
Solution Design Document

Intellimatch File Transfer

Process Name: Intellimatch File Transfer
Prepared by: Novigo Solutions Pvt. Ltd.
Date Prepared:
Last Updated:
Version: V1.0

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1 DOCUMENT HISTORY

Version	Description	Date	Author
1.0	Initial Draft	08-04-2025	Novigo Solutions

2 DOCUMENT APPROVALS

Approver Name	Designation (Department)	Signature	Date
Pankaj Bajaj	Senior Manager, Engineering and Integration		
Priyabrata	Developer, Engineering and Integration		

3 GLOSSARY OF TERMS

The following table includes definitions for any abbreviations or notations that are used in the document:

Term	Definition
FCSSL	First Capital Shared Services Limited
BOT	Short for Robot
SDD	Solution Design Document
RPA	Robotic Process Automation
SME	Subject Matter Expert
I/P	Input
O/P	Output
WinSCP	Windows Secure Copy
DB	Database
DT	Data table
PS	Process Schedule
MS	Microsoft

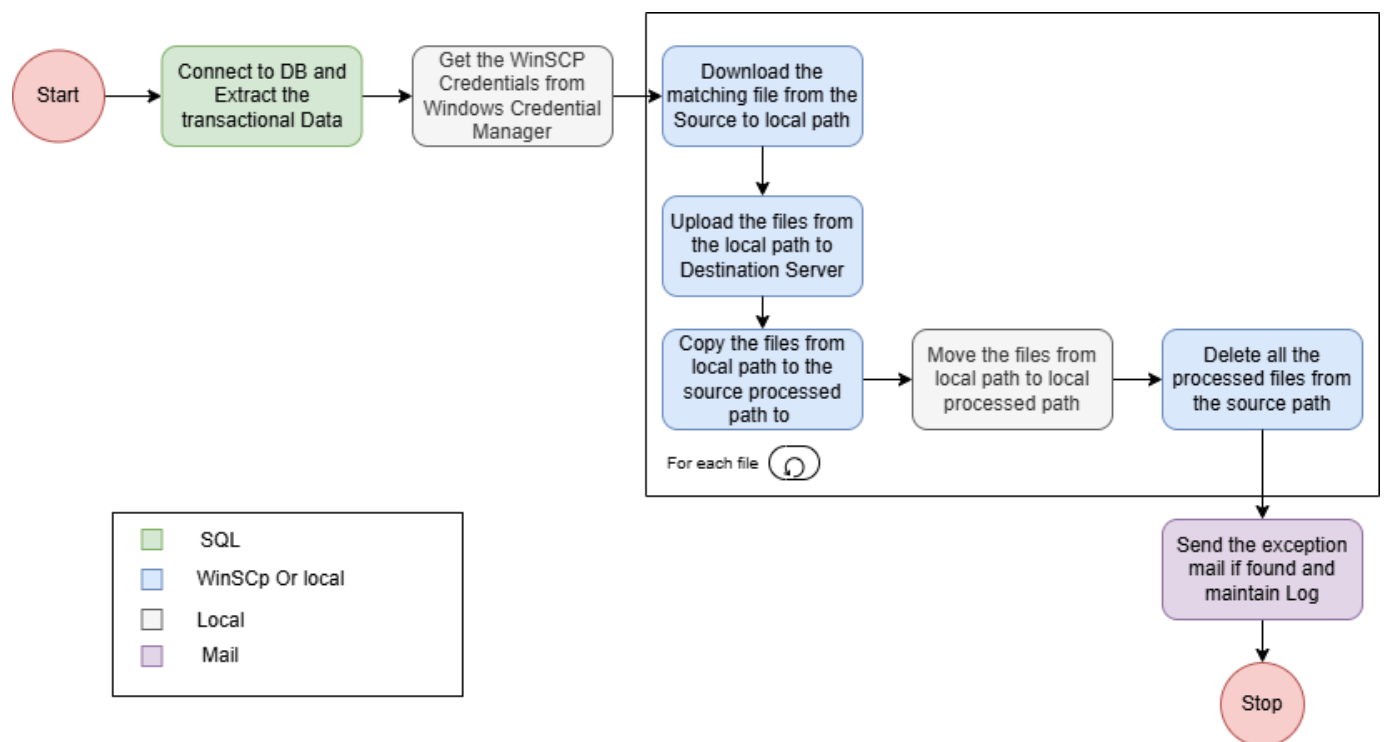
4 CUSTOMER SCENARIO AND CHALLENGE

The institution needs to automate the secure transfer and processing of files across multiple countries (Zimbabwe, Malawi, and Botswana) using the RE Framework. The process involves retrieving file transfer details from a database, connecting to WinSCP for secure file downloads, and transferring them to designated destinations while maintaining logs and handling exceptions efficiently.

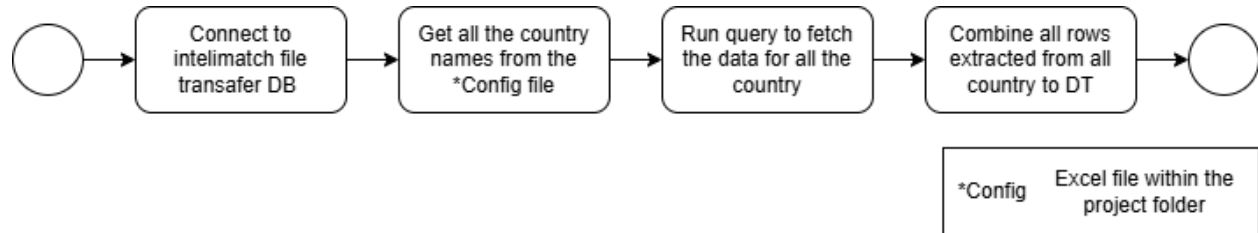
Challenge: Ensuring seamless connectivity to source and destination servers, managing country-specific file transfer priorities, handling exceptions during file transfers, and implementing robust retry mechanisms. Additionally, maintaining data integrity while renaming, moving, and deleting files, along with ensuring accurate status updates for each transaction, adds complexity to the automation process.

5 THE RPA SOLUTION

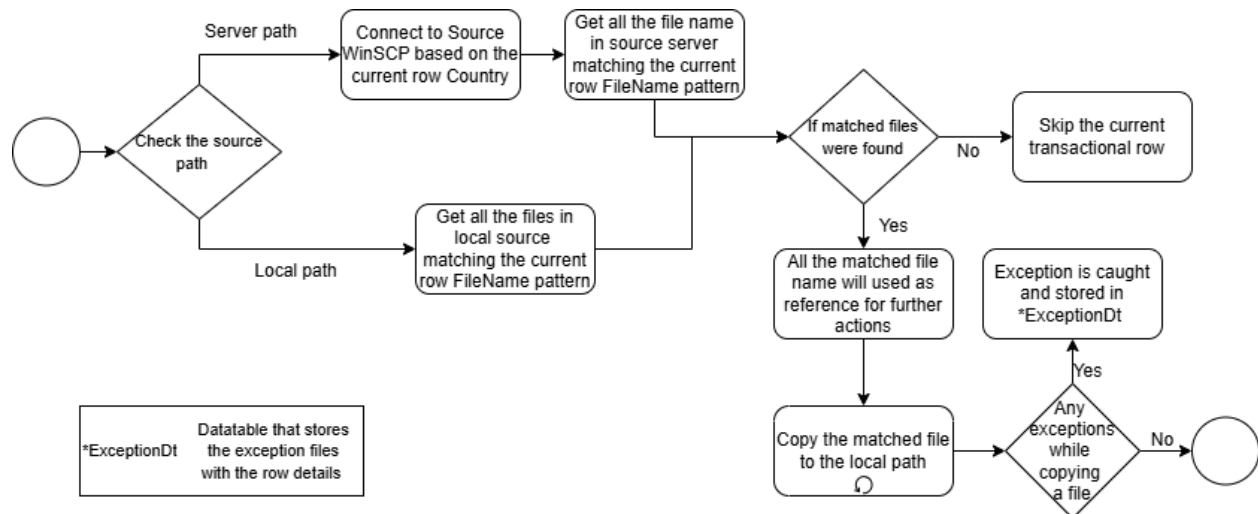
Novigo will be building an RPA solution which uses UiPath unattended bots for processing Intellimatch File Transfer. Below flowchart represent detailed process workflow:



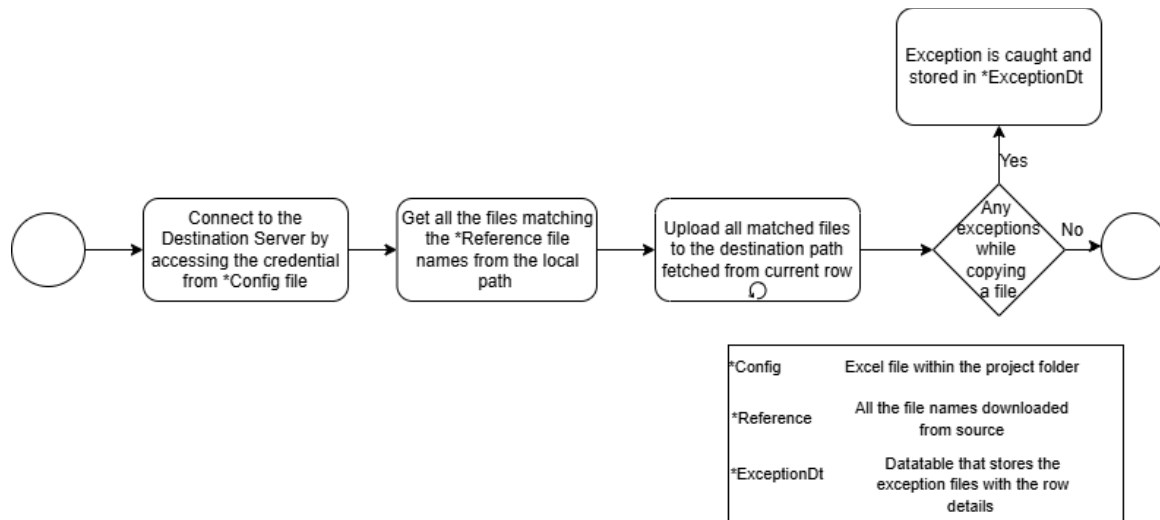
1: Connect to DB and fetch data



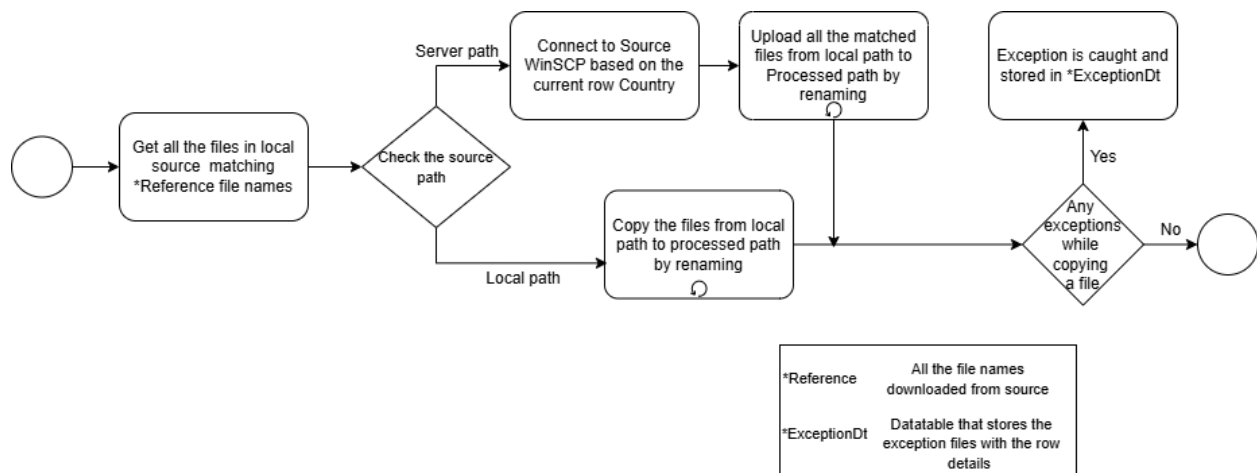
2. Download files from Source Path



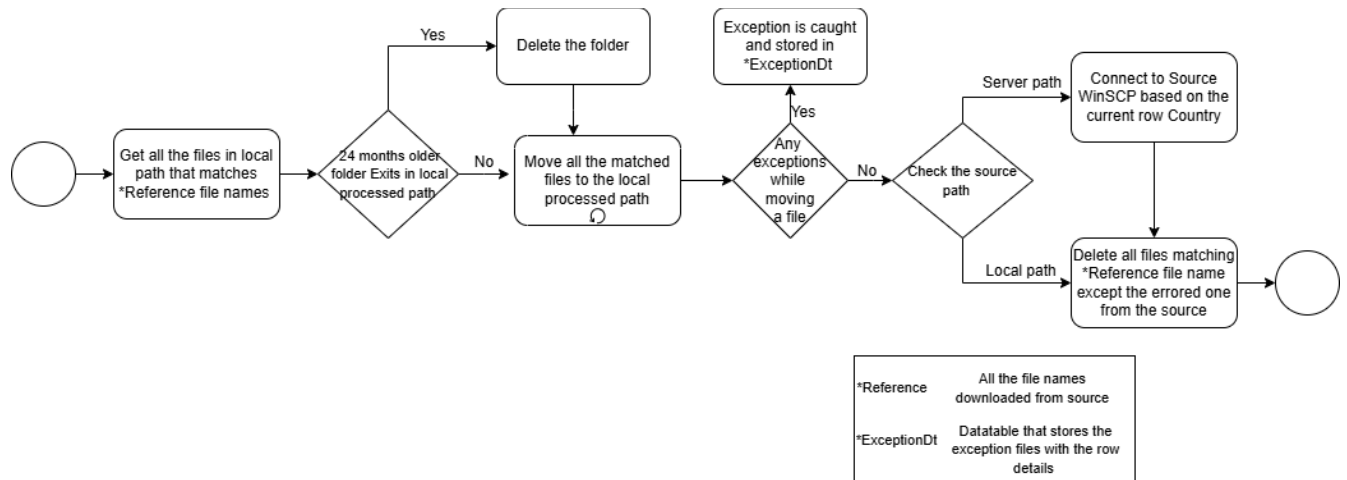
3. Upload files to Destination Server



4. Copy file to Source Processed Path



5. Move files to local processed path and finally delete files from source



5.1 Steps of The RPA Solution

Novigo will be building an RPA solution which uses UiPath unattended bots for bots for processing Intellimatch File Transfer. This process is developed using the **RE Framework**.

5.1.2 Fetch Data for Processing

1. Establishes a connection to the Intellimatch file transfer database.
 - a. Executes queries based on the priority order set in the config file: Zimbabwe, Malawi, Botswana.
 - b. Compiles all the data into a Data Table, where each row represents a file transfer record.
2. Columns within the DT that are used subsequent steps of the process include
 - a. File Name, Source Path, Destination Path, Local Folder Path, Source Archival Path and Country
 - b. Adds a **"Status"** column to the **DT** to track the status of each transaction.

row	FileType	FileName	SourceServerIP	FileNameExample	SourcePath	DestinationServer	DestinationPath	Country	CountryC	SourceArchivalPath	LocalFolderPath	EmailAdd	StartT	EndTime
1	ACQUIRED	FCB*AcquirerAuditRep	10.5.82.147	FCB - YY-MM-DD - AT:\		147.249.1.47	/ReconData_Zimbabwe/FI Zimbabwe	ZW	T:\PROCESSED		C:\RPA\Intellimatch_Transf	07:00	14:00	
2	BILLERS	B01-Bill_Payment_Trar	10.5.82.147	B01-Bill- _Payment_TT:\		147.249.1.47	/ReconData_Zimbabwe/FI Zimbabwe	ZW	T:\PROCESSED		C:\RPA\Intellimatch_Transf	07:00	14:00	
3	CHANNELS_TRAN	Channels_Transaction_	10.5.82.147	CHANNELS_TRANSA:T:\		147.249.1.47	/ReconData_Zimbabwe/FI Zimbabwe	ZW	T:\PROCESSED		C:\RPA\Intellimatch_Transf	07:00	14:00	
4	ECOCASH	FIRST_CAPITAL_IND04	10.5.82.147	FIRST_CAPITAL_INDIT:\		147.249.1.47	/ReconData_Zimbabwe/FI Zimbabwe	ZW	T:\PROCESSED		C:\RPA\Intellimatch_Transf	07:00	14:00	

3. Fetching WinSCP Credentials from Windows Manager

- a. For the country **Zimbabwe** and **Malawi**, fetch WinSCP credentials (username and password) Windows Manager based on the target key in the Config file.
 - b. Botswana uses local drive paths and does not require server credentials.
 - c. Store credentials as key-value pairs, with the country as the key and credentials as values.
 - d. The retrieved key-value pair is used in subsequent process steps to establish a server connection.
4. Maintain a log file
- a. Creates a log text file in a dynamically generated folder based on the current date.
 - b. The log file is continuously updated in the subsequent process to record execution details.
 - c. Declare Exception DT *dt_ExceptionData* to store all the transactional rows with exceptions

Exception handling:

- If an exception occurs during any of these stages, the process will attempt a retry. If the exception persists despite the retry, the process stops immediately, and a message is sent to the SME for further action.

To	Priyabrata Rout <priyabrata.rout@fcssl.com> X
Cc	Pankaj Bajaj <pankaj.bajaj@fcssl.com> X

RPA - BOT Failed

Dear Team,

Execution of the process IntelliMatch File Transfer on the RPA Bot failed due to the following reasons:
{Exception Message}

Date: {Current Date}

Thanks,
Digital RPA BOT

5.1.2 Transferring Files

1. Declarations for the process
 - a. A dictionary ErrorFileCollection to store file names that encounter errors during transfer.
 - b. ErrorFileCollection is finally stored in Exception DT along with row details.
 - c. Declare the local path by combining LocalFolderPath and Country from the transactional row.
 - d. Check the Source Path from the current transactional row.

- e. If the path starts with /
 - i. It is a server path (WinSCP path)
 - ii. Else, it is a local path.

SourcePath

T:\

/REPORTS_OTH/Intellimatch/

2. Copy files from source to local folder path
 - a. If the Source Path is a server path
 - i. Connect to **Source WinSCP** based on the country and retrieve the file names matching the current transactional row FileName
 - ii. If it's a local path, retrieve matching files from the local source.
 - b. Uses retrieved file names as **reference files** for further processing.
 - c. Throws a business exception and skips the row if no matching files are found.
 - d. Copies each matched file to the **local path** from the current transactional row.
 - e. Catches any exceptions during copying and stores them in ErrorFileCollection.
3. Copy files from local folder path to Destination Server
 - a. Connects to the destination server using credentials from the Config file, which utilizes a **private key file path** for authentication.
 - b. Retrieves all files matching the Reference file names (downloaded from the source), excluding those in ErrorFileCollection.
 - c. Uploads each matched file from the **local path** to the **destination path** specified in the current transactional row.
 - d. Catches any exceptions during the upload process and stores them in ErrorFileCollection.
4. Copy files from **local** folder path to **Source Processed** Path
 - a. Retrieves all files from the local source matching the Reference file names, excluding those in ErrorFileCollection.
 - b. If the Source Path is a server path
 - i. Connect to Source WinSCP based on the country and upload each matched file from the local path to the processed path, renaming it as **"FileName_ddMMyyyy_done"**.
 - ii. If it is a local path, copy all matched files to the processed path, renaming them as **"FileName.done"**.
 - c. Creates the processed path directory if it does not exist (/REPORTS_OTH/Intellimatch/PROCESSED/mm/yyyy/date) before moving files.
 - d. Catches any exceptions during the upload or copying process and stores them in Error.

5. Copy files from local folder path to Local processed path
 - a. Deletes any folders older than 24 months in the local processed path (month-year folders).
 - b. Retrieves all files from the **local path** matching the Reference file names, excluding those in ErrorFileCollection.
 - c. Moves the retrieved files to the local processed path from the current row (C:\RPA\Intellimatch_Transfers \{CountryName}\PROCESSED\monthyear\date).
 - d. Renames each file to "**FileName.done**" during the move.
 - e. Creates the local processed path directory if it does not exist before moving the files.
 - f. Catches any exceptions during the process and stores them in ErrorFileCollection.
6. Finally Delete the files from the source path
 - a. If the **Source Path** is a **server path**
 - i. Connect to **Source WinSCP** based on the country deletes all matching files from the source, excluding those in ErrorFileCollection.
 - ii. If it is **local path**, directly deletes the matching files from the **local source**, excluding those in ErrorFileCollection

Exception handling:

1. If a System Exception occurs while connecting to the source or destination path, the bot attempts a retry.
2. If the exception persists, it updates the Status of the transactional row with the exception message and moves to the next row.
3. If the transaction is successful, the Status column is updated as "Passed".

5.1.3 Updating the Status

1. The **final DT**, with the updated **Status** column for each transactional row, is stored in an **Excel file** within the project location as a record of processed transactions.
2. If the **Status** column contains any **exceptions**, an **email** is sent to the SME, attaching an **Excel file** with only the transactional rows that encountered exceptions.
3. If **ExceptionDt** contains values, an email is sent to the SME with an Excel file attachment containing the ExceptionDt data.


To

Priyabrata Rout <priyabrata.rout@fcssl.com> X

Cc

Pankaj Bajaj <pankaj.bajaj@fcssl.com> X

RPA - BOT Failed


AllExceptionData.xlsx
7 KB

▼

Dear Team,

Execution of the process **IntelliMatch File Transfer** on the bot runner RPA Bot failed
Please find the attachment .
Date: 03/26/2025 07:34:12

Thanks,
Digital RPA BOT

6 SYSTEM REQUIREMENTS

Software Requirements	Operating System (Any one of these Operating System)	<ul style="list-style-type: none"> Windows 10 Windows 11 Windows Server 2016, 2019, 2022
	.NET Framework	.NET Framework 4.6 (Minimum)
Hardware Requirements	CPU	1.4GHz 32-bit (Minimum) Dual Core 1.8GHz 64-bit (Recommended)
	RAM	4 GB (Minimum)

7 Application list

Application	Username	Access Type	Purpose
Outlook	robot@fcssl.com		Email communications
MS Excel			Storing Data
MS SQL			Fetching Data from Intellimatch SQL Database

8 Input/Output Folder Structure

Folder	Path
Email Formats (I/P)	Data\Input\Email Formats\AttachExceptionDtFormat.txt
BotLogs (O/P)	BotLogs\MM_yyyy\ddMMyyyy_hhmmss.xlsx

9 Schedule

The schedule will be fine-tuned during the production cutover planning phase

Process Name	Parameter	Start Schedule	# of Schedules	Schedule Interval
Intellimatch File Transfer	<i>Nil</i>	Time Trigger – 7.00 – 14.00		Every 30 min

Note: The automatic trigger is configured to disable after 1 hour. If a process runs longer than an hour, it will be terminated, an alert for the incomplete job will be generated, and the next scheduled process will begin.

10 APPENDIX

Sl.#	Document	Reference attachment
1	Application config.xlsx	

11 UiPath Activity Library Files

Activity Package Name	Version #	Description
UiPath FTP Activities	2.4.0	For Performing operations in the WinSCP Server
UiPath Excel Activity	2.24.4	Core activity for Excel operations
UiPath System Activity	25.2.2	Core activity package
UiPath Mail Activity	1.24.13	Core activity package for mailing

UiPath Credentials Activity	2.1.0	For fetching credentials from Windows Credential Manager
UiPath Database Activity	1.9.0	Core activity for SQL operations

12 Email lists for Notification

Team	Email
FCSSL (SME)	priyabrata.rout@fcssl.com

13 FUTURE ENHANCEMENT

Any planned and identified future enhancements

14 CLIENT ACCEPTANCE

Name of Document	Intellimatch File Transfer
Document	Solution Design Document
Revision Number	1.0
Number of Pages	13
Date Prepared	08-04-2025

This document has been approved as the official Solution Design Document for Centralized Service Claim & Collection, and accurately reflects Proposed Solution using RPA. Following approval of this document, requirement changes will be governed by the project's change management process, including impact analysis, appropriate reviews and approvals.

If you agree with the above Solution document for the mentioned business process automation, please sign below with date and return it back to **__Novigo PM name & email__** via email to confirm.

Client Name

Novigo Solutions Pvt. Ltd.

Signature: _____

Signature: _____

Name:

Name:

Job Title:

Job Title:

Date:

Date: