SWIFT Certified Applications

CSDs and Securities Market Infrastructures

Technical validation Guide 2017

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1 Preface

1.1 Introduction

SWIFT initiated the SWIFT Certified Application programme to persuade application vendors to offer products that are compliant with the business and technical requirements of the financial industry. SWIFT Certified Application programme certify third party applications and middleware products that support solutions, messaging, standards and interfaces supported by SWIFT.

SWIFT has engaged with Wipro (referred here after as the "Validation Service Provider") for performing the technical validation of the products applying for a SWIFT Certified Application.

1.2 Purpose and Scope

The certification for the SWIFT Certified Application CSDs and Securities Market Infrastructures label is based on a set of pre-defined qualification criteria, which will be validated by means of a technical, functional and customer validation process.

The set of pre-defined qualification criteria is defined in the SWIFT Certified Application CSDs and Securities Market Infrastructures label criteria 2017.

This document focuses on the approach that a vendor application must follow to complete the technical validation against the SWIFT Certified Application CSDs and Securities Market Infrastructures criteria.

1.3 Target Audience

The target audience for this document is application vendors considering the certification of their business application for SWIFT Certified Application CSDs and Securities Market Infrastructures Label. The audience must be familiar with SWIFT from a technical and a business perspective.

1.4 Related Documents

1) The SWIFT Certified Application Programme Overview provides a synopsis of the SWIFT Certified Application programme, including the benefits to join for application vendors. It also explains the SWIFT Certified Application validation process, including the technical, functional and customer validation.

2) The SWIFT Certified Application for CSD's and Securities market infrastructures label criteria provides an overview of the criteria that a CSDs and Securities Market Infrastructures Label application must comply with to be granted the SWIFT Certified Application.

2 Technical Validation Process

SWIFT Certified Application CSDs and Securities Market Infrastructures Label is a new label for 2017 and hence there is no label renewal for the year 2017. The following matrix explains the tests that will be performed by the vendor application.

Label Type	Depth of Testing	Message Validation	Standards Support	Integration with Alliance Interfaces	Reference Data
New Label	Comprehensive	✓	✓	✓	✓

Validation Test Bed

The vendor will need to set up and maintain 'a SWIFT test lab' to develop the required adaptors needed for validation and to perform the qualification tests. The SWIFT lab will include the Alliance Access Interface as the direct connectivity to the Integration Test bed (ITB) (including SWIFTNet Link, VPN Box, RMA security, and HSM box) and the subscription to the FIN messaging services.

The installation and on-going maintenance of this SWIFT lab - using a direct ITB connectivity - is a pre-requirement for connectivity testing. However, as an alternative for the vendor to connect directly to the SWIFT ITB, the Validation Service provider (VSP) can provide a 'testing as a service' to integrate financial applications with SWIFT Interfaces via a remote Alliance Access over the SWIFT Integrated Test Bed (ITB) at VSP premises. Additional details can be obtained from the Wipro Testing Services – User Guide. (This is a payable service, not included in the standard SWIFT Certified Application subscription fee)

2.1 Integration with Alliance Interfaces

Requirement: The vendor will demonstrate the capability of the product to integrate with SWIFT Alliance Interfaces. When integrating with Alliance Access, Release 7.0 or 7.2 support is mandated for the SWIFT Certified Application in 2017.

Note: The connectivity testing is applicable for new label applicant vendors. New label applicant will demonstrate connectivity using AFT or MQHA or SOAPHA

SWIFT will only publish information for which evidences have been provided during the technical validation. In case the vendor application supports several of the above adapters, the vendor is required to provide the appropriate evidences for all of them.

2.1.1 Direct Connectivity

Alliance Access 7.0 or Alliance Access 7.2 is the preferred choice for connectivity. The table below specifies the adaptors and formats. The vendor is required to perform the connectivity testing with any one of the adaptors mentioned below.

Label Type	Alliance Access 7.0 or 7.2	
	Adaptor	Format
New	AFT	RJE or XML v2
	MQHA	RJE or XML v2
	SOAP	XML v2

The vendor needs to successfully connect to and exchange test messages with the Integration Test Bed (ITB). Vendors can make use of the testing services provided by the Validation Service Provider to connect to the ITB. For more information refer to Wipro Testing Services – User Guide.

The vendor must demonstrate the capability of their product to support the FIN protocol and its associated features (example: message validation).

2.1.1.1 Alliance Access Integration

- Testing for connectivity to Alliance Access Interface will be verified on the SWIFT Integration Test Bed (ITB) using Alliance Access Release 7.0 or 7.2.
- The vendor should demonstrate the capability of the product to integrate with the Alliance Access with one of the following adaptors:
  - Automated File Transfer mode (AFT)
  - Web Sphere MQ Host Adaptor (MQHA)
  - SOAP Host Adaptor (SOAPHA)

The vendor must connect to the SWIFT ITB and receive SWIFT network ACK / NAK notifications and delivery notifications.

The Technical Validation documents for the AFT, MQHA and SOAPHA adaptors are available separately on swift.com (Partner section).

Notes for vendors having ITB connectivity

- The vendor must inform SWIFT Partner Management and the Validation Service provider before starting the test execution through ITB
- The testing on ITB can start any time before the validation window allocated to the vendor. However, the entire testing on the ITB must be completed within the time window allotted to the vendor.
- The Vendor application must support the securities settlement and reconciliation messages and it must also support at least one of the two following messages set:
  - ➤ Corporate actions management
  - ➤ Collateral management
- The vendor application should generate the following outbound test messages for **securities settlement**
  - Applications targeting intermediaries (Account Servicers), must generate 24 test messages (two test messages each for MT 535, 536, 540, 541, 542, 543, 544, 545, 546, 547, 548 and MT 578 - 586)
  - Applications targeting non-intermediaries (Account owners) must generate 20 test messages (five test messages each for MT 540, 541, 542, 543, 548 and MT 578 - 586)
- The vendor application should generate 5 MT 595 outbound test messages for **Reconciliation**
- The vendor application must also support at least one of the two following Collateral or corporate action messages sets:
  Collateral Management
- For Bilateral Collateral management vendor should generate and exchange the following:
  1. If the vendor application supports MX messages then two sets of MX Messages for the following 3 request types as Input Message to SWIFT
     - colr.003.001.03 – MarginCallRequest
     - colr.005.001.03 – CollateralManagementCancellationRequest
     - colr.008.001.03 – CollateralProposalResponse
  2. Three Messages each for MT 540, 542, 202 as Input Message to SWIFT

- For Triparty Collateral management vendor should generate and exchange the following request types as Input Message to SWIFT
  - Three messages each for MT 527,558 and 569

  Corporate Actions
- The vendor application should generate the following outbound Corporate Actions test messages
  - Applications targeting intermediaries (Asset Servicers) such as Global Custodians, must generate 20 test messages (Four test messages each for MT 564, 565, 566, 567 and 568)
  - Applications targeting non-intermediaries (Asset Holders / Investors) must generate 10 MT 565 test messages
- All these test messages must be compliant to **Standards Release 2017**

- The vendor must request for delivery notification
- The vendor application must exchange the SWIFT messages using Alliance Access RJE or XML v2 format
- The sender destination used in the messages is the PIC (Partner Identifier Code) that was used by the application provider to install and license Alliance Access. The receiver destination of messages must be the same PIC. Or simply stated messages should be sent to own vendor PIC.
- The vendor must connect to SWIFT ITB, send MT messages, receive SWIFT ACK/NAK, Delivery Notification and properly reconcile them by updating the status of sent messages
- The vendor must inform SWIFT Partner Management and the Validation Service provider about the completion of the test execution and provide evidence of testing though application event logs, transmitted messages and ACK / NAK received messages.

Notes for vendors testing through Wipro Testing Service

- The vendor must contact the Validation Service provider and agree on the terms for exchanging test messages using their testing service
- The Validation Service provider will assign a branch PIC. This PIC must be used for exchanging test messages i.e. the sender and receiver PIC must be the PIC provided the Validation Service provider.
- The Validation Service provider will configure vendor profiles in their environment and inform the vendor about their access credentials. This service will be available for an agreed period for testing the connectivity and exchanging test messages. The entire testing on the ITB must be completed within the time window allotted to the vendor.
- The Vendor application must support the securities settlement and reconciliation messages and it must also support at least one of the two following messages set:
  - ➢ Corporate actions management
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- The vendor application must exchange the SWIFT messages using Alliance Access RJE or XML v2 format
- The vendor must connect to SWIFT ITB, send MT messages, receive SWIFT ACK/NAK, Delivery Notification and properly reconcile them by updating the status of sent messages

The vendor must inform SWIFT Partner Management and the Validation Service provider about the completion of the test execution and provide evidence of testing though application event logs, transmitted messages and ACK / NAK received messages.

2.1.2 Confirmation of Test Execution and Evidence Documents

After successful exchange of the test messages, the vendor should send the following test evidences by email to the Validation Service provider:
- A copy of the MT test messages in RJE / XML v2 format generated by the business application
- Application log / Screenshots evidencing the
  - o processing of SWIFT messages
  - o reconciliation of delivery notifications and Acknowledgements
- Alliance Access Event Journal Report and Message File spanning the test execution window
- Message Partner Configuration details

Note: When connected through the Validation Service provider testing services, the Alliance Access logs (Event Journal Report, Message File and Message Partner configuration) will be generated by the Validation Service Provider.

2.1.3 Verification of the Test Results

In order to issue the scorecard and necessary recommendation, the Validation Service provider will review the log files, event journal, the screenshots produced by the vendor to ascertain that:
- All messages are positively acknowledged by the SWIFT Network
- Test messages have been exchanged by the vendor over ITB
- Test messages adhere to the SWIFT format (RJE and /or XML v2 formats).
- Application is able to reconcile technical messages

2.1.4 Qualification Criteria Verified

Sl. No	Section Ref Number	Label Requirement	Pass / Fail Status
		SWIFT Certified Application Qualification Criteria	
1.		Alliance Access Integration – AFT / MQHA /SOAPHA	
2.	3.4	Alliance Access Integration Support – Release 7.0 or 7.2	
3.		Alliance Access Integration – RJE / XML v2 Format	
4.	3.5	Standards Support	
5.	3.7	Standards Release 2017	
6.	3.7	Message Format Validation Rules (MFVR)	

2.2 Standards Support and Market Practice Compliance

Requirement: The vendor must demonstrate the application's capability to support FIN messages, the rules and guidelines set out in MFVR for SR 2017.

For the corporate actions management the vendor application must offer compliance with the global practices for event types within the vendor's product offering. The vendor application must also be

capable of supporting variations for a particular market as well. The support for the number of Corporate Action Events and Markets differ between the new label and label renewal.

The following table specifies the list of Corporate Actions that will be tested against the SMPG Corporate Actions Market Practice / Event Interpretation Grid (EIG)

Frequently Used			Most Important		
Corporate Action Events					
REDM	INTR	DVCA	REDM	INTR	DVCA
DVSE	DVOP	RHDI	DVSE	DVOP	RHDI
EXRI	TEND	EXOF	EXRI	TEND	EXOF
BONU	DRIP	PRII	BONU		
CHAN	MRGR	MCAL			
SPLF	EXWA	BIDS			
CONV	BPUT				

- New label applicants have to prove their application support for the 20 Corporate Actions listed in the above table as "Frequently Used".

2.2.1 Testing of Incoming Messages

The Validation Service provider will send a set of valid MT test messages that should be uploaded and processed in the application. These test messages will cover MT 535, 536, 537, 538, 540, 541, 542, 543, 544, 545, 546, 547, 548, 578, 586,596,940 and 950 for securities settlement and reconciliation. Since the message types supported depends on the target customer implementation, the Validation Service provider will send the test messages as defined below:

Target Customer Implementation	Message Types	Test Message Direction
Account Servicers	MT 535 – 536, 540 – 548, 578 – 586	Inward to the application
Account Owners	MT 535, 544 – 548, 578 - 586	

- If the application supports **corporate actions management** then the test messages covers the following:
- The Validation Service provider will send one MT 564 test message per Corporate Actions Event for the US and GB markets
- For New label, the test messages will be sent for 20 frequently used Corporate Actions listed in section 2.2 above. A maximum of 40 test messages will be sent to prove the application's capability to process the incoming messages and generate outbound messages compliant to SMPG guidelines for EIG of the respective markets
- If the application supports **Collateral management**
- For Bilateral Collateral management below are the messages to be generated and exchanged:
    1. If the vendor application supports MX messages then two sets of MX Messages for the following 3 request types as Input Message to SWIFT
        -colr.003.001.03 – MarginCallRequest
        -colr.005.001.03 – CollateralManagementCancellationRequest
        -colr.008.001.03 – CollateralProposalResponse
    2. Three Messages each for MT 540, 542, 202 as Input Message to SWIFT

- For Triparty Collateral management vendor should generate and exchange the following request types as Input Message to SWIFT
    – Three messages each for MT 527,558 and 569

- For more information on collateral management, messages please refer to the collateral management technical validation guide and perform the business workflow for the collateral management events Scenarios. The vendor must inform SWIFT Partner Management and the Validation Service provider about the choice of customer implementation beforehand.
- All test messages will be "inward to the application" direction
- The test messages will cover the key fields that undergone changes in SR 2017
- The application must process SR 2017 impacted incoming messages
- The application must perform the business validations while parsing the incoming message.
- User Header Block (Block 3) will contain a unique reference number in the form of a Message User Reference (MUR) for each test message. The MUR will consist of the MT numerical identification followed by test message sequence number.

- The test messages will have generic test data for Accounts, Dates and BIC. The vendor can change the values / customise to their application needs. For ease of customisation, the test messages will be sent in a spreadsheet format with a facility to convert the output into a single RJE formatted file for all the test messages or individual RJE formatted files for every test message.

File Naming Convention

- The files will be named as SRyy_CSDMTValidation.xls, where "yy" will represent the Year of the Standards Release. For example, for a file containing test messages for Standards Release 2017, the file name will be "SR17_CSDMTValidation.xls"
- The Validation Service provider will also send an MT Test Result Summary file in excel spreadsheet format for the vendor to capture the test results. The file name will be xxxx_SRnn_CSDMT_Validation_Test_Result.xls, where "xxxx" represents the vendor name and "nn" represents the Standards Release.

Processing the provided SWIFT Message Types

The vendor must input the above-mentioned files into the application and perform the business validations.

2.2.2 Confirmation of Test Execution and Evidence Documents

The vendor should send the following test evidences by email to the Validation Service provider:
- Sample evidence demonstrating that the application has processed the test messages. This will be done by sending screenshots / log file / application generated reports.
- The MT Test Result Summary file, updated with the test results. A sample of the spreadsheet is provided here below.

Sl. No.	Message ID (MUR in Block 3)	Business Validation Results	Error Line Number	Error Description	Expected Error Code	Expected Error Line Number	Pass / Fail Status
1	54010000001	Pass	-				
2	54110000002	Error	11				

2.2.3 Verification of the Test Results

The Validation Service provider will review the log files and the screenshots produced by the vendor to ascertain that all messages are processed by the application and analyse the test result to build the scorecard and recommendation.

2.2.4 Testing Outgoing Messages

The vendor application should generate 50 outbound test messages for securities settlement as defined below. The test messages must be the one that is supported by their application with reference to their target client implementation.

Target Customer Implementation	Message Types	Test Message Direction
Account Servicers	MT 535 – 536, 540 – 548, 578 - 586	Outward from the application
Account Owners	MT 540 – 543, 548, 578 - 586	

- If the vendor supports corporate actions management, the following outgoing messages should be supported by the application:

Test Message for MT 564

- Label applicants must create 200 test messages covering the twenty frequently used Corporate Action Events for 10 markets of their choice. The Corporate Action Events are listed in section 2.2
- The outbound message generated for US and GB market as per section 2.2.1 can be used to provide evidence for this testing
- There must be a minimum of one test message per Corporate Action Event, per market

Test Messages for MT 566

- New applicants must submit one test message per market for the Corporate Actions events listed as "Most Important" in section 2.2
- The new label applicants must submit 100 test messages covering 10 markets. There must be a minimum of one test message per Corporate Action Event, per market
- The test messages must contain the key fields that undergone changes in SR 2017.

- For the vendor supporting **collateral management messages** please refer to the collateral management technical validation guide and perform the business workflow for the collateral management events scenarios.

2.2.5 Confirmation of Test Execution and Evidence Documents

The vendor should send the following test evidences by email to the Validation Service provider:
- Screenshots, Log Files, from application evidencing generation SWIFT messages
- A copy of the MT test messages in RJE / XML v2 format generated by the business application
- List of fields that have undergone changes which are covered in the messages generated

2.2.6 Verification of the Test Results

The Validation Service provider will review the messages generated, log files, the screenshots produced by the vendor to ascertain that all messages are processed by the application and analyse the test result to build the scorecard and recommendation.

For the corporate action messages the Validation Service provider will verify the coverage and validate the test messages for compliance with Standards Release 2017, Market Practice compliance as per SMPG Corporate Actions Market Practice, Event Interpretation Grid (EIG) to build the scorecard and recommendation

2.2.7 Qualification Criteria Verified

SI. No	SWIFT Certified Application Qualification Criteria		Pass / Fail Status
	Section Ref Number	**Label Requirement**	
1.	3.5	Standards Support for Messaging Services	
2.	3.7	Standards Release	
3.	3.7	Message Format Validation Rules (MFVR)	

3   Summary of Technical Validation

Test Activity			Label NEW
Message Validation	Outgoing		**Securities settlement and reconciliation messages** Account Servicers: MT 535,536, 540,541,542,543,544,545,546,547,548, 578,586 Account Owners: MT 540,541,542,543,548, 578,586 Reconciliation: MT 595 **Corporate actions messages** Asset Services: MT 564, 565, 566, 567 and 568 Asset Holders/Investors: MT 565
	Incoming		**Securities settlement and reconciliation messages** Account Servicers: MT 535,536,540,541,542,543,544,545,546,547,548,578,586 Account Owners: MT 535, 544,545,546,547,548, 578,586 Reconciliation: MT 535, 536, 537, 538, 540, 541, 542, 543, 544, 545, 546, 547, 548, 578, 586,596,940 and 950 **Corporate actions messages** Asset Services: MT 564, 565, 566,567 and 568 Asset Holders/Investors: MT 564, 566,567 and 568
	Bilateral	Collateral Giver/Collateral Taker	FIN MT- 540,542,544,546,202
	Triparty	Collateral Giver/Collateral Taker	FIN MT-527,558,569
Standards	Standard Release		SR2017
	Market Practice		SMPG Corporate Actions Market Practice, Event Interpretation Grid (EIG)
	Optional Messages		Verified only on specific request by the vendor
Connectivity	Alliance Access 7.0 or 7.2		MQHA or AFT or SOAPHA
	Message format		RJE or XML v2
Reference Data Directory	BIC, Bank Directory Plus		Scenario Based Testing

4 FAQ

1. Will the MT test messages provided for technical validation contains the header blocks as well or only text block [Block 4] of the message?

MT test messages will contain the Blocks from 1 to 4.

2. What exactly should we populate Error Code in MT Test Result Summary file?

The business application must perform business validation only, since the test messages sent by the Validation Service provider will be a correct message that complies with MFVR.

3. According to the EIG some events are not applicable in markets selected by us. How do we cover such events?

If a specific Corporate Action is not applicable in one or more of the markets covered by you, you have to exclude those events/ markets and execute the test messages for the remaining markets.

4. Can we provide more than one test message to cover an event type – market combination?

We do not recommend this practice. It would be best to provide only one test message covering an event type – market combination. Messages should be provided covering all event type – market combinations as specified in Technical Validation Guide. Even if you provide multiple messages for a particular event type – market combination, only one valid test message would be treated for the final evaluation.

5. Can we send test message covering event type – market combination other than the one specified in Technical Validation Guide?

Not recommended for label technical validation. Such combinations would be ignored for evaluation purpose.

6. Our application does not support all markets / event types in the list specified in Technical Validation Guide. Can we get an exemption for the same?

You need to take up with SWIFT for any exemption.

7. We are not clear on some of the interpretations in the SMPG guidelines. For example, as per the EIG, ZA Market does not support CAEV with CAMV RHTS/CHOS. However against RHTS / VOLU, it is left blank (meaning follows Global Grid) and also a remark is present stating "EXRI is used in our Market". Does that mean RHTS - VOLU is not supported in ZA?

EIG implementation is based on the Rules. Definition/ comments provided are for information purpose. If the CAMV column is blank, then the concerned market will follow the Global Grid.

*** End of document ***