

CFIHOS Use Case 1 - Bulk File Submission Validation

Contractor or Principal quality assurance workflow comparing Master Document Register metadata with metadata extracted from submitted document files. Aligned to CFIHOS v2.0 Core Reference Data Library structures.

Introduction

Contractor or Principal quality assurance workflow comparing Master Document Register (MDR) metadata with metadata extracted from submitted engineering drawing and document files.

This user guide demonstrates how to use Rihal Data eXtract (RDX) and Rihal Data Refine (RDR) to:

- extract structured metadata from submitted document files
- review extracted metadata against the source documents
- compare extracted metadata with the corresponding MDR
- validate and transform metadata against Principal reference data requirements
- populate a Principal-aligned MDR template for submission or further review

The workflow can be performed by Contractor Document Control before information is transferred to the Principal, or by Principal Document Control as part of received-submission quality assurance.

These instructions assume that Rihal Data eXtract (RDX) extraction rules and RDR properties, reference data, transformation rules and Excel templates have already been configured for the applicable project standard.

Rihal Data eXtract – Import Files and Extract Metadata

1. Prepare files in Bulk File Submission into one folder for upload to Rihal Data eXtract (RDX)

2. Log in to RDX using the instance URL and login credentials provided by your organisation
3. Select **Projects** from the left-hand menu and select the appropriate project

Rihal Data eXtract

 Projects

Figure 1. Projects

4. Where required, remove files from a previous run before uploading the new submission. Confirm that the files are no longer required before deletion. Remove previously uploaded files by selecting the delete button next to each file

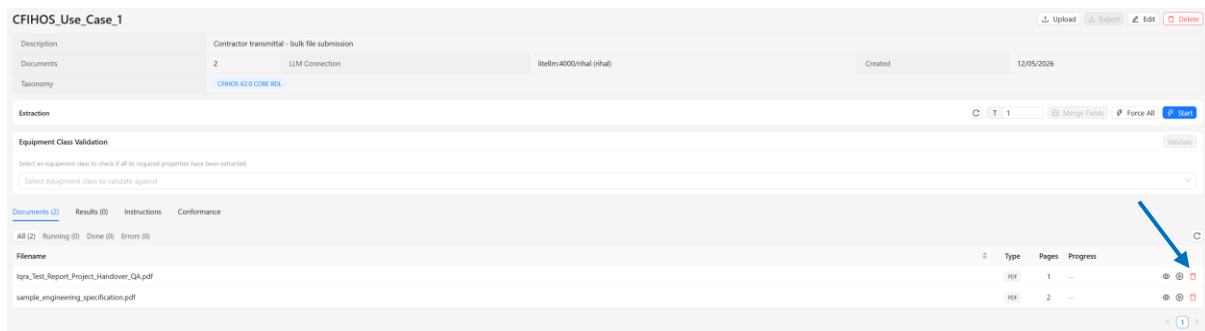


Figure 2. Delete previously uploaded files

5. Select the **Upload** button

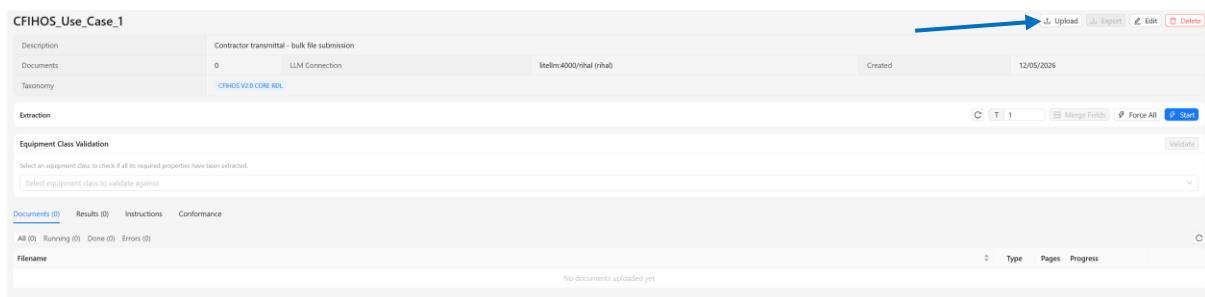


Figure 3. Upload button

6. Navigate to the prepared folder and press **Ctrl+A** to select all files then select **Open**

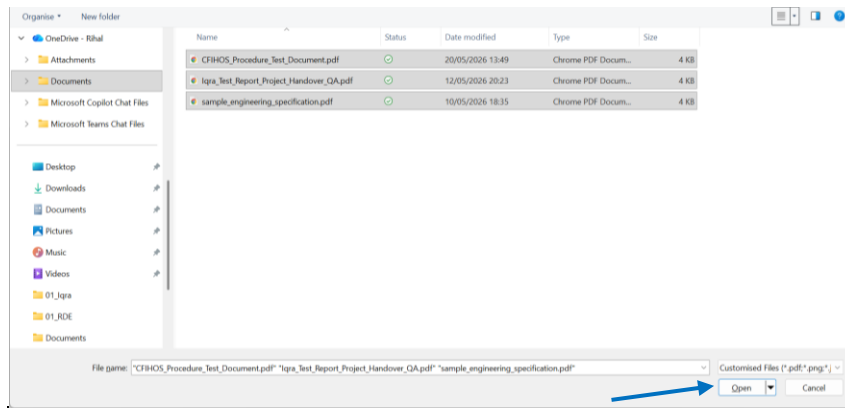


Figure 4. Select all files then Open for upload

7. Select **Start** to begin the extraction process



Figure 5. Start extraction

8. Wait for the Extraction status to show “Completed” then select **Results** view

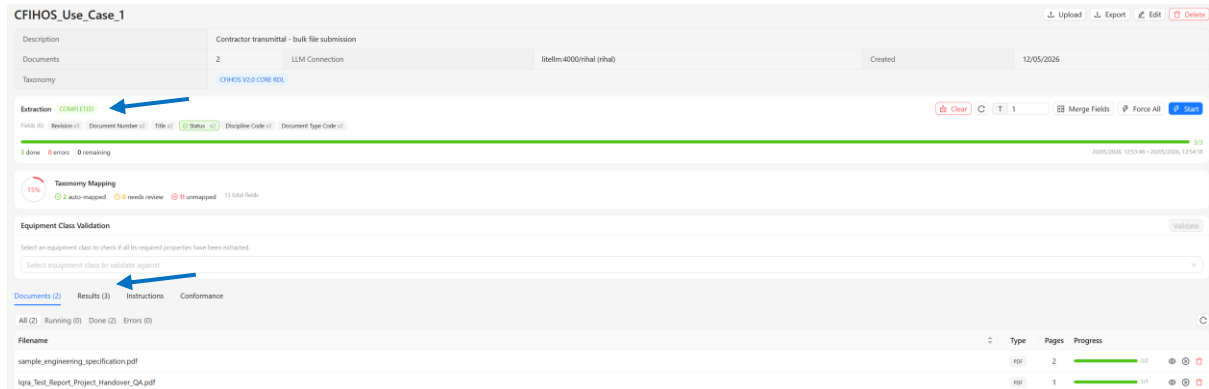


Figure 6. Extraction completed, select Results view

9. The Results view shows extracted fields and each document page as a record, extracted fields are organised into columns for each page

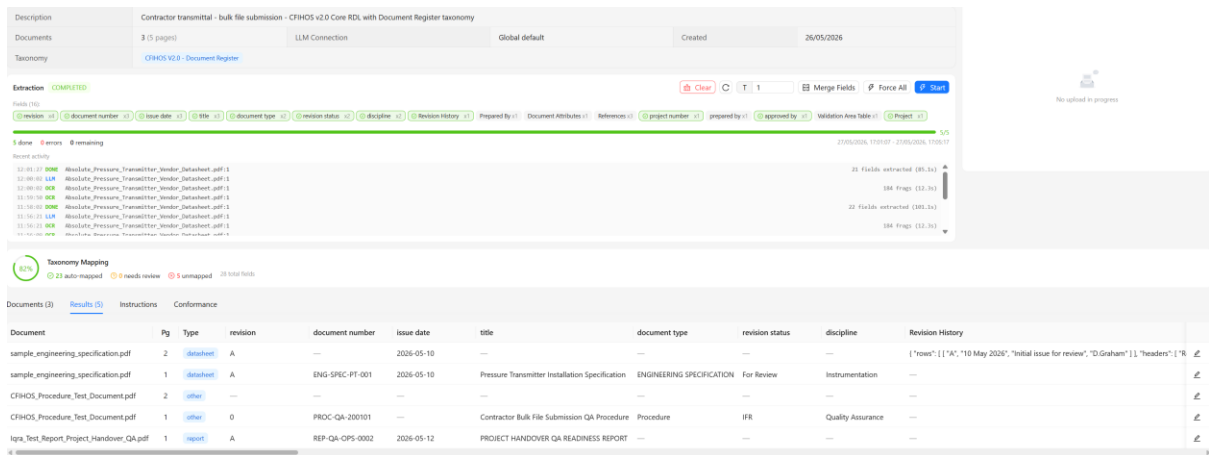


Figure 7. Results view

10. Select the Edit icon to view the file

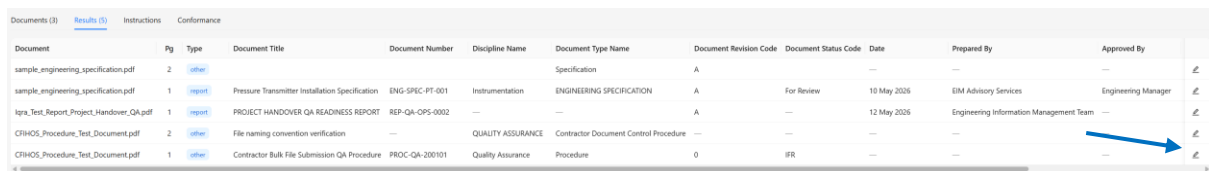


Figure 8. Open the Document Viewer

11. The Document Viewer is opened, select a field in the right-hand pane to zoom to where the data was extracted from the page

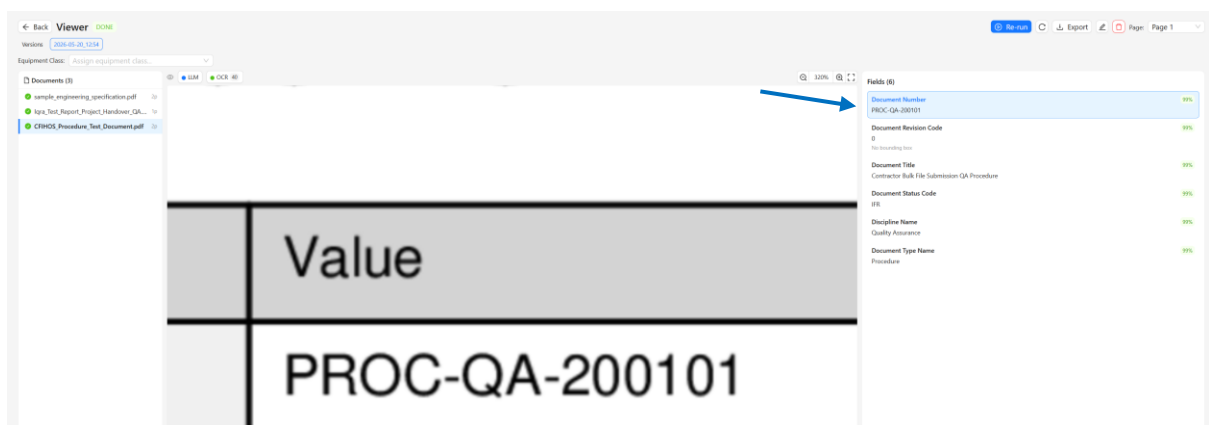


Figure 9. Document Viewer

12. Select **Back** to return to Documents view

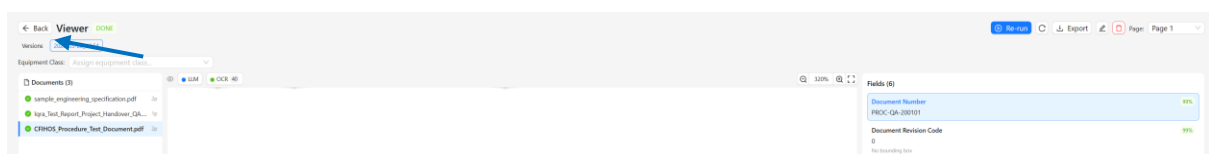


Figure 10. Back button to return to documents view

13. Select the **Export** button

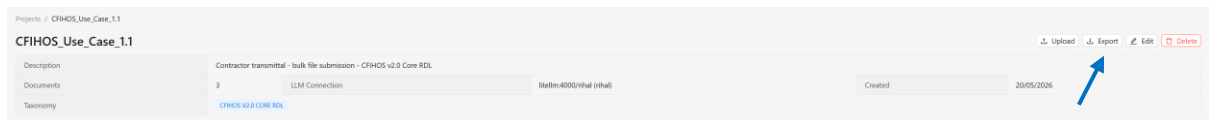


Figure 11. Export button

14. Select **Excel (wide – fields as columns)**

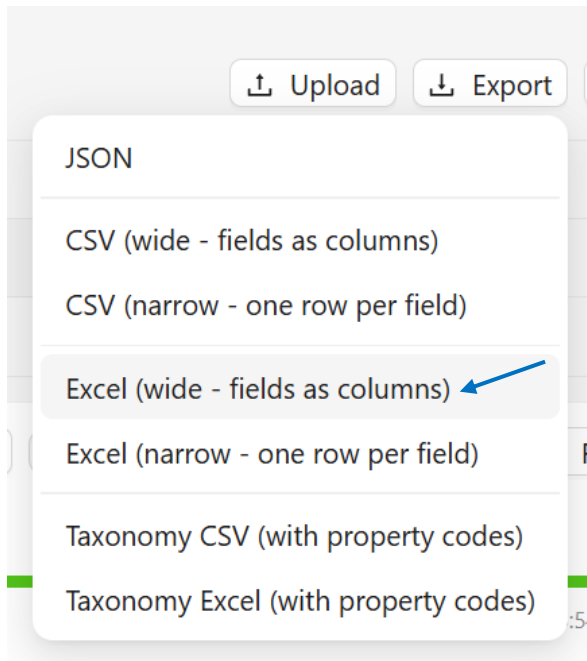


Figure 12. Select export format

15. Use Save As dialog box to rename file, navigate to save location then select **Save**

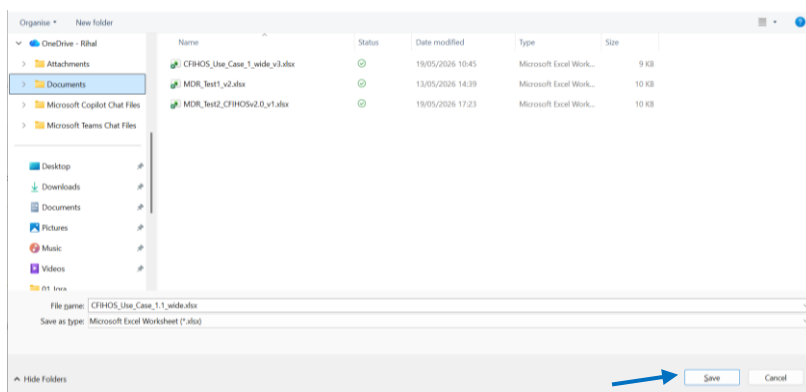


Figure 13. Save As dialog box

RDX output: structured metadata export ready for comparison in RDR.

Rihal Data Refine – Comparing Extracted Metadata to Master Document Register

1. Prepare extracted metadata Excel workbook from RDX and Master Document Register workbook (and/or submission coversheet/register) into one folder for upload into RDR
2. Log in to RDR using the instance URL and login credentials provided by your organisation
3. Select the appropriate project



Figure 14. Select project

4. On the left-hand menu select **Dataflow** then **Upload Data**

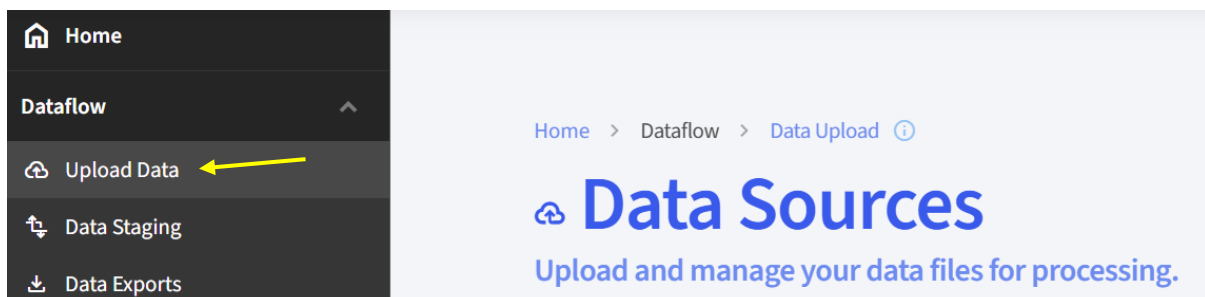


Figure 15. Upload data

5. Where required, remove files from a previous run before uploading the new submission. Confirm that the files are no longer required before deletion. To clear previously loaded files, select the Select All checkbox then select **Delete Selected**

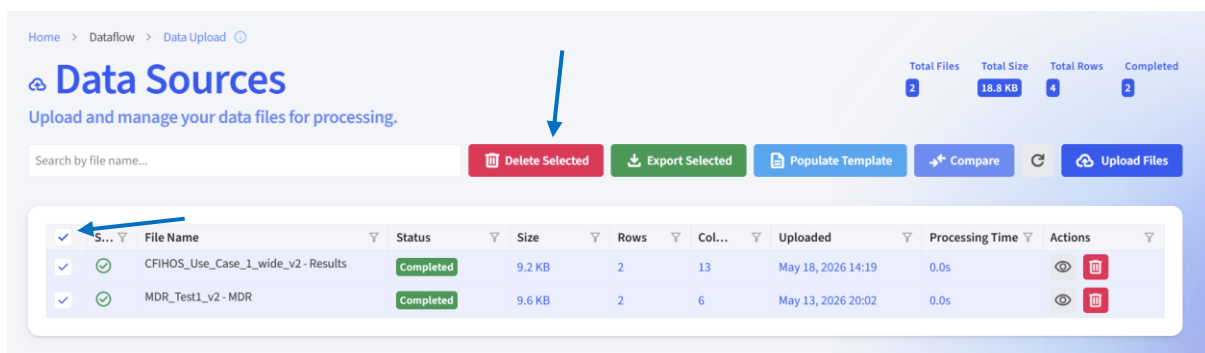


Figure 16. Delete selected files

6. Confirm delete selection

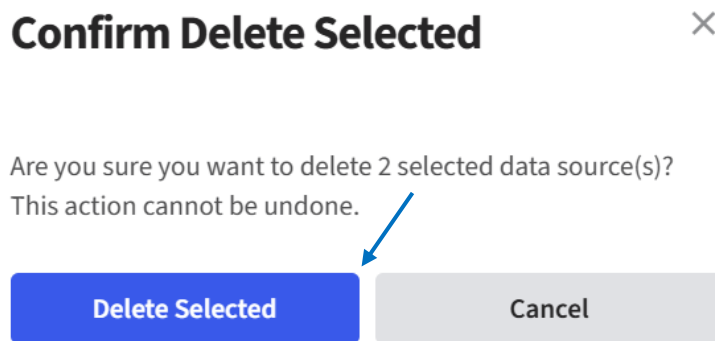


Figure 17. Confirm delete selection.

7. Wait for files to be deleted

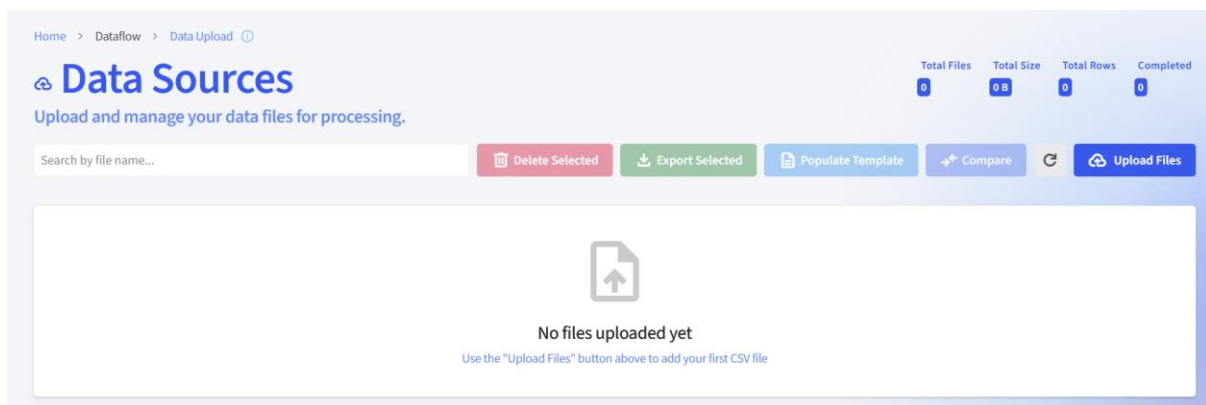


Figure 18. Data sources cleared

8. Select Upload Files

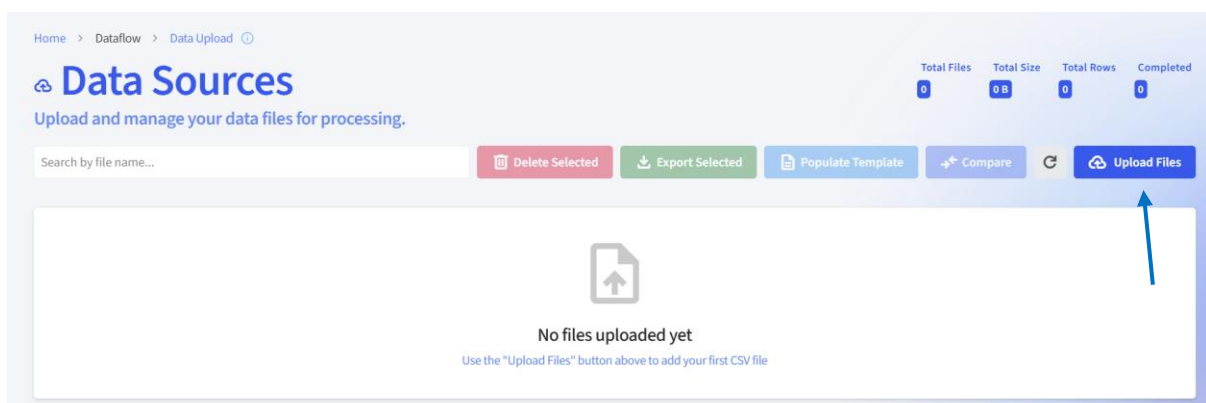


Figure 19. Upload files

9. Navigate to folder with extracted metadata and Master Document Register Excel workbooks then press **Ctrl+A** to select all files, then select **Open**

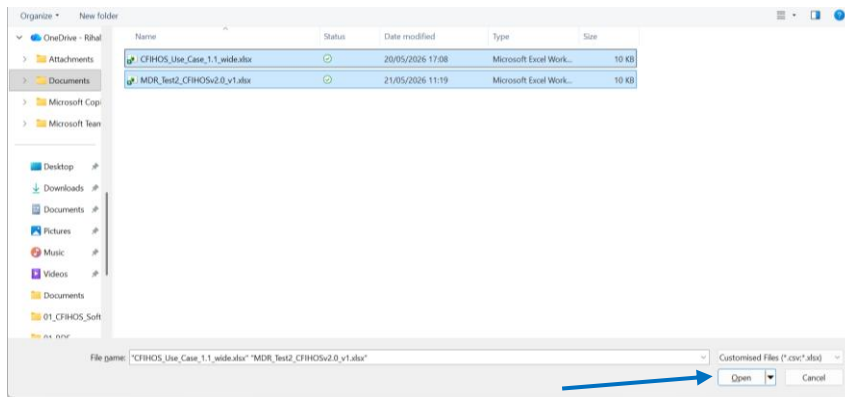


Figure 20. Open files

10. The files will display as Data Sources on Upload Data page

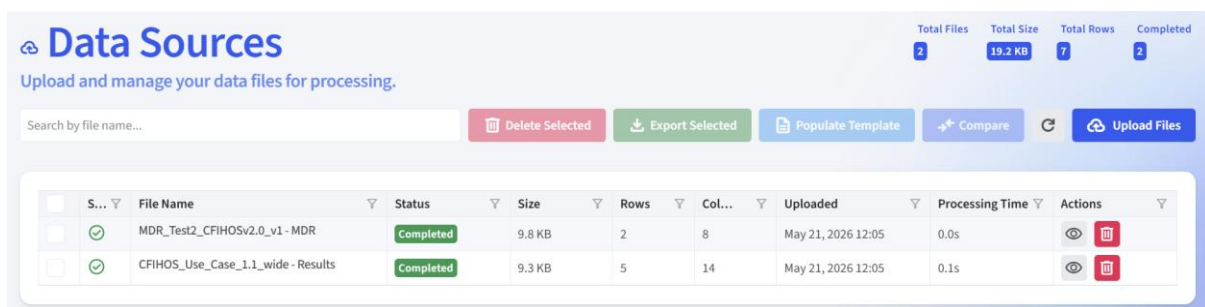


Figure 21. Uploaded files

11. Expand the Tools menu and select **Data Comparison**

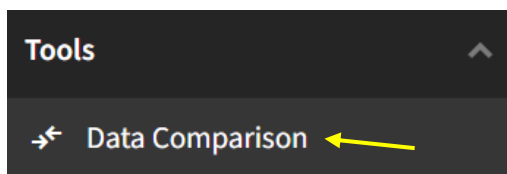


Figure 22. Data comparison

12. Select a **Left Data Source** (Master Document Register) and **Right Data Source** (Extracted metadata) then select **Compare**



Figure 23. Select data sources for comparison

13. Under Property Mismatch Summary, select the relevant property mismatch, then select **Click to view affected unique items**

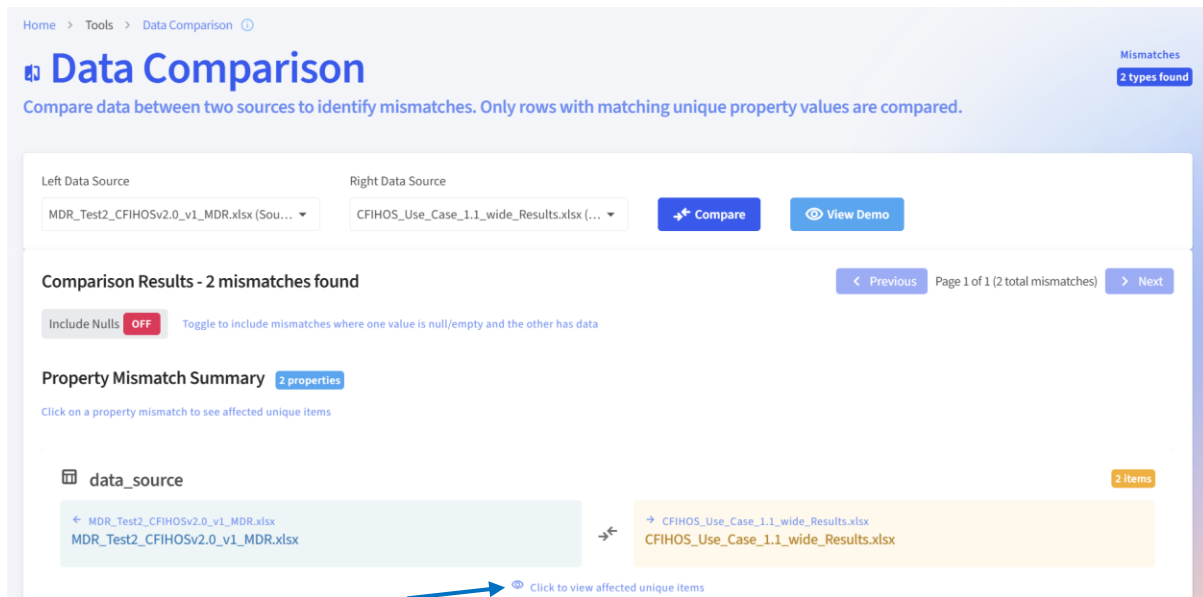


Figure 24. Click to view affected unique items

14. Review the side-by-side comparison for each unique document

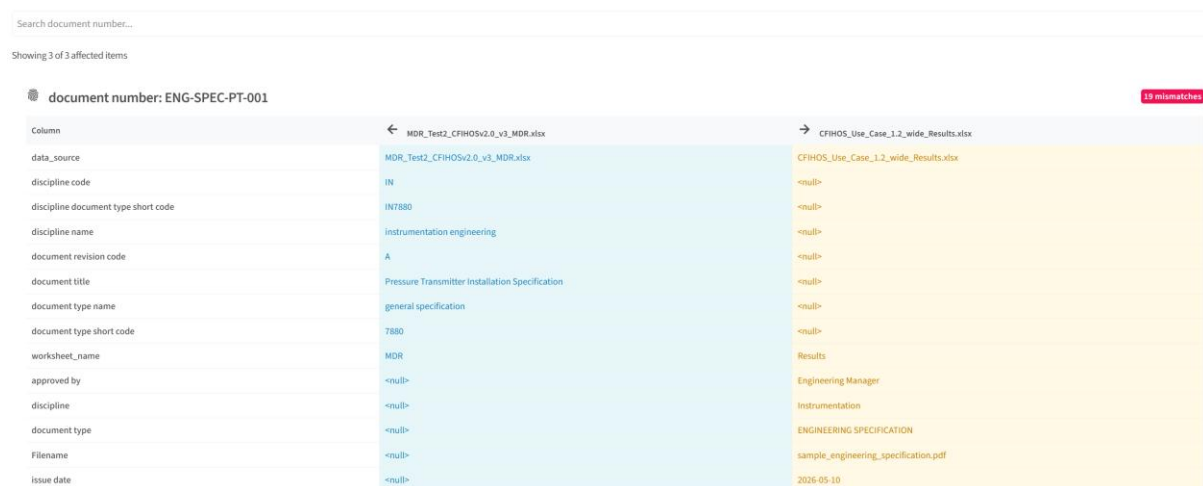


Figure 25. Side by side column comparison

15. Go to **Data Staging** under the **Dataflow** menu heading

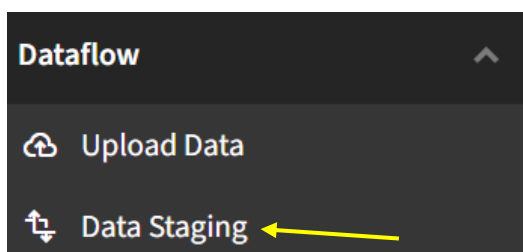


Figure 26. Data staging

16. Select **Run Transformation**

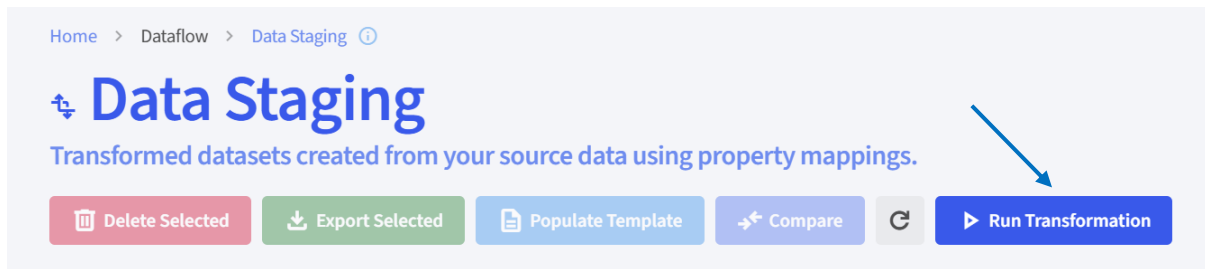


Figure 27. Run transformation

17. Once transformation is completed a staging dataset is created, select the eye button to view

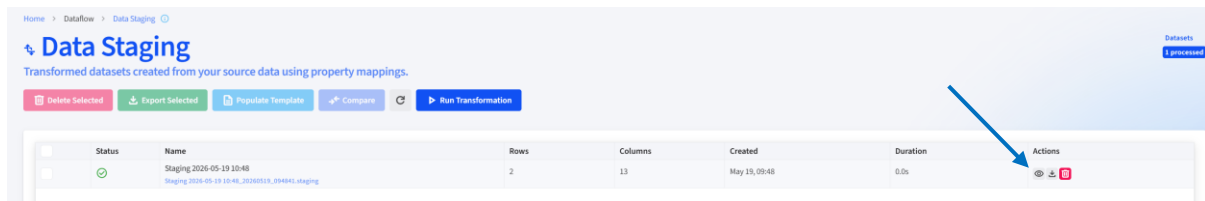


Figure 28. Open staging dataset

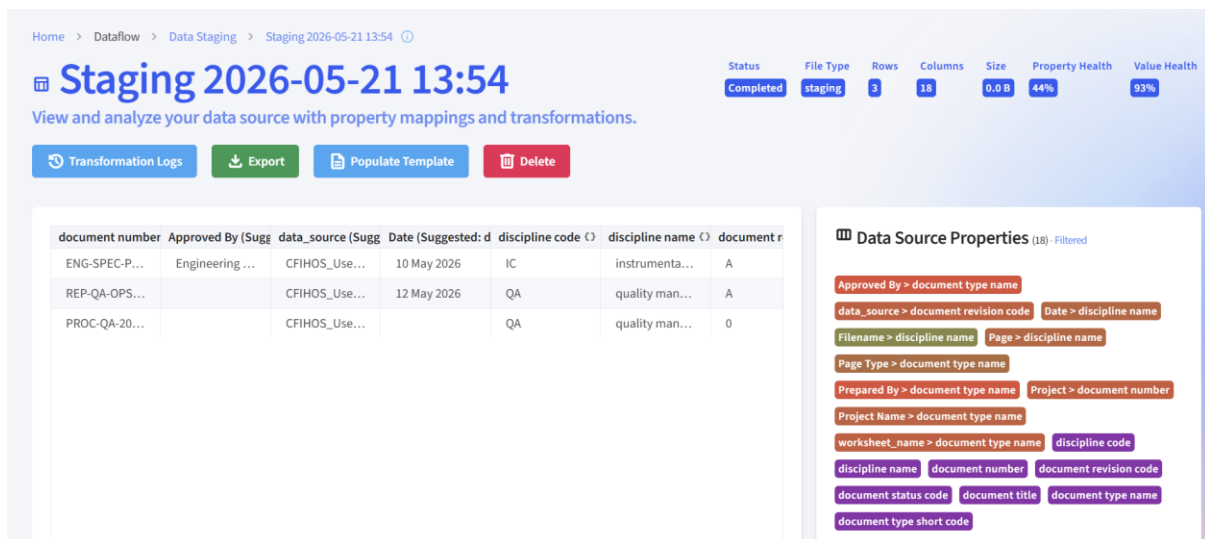


Figure 29. Review staging dataset

18. Review the transformation results

Note in this example, discipline code has been populated based on discipline name and document type short code has been populated based on document type name.

WHILST REVIEWING STAGING DATASET REFER TO RESOLVING INVALID VALUES SECTIONS BELOW

19. Select **Populate Template**

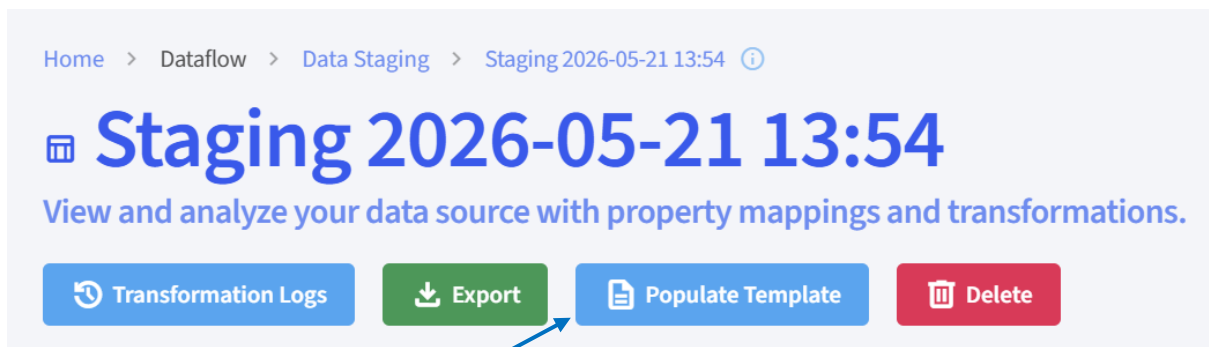


Figure 30. Select Populate Template

20. Select the correct Master Document Register template and staging source

Populate Excel Template

Populate Excel Template

Select Template

MDR_Test_Template_CFIHOSv2.0

Select a staging data source to populate the template. Data will be automatically matched to template columns using fuzzy matching.

Template Headers

document number

document revision code

document title

document status code

discipline code

discipline name

document type short code

document type name

Select Staging Data Source

Staging 2026-05-21 13:54_20260521_125411.staging

Figure 31. Confirm Populate Template

21. Scroll down and select **Populate Template**

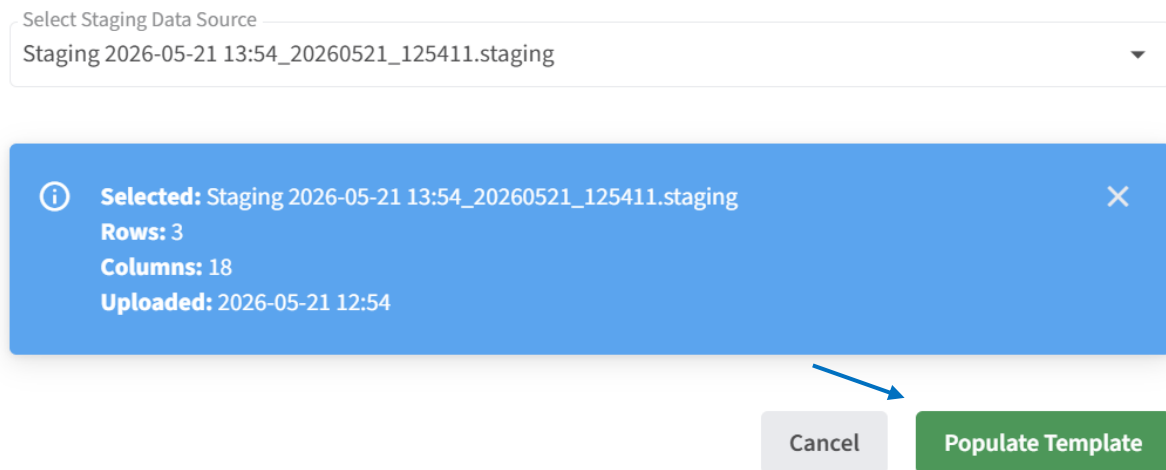


Figure 32. Select Populate Template

22. Navigate to **Data Exports** under **Dataflow** section of menu

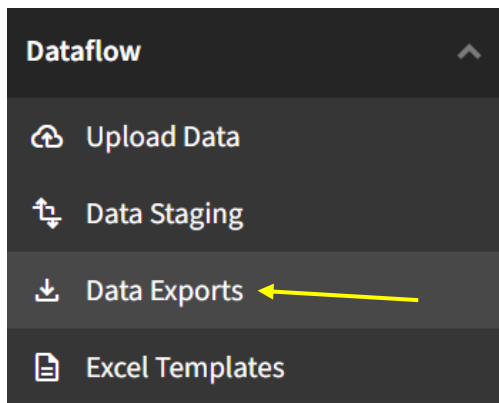


Figure 33. Data exports

23. Select the Download Export button under the Actions column for the required data export

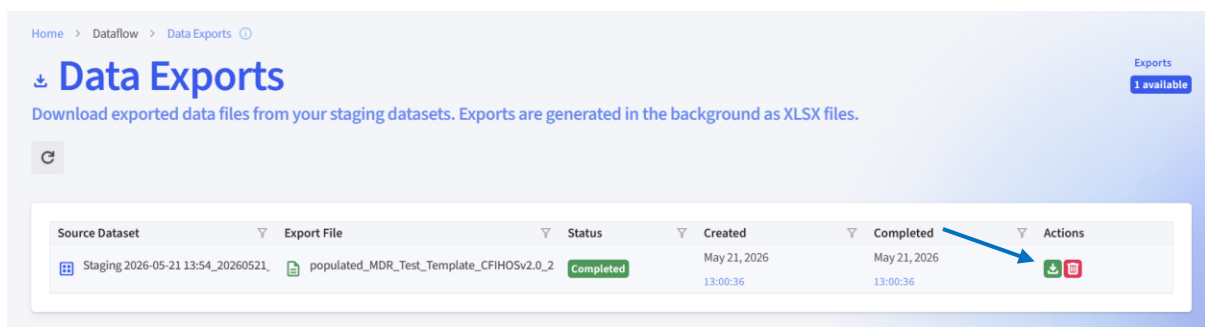


Figure 34. Download export file

24. Use the Save As dialog box to rename the populated template file, select a save location and select **Save**

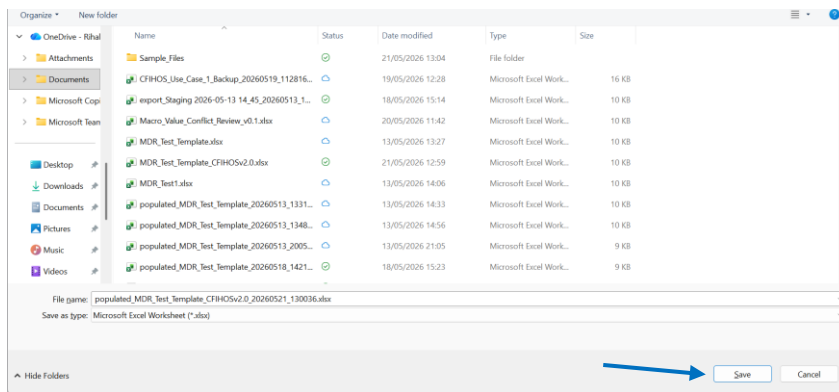


Figure 35. Save As for populated template

25. Open the populated template Excel workbook for review

A	B	C	D	E	F	G	H
document number	document revision code	document title	document status code	discipline code	discipline name	document type short code	document type name
ENG-SPEC-PT-001	A	Pressure Transmitter Installation Specification	IFR	IC	instrumentation engineering	7080	general specification
REP-QA-OPS-0002	A	PROJECT HANDOVER QA READINESS REPORT	QA	QA	quality management	7180	general report
PROC-QA-200101	0	Contractor Bulk File Submission QA Procedure	IFR	QA	quality management	6180	general procedure

Figure 36. Sample populated MDR template

RDR output: validated and transformed MDR populated in the required Principal template.

Resolving Conflicting Values – RDR (Preferred)

1. Select **Property Mappings** from the **Transformation** section of left menu

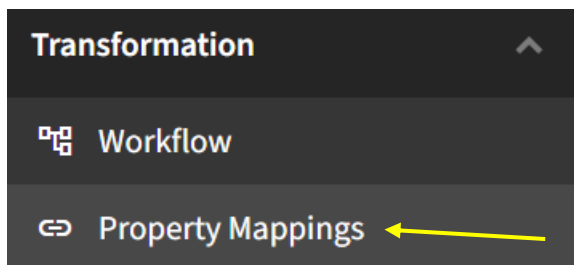


Figure 37. Property mappings

2. Select a property highlighted in purple in the Data Source Properties section and choose **View Values** to review (review each mapped target property shown in purple)

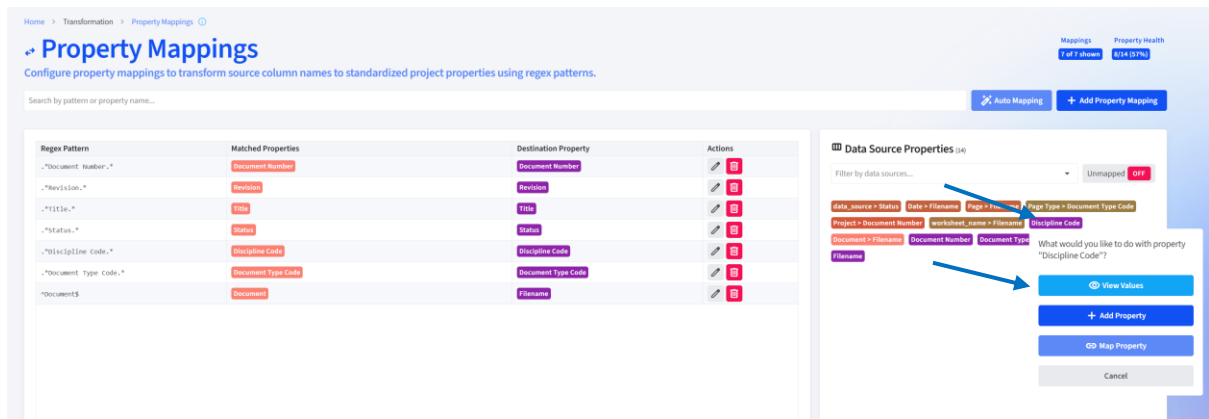


Figure 38. Select data source properties tagged in purple then view values

- Where an invalid or unresolved value is shown in red, select the value for review

Property Values - Revision

2 unique values from 2 total records → Mapped to: Revision

Invalid Only **OFF**

CFIHOS_Use_Case_1_wide_v3 - Results

A (1) A. (1)

Figure 39. Property values

- Enter a replacement value to create a reusable value mapping correction for the property then select **Create**

Create Value Mapping for 'Revision' - Value: 'A.'

Staging Data **OFF**
Data Sources
CFIHOS_Use_Case_1_wide_v3 - Results
MDR_Test1_v2 - MDR

Properties Regex Pattern
^Revision\$
Valid regex pattern

Values Regex Pattern
^(?<VALUE>A\.)\$
Valid regex pattern

Replacement Value
A

Suggested Lookup Values
No suggestions available

Replacement Preview with Validation
Revision: A

Description (Optional)

Matched Properties
Revision > Revision

Matched Values

AI Assistant

Start a conversation
Ask questions or get assistance with your data mapping tasks.

Type your message...
Send

Figure 40. Create value mapping to make correction (in this example, revision “A.” will be transformed to “A”)

5. Go to RDR step 16 to re-run transformation with updated rules

Resolving Conflicting Values – Excel (Alternative)

1. Open the populated template in Excel
2. In Excel use Ctrl & F to find cells containing the pipe delimiter to review conflicts

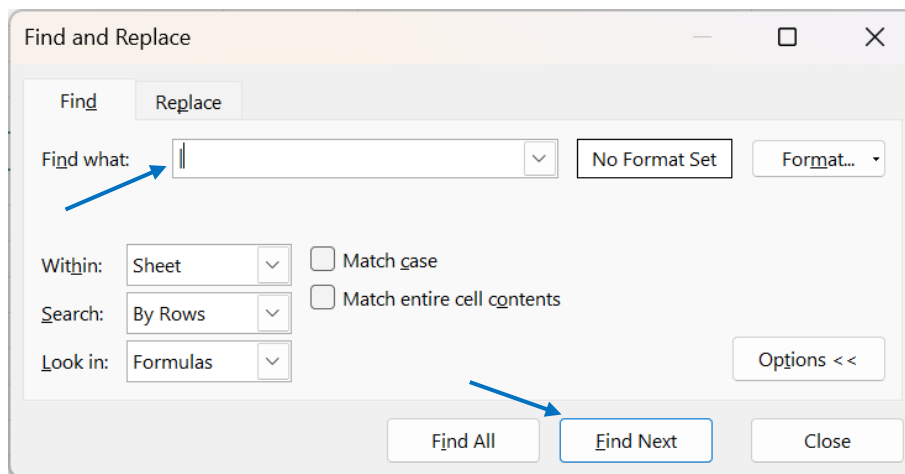


Figure 41. Find cells with conflicting values

3. Resolve each conflict by replacing with the correct value

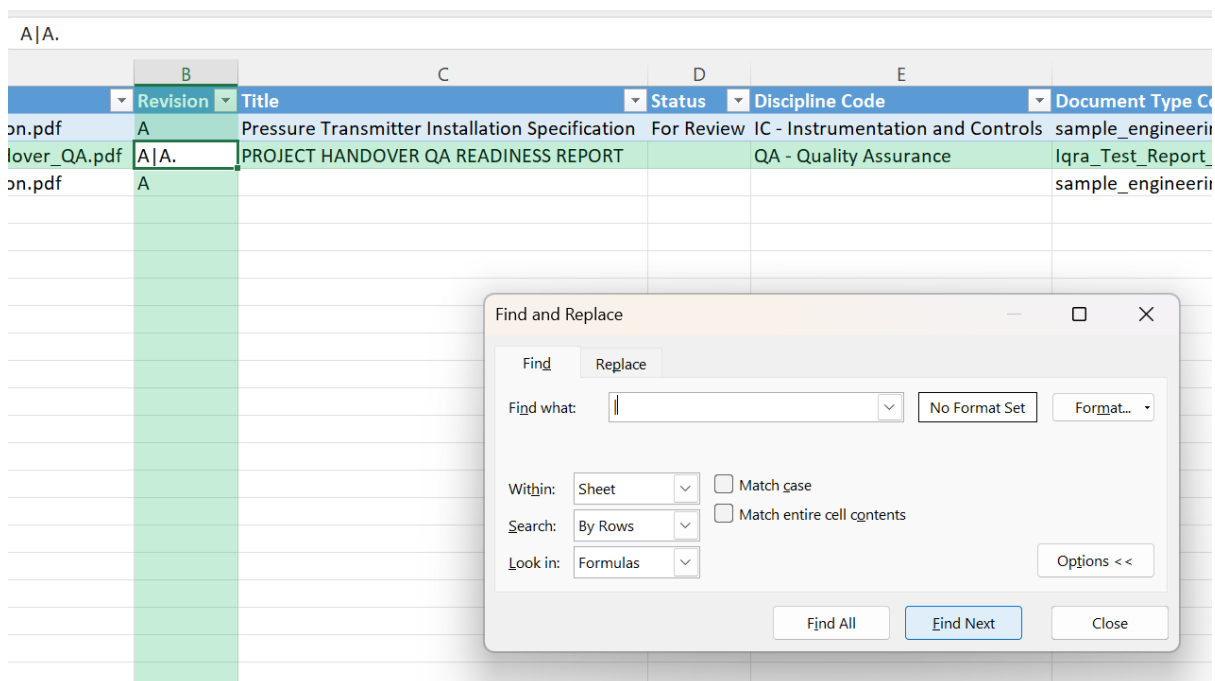


Figure 42. Example value conflict

	A	B	C	D	E	F
1	Document Number	Revision	Title	Status	Discipline Code	Document Type Code
2	ENG-SPEC-PT-001	A	Pressure Transmitter Installation Specification	For Review	IC - Instrumentation and Controls	SPE - Specification
3	REP-QA-OPS-0002	A	PROJECT HANDOVER QA READINESS REPORT		QA - Quality Assurance	REP - Report
4						

Figure 43. Example resolved conflict value

Once all conflicts have been resolved and the populated MDR or coversheet/submission register has been fully reviewed, the information deliverable is ready for the next stage:

- a. Contractor workflow: submit the validated MDR and associated document files to the Principal through the agreed project information management process.*
- b. Principal workflow: proceed with received-submission quality assurance and review through the Principal's agreed information management process and systems.*