\Process\T001-P\U01-10-P-0006-1C0031\
2	Failed - PCF->Part Lookup	1C0031 - Tee(1) - 10in / 10in -> MDJZZB0ZZAAEADCCZUS - MATCH - Match	A2\U04\Process\404-P\U04-10-P-0002-1C0031\
3	Failed - PCF->Part Lookup	1C0031 - Tee(1) - 10in / 10in -> MDJZZB0ZZAAEADCCZUS - MATCH - Match	A2\U03\Water\300-W\U03-10-W-0302-1C0031\
4	Failed - PCF->Part Lookup	1C0031 - Blind Flange(1) - 10in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A2\U03\Water\300-W\U03-10-W-0302-1C0031\
5	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 8in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10148\U20-8-P-0208-1C0031\
6	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 8in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10148\TRN_Unit-8-P-0502-1C0031\
7	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 12in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10162\TRN_Unit-12-P-0103-1C0031\
8	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 4in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10147\U20-4-P-0112-1C0031\
9	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 12in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10162\TRN_Unit-12-P-0104-1C0031\
10	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 8in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10150\TRN_Unit-8-P-0402-1C0031\
11	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 1.5in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10200\TRN_Unit-1.5-P-0101-1C0031\
12	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 12in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10161\TRN_Unit-12-P-0301-1C0031\
13	Failed - PCF->Part Lookup	1C0031 - Blind Flange(1) - 2in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U15\Piping\10222\U15-2-P-0002-1C0031\
14	Failed - PCF->Part Lookup	1C0031 - Eccentric Size Change(1) - 8in / 3in -> MBJZZB0ZZAAEADCCZUS - MATCH - Match	A3\U15\Piping\10222\U15-8-P-0005-1C0031\
15	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 1in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U14\Piping\10115\U14-1-P-0003-1C0031\
16	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 4in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10136\TRN_Unit-4-P-0101-1C0031\
17	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 12in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10146\TRN_Unit-12-P-0101-1C0031\
18	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 12in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10162\U24-12-P-0110-1C0031\
19	Failed - PCF->Part Lookup	1C0031 - Blind Flange(1) - 12in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10162\U24-12-P-0110-1C0031\
20	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 1in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U14\Piping\10116\U14-1-P-0004-1C0031\
21	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 1in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U14\Piping\10116\U14-1-P-0005-1C0031\
22	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 8in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10202\TRN_Unit-8-P-0101-1C0031\
23	Failed - PCF->Part Lookup	1C0031 - Blind Flange(1) - 8in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10143\U24-8-P-0001-1C0031\
24	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 8in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10140\TRN_Unit-8-P-0101-1C0031\
25	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 4in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10147\TRN_Unit-4-P-0410-1C0031\
26	Failed - PCF->Part Lookup	1C0031 - Blind Flange(1) - 8in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10144\U24-8-P-0102-1C0031\
27	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 8in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10201\TRN_Unit-8-P-0201-1C0031\
28	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 8in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10148\TRN_Unit-8-P-0508-1C0031\
29	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 8in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10141\TRN_Unit-8-P-0102-1C0031\
30	Failed - PCF->Part Lookup	1C0031 - Blind Flange(1) - 3in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U15\Piping\10222\U15-3-P-0001-1C0031\
31	Failed - PCF->Part Lookup	1C0031 - Blind flange(1) - 4in -> MAAAHABZZAADABQZZU - Undefined - Undefined	A3\U13\Piping\10147\TRN_Unit-4-P-0413-1C0031\

- Notice that results correspond to 10 in, S-STD Tees for which part definition was deleted and for Blind Flange where Commodity Code in Piping Commodity Filter was changed to non-existent Catalog part.

Using Dimensional Report

Dimensional report supplements Catalog Checker by providing additional details about mismatch in physical dimensions of a piping part. Notice that Catalog Checker did not report 3in Globe valve as modified part in Catalog. This is because only operator “GLO-Bolted-150-3” of Globe valve was modified in catalog and base valve part was not modified. Dimensional report helps here as it reports mismatching Valve Operators as well!

- .Dll for report, bulkload file for loading report are located in C:\Install\Report folder of your machine.
- Notice that filter used for Dimensional report has only Piping Components, Piping Instruments and Piping Specialty Items node selected in Object Type tab. Also “User of filter supplies value” is checked on System tab of this filter.
- Switch task to Drawings and Reports. Go to “Reports” folder and select “Part Dimension Report” snapin.
- Right click on “Part Dimension Report” snapin and click on “Create Report ...” command.



- Select “PartOccVsCatalog” Once Smart3D opens and click ok.
- A dialog asking you to select system hierarchy for which you want to run report will pop up. Select entire plant in system hierarchy and click ok.
- In Report Parameters dialog box, select Units of Measure you want to use for dimensions reported on report. Change Primary units to “in” and click finish button.
- Right click created report and click “Update Now” to update report.
- Open updated report by right clicking on report and clicking open.
- This report provides details about differences in dimensions of piping part between Model and Catalog. Report also lists cases for which Catalog Part or Symbol dll is missing! Also notice that report contains entry for differences in dimensions of Operator of 3in Globe Valve.