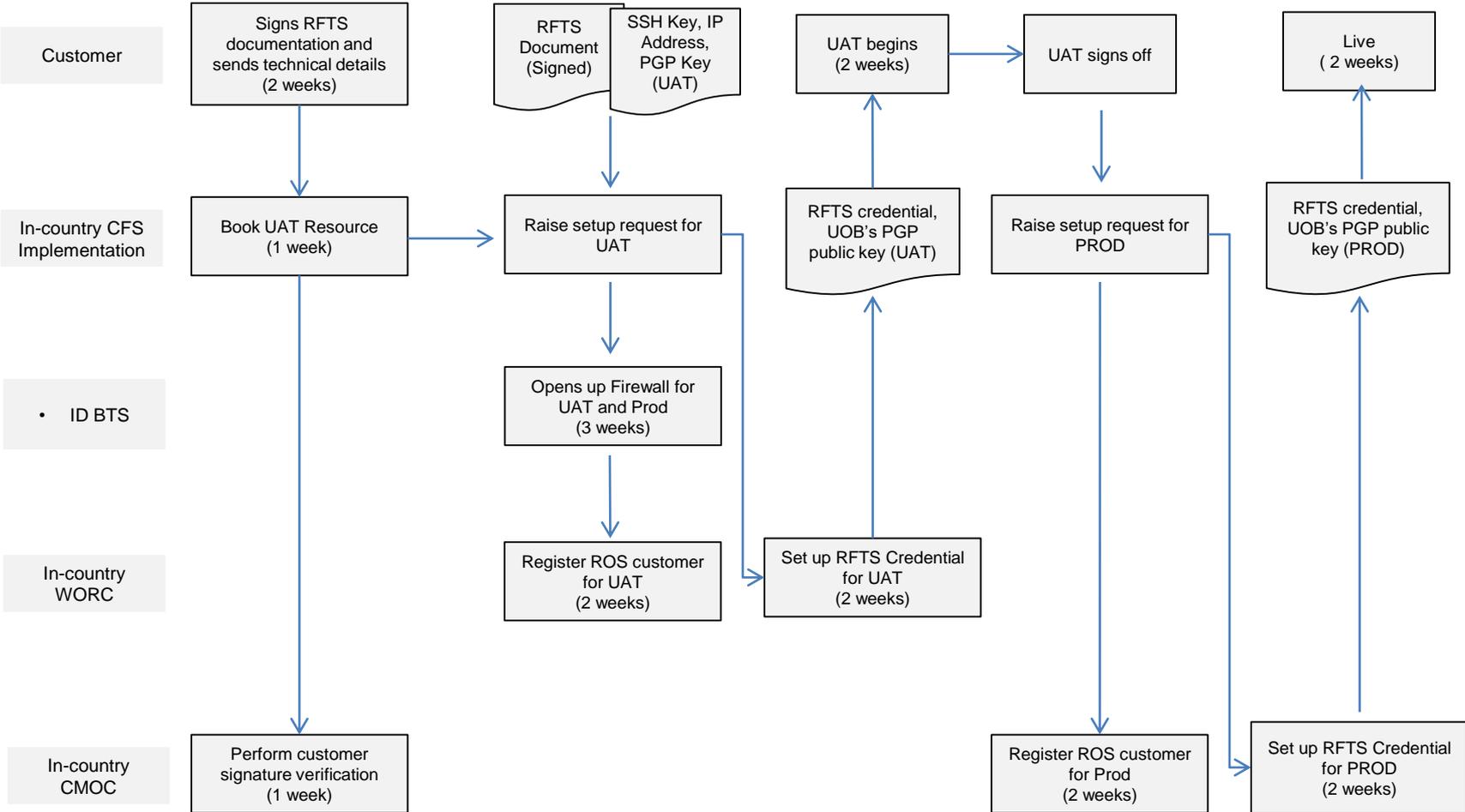




RFTS Capability

Transaction Banking
Maret 2020

FTS ID : Single Country Implementation Overview



Business Solution

UOB offers the following products on RFTS

Business Area	Description	File Format	UOB Product
Payments	Bulk Payments	<u>ISO 20022</u> pain.001.001.03 pain.002.001.03	RTGS, TT, ATM, SKN
		<u>UOB Text Formats</u>	RTGS, TT, ATM, SKN, eTax, VAN (existing fixed length format)
Reports	End-of day statement	MT940 Camt053	
	Intraday Statement	MT941 (camt052) MT942 (camt053)	
	VA Reports (VA1-VA5)	Daily Transaction Report VAN Biller Maintenance Report	

FTS Customer Testing Procedure

Test Case	Test Description	Test Procedure	Success Criteria
Connectivity Testing	To validate if firewalls on Customer and UOB ends are correctly configured	Customer to log onto RFTS server (Axway) using FTS ID and their SSH key	Customer can log into FTS successfully using SSH
Test File Upload Testing	<p>To validate if customer's upload (IN) folder is setup correctly on RFTS UAT server</p> <p>To validate if customer can upload a test file to their (IN) folder.</p> <p>To validate if customer receives L1 acknowledgement after file is received by FTS.</p>	<p>Customer to navigate into their (IN) folder on FTS UAT server using SFTP client</p> <p>Customer to upload a test file to their (IN) folder</p> <p>FTS to send L1 acknowledgement after file is received.</p>	<p>Customer can access their (IN) folder on FTS UAT server using SFTP client</p> <p>Customer can upload a test file successfully to their (IN) folder</p> <p>Customer receives L1 acknowledgement after file is received by RFTS</p>
File Download Testing	<p>To validate if customer's download (OUT) folder is setup correctly on FTS UAT server</p> <p>To validate if customer can download a test result file (L1-L4) from their (OUT) folder</p> <p>To validate if customer can decrypt the dummy file and view its contents</p>	<p>Customer to navigate into their (OUT) folder on FTS UAT server using SFTP client</p> <p>Customer to download a test result file (L1-L4) from their (OUT) folder</p> <p>Customer to decrypt and view the file contents</p>	<p>Customer can access their (OUT) folder on RFTS UAT server using SFTP client</p> <p>Customer can download a test result file (L1-L4) successfully from their (OUT) folder</p> <p>Customer can successfully decrypt and view the file contents</p>

RFTS Customer Testing Procedure

Test Case	Test Description	Test Procedure	Success Criteria
File Format Validation	To validate if customer's payment or collection file meets the file format specifications	<p>CFS will provide the test accounts to the customer. Customer will populate the test accounts into their payment and collection file for testing.</p> <p>Note: For Collections testing, Customer will provide their collections account number and DDA reference number to CFS. CFS will set these up in our test environments and confirm to customer once complete.</p> <p>Customer to upload payment or collection file populated with the test accounts provided by CFS into the (IN) folder on RFTS UAT server using SFTP client</p> <p>RFTS UAT server will route the file to ROS UAT server and subsequently to the local processing systems (e.g. REM, LLG, etc).</p> <p>Note: For TT payment testing, CFS will engage BTS to manually process the file in REM.</p> <p>Test results will be generated and sent by the local processing systems to the customers' OUT folder on RFTS UAT server.</p> <p>Customer will contact CFS if they do not receive any acknowledgements or test result in their OUT folder.</p> <p>CFS will check the ROS UAT server and engage BTS to check the RFTS UAT server</p>	Customer receives L3 ack file and fate file without error.

What is required from customer?

Operating System Requirements

FTS solution does not restrict the O/S platform on client's end. However, it is recommended to have the minimum hardware specification.

Minimum Hardware Requirements for Windows/ UNIX Environment	
Processor	Intel Pentium Class 2.0 GHz or above CPU
RAM (memory)	512 MB
Hard Disk Space	10 GB free Hard Disk space
Network Card	Ethernet Network Interface Card
Drives	CD-ROM / USB drive

What is required from customer?

Software Requirements : SFTP and PGP/ GPG software

FTS solution does not dictate which SFTP and PGP software that the client has to install.

Examples of SFTP client includes WinSCP, FileZilla, Cyberduck etc.

Examples of PGP software includes Axway Activator, Symantec PGP command line, Symantec PGP Desktop, GNU Privacy Guard, GoAnywhere OpenPGP Studio, etc

Minimum Software Requirements

SFTP Client	SFTP client software has to be installed at Client's environment, according to their platform types. This client would be required to initiate files push and return files pull from Client's hosting environment. *Note that client has to provide their own SFTP script for remote connection setup when doing scheduled connection initiation.
PGP/ GPG	A PGP software needs to be made available at Client's hosting environment for payment files encryption and statement files decryption.

Bank's File reponse

Status	Receive by Customer
Level 1 (file received)	Max 30 mins after file sent to Bank
Level 2 (file rejected)	Max 30 mins after Cust receive L1
Level 3 (file accepted)	<u>a. For non interops:</u> Max 30 mins after Cust receive L1 <u>b. For Interops:</u> Max 30 mins after Cust fully Authorise transaction in BIBPlus
Level 4 (process status)	H+1 processing date

File Formats

UOB Universal File Format (UFF)

- The file has variable record length
- Each record has data columns delimited by a separator.
- One file can contain multiple payment types (within a country).
- Suitable for corporates require multiple payment types in more than 1 country.
- Sample of the UFF file below shows variable record length with data columns delimited by ~

```

1 HD1-FAIDE2405902.SXX-20180915-100000-UOVBSGSG-----C3183
2 HD2-FAST-20180915-RC200600531C-11420180524-SALA--UOVBSGS0XXX-SG-3743027726-SGD-AC NAME1 -----C3183
3 DTL-PAYER1234-5.00-SGD-----SALA-Salary-N-----UOVBSGS0XXX-7013000593-BeneAcctName-SG--UOBBankSG-----Benename1-----A
4 DTL-PAYER1234-7.00-SGD-----SALA-Salary-N-----UOVBSGS0XXX-4567890123-BeneAcctName-SG--UOBBankSG-----Benename1-----A
5 FTI-2-12.00-----C3183
6 FTI-2-----C3183
  
```

UOB Fixed Length Format

- The file has fixed record length.
- Each record has data columns start at fixed positions.
- One file can contain 1 payment type hence it is simple to generate by customer.
- Suitable for SMEs require 1 or 2 payment types.
- Sample of the TT file below shows fixed record length of 1800 characters.

```

1 OUTPI12101020171012090000RC199201900W000002103088831RC199201900W.....
2 1CCY TEST 2.....
3 2TT IDR00000000030000020171012M16072016185.....
4 2TT BND00000000030000020171012M16072016185.....
5 2TT DKK00000000030000020171012M16072016185.....
6 2TT INR00000000030000020171012M16072016185.....
7 2TT NOK00000000030000020171012M16072016185.....
8 2TT .....
9 2T .....
10 2T .....
11 2T .....
12 90 .....
  
```

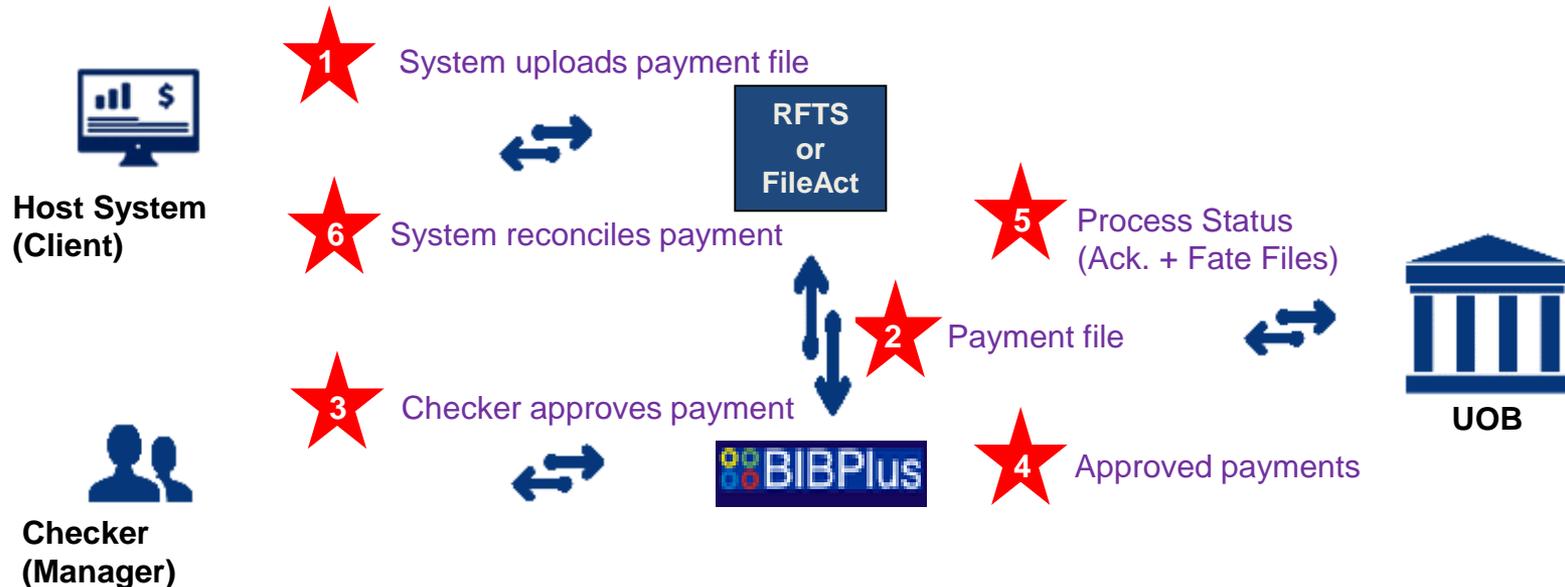
XML (UFF)

- The file follows ISO 20022 standard, pain 001 and pain 002
- Each field has tags
- 1 file can contain multiple transaction types

```
<?xml version="1.0" encoding="UTF-8" ?>
<Document xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="urn:iso:std:
  <CstmrCdtTrfInitn>
    <GrpHdr> <!--HD1-->
      <MsgId>GP1131911102.xml</MsgId> <!--Filename-->
      <CreDtTm>2019-11-19T21:00:00</CreDtTm> <!--Creation date-->
      <NbOfTxes>3</NbOfTxes>
      <CtrlSum>300000254</CtrlSum>
      <InitgPty>
        <Nm>RTGS file</Nm>
        <Id>
          <OrgId>
            <BICOrBEI>BBIJIDJAXXX</BICOrBEI> <!--Kode bank sumber-->
          </OrgId>
        </Id>
      </InitgPty>
    </GrpHdr>
    <PmtInf> <!--HD2-->
```

Interoperability

- Interoperability feature allows UOB's RFTS/ FTS and FileAct services to work along with BIBPlus Bulk Upload module to upload customer's bulk payment and collection files.
- Customer who requires authorization of bulk payment and collection files in BIBPlus can use our interoperability feature to streamline their payment and collection workflows.
- Interoperability is mostly used for sensitive payments such as Payroll or Treasury Payments

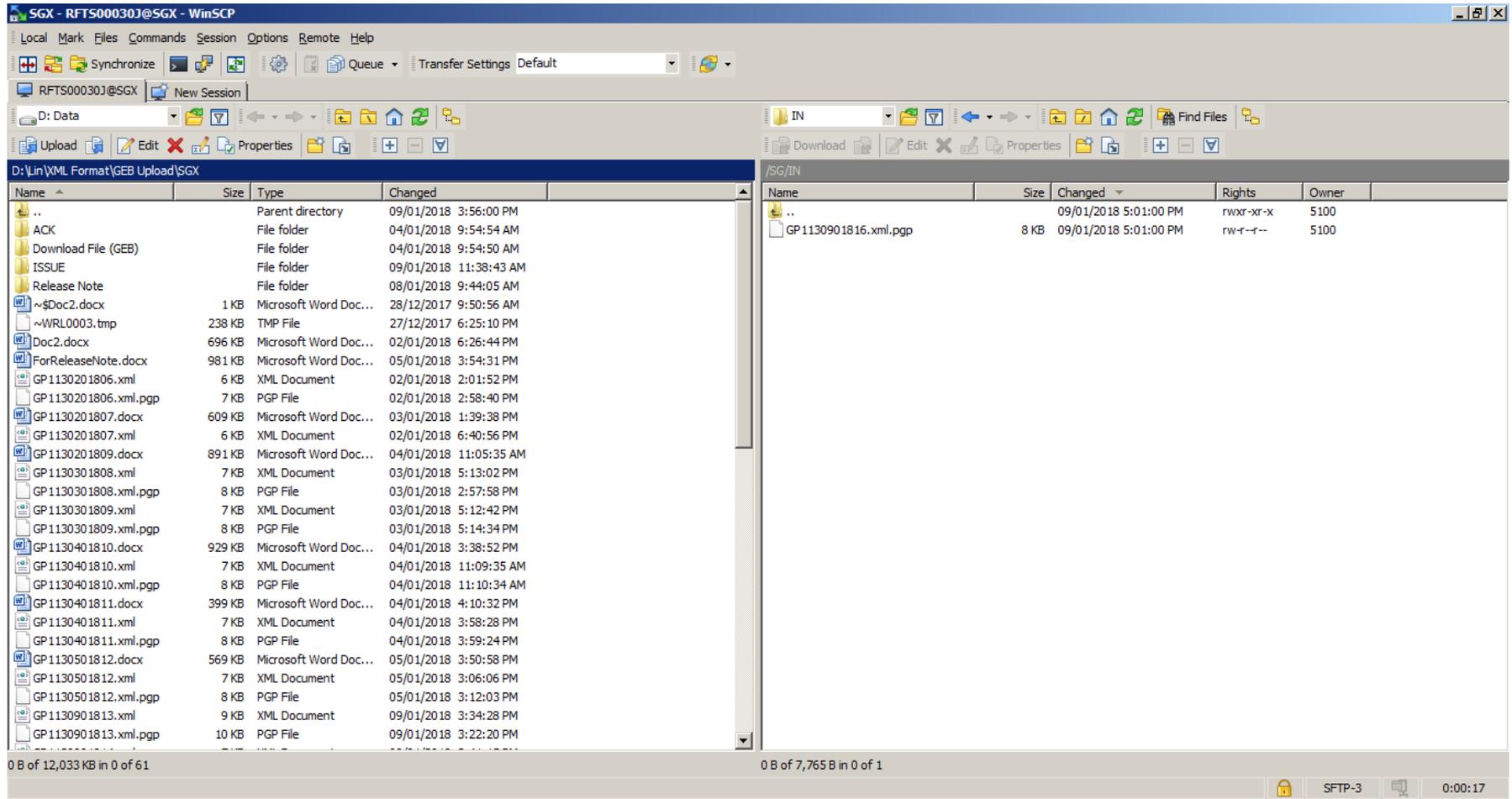


Notes:

- ✓ Process Status is sent back to BIBPlus and RFTS (or FileAct)
- ✓ As of Aug 2019, Interoperability is supported by UOBS and UOBC in UFF and XML formats.
- ✓ UOBI and UOBM will have interoperability option in UFF and XML formats with P9 live.

Interoperability – File Uploading & Authorize Flow

1) A XML payment file GP1130901816 with 3 bulks has been uploaded via RFTS



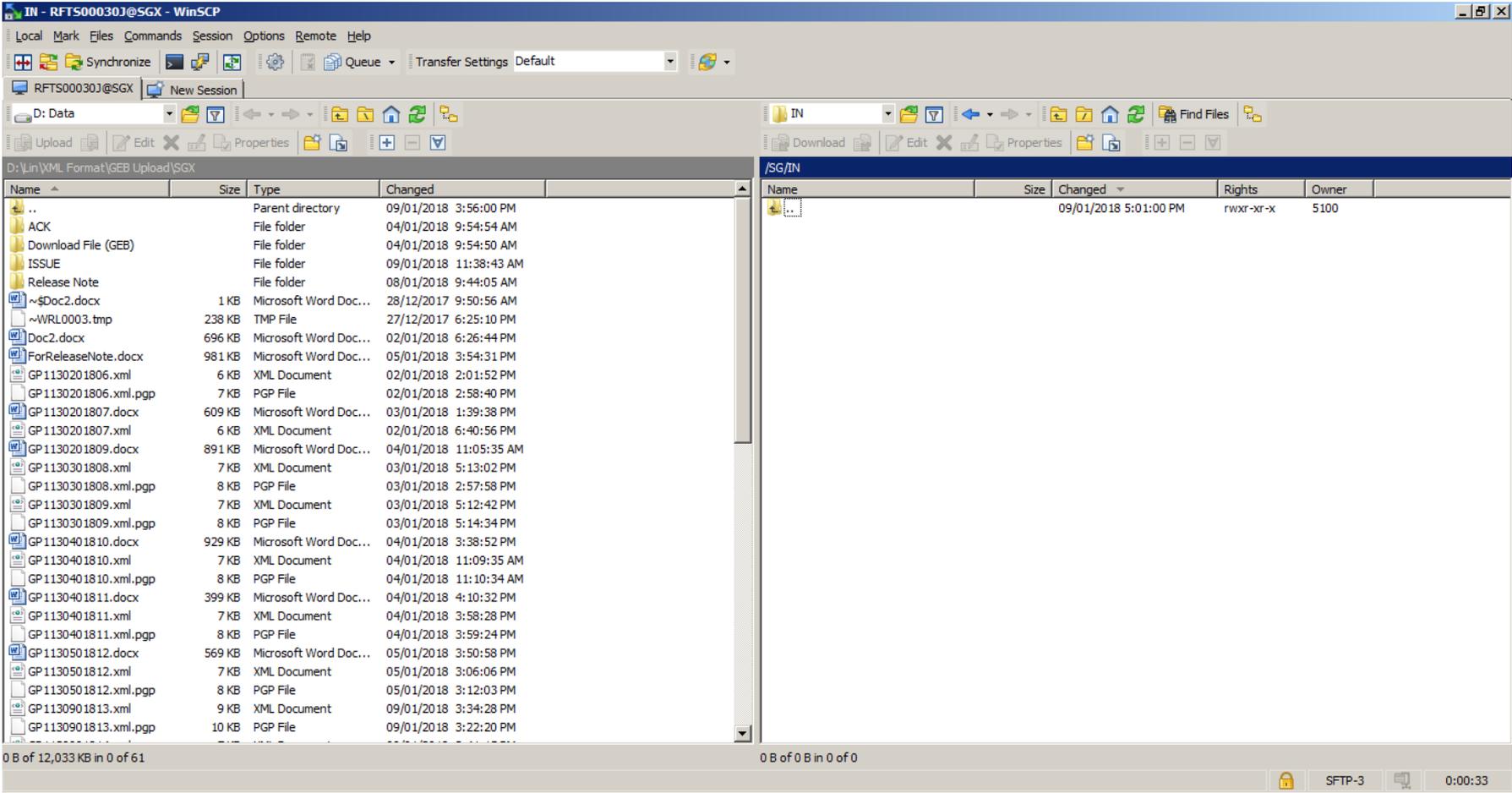
The screenshot displays the WinSCP interface for a session named 'SGX - RFTS00030J@SGX'. The left pane shows the local file system at 'D:\Data\XML Format\GEB Upload\SGX', listing various files including XML documents and PGP files. The right pane shows the remote file system at '/SG/IN', where the file 'GP1130901816.xml.pgp' is being uploaded, with a progress bar at 0 B of 7,765 B in 0 of 1. The status bar at the bottom indicates the upload progress and session details like 'SFTP-3' and '0:00:17'.

Name	Size	Type	Changed
..		Parent directory	09/01/2018 3:56:00 PM
ACK		File folder	04/01/2018 9:54:54 AM
Download File (GEB)		File folder	04/01/2018 9:54:50 AM
ISSUE		File folder	09/01/2018 11:38:43 AM
Release Note		File folder	08/01/2018 9:44:05 AM
~\$Doc2.docx	1 KB	Microsoft Word Doc...	28/12/2017 9:50:56 AM
~\WRL0003.tmp	238 KB	TMP File	27/12/2017 6:25:10 PM
Doc2.docx	696 KB	Microsoft Word Doc...	02/01/2018 6:26:44 PM
ForReleaseNote.docx	981 KB	Microsoft Word Doc...	05/01/2018 3:54:31 PM
GP1130201806.xml	6 KB	XML Document	02/01/2018 2:01:52 PM
GP1130201806.xml.pgp	7 KB	PGP File	02/01/2018 2:58:40 PM
GP1130201807.docx	609 KB	Microsoft Word Doc...	03/01/2018 1:39:38 PM
GP1130201807.xml	6 KB	XML Document	02/01/2018 6:40:56 PM
GP1130201809.docx	891 KB	Microsoft Word Doc...	04/01/2018 11:05:35 AM
GP1130301808.xml	7 KB	XML Document	03/01/2018 5:13:02 PM
GP1130301808.xml.pgp	8 KB	PGP File	03/01/2018 2:57:58 PM
GP1130301809.xml	7 KB	XML Document	03/01/2018 5:12:42 PM
GP1130301809.xml.pgp	8 KB	PGP File	03/01/2018 5:14:34 PM
GP1130401810.docx	929 KB	Microsoft Word Doc...	04/01/2018 3:38:52 PM
GP1130401810.xml	7 KB	XML Document	04/01/2018 11:09:35 AM
GP1130401810.xml.pgp	8 KB	PGP File	04/01/2018 11:10:34 AM
GP1130401811.docx	399 KB	Microsoft Word Doc...	04/01/2018 4:10:32 PM
GP1130401811.xml	7 KB	XML Document	04/01/2018 3:58:28 PM
GP1130401811.xml.pgp	8 KB	PGP File	04/01/2018 3:59:24 PM
GP1130501812.docx	569 KB	Microsoft Word Doc...	05/01/2018 3:50:58 PM
GP1130501812.xml	7 KB	XML Document	05/01/2018 3:06:06 PM
GP1130501812.xml.pgp	8 KB	PGP File	05/01/2018 3:12:03 PM
GP1130901813.xml	9 KB	XML Document	09/01/2018 3:34:28 PM
GP1130901813.xml.pgp	10 KB	PGP File	09/01/2018 3:22:20 PM

Interoperability – File Uploading & Authorize Flow



2) Once the back-end system picked the file and process, It will disappear from “IN” folder



Interoperability – File Uploading & Authorize Flow

3) The XML payment file GP1130901816 with 3 bulks are split to 3 files (meta file) by DMP and routed to the BIBPlus. The entry status in BIBPlus is shown as “In Process”.


Business Internet Banking Plus

Last login: 09/01/2018, 16:42:07 PM

Welcome Client, Client
JACKYC (Manage profile)

Contact Helpdesk | Logout

Account Services | **Payment Services** | Trade Services | Foreign Exchange | Administration



Create Bulk Transaction

Create New Bulk Transfer

Create from Template

Copy from Past Bulks

File Upload

Edit Transactions

Pending Approval

File Upload Results

Pending Bulk Transfers

Processed Bulk

Maintain Bulk Transfer

Maintain Files

List of File Upload Results

[Search Options](#)

1 - 50 of 907 items
10 | 25 | 50 | 100

BIB Ref	Company ID	File Type	Product Group	Product Type	File Name	Upload Date Time	User Name	File Status	Actions
SE18010000472002	RC199015250R	PAIN.001.V3.0 CR Transfer (IBG/FAST Payments)- Inter-Op	Payment	Bulk Upload Payment Inter Bank Giro (IBG)	GP1130901816_	09/01/2018 05:11:52 PM	User Interop System	In Process	
SE18010000472000	RC199015250R	PAIN.001.V3.0 CR Transfer (IBG/FAST Payments)- Inter-Op	Payment	Bulk Upload Payment Inter Bank Giro (IBG)	GP1130901816_	09/01/2018 05:11:50 PM	User Interop System	In Process	
SE18010000471998	RC199015250R	PAIN.001.V3.0 CR Transfer (IBG/FAST Payments)- Inter-Op	Payment	Bulk Upload Payment Inter Bank Giro (IBG)	GP1130901816_	09/01/2018 05:11:49 PM	User Interop System	In Process	

Interoperability – File Uploading & Authorize Flow

4) The files are routed to DMP for transformation as per the existing BAU process, once DMP has transformed and sent back the file (h-file) to BIBPlus the status is changed to “Successful”.



UOB 大华银行 Business Internet Banking Plus

Last login: 09/01/2018, 16:42:07 PM

Welcome Client, Client
JACKYC (Manage profile) Contact Helpdesk Logout

Account Services
Payment Services
Trade Services
Foreign Exchange
Administration

- Create Bulk Transaction
- Create New Bulk Transfer
- Create from Template
- Copy from Past Bulks
- File Upload
- Edit Transactions
- Pending Approval
- File Upload Results
- Pending Bulk Transfers
- Processed Bulk
- Maintain Bulk Transfer
- Maintain Files

List of File Upload Results

Search Options

1 - 50 of 907 items 10 | 25 | 50 | 100

BIB Ref	Company ID	File Type	Product Group	Product Type	File Name	Upload Date Time	User Name	File Status	Actions
SE18010000472002	RC199015250R	PAIN.001.V3.0 CR Transfer (IBG/FAST Payments)- Inter-Op	Payment	Bulk Upload Payment Inter Bank Giro (IBG)	GP1130901816_	09/01/2018 05:11:52 PM	User Interop System	Successful	 
SE18010000472000	RC199015250R	PAIN.001.V3.0 CR Transfer (IBG/FAST Payments)- Inter-Op	Payment	Bulk Upload Payment Inter Bank Giro (IBG)	GP1130901816_	09/01/2018 05:11:50 PM	User Interop System	Successful	 
SE18010000471998	RC199015250R	PAIN.001.V3.0 CR Transfer (IBG/FAST Payments)- Inter-Op	Payment	Bulk Upload Payment Inter Bank Giro (IBG)	GP1130901816_	09/01/2018 05:11:49 PM	User Interop System	Successful	 

Interoperability – File Uploading & Authorize Flow

5) Below table shows the current authorization process flow before the transactions are sent to the bank for processing, as per existing BAU.

Authorization Method	Process Flow
Super User (1-step)	Super user submits the transaction under the “Edit Transaction”, no further approval is needed.
Maker and Authorizer (2-steps)	Maker submits the transaction under the “Edit Transaction”. Checker authorize the transaction under the “Pending Approval” or “To-Do List” (authorization groups supported).
Maker, Verifier and Authorizer (3-step)	Maker submits the transaction under the “Edit Transaction”. Verifier verifies the transaction under the “Pending Approval” or “To-Do List”. Checker authorizes the transaction under the “Pending Approval” or “To-Do List” (authorization groups supported).
Maker, Verifier, Authorizer and Sender (4-step)	Maker submits the transaction under the “Edit Transaction”. Verifier verifies the transaction under the “Pending Approval” or “To-Do List”. Checker authorizes the transaction under the “Pending Approval” or “To-Do List” (authorization groups supported). Sender sends the transaction under the “Pending Approval” or “To-Do List”.

Interoperability – File Uploading & Authorize Flow

As per existing BAU current customer authorization setup has the “Payment Type” key which differentiates “Bulk Online” or “Bulk Upload”, this can be used to setup a different customer authorization flow for Interoperability.

UOB 大华银行 Business Internet Banking Plus

Last login: 12/01/2018, 09:35:40 AM
Welcome COC, BA ID 14  Logout
UOBS (Manage profile)

Home

Profile Settings
Manage Access Rights
Customer Management
Group Setup
Entities Setup
Entity Tokens
User Setup
Password Management
Authorisation Setup
User Accounts Access
Payer/Beneficiary Master
External Accounts
Token Enquiry
Ad hoc Online Printing

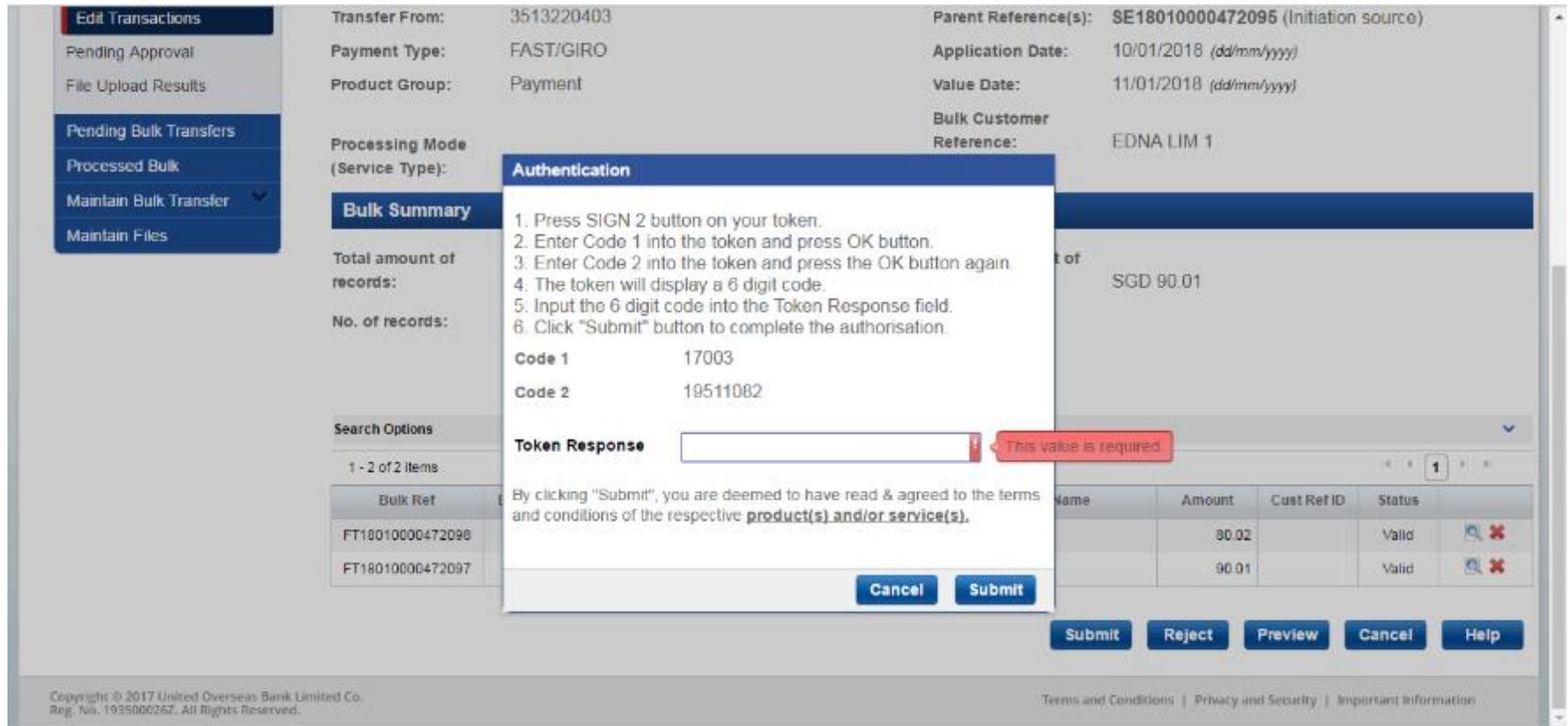
Existing Customer Authorisation Setup

Search Options

1 - 1 of 1 items 10 | 25 | **50** | 100

Company ID	Type	Product	Product Group	Payment Type	Account	Verify	Authorisation Level(s)	Send	Ccy	Amount	Status	Maker User
RC199904940D	*	*		*		Y	B	N	SGD	999,999,999,999.		

6) OTP using the Token is required in the process of verifying, authorizing and sending the transactions. as per BAU.



Authentication

1. Press SIGN 2 button on your token.
2. Enter Code 1 into the token and press OK button.
3. Enter Code 2 into the token and press the OK button again.
4. The token will display a 6 digit code.
5. Input the 6 digit code into the Token Response field.
6. Click "Submit" button to complete the authorisation.

Code 1 17003
Code 2 19511082

Token Response This value is required

By clicking "Submit", you are deemed to have read & agreed to the terms and conditions of the respective **product(s) and/or service(s)**.

Cancel Submit

Name	Amount	Cust Ref ID	Status
	80.02		Valid
	90.01		Valid

7) Transactions are sent to bank after the final approval.