The New Smart Instrumentation Offline Project

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What is Smart Instrumentation Offline Project?

The Smart Instrumentation (SI) Offline Project is a new feature that will allow SI administrators and users to easily export work packages to external companies and then easily import and merge them back to their database.

Main Features

- “Work Package” approach. The project export package contains all the data needed for the external contractor to perform the work.
- SI version and database platform independent. For example, a package created in SI Ver 13.1 and platform Oracle, can be imported by SI Version 2018 and Platform MSSQL.
- Rules mechanism – better control of the items imported or exported, with the ability to export and import **Only Specifications and Process Data** or **Wiring Data** or **All data.**
- Ability to prevent the subcontractor making changes to the reference data.
- A Ref Data Comparison utility. A utility that compares the package reference data with your database to track the reference data modifications done by the subcontractor.
- New SI operation mode: EPC with project capabilities.
- No direct interaction by an outside source with your database or IT systems.

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Terminology

Project Package:

- A project package is a file that contains all the needed data for a project, i.e. it contains the items, the reference data, the specs and all other needed data so it can be imported to a blank SI database and be worked on.
- A package can also be “empty”, in this case it contains only the reference data. This is the equivalent to what was called a seed database.
- Importing a package to a domain will not overwrite the reference data nor delete it. It can only ADD reference data.
- A package can contain a flag that will convert the package receiver to have view only rights on the reference data. This will ensure that the project host (mainly OO) will have a better control on the Reference Data.

The Claim / Merge Rules (Options)

- This is for controlling the items that are claimed to the project or merged from a project. There are three options:
  - **All**: this is the normal behavior, claims / merges the item’s entire related data.
  - **Only Specification and Process Data:** claims / merges the items and the item’s specifications and process data.
  - **Exclude Specification and Process Data:** claims / merges the items and all the item’s related data except specification and process data. This is mainly the wiring, but also other related data.

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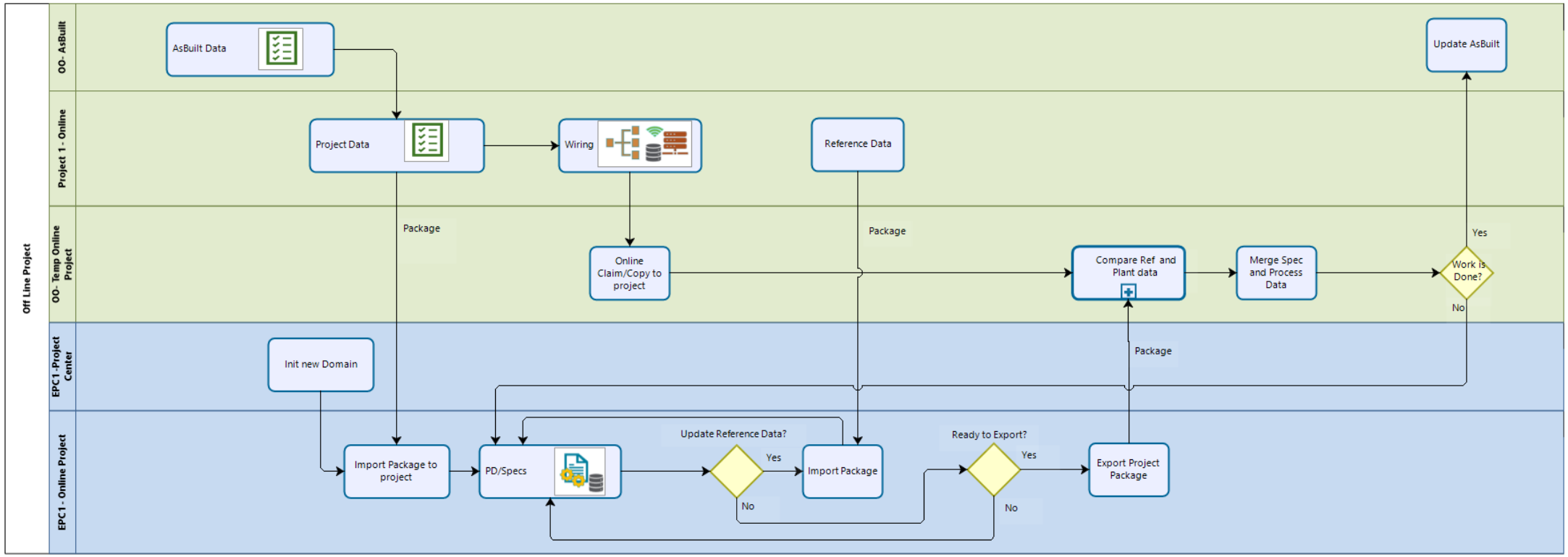
Basic Workflows:

Spec and PD tasks are done by subcontractor:



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Basic Workflows:

Spec and PD tasks are done by subcontractor:

1. Owner Operator (OO) creates project and scopes items to it, then exports the project.
2. Engineering Project Company (EPC) creates an empty domain and imports the package from the OO.
3. OO works on the wiring in the project.
4. EPC works on the specs and PD in the offline project. When he is finished, he exports the project.
5. OO compares his ref data with the package ref data.
6. OO imports the package to a temporary project.
7. OO accepts the temporary project and merges it either to the original project or to As-Built.

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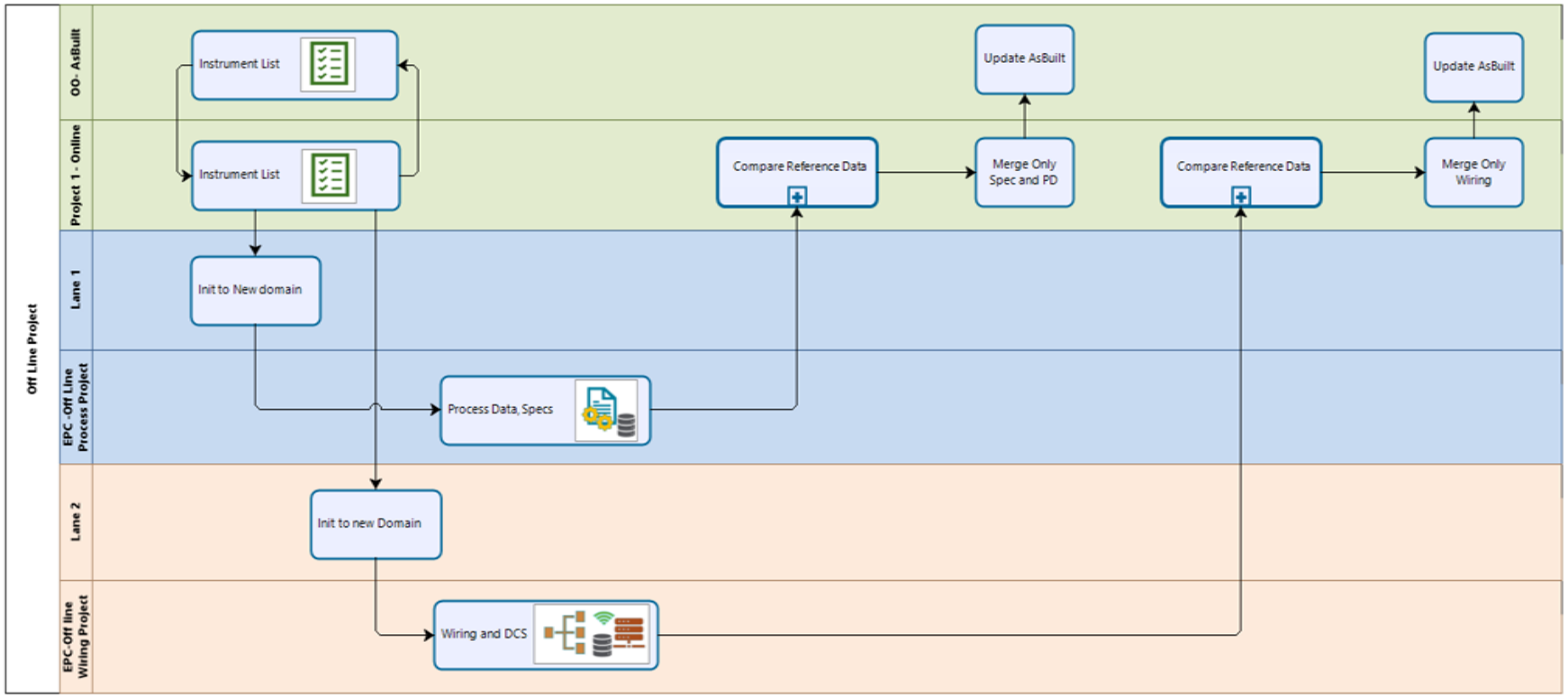
Basic Workflows:

Both wiring and Process Data work is done by EPCs



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Basic Workflows:

Both wiring and Process Data work is done by EPCs

1. OO creates a project and scopes items to it, then exports the project.
2. EPC1 and EPC2 create empty domains and import the packages from the OO.
    i) EPC1 works on the specs and PD in the offline project. When he is finished, he exports the project.
    ii) EPC2 works on the wiring and DCS in the offline project. When he is finished, he exports the project
3. OO compares his ref data with the packages ref data.
4. OO imports the packages to a temporary project.
5. OO accepts the temporary project and merges it to the original project or to As-Built.

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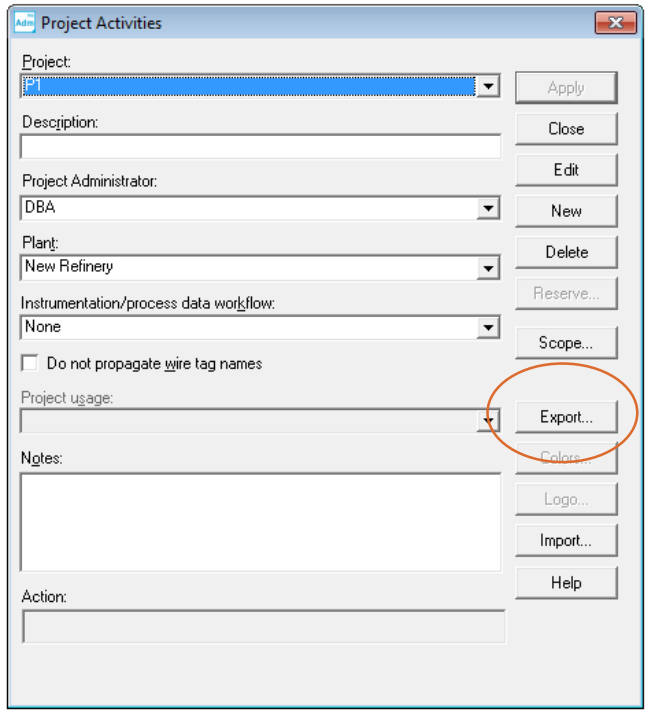
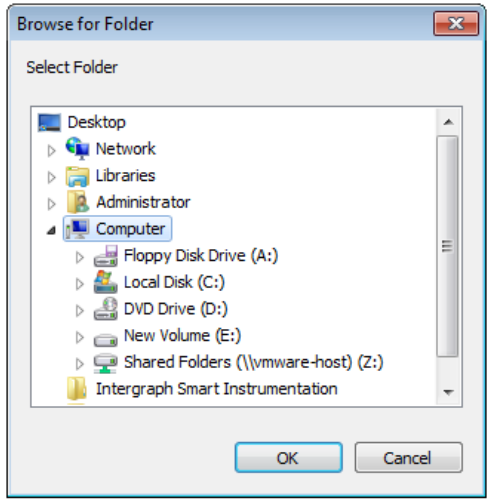
How to use the Offline Capabilities

Exporting a package

1. Create a project and scope the items to it as usual.
2. From the **Project Activities Window** in the Administration Module, select the project and click on the **Export** button.
3. Select the destination folder for the project package.
4. The file format is DDTi and its name is created by the software (a combination of the project name and time stamp).





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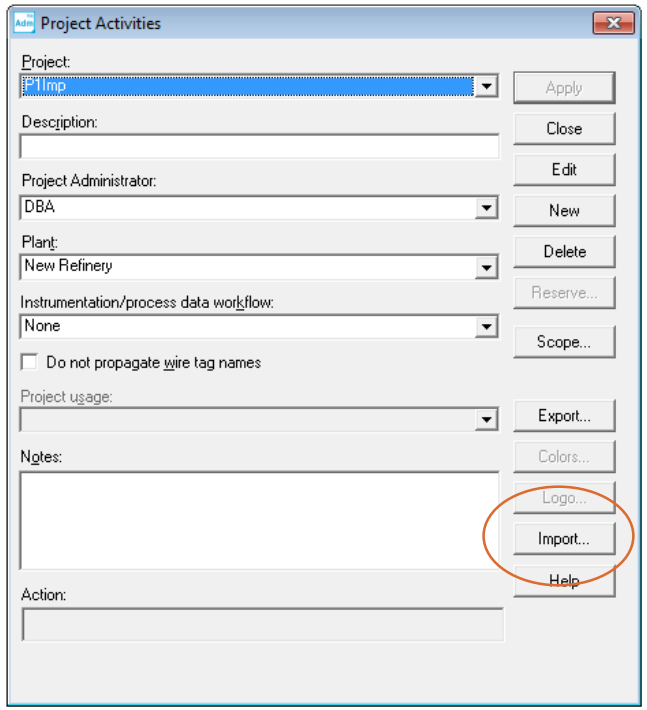
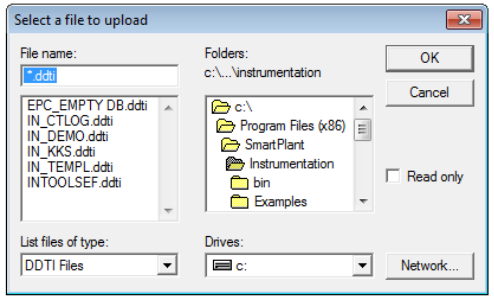
How to use the Offline Capabilities

Importing a package

1. Create an empty project.
2. From the **Project Activities Window** in the Administration Module, select the project and click on the Import button.
3. Select the project package file.





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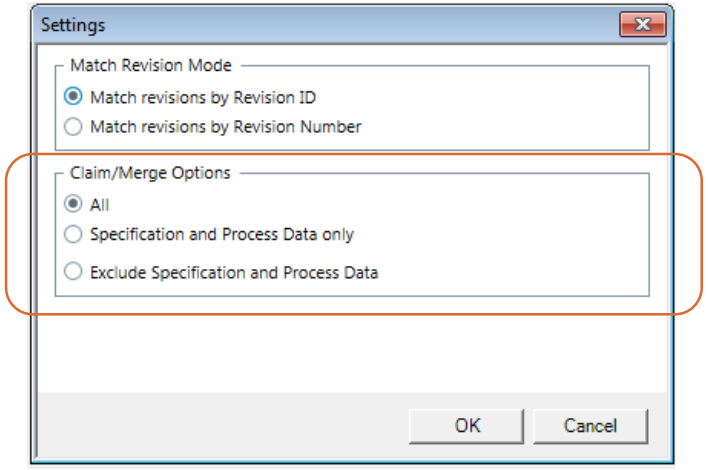
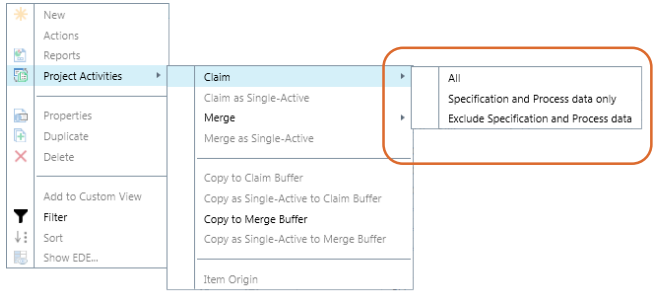
How to use the Offline Capabilities

Using the Rules

1. The Merge / Claim rules (options) can be accessed from the buffer or directly from the right-click menu.
2. From the **Buffer** click on the **Settings** button and choose the required Claim/ Merge option. The Buffer display adjusts to your selected option.
3. From the right-click menu select **Project Activities**, then select **Merge** or **Claim** and then select the required claim/merge option.





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How to use the Offline Capabilities

The Reference Data Comparison utility

1. The Reference Data Comparison Utility is an external tool that compares the SI reference data between two SI sources i.e. SI dbs and SI Project Packages .
2. As with all Offline Project capabilities, this utility is also SI version and database platform independent. In addition it can compare a project Package of any SI source to any other SI db.
3. The results are listed in an Excel file and / or in a CSV file.
4. The utility can be downloaded from Smart Support and it pulls an SI License (ISL or SPLM)
5. Simple installation and easy to use
6. Works with SI V2016 +
7. The ref items that are compared:
   - Lookup tables (Manufacturers , models, item types, etc.)
   - Spec Data (Spec forms, Spec Pages and Spec Data Dictionary)
   - Instrument Types Profiles
   - Naming Convention

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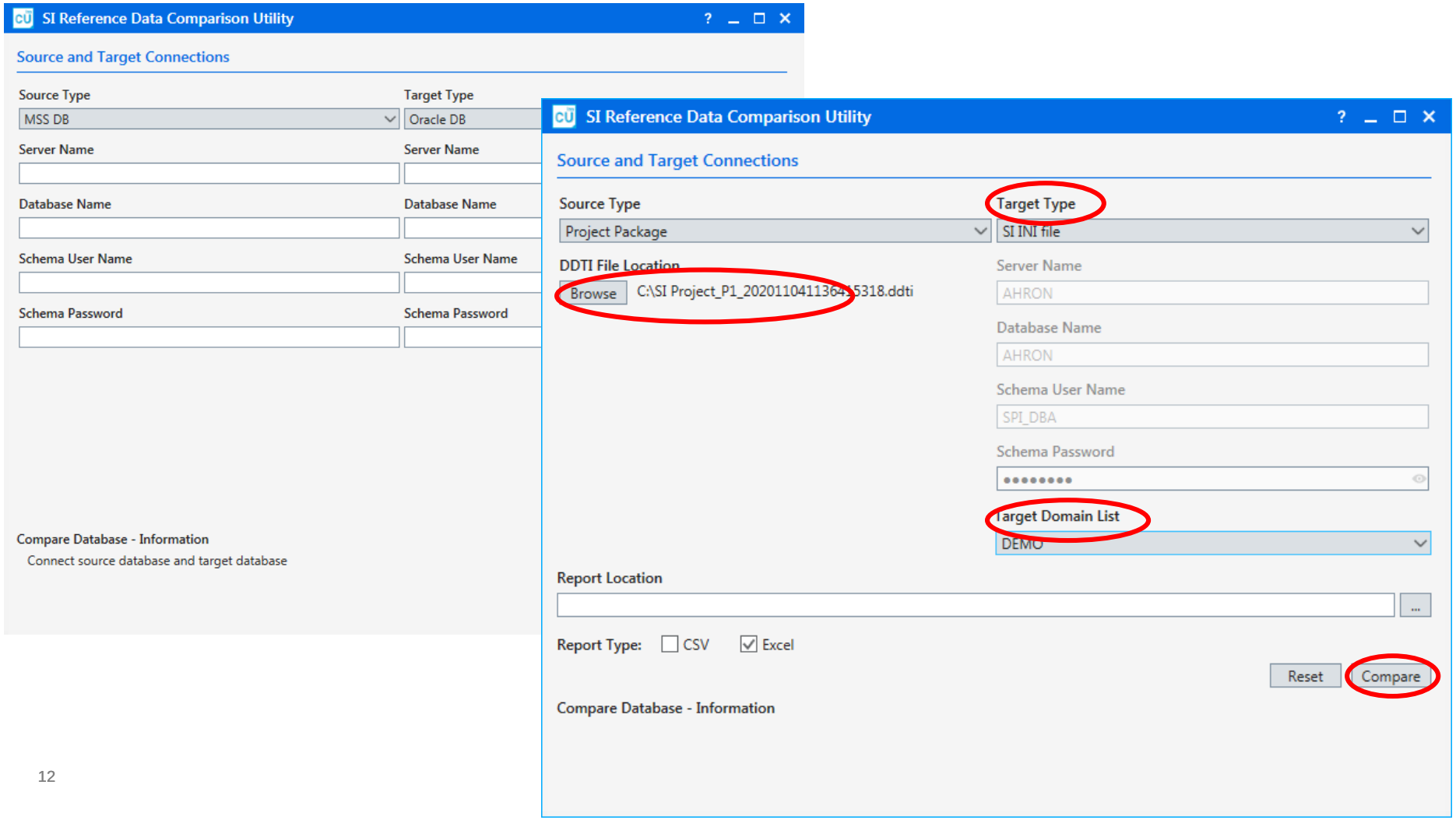
How to use the Offline Capabilities

The Reference Data Comparison utility



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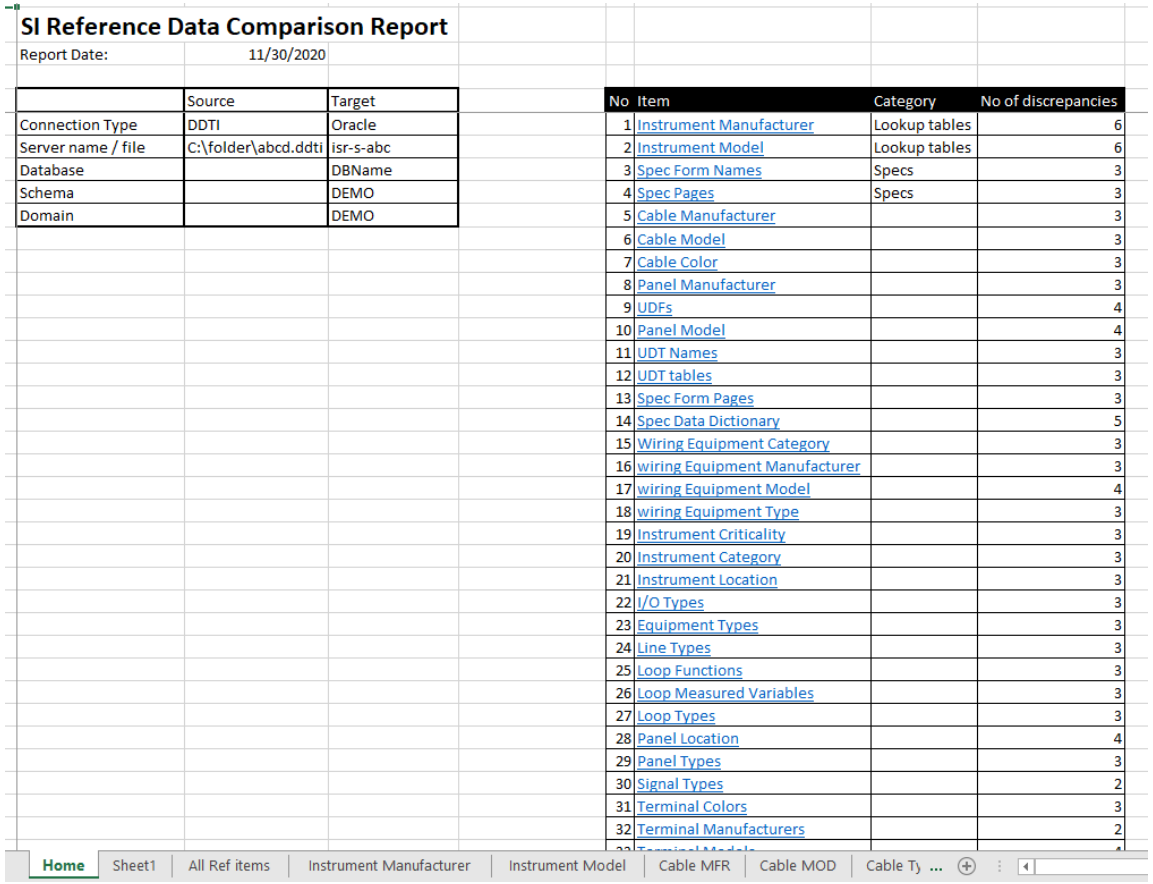
How to use the Offline Capabilities

The Reference Data Comparison utility – The Excel Report

- The Excel report contains a worksheet for each compared item.
- It has a home sheet that contains a summary of the reports with links to each worksheet.
- It also contains information about the data sources.
- Compared items that have no discrepancies have no worksheet or link.



SI Reference Data Comparison Report

Report Date: 11/30/2020

	Source	Target
Connection Type	DDTI	Oracle
Server name / file	C:\folder\abcd.ddti	isr-s-abc
Database		DBName
Schema		DEMO
Domain		DEMO

No	Item	Category	No of discrepancies
1	Instrument Manufacturer	Lookup tables	6
2	Instrument Model	Lookup tables	6
3	Spec Form Names	Specs	3
4	Spec Pages	Specs	3
5	Cable Manufacturer		3
6	Cable Model		3
7	Cable Color		3
8	Panel Manufacturer		3
9	UDFs		4
10	Panel Model		4
11	UDT Names		3
12	UDT tables		3
13	Spec Form Pages		3
14	Spec Data Dictionary		5
15	Wiring Equipment Category		3
16	wiring Equipment Manufacturer		3
17	wiring Equipment Model		4
18	wiring Equipment Type		3
19	Instrument Criticality		3
20	Instrument Category		3
21	Instrument Location		3
22	I/O Types		3
23	Equipment Types		3
24	Line Types		3
25	Loop Functions		3
26	Loop Measured Variables		3
27	Loop Types		3
28	Panel Location		4
29	Panel Types		3
30	Signal Types		2
31	Terminal Colors		3
32	Terminal Manufacturers		2

Home | Sheet1 | All Ref items | Instrument Manufacturer | Instrument Model | Cable MFR | Cable MOD | Cable Ty ...

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How to use the Offline Capabilities

The Reference Data Comparison utility – The Excel Report

Understanding the report

1. The Excel reports are color coded.
2. The report contains only the UI visible to user fields.
3. The comparison is done by IDs, i.e. items are compared by IDs.
4. In case that the ID is the same in both sources, then the report will highlight in yellow the discrepancies. Examples:
    1. Lines No 1. The id is the same in both sources (source and target), so the **Discrepancy Type** is "**Mismatch** …" and all the cells that are not the same are highlighted in yellow.
    2. Lines No 4. The **Manufacturer** name was not changed but the **Description** and the **Identification** were changed, therefore they are highlighted.
5. If no discrepancies, then the item will not be listed.
6. In a case that the item exists only in one of the sources (source or target), then the **Discrepancy Type** will be either **Only in Source** and will be highlighted green (rows 5, 6) or **Only In Target** and will be highlighted blue (Rows 2,3).

No	Discrapency Type	Instrument Manufacturer CMPNT_MFR_NAME	Description CMPNT_MFR_DESC	Manufacturer Identification MFR_COMPANY_IDENTIFICATION	URL IP_ADRESS	ID CMPNT_MFR_ID
1	Mismatch Source	FISHER			http://www.frco.com	4067
1	Mismatch Target	Fuji	Fuji Inc	ZZ200		4067
2	Only in Target	FOXBORO			http://www.foxboro.com	4068
3	Only in Target	HONEYWELL			http://www.honeywell.com	4072
4	Mismatch Source	ASTAVA		XYZ200	http://www.astava.com	4080
4	Mismatch Target	ASTAVA	Astva comp	XYZ2000	http://www.astava.com	4080
5	Only in Source	ALLEN BRADLEY		AB12345	http://www.ab.com	100200300
6	Only in Source	ASCO	Asco Corp.	X100200	http://www.asco.com	700200300

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How to use the Offline Capabilities

The Reference Data Comparison utility – The CSV Report

1. The CSV report is for batch operations on the database.
2. It contains all information as in the Excel report but in a format that will allow an advanced user to carry out batch modifications in the database.

Refernce Item	Database field	Display Name	Source value	Target Value	ID
Instrument Manufacturer	CMPNT_MFR_NAME	Instrument Manufacturer	FISHER	Fuji	4067
Instrument Manufacturer	CMPNT_MFR_DESC	Description		Fuji Inc	4067
Instrument Manufacturer	MFR_COMPANY_IDENTIFICATION	Manufacturer Identification		ZZ200	4067
Instrument Manufacturer	IP_ADRESS	URL	http://www.frco.com		4067
Instrument Manufacturer	CMPNT_MFR_NAME	Instrument Manufacturer		FOXBORO	4068
Instrument Manufacturer	IP_ADRESS	URL		http://www.foxboro.com	4068
Instrument Manufacturer	CMPNT_MFR_NAME	Instrument Manufacturer		HONEYWELL	4072
Instrument Manufacturer	IP_ADRESS	URL		http://www.honeywell.com	4072
Instrument Manufacturer	CMPNT_MFR_DESC	Description		Astva comp	4080
Instrument Manufacturer	MFR_COMPANY_IDENTIFICATION	Manufacturer Identification	XYZ200	XYZ2000	4080
Instrument Manufacturer	CMPNT_MFR_NAME	Instrument Manufacturer	ALLEN BRADLEY		100200300
Instrument Manufacturer	MFR_COMPANY_IDENTIFICATION	Manufacturer Identification	AB12345		100200300
Instrument Manufacturer	IP_ADRESS	URL	http://www.ab.com		100200300
Instrument Manufacturer	CMPNT_MFR_NAME	Instrument Manufacturer	ASCO		700200300
Instrument Manufacturer	CMPNT_MFR_DESC	Description	Asco Corp.		700200300
Instrument Manufacturer	MFR_COMPANY_IDENTIFICATION	Manufacturer Identification	X100200		700200300
Instrument Manufacturer	IP_ADRESS	URL	http://www.asco.com		700200300

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