



**HONG KONG INTERBANK  
CLEARING LIMITED**  
香港銀行同業結算有限公司

**Hong Kong Trade Repository**

**Administration and Interface Development Guide**

**(Reporting Service)**

**Publication Date: July 2020**

**Version: 1.7**

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## DOCUMENT HISTORY

Revision Date	Updated By	Version	Amendment Summary
December 2011	HKICL	1.0	Initial publication
December 2012	HKICL	1.1	<ol style="list-style-type: none"> <li>Added description about file uploading size limitation in section 2.1.2.</li> <li>Inclusion of the new SuppressUncertain event in section 2.1.2, and revise the applicable product sub-types of each request.</li> <li>Clarified the syntax allowed for user file reference in section 2.1.3.</li> <li>Added descriptions on the behavior of the system on processing bulk submission of trade events.</li> <li>Clarified that Event Date (i.e. agreement date) instead of Event Time is used for sequence checking (section 2.1.5.3).</li> <li>Added section 2.1.6.3 to describe the response file.</li> <li>Added descriptions on agent relationship maintenance in section 2.1.8.</li> <li>Added IP addresses for URLs (section 2.2.4, 3.2.1).</li> <li>In section 3.1.2.3, added a paragraph clarifying the accessibility of the system by existing eMBT/eCMT users, as well as requirements on their sender DN.</li> <li>Added section 4.3 to describe the character set supported for different types of data fields.</li> <li>Revised the list of return codes (section 4.4).</li> <li>Added a new appendix E for examples in XML Format (Reporting).</li> <li>Added a new appendix F for enumerations and coding schemes.</li> <li>Added a new document reference to Connect:Direct configuration guide.</li> <li>Renamed HKTR to HKTR-R throughout the document.</li> </ol>
June 2013	HKICL	1.2	<ol style="list-style-type: none"> <li>Changed the name of FINNet to ICLNet.</li> <li>In section 1.1, updated the target audience of this document.</li> <li>In section 2.1.3 and 2.1.6.3, added the description on case sensitivity issue on handling request and response file names.</li> <li>In section 2.1.5.3, revised the logic on determining the processing sequence of inputted trade event requests.</li> <li>In section 2.2.1, revised the way on reporting full novation / partial novation events.</li> <li>In section 2.2.4, the IP addresses are updated.</li> <li>In section 2.3, revised the description about the UI</li> </ol>

Revision Date	Updated By	Version	Amendment Summary
			<p>enquiry report.</p> <p>8. In section 3.1.2.3, the SWIFTNet services names are revised.</p> <p>9. Revised section 4.3, adding in description about character set support for different party IDs.</p> <p>10. Added a new section 4.4 describing the case sensitivity issue on various string data fields.</p> <p>11. Revised the list of return codes (section 4.5).</p>
November 2013	HKICL	1.3	<p>1. In section 2.1.5, added a paragraph describing the space-trimming behavior in fields within a trade event request.</p> <p>2. In the section 4.3, the Supported Character Set is revised</p> <p>3. In section 4.5, the return codes are updated.</p> <p>4. In section 2.2.4, the IP addresses are updated.</p>
March 2014	HKICL	1.4	<p>1. Overall, added descriptions on support of new Interest Rate, Foreign Exchange and Equity products.</p> <p>2. Add in a section 2.1.2 describing the supported products.</p> <p>3. In section 2.1.3, added descriptions on applicable products for each FpML and CSV templates.</p> <p>4. In section 2.2.3, updated client software requirements</p> <p>5. In section 4.5, the return codes are updated.</p>
September 2014	HKICL	1.4.1	<p>1. Revised Document References section.</p> <p>2. In section 2.1.2, added “Note 3” for equity products.</p> <p>3. In section 2.1.3, revised the products supported by various FpML versions.</p> <p>4. In section 2.1.9, added the notification procedure when switching agent.</p> <p>5. In section 4.3, added “Note” for numeric characters.</p> <p>6. Added a new section 4.5, which describes the behavior of linking and matching fields.</p> <p>7. Added a new section 4.6, which describes the revised reporting or transacting parties’ code priority.</p> <p>8. In section 4.7, the return codes are updated.</p>
July 2015	HKICL	1.4.2	<p>1. In section 2.1.2, added additional guideline on reporting OIS trades.</p> <p>2. In section 2.1.3, the version of Excel templates are updated.</p> <p>3. Revised section 4.6 to describe the meaning of party information submitted.</p> <p>4. In section 4.7, the return codes are updated.</p>
November 2015	HKICL	1.4.3	<p>1. Change the maximum length of party ID (User Defined Code) and party name to 255.</p>
November 2015	HKICL	1.5	<p>1. Revised section 2.1 on supported products and</p>

Revision Date	Updated By	Version	Amendment Summary
			<p>corresponding message formats.</p> <ol style="list-style-type: none"> <li>Added a section 2.2 on describing valuation report.</li> <li>In section 2.5.2, revised the Trusted Global Certification Authority for Internet User Authentication.</li> <li>In section 2.5.3, updated the client software requirements.</li> <li>In section 2.5.4 and 3.2.1, revised the information about access methods for UI through Internet and SWIFTNet.</li> <li>Added section 4.3 for the information on valuation request reference.</li> <li>In section 4.5, revised the list of fields that will be converted to uppercase characters by the system.</li> <li>In section 4.8, the return codes are updated. Also, revised the paragraph on supporting the return of multiple error codes.</li> <li>Added appendix G and H describing valuation data reporting through FpML 5.5, and their corresponding schema and examples.</li> </ol>
February 2016	HKICL	1.5.1	<ol style="list-style-type: none"> <li>In section 4.8, the return codes are updated.</li> <li>In section 2.1.3 and 2.2.2.2, revised the version of Excel templates.</li> </ol>
October 2016	HKICL	1.5.2	<ol style="list-style-type: none"> <li>In section 4.8, the return codes are updated.</li> <li>In sections 2.5 and 3.2, removed the reference of SWIFT Alliance Web Station (SAB) as it is no longer supported by SWIFT.</li> <li>Added a new section 4.9 to describe reporting of Zero coupon swap using “Known Amount” field.</li> </ol>
August 2019	HKICL	1.5.3	<ol style="list-style-type: none"> <li>In sections 2.1.3 and 2.2.2.2, revised the version of Excel templates.</li> <li>In section 2.5.2: <ol style="list-style-type: none"> <li>added following new CA Entrust IdenTrust DigiCert</li> <li>moved the note to Verisign</li> <li>updated the note for Symantec</li> </ol> </li> <li>In section 2.5.3: <ol style="list-style-type: none"> <li>updated Windows and Internet Explorer version</li> <li>updated the versions of Microsoft Office Excel</li> <li>removed note 5</li> </ol> </li> <li>In section 2.5.4, added IP Address column for URL of Internet</li> </ol>

Revision Date	Updated By	Version	Amendment Summary
			<p>SWIFT related updates:</p> <ol style="list-style-type: none"> <li>5. In section 1 and 2.6.3, revised SWIFT's service name</li> <li>6. In section 2.1.3 and 2.4.1, changed reference number of "Operating Procedures for HKTR – User Manual for Participants" from [6] to [5]</li> <li>7. In section 2.5, revised access methods of new SWIFT WebAccess service</li> <li>8. In section 2.5.1, updated user authentication description for SWIFT WebAccess</li> <li>9. In section 2.5.3, revised client software requirements for SWIFT WebAccess</li> <li>10. In section 2.5.4, removed reference for URL of SWIFTNet Browse</li> <li>11. In section 3.1.2.3, revised the description of SWIFTNet FileAct service and removed description of SWIFTNet Browse service</li> <li>12. In section 3.2, revised the description for SWIFT WebAccess service</li> <li>13. In section 3.2.1: <ol style="list-style-type: none"> <li>a. added SWIFT WebAccess service names and updated URLs for SWIFT WebAccess</li> <li>b. added brief description of Closed User Group (CUG) for TR SWIFT WebAccess service</li> <li>c. added IP Address column for URL of SWIFTNet</li> </ol> </li> <li>14. Added section 3.2.2 for SWIFT Certificates Set-up</li> <li>15. Added section 3.2.3 for SWIFT RBAC Role Assignment</li> <li>16. Added section 3.2.4 for Installation and Configuration of SWIFT Software</li> <li>17. In section 3.2.5, revised the browser configuration section and referred the details to SWIFT's documentation</li> <li>18. In section 4.6, changed reference number of "Operating Procedures for HKTR – User Manual for Participants" from [6] to [5]</li> <li>19. In Document References section: <ol style="list-style-type: none"> <li>a. updated document name of [3] to "SWIFT WebAccess Configuration and Troubleshooting Guide"</li> <li>b. removed obsolete document [2] SWIFTNet Link Error Codes</li> <li>c. changed reference number of "SWIFT WebAccess Configuration and Troubleshooting Guide" from [3] to [2]</li> <li>d. changed reference number of "Consultation Paper on Logistical and Technical Arrangements for</li> </ol> </li> </ol>

Revision Date	Updated By	Version	Amendment Summary
			<p>reporting to HKMA Trade Repository” from [4] to [3]</p> <p>e. changed reference number of “File Transfer Service on ICLNet Connect Direct Configuration Guidelines” from [5] to [4]</p> <p>f. changed reference number of “Operating Procedures for HKTR – User Manual for Participants” from [6] to [5]</p> <p>g. changed reference number of “Hong Kong Monetary Authority OTC Derivatives Trade Repository Reference Manual (Reporting Service) (“Reference Manual”)” from [7] to [6]</p> <p>20. In Abbreviations and Acronyms section, changed abbreviation of SWIFT Alliance Web Platform</p>
April 2020	HKICL	1.6	<p>1. In sections 2.1.3 and 2.2.2.2, revised the version of Excel templates</p> <p>2. In section 2.5.3:</p> <p>a. changed the supported window version for UI functions</p> <p>b. changed supported MS Office version for Excel templates</p> <p>3. In section 3.1.2.5, updated the reference section to 2.4.1</p> <p>4. In section 3.2.4:</p> <p>a. removed the specific access channel of SWIFTNet for Personal Token</p> <p>b. revised grammar</p> <p>5. In section 4, added reference Appendix G and H</p> <p>6. In section 4.8, updated the return code</p>
July 2020	HKICL	1.7	<p>1. In sections 2.1.3 and 2.2.2.2, revised the version of Excel templates.</p> <p>2. In section 4.8, updated the return code</p>

## Document References

	Document Name
[1]	SWIFT User Handbook
[1.1]	SWIFTNet Service Description (part of [1])
[1.2]	SWIFTNet Naming and Addressing Guide (part of [1])
[2]	SWIFT WebAccess Configuration and Troubleshooting Guide
[3]	Consultation Paper on Logistical and Technical Arrangements for reporting to HKMA Trade Repository
[4]	File Transfer Service on ICLNet Connect Direct Configuration Guidelines
[5]	Operating Procedures for HKTR - User Manual for Participants
[6]	Hong Kong Monetary Authority OTC Derivatives Trade Repository Reference Manual (Reporting Service) ("Reference Manual")

## Abbreviations and Acronyms

Abbreviation/Acronym	Description
CSV	Comma Separated Value
eCMT	Central MoneyMarkets Unit Member Terminal
eMBT	Member Bank Terminal
FpML	Financial products Markup Language
FTS	File Transfer Server on ICLNet
GUI	Graphical User Interface
HKICL	Hong Kong Interbank Clearing Limited
HKMA	Hong Kong Monetary Authority
HKTR	Hong Kong Trade Repository
HKTR-R	Hong Kong Trade Repository Reporting Service
PDF	Portable Document Format
PDU	Protocol Data Units
SWIFT	Society Worldwide Interbank Financial Telecommunication
AWP	SWIFT Alliance Web Platform
UI	User Interface
XML	Extensible Markup Language

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**Appendix A - Trade Submission Through XML Document (Reporting) for FpML 5.5 / FpML 5.7**

**Appendix B - Trade/Valuation Submission Through CSV Format (Reporting) for CSV 2.1 / CSV 2.2 / CSV 3.0**

**Appendix C - EXCEL Templates for CSV 2.1 / CSV 2.2 / CSV 3.0**

**Appendix D - Validation Rules**

**Appendix E - Schemas and Examples in XML Format (Trade) for FpML 5.5 / FpML 5.7**

**Appendix F - Enumerations and Coding Schemes**

**Appendix G - Valuation Submission Through XML Document for FpML 5.5**

**Appendix H - Schemas and Examples in XML Format (Valuation) for FpML 5.5**

## **1 INTRODUCTION**

### **1.1 Purpose**

The purpose of this document is to provide participants of Hong Kong Trade Repository Reporting Service (HKTR-R) the information required to:

- Access the HKTR-R system's UI functions through SWIFT WebAccess or Internet;
- Specify the SWIFT environment configuration required to access the HKTR-R system through SWIFT WebAccess and FileAct service;
- Develop systems where required to provide straight-through processing (STP) between the participant's back-office systems and the HKTR-R system through various channels provided.

Within each organization of HKTR participants (or simply referred to as "participants" hereafter), the target audience is:

- Developers who develop and support the interface to the HKTR-R system;
- System administrators who manage the SWIFT environment and its configuration;
- Compliance department;
- Departments responsible for trading and recording OTC derivatives trades; and,
- Those who plan for making system changes to meet the technical requirements of the HKTR-R system.

Moreover, this document includes the file specifications of supported formats for trade information submission by participants.

### **1.2 Scope**

This document focuses on the ways to access the HKTR-R system through different channels. SWIFTNet service description information is also given, in order to support development and configuration of SWIFT solutions. Access to the HKTR-R system for STP through various channels is covered. Moreover, the participant needs access to the system via SWIFT WebAccess service or Internet, in order to obtain enquiry and report information as well as upload trade data and maintain operational parameters. SWIFT WebAccess and FileAct are standard SWIFTNet services and the details are not addressed in this document.

It is intended that this document should duplicate as little as possible information available from SWIFT. It should be read in conjunction with the standard SWIFT documentation set, with which the participant is expected to be familiar, in

particular the SWIFT User Handbook [1]. Other documents quoted in the Document References are for reference of further details on a specific topic.

## 2 PARTICIPANT INTERFACE

### 2.1 Trade Information Submission by Participants

#### 2.1.1 Supported Products

The following subsections summarize the products and features supported by the HKTR-R system, subcategorized by its asset classes.

##### 2.1.1.1 Interest Rate

ISDA Product Taxonomy			Supported Features			
Asset Class	Base Product	Sub Product	Non-deliverable	Cancellable	Early Termination	Amortization Schedule
Interest Rate (IR)	Cap Floor	-	✓	-	✓	✓
	Cross Currency	Fixed Float	✓	✓	✓	✓
		Fixed Fixed	✓	✓	✓	✓
		Basis	✓	✓	✓	✓
	FRA	-	-	-	-	-
	IR Swap	Fixed Float	✓	✓	✓	✓
		Fixed Fixed	✓	✓	✓	✓
		Basis (See Note 1)	✓	✓	✓	✓
		OIS (See Note 1)	✓	✓	✓	✓
		Inflation	✓	✓	✓	✓
	Option	Swaption	-	-	-	-
	Other	-	-	-	-	-

Notes:

1. An overnight index swap with floating vs fixed legs is reported as OIS; An overnight index swap with floating vs floating legs is reported as Basis.

### 2.1.1.2 Foreign Exchange

ISDA Product Taxonomy	
Asset Class	Base Product
Foreign Exchange (FX)	Forward (See Note 1)
	NDF (See Note 2)
	NDO
	Vanilla Option
	Other

Notes:

1. An FX Swap is reported as two separate individual FX Deliverable Forwards (one for the near leg and one for the far leg).
2. A Non-Deliverable FX Swap is reported as two separate individual FX Non-Deliverable Forwards (one for the near leg and one for the far leg).

### 2.1.1.3 Equity

ISDA Product Taxonomy			
Asset Class	Base Product	Sub Product	Transaction Type
Equity (EQ)	Option	Price Return Basic Performance (See Note 1)	Single Index
			Single Name
	Swap	Price Return Basic Performance (See Note 1)	Single Index
			Single Name
		Parameter Return Variance (See Note 1)	Single Index
			Single Name
	Other (See Note 1)	Parameter Return Dividend (See Note 1)	Single Index
			Single Name
		-	-

Notes:

1. For simplicity and clarity, we will use the following short names for equity products throughout this specification and the appendixes:

Product Taxonomy	Short Name
Equity:Option:PriceReturnBasicPerformance	Equity Option
Equity:Swap:PriceReturnBasicPerformance	Equity Swap
Equity:Swap:ParameterReturnVariance	Variance Swap
Equity:Swap:ParameterReturnDividend	Dividend Swap
Equity:Other	Equity Other

#### 2.1.1.4 Credit

ISDA Product Taxonomy			
Asset Class	Base Product	Sub Product	Transaction Type
Credit (CD)	Single Name	Corporate	Asia-Corporate
			Australia Corporate
			Emerging European Corporate
			Emerging European Corporate LPN
			European Corporate
			Japan Corporate
			Latin America Corporate
			Latin America Corporate Bond
			Latin America Corporate Bond Or Loan
			New Zealand Corporate
			North American Corporate
			Singapore Corporate
			Standard Asia Corporate
			Standard Australia Corporate
			Standard Emerging European Corporate
			Standard Emerging European Corporate LPN
			Standard Japan Corporate
			Standard Latin America Corporate Bond
			Standard Latin America Corporate Bond Or Loan
			Standard New Zealand Corporate
			Standard North American Corporate
			Standard Singapore Corporate
			Standard Subordinated European Insurance Corporate
			Standard Sukuk Corporate
			Subordinated European Insurance Corporate
			Sukuk Corporate

ISDA Product Taxonomy			
Asset Class	Base Product	Sub Product	Transaction Type
			Standard European Corporate
			Asia Sovereign
		Sovereign	Australia Sovereign
			Emerging European And Middle Eastern Sovereign
			Japan Sovereign
			Latin America Sovereign
			New Zealand Sovereign
			Singapore Sovereign
			Standard Asia Sovereign
			Standard Australia Sovereign
			Standard Emerging European And Middle Eastern Sovereign
			Standard Japan Sovereign
			Standard Latin America Sovereign
			Standard New Zealand Sovereign
			Standard Singapore Sovereign
			Standard Sukuk Sovereign
			Standard Western European Sovereign
			Sukuk Sovereign
			Western European Sovereign
	Index Tranche	CDX	CDX Tranche HY
			CDX Tranche IG
			CDX Tranche XO
			Standard CDX Tranche HY
			Standard CDX Tranche IG
		iTraxx	iTraxx Asia Ex Japan Tranche
			iTraxx Australia Tranche
			iTraxx Europe Tranche
			iTraxx Japan Tranche
			Standard iTraxx Europe Tranche
	Index	CDX	CDX HY
			CDX IG
			CDX XO
			CDX Emerging Markets

ISDA Product Taxonomy			
Asset Class	Base Product	Sub Product	Transaction Type
			CDX Emerging Markets Diversified
		iTraxx	iTraxx Asia Ex Japan
			iTraxx Australia
			iTraxx Europe
			iTraxx Japan
			iTraxx LevX
			iTraxx SovX
			Itraxx SDI
	Other	-	-

#### 2.1.1.5 Commodity

Trade Leg Type		
Asset Class	Base Product	Sub Product
Commodity	Swap	Fixed Float
		Float Float
		Float Coal
		Float Gas
		Float Oil
		Float Electricity
		Fixed Oil
		Fixed Gas
		Fixed Coal
		Fixed Electricity
	Option	Option Option
		Fixed Bullion
		Fixed Metal
		Average Bullion
		Average Metal
	Forward	Fixed Bullion
		Fixed Metal
		Average Bullion
		Average Metal
	Other	-

### 2.1.2 Supported Trade Events over Products

The HKTR-R system supports the following trade events over the supported products:

- New Trade event
- Amendment event
- Partial Termination event
- Full Termination event
- Backloading event
- Withdrawal event
- Quit event
- Relink event
- Suppress Uncertain event

For reporting services, Full Novation business event can be reported as Full Termination event (or Amendment event with zero outstanding notional), followed by a New Trade event.

Similarly, Partial Novation business event can be reported as Partial Termination event (or Amendment event with non-zero outstanding notional), followed by a New Trade event.

For details on the exact mapping of trade event support on a particular product, please refer to Appendix A and Appendix B.

### 2.1.3 Supported File Format for Trade Submission

Each file submitted can contain one or multiple trade event requests in either of the following formats:

- XML (extended FpML)
- CSV

Below is a summary on the products supported by HKTR and the applicable FPML and CSV version.

Asset Class	Base Product supported by HKTR	Trade Event				File Format		
		New Trade / Amendment / Backloading	Partial Termination	Full Termination	Withdrawal / Quit / Relink / Suppress Uncertain	FpML version	CSV version (Excel version)	
Interest Rate	IR Swap	✓	✓ <sup>1</sup>	✓	✓	5.5	2.1 (2.8)	
	Cross Currency	✓	✓ <sup>1</sup>	✓	✓			
	Cap Floor	✓	✓	✓	✓			
	Option	✓	✓ <sup>1</sup>	✓	✓			
	FRA	✓	✓	✓	✓			
	Other	✓	✗	✗	✓	-		
Foreign Exchange	NDF	✓	✗	✓	✓	5.5		
	Vanilla Option	✓	✗	✓	✓			
	NDO	✓	✗	✓	✓			
	Forward	✓	✗	✓	✓			
	Other	✓	✗	✗	✓	-		
Equity	Equity Option	✓	✓	✓	✓	5.5		
	Equity Swap	✓	✓	✓	✓			
	Variance Swap	✓	✓	✓	✓			
	Dividend Swap	✓	✓	✓	✓			
	Other	✓	✗	✗	✓	-		
Credit	Single Name	✓	✓	✓	✓	5.7	3.0 (3.5)	
	Index Tranche	✓	✓	✓	✓			
	Index	✓	✓	✓	✓			
	Other	✓	✗	✗	✓	-		
Commodity	Swap	✓	✓	✓	✓	5.7		
	Option	✓	✓	✓	✓			
	Forward	✓	✓	✓	✓			
	Other	✓	✗	✗	✓	-		

For the details of the FpML or CSV message layouts, please refer to the appendixes A and C correspondingly. For the base product 'Other' under each asset class, in addition to CSV file submission, a supplementary attachment can be uploaded via the User Interface. For details on the attachment uploading feature, please refer to User Manual [\[5\]](#) for Participants – Trade Functions for details.

### 2.1.3.1 Trade Event Requests support in FpML

For the trade events supported by the HKTR-R system<sup>2</sup> and the cancellation requests on trade event applicable for reporting, they are collectively referred as the Trade Event Requests.

Generally speaking, one may use the following trade event requests in FpML for submission:

<sup>1</sup> Please note that Partial Termination event is not applicable to IR products with Known Amount.

<sup>2</sup> For a list of products supported by the HKTR-R system, please refer to section 2.1.1.

- **eventActivityReport.** To *initiate* requests on all supported trade events: New Trade, Amendment, Partial Termination, Full Termination, Withdrawal, Quit, Backloading, Relink and Suppress Uncertain.
- **eventActivityReportRetracted.** To *cancel* requests on, in particular, the Relink trade event.

#### 2.1.3.2 Trade Event Requests support in CSV

The following is a list of Trade Event Requests supported in CSV submissions. Note that different versions of MS Excel templates are provided for generating different versions of CSV to be submitted to HKTR. For the details on the usages of the available Excel template, please refer to Appendix B.

For the file specifications, please refer to section 4.

#### 2.1.4 Identification of Request File for Trade Event Request submissions

The HKTR-R system mandates the file naming convention to ensure the uniqueness of the files submitted.

The file name is in the following format:

**treq-<participant id>-<generation date>-<user file reference>.xxx**

Format String	Description
treq	The request file name prefix. Must be “treq” in lowercase.
<participant id>	HKTR Participant ID (Submitting party). ID in uppercase and lowercase characters will be treated in the same way.
<generation date>	Date of file generation in yyymmdd format
<user file reference>	It is an in-house unique reference assigned by the participant which can be up to a maximum of 30 characters in length. For information of allowable character set on this field, please refer to section 4.4.  This user file reference must be the same as the file reference quoted in the file header of the file content. Moreover, the two file references must match in a case-sensitive manner.
xxx	Either CSV or XML file extension depending on the request's encoding format. File extension in uppercase and lowercase characters will be treated in the same way.

Following this naming convention, the participant should generate a unique file name for each request file. The HKTR-R system supports multiple submissions of files per day for the same participant.

#### 2.1.5 Bulk Submission of Trade Events

The HKTR-R system allows the submission of a trade event request file which contains multiple trade events. The HKTR-R system will then process the trade event requests according to their order in the request file for each trade.

To ensure the files correlated to the same trade can be processed in sequence by system, participants should send a new request file after the response file of the previous request file is received.

Please note that each file should contain no more than 125 requests, and that the file size should not be larger than 25M bytes.

## 2.1.6 Validation of Trade Event Request

### 2.1.6.1 Format and Syntax Checking

The HKTR-R system will firstly validate the file content, such as the control totals, to ensure the file content integrity and consistency.

For XML formatted request files, they will be checked against the XML schema that will be published to the participants. For CSV formatted request files, they will also be checked against the corresponding CSV template definitions. If the XML/CSV request file does not conform to HKICL's published standards, the request file will be rejected immediately and no trade event request is processed. Otherwise, each trade event request in the file will be examined in accordance with HKICL's validation rules.

That said, it should be noted that to avoid possible ambiguities during trade capturing process in HKTR-R, all input fields will have their leading and trailing white spaces (i.e. "Space", "Tab" and "Newline" character) trimmed prior to syntax and format validations.

### 2.1.6.2 Unique Reference

Participants are required to specify a unique file reference in the file header for each trade event request file submitted to the HKTR-R system. Each trade event level request must also be assigned with a unique event request reference. Refer to section 4.1 and 4.2 for the exact field names in different request file formats.

### 2.1.6.3 Sequence Checking

For any post trade event received, the HKTR-R system will process the events in chronological order according to their order in the request file for each trade. If there are more than one intra-day post trade events for the same trade, participants are required to put the post trade events within the file according to the correct (agreement) date sequence.

## 2.1.7 Request Handling and Response File

### 2.1.7.1 Handling of Rejected Request

If validation on a trade event request fails, the HKTR-R system will reject that request and return the rejection reason in a response file to the submitting participant. As a result, the response file will contain the validation results of individual trade event requests indicating whether they are accepted or rejected by the system. Refer to section 4.8 for the list of return codes and their corresponding descriptions.

Rejected trade event requests will not be further processed by the system, and they will not be kept in the HKTR-R system.

#### 2.1.7.2 Handling of Accepted Request

For a valid trade event request, the HKTR-R system will proceed to process it according to its event types (e.g. New Trade event, post trade event, or cancellation requests). Valid trade event requests will be kept in the HKTR-R system as historical records and can be enquired through the trade history view of UI enquiry function.

For a cancellation request, the HKTR-R system will update/cancel the corresponding trade event.

#### 2.1.7.3 Identification of Response File

For every request file submitted to the HKTR-R system, a response file will be generated and returned to the participant after each trade event request in the request file has been processed.

The response file contains one response record corresponding to each trade event request record. However, when there is exceptional situation in which some response records cannot be properly formatted due to critical errors identified in the trade event requests, the whole request file will be rejected with a file-level response code.

Similar to the request file, the response file can be in either extended FpML or CSV format. The HKTR-R system will generate the response file in the same format as the request file's.

The file name is in the following format:

**trsp-<participant id>-<generation date>-<user file reference>-<TR file reference>.xxx**

Format String	Description
trsp	The response file name prefix. Must be "trsp" in lowercase.
<participant id>	HKTR Participant ID. Always in uppercase characters.
<generation date>	Date of file generation in yyymmdd format.
<user file reference>	It is an in-house unique reference assigned by the participant in the request file.
<TR file reference>	It is a unique file reference generated by the HKTR-R system.
xxx	Either CSV or XML file extension depending on the request's encoding format. Always in lowercase characters.

## 2.2 Valuation Information Submission by Participants

### 2.2.1 Valuation Requests

The HKTR-R system supports the reporting of daily valuation data of a reported trade through the use of *valuation requests*. The requests support modification and deletion of previously reported valuation. They are the basic units of submission for valuation data in HKTR.

Available types of valuation requests include:

- **“AddOrModify” action request** can be used to report valuation data or to modify the reported valuation data for a particular valuation date of an existing trade.
- **“Delete” action request** can be used to remove the reported valuation data for a particular valuation date of an existing trade.

### 2.2.2 Supported File Format for Valuation Data Submission

Similar to trade submission, each file submitted for valuation reporting can contain one or multiple valuation requests in either of the following formats:

- XML (extended FpML)
- CSV

The HKTR-R system currently only supports FpML version 5.5 and CSV version 2.2 on the reporting of valuation data.

#### 2.2.2.1 Valuation Requests support in FpML

One may use the following request messages for submitting valuation requests in FpML:

- **valuationReport**. This corresponds to the “AddOrModify” request.
- **valuationReportRetracted**. This corresponds to the “Delete” request.

#### 2.2.2.2 Valuation Requests support in CSV

The following is a list of Valuation Requests supported in CSV submissions.

Excel Template	Excel Version	CSV Version	Description	Applicable Product
<b>Reporting View</b>				
Reporting - Valuation	2.9	2.2	Report valuation data over an existing trade	All

For the file specifications, refer to section 4.

### 2.2.3 Identification of Request File for Valuation Request submissions

The HKTR-R system mandates the file naming convention to ensure the uniqueness of the files submitted.

The file name is in the following format:

**vreq-<participant id>-<generation date>-<user file reference>.xxx**

Format String	Description
vreq	The request file name prefix. Must be “vreq” in lowercase.
<participant id>	HKTR Participant ID (Submitting party). ID in uppercase and lowercase characters will be treated in the same way.
<generation date>	Date of file generation in yyyyymmdd format
<user file reference>	<p>It is an in-house unique reference assigned by the participant which can be up to a maximum of 30 characters in length. For information of allowable character set on this field, please refer to section 4.4.</p> <p>This user file reference must be the same as the file reference quoted in the file header of the file content. Moreover, the two file references must match in a case-sensitive manner.</p> <p>Though not recommended in practical use, the HKTR-R system allows the user file references used for valuation request submissions to be duplicated with those used by trade event request submissions.</p>
xxx	Either CSV or XML file extension depending on the request's encoding format. File extension in uppercase and lowercase characters will be treated in the same way.

Following this naming convention, the participant should generate a unique file name for each request file. The HKTR-R system supports multiple submissions of files per day for the same participant.

### 2.2.4 Bulk Submission of Valuation Requests

Like trade event request submissions, the HKTR-R system allows the submission

of a valuation request file which contains multiple valuation requests. The HKTR-R system will then process the valuation requests according to their order in the request file for each trade.

To ensure the files correlated to the same trade can be processed in sequence by system, participants should send a new request file after the response file of the previous request file is received.

Like trade event request submissions, there are limits on the file size and how many valuation requests can be contained inside a file for different file formats, as listed below:

File Format	Max. No. of containing records	Maximum file size
FpML	2500	25M bytes
CSV	5000	25M bytes

## 2.2.5 Validation of Valuation Request File

### 2.2.5.1 Format and Syntax Checking

Similar to validating trade event request file, on validating valuation request file, the HKTR-R system will perform a control-total check on the file, followed by an FpML schema / CSV template definition check. Failures on such validations will cause the request file to be rejected immediately and no valuation requests would be processed.

If no errors are found during these validations, each valuation requests in the file will be further validated with business validation rules, and be captured into the system if no errors are further found.

That said, like trade event request processing, it should be noted that to avoid possible ambiguities, all input fields will have their leading and trailing white spaces (i.e. “Space”, “Tab” and “Newline” character) trimmed prior to syntax and format validations.

### 2.2.5.2 Unique Reference

As mentioned in section 2.2.3, Participants are required to specify a unique file reference in the file header for each valuation request file submitted to the HKTR-R system. Each valuation request must also be assigned with a unique valuation request reference. Refer to section 4.1 for the exact field names in different request file formats.

### 2.2.5.3 Correlation of Trade and Valuation Data

A valuation request correlates the trade it wants to operate on using trade reference, and then updates its valuation record according to the specified valuation date. The

following trade reference types are supported in the valuation for correlation purpose:

- TR Trade Reference
- User Trade Reference
- Agent Trade Reference
- UTI/UTI-TID

Note that the trade correlation of the reported valuation data CANNOT be modified through an “AddOrModify” request. To change the trade correlation of valuation data, one needs to remove the valuation data with wrong trade correlation using the “delete” request, and then create a new valuation data using the correct trade correlation using the “AddOrModify” request.

## 2.2.6 Request Handling and Response File

### 2.2.6.1 Handling of Rejected Request

Similar to trade event request processing, if validation on a valuation request fails, the HKTR-R system will reject that request and return the rejection reason in a response file to the submitting participant. As a result, the response file will contain the validation results of individual valuation requests indicating whether they are accepted or rejected by the system. Refer to section 4.8 for the list of return codes and their corresponding descriptions.

Rejected valuation requests will not be further processed by the system, and they will not be kept in the HKTR-R system.

### 2.2.6.2 Handling of Accepted Request

For a valid valuation request, the HKTR-R system will proceed to process it according to its request types (e.g. “AddOrModify” / “Delete” requests). Valid valuation requests will be attached to the correlated trade in the HKTR-R system, and can be enquired through the “Valuations” tab under the correlated trade in Trade Details view of UI enquiry function.

For a “Delete” request, the HKTR-R system will delete the corresponding valuation information in the “Valuations” tab.

### 2.2.6.3 Identification of Response File

For every request file submitted to the HKTR-R system, a response file will be generated and returned to the participant after each valuation request in the request file has been processed.

The response file contains one response record corresponding to each valuation request record. However, when there is exceptional situation in which some response records cannot be properly formatted due to critical errors identified in the valuation requests, the whole request file will be rejected with a file-level response

code.

Similar to the request file, the response file can be in either extended FpML or CSV format. The HKTR-R system will generate the response file in the same format as the request file's.

The file name is in the following format:

**vrsp-<participant id>-<generation date>-<user file reference>-<TR file reference>.xxx**

Format String	Description
vrsp	The response file name prefix. Must be "vrsp" in lowercase.
<participant id>	HKTR Participant ID. Always in uppercase characters.
<generation date>	Date of file generation in yyymmdd format.
<user file reference>	It is an in-house unique reference assigned by the participant in the request file.
<TR file reference>	It is a unique file reference generated by the HKTR-R system.
xxx	Either CSV or XML file extension depending on the request's encoding format. Always in lowercase characters.

## 2.3 File Submission by Agent

An Agent can submit the trade event request files and valuation request files on behalf of a participant.

Upon the receipt of a request file from an Agent, the HKTR-R system will check whether the submitting party is authorized to submit the request file on behalf of the corresponding trade party for that sub product. If not, the HKTR-R system will reject the request file.

Under the current phase, the agent relationship is maintained by HKMA only, according to the information provided by HKTR-R participants. When a reporting party intends to switch agent of a sub product for trade and valuation reporting, it is necessary to notify HKTR in advance.

## 2.4 Submission Channel

The HKTR-R system provides a UI function for participants to upload the trade event requests and valuation requests in files according to the published standards.

Alternatively, participants can submit the trade event request files and valuation request files to the HKTR-R system through the File Transfer Service (“FTS”) on ICLNet or FileAct on SWIFTNet. The subscription of FTS and FileAct service are provided by HKICL and SWIFT respectively.

In summary, the HKTR-R system supports the following 3 methods of trade information submission by participants.

- FTS on ICLNet
- FileAct on SWIFTNet
- UI Upload

For the first two methods, the HKTR-R system requires participants to configure specific parameters through the UI function prior to trade information submission and report collection. Please refer to the following subsections for more details.

#### 2.4.1 FileAct Configuration

Configuration is required for the following parameter:

- SWIFT FileAct Distinguished Name (DN) – the DN applicable to the participant’s submitting trade data via SWIFTNet FileAct. Multiple FileAct DNs may be configured by participants for use in the HKTR-R system.

The parameter can be viewed and maintained by participants using the View/Maintain Participant Details UI functions. Please refer to the User Manual [\[5\]](#) for the details of the UI functions.

#### 2.4.2 FTS Configuration

For FTS, Connect:Direct software with Secure+ feature is used by participants to submit trade event requests / valuation requests and receive reports. The data will be carried across ICLNet, which provides reliable and secure network.

Many financial institutions in Hong Kong are currently using the FTS on ICLNet for various purposes. New FTS users are required to contact HKICL for the subscription of the service and the arrangement of the necessary testing and set-up.

For the submission of trade event request / valuation request files, the participant’s Connect:Direct server is required to initiate a Connect:Direct process to the FTS server hosted by HKICL. Participants have to provide the following information for the file transfer process:

<b>Argument</b>	<b>Description</b>
File Name	The file name of the trade event request / valuation request.
Connect:Direct Process Name	The process name to be provided by HKICL that will handle the file transfer.
HKTR-R Notification Shell Script	The shell script name of HKTR-R system to be provided by HKICL that will process the trade event request file / valuation request file.

Participants can optionally define a job in its Connect:Direct server, which will invoke a job to process the trade event request response files returned by HKICL.

A spreadsheet template will be distributed to the participants for their inputs of FTS configurations for trade event request response files such as Output File Path, Output File Name and Batch Job to be triggered at participants' servers.

## 2.5 UI Functions

Participant users can use online functions provided by the HKTR-R system via the following means:

- SWIFT WebAccess service (requiring prior login to SWIFT network through SWIFT Alliance Web Platform (AWP) / Personal Token)
- Internet

### 2.5.1 User Authentication via SWIFT WebAccess

Different from GUI function access through Internet as described in section 2.5.2, user authentication is not entirely done by HKTR-R application but integrated with SWIFT's central authentication service. While SWIFT users authenticate themselves to log in SWIFT network, the users have the convenience to use the same credentials and similar SWIFT user interface to log in HKTR-R application.

When a SWIFT user logs in HKTR-R system via SWIFT WebAccess service by accessing the application URL over SWIFT WebAccess, the user is presented with a SWIFT WebAccess login screen (rather than HKTR-R system's application login interface in the case of Internet channel). After submitting the password of the SWIFT user, SWIFT will authenticate the user on behalf of HKTR-R system and pass SWIFT's user ID to HKTR-R system for identification purpose if the authentication is successful.

When the SWIFT user ID is passed to the HKTR-R system for login purpose, the HKTR-R system needs to associate the SWIFT user ID with corresponding application user ID. If the association has yet been made, a SWIFT User Account Association web page will be invoked for the user to associate the currently used SWIFT user with HKTR-R application user profile. The participant ID, application user ID and application user password will be required in order to activate such association.

Once the association between SWIFT's user and HKTR-R system's application user profile is established, the function will no longer be prompted for subsequent login of that user.

The SWIFT user account association can be viewed in the View User Account UI function. The association can be removed using the Maintain User Account UI function, if necessary.

## 2.5.2 Internet User Authentication Using SSL Client Certificates

Participant users that access the HKTR-R system via the Internet are required to be authenticated when logging in using an SSL Client certificate (digital certificate). This is configured through the Maintain User Account UI function provided by the HKTR-R system. The URL associated with the access through Internet is the same one used for connecting to the primary or DR site.

At the time of user login, in addition to entering the user's Participant ID, User Name and Password, the user's SSL certificate is retrieved and forwarded to the HKTR-R system with the logon request. The login screen allows the user to select a certificate from the browser's certificate repository.

The credentials of the user's certificate are validated as follows:

- The user's certificate is checked for expiry;
- The certificate must be signed by a Certification Authority (CA) that is designated as a trusted CA by HKICL;
- The certificate is checked against the consolidated list of revoked certificates maintained for the HKTR-R system.

If this validation fails, the login request is rejected. The HKTR-R system will ensure that the SSL Client certificate associated with the user account can be shared within own participant but not shared between different participants during user account maintenance. The certificate revocation lists for the agreed CAs are maintained in the HKTR-R system and are updated periodically.

Digital certificate issued by the following authorized CAs will be supported by the HKTR-R system:

### i) Local Certification Authority:

- Digi-Sign Certification Services Limited ("Digi-Sign")
- Hongkong Post

### ii) Global Certification Authority:

- Geotrust
- Verisign<sup>3</sup>
- Symantec<sup>4</sup>
- Entrust

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<sup>3</sup> Security Business of Verisign has been acquired by Symantec in 2010.

<sup>4</sup> Security Business of Symantec has been acquired by DigiCert in 2017.

- IdenTrust
- DigiCert

Please note that the list of CAs above is not finalized and subject to change in future.

### 2.5.3 Client Software/Token Requirements

For accessing to the HKTR-R system for UI functions via SWIFT WebAccess service:

- SWIFT Alliance Web Platform (AWP) / Personal Token (refer to SWIFT's manuals for more details)
- AWP / Personal Token supported Windows versions
- AWP / Personal Token supported Microsoft Internet Explorer versions

For accessing to the HKTR-R system for UI functions:

- Windows 8.1 / Windows 10
- Microsoft Internet Explorer version 11

For the generation of the CSV using Microsoft Office Excel:

- Microsoft Office Excel 2013 / 2016 / 2019

### 2.5.4 URL for UI Functions via Internet

The HKTR-R system implementation provides a browser-based user interface through Internet for enquiry, report viewing and administrative functions.

The URLs available to participants are as follows:

URL	IP Address	Purpose
<a href="https://tr.cmu.org.hk/tr/login">https://tr.cmu.org.hk/tr/login</a>	Production: 113.28.158.73 (primary) 118.143.124.9 (backup) 107.162.133.234 (contingency)  Disaster Recovery: 113.28.158.74 (primary) 118.143.124.10 (backup) 107.162.133.234 (contingency)	Production and Disaster recovery site

<a href="https://truat.cmu.org.hk/tr/mem/login">https://truat.cmu.org.hk/tr/mem/login</a>	118.143.124.8 (primary) 107.162.133.232 (contingency)	Member test
<a href="https://truat.cmu.org.hk/tr/sim/login">https://truat.cmu.org.hk/tr/sim/login</a>	118.143.124.8 (primary) 107.162.133.232 (contingency)	Simulation test

## 2.6 Report Collection by Participants

The reports generated by the HKTR-R system are broadly classified into the following three types:

- (1) System reports – Reports are generated in off-line batch mode at pre-defined time or after a specific event, in PDF format (for administrative functions reports) or CSV format (for trade / valuation related reports except the trade event request / valuation request capture report), and can be delivered via file transfer or viewed/downloaded via UI function;
- (2) Enquiry-Initiated User Requested reports – Reports are generated in background mode, in PDF (for administrative functions reports) or CSV (for trade related reports) format. Users can check report generation status, view or download the generated report via the View Report List function; and
- (3) UI Enquiry reports – Reports that are tied to the enquiry functions. The report shows the real-time enquiry result. Reports generated are sent to the browser front-end for user's viewing. The user can then save the report or print it out. Saved enquiry results are in CSV format.

The following channels are supported by the HKTR-R system:

- FTS on ICLNet
- FileAct on SWIFTNet
- Browser retrieval - through UI functions

The means of browser retrieval is always available by default. For system reports with multiple report formats, each report format can be configured to be delivered via FTS and/or FileAct as the additional delivery channel.

Depending on the report type of system reports, the delivery channel can be configured on a participant basis using Maintain Report Schedule UI function.

### 2.6.1 FTS Configuration Spreadsheet Template

A spreadsheet template will be distributed to the participants for their inputs of FTS configurations for each system report such as Output File Path, Output File Name and Batch Job to be triggered at participants' servers.

### 2.6.2 SWIFTNet FileAct

For the configuration information required for reports received through SWIFTNet FileAct service, refer to section 2.4.1 for details.

### 2.6.3 SWIFT WebAccess

The HKTR-R system provides functions for users to browse reports in PDF file format. Users should ensure that their PC workstations are installed with the necessary client software for viewing PDF files.

For the configuration information required to use SWIFT WebAccess service, refer to section 3.2 for details.

### 3 USE OF SWIFTNET SERVICES

#### 3.1 SWIFTNet FileAct Service

SWIFTNet FileAct is used as one of the channels for the participants to submit trade information to the HKTR-R system and/or receive response files/reports generated by the HKTR-R system. The specific SWIFTNet FileAct messaging implementation used is Store-and-Forward.

##### 3.1.1 Overview of SWIFTNet FileAct Message

The SWIFTNet FileAct message is composed of two components – (i) a Protocol Data Units (PDU) header which contains addressing information and a cryptographic element used to authenticate the message, and (ii) a payload containing the actual file content.

##### 3.1.2 FileAct PDU

The FileAct PDU contains addressing information, additional service-specific information such as non-repudiation, and any authentication information for the message.

Note that only the UTF-8 encoding scheme is supported for SWIFTNet FileAct XML messages.

SWIFTNet addressing in the FileAct PDU is derived from the Request Type, Sender Distinguished Name (DN), Receiver DN, and SWIFTNet Service name.

The PDU message structure and the permitted values for parameters are described as follows:

Element name	Permitted Values
Saa:DataPDU	
Saa:Revision	
Saa:Header	
Saa:Message	
Saa: MessageIdentifier	refer to section 3.1.2.1
Saa: Sender	
Saa: DN	refer to section 3.1.2.2
Saa: Receiver	
Saa: DN	refer to section 3.1.2.2
Saa: NetworkInfo	
Saa:Service	refer to section 3.1.2.3
Saa: FileLogicalName	refer to section 2.1.4 (for trade) or 2.2.3 (for valuation).

### 3.1.2.1 Request Types for SWIFTNet Service

The Request Type for HKTR-R system's FileAct service is "demt.001". This is validated by SWIFT and the HKTR-R system.

### 3.1.2.2 SWIFTNet Sender and Receiver Addressing

The following table defines the Sender and Receiver DN to be used for the HKTR-R system.

For an overview of how Sender and Receiver addressing works in the context of SWIFTNet, refer to [1.2].

Sender DN	Receiver DN	Purpose
Any of the production participant DNs configured within the HKTR-R system.	ou=tr,o=hkikhkh,o=swift	Production
Any of the pilot participant DNs configured within the HKTR-R system.	cn=trsintest,ou=test,o=hkikhkh,o=swift	Simulation test (Note 1)
Any of the pilot participant DNs configured within the HKTR-R system.	cn=trmemtest,ou=test,o=hkikhkh,o=swift	Member test (Note 2)

Note:

1. Simulation test is to allow participants to get familiar with the operations of the HKTR-R system on an end-to-end basis under a production-like testing environment.
2. Member test is for those participants to test their straight-through processing (STP) interfaces to the HKTR-R system.

### 3.1.2.3 SWIFTNet FileAct Service Name

Two separate services are respectively defined to facilitate provisioning of FileAct and WebAccess services at SWIFT.

For SWIFTNet FileAct service, the service of HKTR-R system is shared with eMBT/eCMT system, that is, the SWIFT's Closed User Group (CUG) of HKTR-R system is the same as eMBT/eCMT system. Service subscription is required if participants have not subscribed eMBT/eCMT's SWIFTNet FileAct service.

SWIFTNet FileAct services are available in the pilot and production environments of HKTR-R system.

SWIFTNet FileAct Service Name	Service Description	SWIFTNet Environment	Purpose
hkicl.rtgs.fileact	Hong Kong RTGS	Production (Live service)	FileAct Production

	Store-n-Forward FileAct Service (Live)		
hkicl.rtgs.fileact!p	Hong Kong RTGS Store-n-Forward FileAct Service (Pilot)	Production (Pilot service)	FileAct Member Test and Simulation Test

For SWIFT WebAccess URL and service name, refer to section 3.2.1.

#### 3.1.2.4 Additional Information Contained in the PDU

SWIFTNet Non-Repudiation feature is not supported by the HKTR-R system, and the following rule applies:

Element Name	Usage
Saa:DataPDU	
Saa:Header	
Saa:Message	
Saa:SecurityInfo	
Saa:SWIFTNetSecurityInfo	
Saa:IsNRRequested	Not allowed to be set. If set, the message is rejected by SWIFT.

SWIFTNet Copy feature for FileAct is not supported by the HKTR-R system, and the following rule applies:

Element Name	Usage
Saa:DataPDU	
Saa:Header	
Saa:Message	
Saa:NetworkInfo	
Saa:SWIFTNetNetworkInfo	
Saa:IsCopyRequested	Not allowed to be set. If set, the message is rejected by SWIFT.

The possible duplicate emission indicator specified in the PDU is ignored by HKTR-R system.

#### 3.1.2.5 FileAct Signature

Messages are authenticated using the SNL cryptographic protocols as implemented using the SignatureList. The SwSec:Signature element contains a number of elements, used in FileAct requests as follows:

Element Name	Permitted Values
SwSec:Signature	

Element Name	Permitted Values
SwSec:KeyInfo	
SwSec:SignDN	SWIFTNet FileAct DN configured by participants in HKTR-R system. Refer to section 2.4.1 for details.

## 3.2 SWIFT WebAccess Service

Before a SWIFT user can access HKTR-R system's GUI function through SWIFT network over SWIFT WebAccess service, the administrator and security officer must go through a set of SWIFT configurations on network connectivity, security and software configurations.

The following sub-sections within section 3.2 provide the high level description of SWIFT WebAccess configurations. For more detailed information, refer to SWIFT's related manuals or contact respective account manager of SWIFT.

### 3.2.1 URL and Service Name for TR SWIFT WebAccess Service

Different from SWIFTNet FileAct service, which is common to both HKTR-R and eMBT/eCMT systems, the SWIFT WebAccess service for HKTR-R system and eMBT/eCMT system are two individual SWIFT services. There is an individual Closed User Group (CUG) for HKTR-R system, service subscription of TR SWIFT WebAccess service is mandatory for all HKTR-R participants.

The service names and URLs of the SWIFT WebAccess services for Live and Pilot environments are listed as follows for WebAccess service subscription and configuration:

SWIFT WebAccess Service Name	URL	IP Address	SWIFTNet Environment	Purpose
hkicl.tr.gui	https://hkicl-tr.browse.swiftnet.sipn.swift.com/tr/login	149.134.1.184	Production (Live service)	Production and Disaster recovery site
hkicl.tr.gui!p4	https://hkicl-tr-pilot-memtest.browse.swiftnet.sipn.swift.com/tr/mem/login	149.134.1.176	Production (Pilot service)	Member test
hkicl.tr.gui!p5	https://hkicl-tr-pilot-simtest.browse.swiftnet.sipn.swift.com/tr/sim/login	149.134.1.177	Production (Pilot service)	Simulation test

For information on SWIFT WebAccess, refer to the SWIFTNet Service Description in [1.1].

### 3.2.2 SWIFT User Certificates Set-up

Each SWIFT user must have a unique SWIFT certificate from SWIFT to associate with one unique application user profile predefined in HKTR-R system. User cannot associate the same SWIFT user certificate with more than one application user profile in HKTR-R system.

### 3.2.3 SWIFT RBAC Role Assignment

In order for a SWIFT user to pass through SWIFT's role based access control before successfully logging in HKTR-R system, each SWIFT user must be assigned to one default RBAC role "access\_to\_service" for TR SWIFT WebAccess Service by participant's security officer.

### 3.2.4 Installation and Configuration of SWIFT Software

Before a SWIFT user can log in HKTR-R system the user should log in SWIFT WebAccess environment first. To achieve SWIFT WebAccess environment login, the following ways are provided by SWIFT:

- SWIFT Alliance Web Platform (AWP)
- Personal Token

For the participants who access HKTR-R system's WebAccess service using AWP, the latest WebAccess GUI package version should be installed.

For the participants / users who access HKTR-R system's WebAccess service using Personal Token, appropriate token installation software should be installed.

For more detail, refer to SWIFT's documentation [\[2\]](#)

### 3.2.5 Browser Configuration

For the details of browser configuration for SWIFT Alliance Web Platform (AWP) or Personal Token in SWIFT WebAccess, refer to SWIFT's documentation [\[2\]](#).

## 4 FILE SPECIFICATION

The trade event requests and valuation requests can be submitted in either extended FpML or CSV format. For every request file submitted to HKTR-R system, a response file will be returned to the participant. Similar to the request file, the response file can be in either extended FpML or CSV format. The HKTR-R system will generate the response file in the same format as the request file's.

Refer to Appendix A, B, C, D, E, F, G and H for the FpML file specification, CSV file specification, Excel templates, validation rules, schemas and examples, and Enumeration and Coding Scheme respectively.

### 4.1 File Level Reference

Participants are required to specify a unique file reference<sup>5</sup> (File Reference) in the file header for each of their trade event request files / valuation request files submitted to the HKTR-R system. Likewise, the HKTR-R system will specify its own unique file reference in the file header for each of the response files returned to the participants. In addition, the HKTR-R system will put the participants' file reference to a field called "Request File Reference" in the corresponding response file so that the participants can correlate the response file returned by the HKTR-R system to their submitted trade event request / valuation request file.

The presentation of the file reference varies for the different formats (extended FpML or CSV). The following is the field name of the file reference used in FpML and CSV:

	Field Path in Extended FpML	Field Name in CSV
<b>Request</b>	/requestDocumentHeader/tr:fileReference	File Reference
<b>Response</b>	/responseDocumentHeader/requestFileReference	Request File Reference

### 4.2 Event Level Reference

Similar to the File Level Reference, each event level request and response includes an event request reference which correlates the request and response of the event.

The presentation of the event request reference varies for the different formats (extended FpML or CSV). The following is the field name of the event request reference used in FpML and CSV:

	Field Path in Extended FpML	Field Name in CSV
<b>Request</b>	/tradeEventRequestDocument/requestDocumentDetails/	Event Request ID

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<sup>5</sup> The HKTR-R system only requires the file reference to be unique either within all submitted trade event request files or within all submitted valuation request files. File references are allowed to be duplicated across these two types of files. In return, the HKTR file reference generated in the response will also be unique either within all trade event response files or within all valuation response files.

	tr:eventActivityReport/header/messageId	
<b>Response</b>	/tradeEventResponseDocument/responseDocumentDetails/ tr:eventActivityReportStatus/header/inReplyTo	In Reply To

### 4.3 Valuation Request Reference

Similarly for valuation request, each request and response message includes a valuation request ID which correlates the request and response of the event.

The presentation of the valuation request ID varies for the different formats (extended FpML or CSV). The following is the field name of the valuation request ID used in FpML and CSV:

	<b>Field Path in Extended FpML</b>	<b>Field Name in CSV</b>
<b>Request</b>	/valuationRequestDocument/requestDocumentDetails/ tr:valuationReport/header/messageId	Valuation Request ID
<b>Response</b>	/valuationResponseDocument/responseDocumentDetails/ tr:valuationReportAcknowledgement/header/inReplyTo	In Reply To

### 4.4 Supported Character Set

The following table shows the character set supported for different types of data fields:

<b>Data Fields</b>	<b>Available character sets</b>	<b>Unicode Code Point</b>
All types of data fields except those mentioned below	Basic Latin including English alphabets, numbers <sup>note</sup> and symbols.	0020 – 007E
File reference	Alphanumeric characters and underscore, i.e. ‘A’ to ‘Z’, ‘a’ to ‘z’, ‘0’ to ‘9’ and ‘_’.	0030 – 0039, 0041 – 005A, 005F, 0061 – 007A
event request ID	Alphanumeric characters, hyphen, underscore and colon, i.e. ‘A’ to ‘Z’, ‘a’ to ‘z’, ‘0’ to ‘9’, ‘-’, ‘_’ and ‘:’.	002D, 0030 – 003A, 0041 – 005A, 005F, 0061 – 007A
Party ID - HKTR Entity ID, Party ID - SWIFTBIC	Alphanumeric characters , i.e. ‘A’ to ‘Z’, ‘a’ to ‘z’, ‘0’ to ‘9’	0030 – 0039, 0041 – 005A, 0061 – 007A
Party name	Basic Latin including English alphabets, numbers and symbols, Latin-1 supplement including Cent sign, Pound sign, Yen sign and German, Latin-Extended-A including French	0020 – 007E, 00A0 – 00FF, 0100 – 017F
Special terms, Bilateral comments and Remarks	Basic Latin including English alphabets, numbers and symbols, Carriage Return (CR) and Line Feed (LF) characters, Latin-1 supplement including Cent sign, Pound sign, Yen sign and German, Latin-Extended-A	000A, 000D, 0020 – 007E, 00A0 – 00FF,

	including French	0100 – 017F
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Note: For the field data of a reportable transaction with integer value exceeding what HKTR-R system supports, the reporting party needs to contact HKTR team to coordinate the reporting procedure.

#### 4.5 Case conversion and case sensitivity on string data fields

Upon receiving a trade / valuation request, the following string fields will first be converted to uppercase characters before further processing (e.g. trade correlation, validations and uniqueness checking, etc) and UI display.

Asset Class(es)	Base Product(s)	Field Block(s)	Field(s) that are transformed and processed in uppercase characters by the system
All	All	All Blocks	Party ID – HKTR Entity ID, Party ID – LEI, Party ID – SWIFTBIC, Party ID – CICR, Party ID – BRN, Party ID – User defined code
IR	IR Other	General Trade Detail Block	Underlying Asset
FX	FX Other	General Trade Detail Block	Underlying Asset
EQ	All exclude EQ Other	Single Underlyer Block	Underlying Asset - Instrument ID
	EQ Other	Underlyer Block	Underlying Asset - Leg 1 - Instrument ID
			Underlying Asset - Leg 2 - Instrument ID
CD	Single Name and CD Other	General Terms Block	Reference Entity - Entity ID
			Reference Entity - Entity Name
			Reference Obligation - Instrument ID
	Index Tranche, Index and CD Other		Index Reference Information - Index ID
CM	Option	Financial Option Block	Commodity - Base
			Commodity - Details
			Option Floating Strike Price Per Unit
			Commodity - Base
			Option Floating Strike Price Per Unit
			Commodity - Details
	Option and Forward	Forward Average Price Leg Block	Commodity- Base
			Commodity - Details
	Swap	Metal Physical Leg Block	Metal Grade
		Floating Leg 1 Block	Commodity - Base
			Commodity - Details
		Floating Leg 2 Block	Commodity - Base
			Commodity - Details

Asset Class(es)	Base Product(s)	Field Block(s)	Field(s) that are transformed and processed in uppercase characters by the system
	CM Other	General Trade Details Block	Grade(s)
			Underlying Asset
		Underlyer 1 Block	Commodity - Base
			Commodity - Details
		Underlyer 2 Block	Commodity - Base
			Commodity - Details

For string fields not listed in the above table, e.g. trade references, event references, file references, event request IDs, party names, bilateral comments, or other enumerated values listed in Appendix F, these field values will remain undistorted in the system, and will be processed *case-sensitively*.

#### 4.6 Linking and Matching behavior on data fields

In HKTR-R system, some data fields are selected for use in linking and matching process. For the full list of linking and matching fields, please refer to Appendix A (for FpML submission) and Appendix C (for CSV submission) of the specification.

The HKTR-R system would provide some tolerance level and special handling on some of these linking and matching fields. Please refer to User Manual [\[5\]](#) for Participants – Trade Functions for details.

#### 4.7 Parties information submitted

Where an OTC derivative transaction is reported to the HKTR system, the report should reflect four types of parties as following:

1. *Submitting Party* means the party who submits the transaction (either trade event request or valuation request) to the HKTR system.
2. *Reporting Party* means the party who has the reporting obligation to report the transaction.
3. *Reporting For* means the trade party that the Reporting Party is reporting for. It should be either one of the trade parties.
4. *Trade Party 1/2* are the contracting parties of the trade being reported.

#### 4.8 Return Code

Upon the receipt of a request, the HKTR-R system returns either a normal response message indicating that the processing result is successful, or an exception message in case of failure. The exception message can carry up to 20 6-character Return Codes with the corresponding descriptions of failure(s), depending on the request file format and the type of errors.

Return Code	Description
DB0001	Trade Event Request duplicated.
DR2013	{0} : Unadjusted Termination Date must be after unadjusted Effective Date.
DR2035	Value Date in FX Leg must be equal to or after the Trade Date.
DR2039	{0} : Payer Party Reference must not be equal to Receiver Party Reference.
DR2045	Exchanged Currency 1 must not be equal to Exchanged Currency 2.
DR2046	{0} : Adjusted Termination Date must be after adjusted Effective Date.
DR2047	Put Notional Currency must not be equal to Call Notional Currency.
DR2048	The Expiration Date of European Exercise must be after the Trade Date.
DR2051	For American Exercise, its Expiration Date must be after or equal to the Trade Date.
DR2054	The Expiration Date of American Exercise must be after the Trade Date.
DR2055	For European Exercise, its Expiration Date must be after or equal to the Trade Date.
DR2057	Effective Date must be before the Scheduled Termination Date.
DR2058	If both Attachment Point and Exhaustion Point exists, Attachment Point must be less or equal to Exhaustion Point.
DR3003	The linking fields of the trades of Relink From and Relink To does not match.
DR4003	User Trade Reference ({0}) must be unique (except the status of the trade is withdrawn/quit/terminated) for the {1}.
DR4004	The target trade for the trade event must exist and the status is active, matured or quitted by the system.
DR4011	The Event Date ({0}) of the post trade event must be equal to or later than the Event Date of the last processed event.
DR4013	{0} event is not applicable to {1}.
DR4014	The Asset Class and Product Taxonomy in the Amendment event must be the same as the original trade.
DR4015	The trade event can be cancelled only when the trade event exists and the status is "Unmatched".

Return Code	Description
DR4017	{0}: Invalid value in the change in notional amount ({1}) or outstanding notional amount ({2}). The sum of the change in notional amount and the outstanding notional amount should be equal to the current notional amount.
DR4034	If product is not "Cross Currency", the Notional Amount/Currency in the two legs of the swap must be the same.
DR4043	UTI ({0}) must be unique for the reporting party within the reporting view (except the status of the trade is withdrawn/quit/terminated).
DR4047	Modifying the Trade Date is not allowed.
DR4054	User Event Reference ({0}) must be unique (except the status of the trade event is cancelled) for the {1}.
DR4055	Modifying the notional currency is not allowed.
DR4058	Agent Event Reference ({0}) must be unique (except the status of the trade event is cancelled) for the agent.
DR4059	Agent Trade Reference ({0}) must be unique (except the status of the trade is withdrawn/quit/terminated) for the agent.
DR4063	Agent Event Reference is required for the agent.
DR4064	User Event Reference is required for the {0}.
DR4065	Agent Trade Reference is required for the agent.
DR4067	Agent Trade Reference of Trade Header ({0}) is not allowed for the {1}.
DR4081	For Full Termination, Outstanding Notional Amount must be zero.
DR4087	The Asset Class and Product Taxonomy must be matched.
DR4090	The related trade(s) for Relink must exist and the status is/are not withdrawn/quitted.
DR4102	Participant is not allowed to submit the trade event with event date outside the latest Reporting Obligation period.
DR4106	The trades of Relink From and Relink To must not be currently linking to each other.
DR4107	Trade cannot be self-linked.
DR4118	The Backloading Date must not be a future date.
DR4119	The Trade Date must not be a future date.
DR4121	The Backloading Date should be equal to or after the Trade Date.
DR4123	The Trade Date must be equal to or before the Later Termination Date of the legs (for IR Swap or Cross Currency), Termination Date (for IR CapFloor or FRA), Expiration Date (for European and American style in IR Option) or last Bermuda exercise date (for Bermuda style in IR Option), Final Maturity Date (for IR Other).
DR4126	The combination of Confirmation Platform ID ({0}) and CP Trade Reference ({1}) must be unique for the reporting party within the reporting view (except

Return Code	Description
	the status of the trade is withdrawn/quit/terminated).
DR4128	{0}: The currency of Change in Notional Amount must be same as the currency of Outstanding Notional Amount and these must match with the notional currency of the original trade.
DR4133	The party of Reporting For in the post trade event must be same as the party of Reporting For in the original trade. For Suppress Uncertain event, the Reporting For must be the counter trade party in the target trade.
DR4134	If the Reporting For is a TR entity with originating party, the Reporting Party must have effective originating relationship with the Reporting For on the event date.
DR4139	Bilateral Comments must be unique within the reporting view (except the status of the trade is withdrawn/quit/terminated) for the {0}.
DR4142	Event Request ID ({0}) must be unique within the reporting view for the Submitting Party.
DR4146	Submitting party is ineligible to submit a trade event for the {0}.
DR4150	Notional Currency in the two legs of the swap must exist and not be the same.
DR4166	The party (party type: TREntityID, party ID: {0}) is not valid TR participant or business entity on the event date ({1}).
DR4169	The {0} from event must match with {1} in trade.
DR4170	The Payer Party of {0} must match the Receiver Party of {1} and vice versa.
DR4171	The Change in Notional Amount and Outstanding Notional Amount cannot be zero.
DR4178	The Effective Date of post trade event must be equals to or after the Trade Date.
DR4179	For the post trade events submitted by reporting party, either one of the following trade references can be used to correlate the post trade event to the target trade. TR Trade Reference, User Trade Reference, UTI and UTI-TID
DR4180	CP Trade Reference is not allowed when Confirmation Platform ID is "PAPER"; Optional when platform is "OTHERS"; Required otherwise.
DR4181	UTI is required when UTI Indicator is "Yes"; Not allowed otherwise.
DR4183	Central Counterparty ID is required only when Clearing is "Yes"; Not allowed otherwise.
DR4189	If Relink To is blank, the trade of Relink From ({0}) must be linked or unlinked.
DR4197	Change the counterparty from [party type: {0}, ID: {1}] to [party type: {2}, ID: {3}] is not allowed.
DR4198	The direction of trade parties can be changed only when the trade parties are same as the original trade.
DR4202	The Exchange Rate - Quoted Currency Pair Currency 1 and Exchange Rate - Quoted Currency Pair Currency 2 must be equal to the exchanged currencies.

Return Code	Description
DR4203	The party type and ID of the Trade Party 1 and Trade Party 2 in the trade header must be same as the trade parties in the trade details.
DR4208	The request is allowed by Overseas Incorporated AI only.
DR4209	The Suppress Uncertain Indicator {0} from the event must be different from the current value {1}.
DR4210	Agent is not allowed to submit Suppress Uncertain as the target trade is not linked with a trade submitted by the agent.
DR4213	Reporting For must be a valid Party Type.
DR4214	The target trade for the trade event must exist and the status is not withdrawn.
DR4215	Agent is not allowed to cancel the event which is submitted by reporting party.
DR4216	Submitting party is ineligible to submit a Relink event for the reporting party {0}.
DR4217	If one of the Notional Amount is zero, the other one must be zero.
DR4218	If Relink To is not blank, the trades must be linked or unlinked originally.
DR4223	Participant is not allowed to submit the trade event outside the latest Reporting Obligation period.
DR4225	The Reporting Party of Relink From and Relink To must not be the same.
DR4226	The trade party of Relink From and Relink To must be TR participant with reporting service or business entity with designated relationship.
DR4227	The party of Reporting For must be same as the original trade.
DR4228	The Party Name should be consistent for a certain combination of Party Type {0} and Party ID {1}.
DR4229	Request for multiple Relink events on the same trade is not allowed until the previous Relink event is completed or cancelled.
DR4230	The target trade for the trade event must exist and the status is active.
DR4231	Change the party of Reporting For from [party type: {0}, ID: {1}] to [party type: {2}, ID: {3}] is not allowed.
DR4233	For the post trade events submitted by agent, either one of the following trade references can be used to correlate the post trade event to the target trade. TR Trade Reference, Agent Trade Reference, User Trade Reference, UTI and UTI-TID
DR4236	Participant is not allowed to submit the trade event with event date outside the latest Reporting Obligation period.
DR4237	The Agreement Date must not be a future date.
DR4238	The counter trade party ({0}) of Relink From must be an Overseas Incorporated AI or a designated BE of an overseas incorporated AI.
DR4239	The Event Date ({0}) of the post trade event must be later than the Event Date of

Return Code	Description
	completed bulk change request.
DR4240	{0}: The Outstanding Notional Amount must be smaller than the current notional amount of the trade.
DR4242	If the trade is quitted by the system, the Event Date ({0}) of the post trade event must be before or equal to the quitted date ({1}).
DR4243	It is not allowed to modify the trade party of a linked trade.
DR4245	Multiple trades are correlated for the post trade event.
DR4246	The target trade for the trade event must exist and the status is active/terminated.
DR4251	Buyer or Seller must be equal to Payer Party or Receiver Party.
DR4253	The sum of the Change in Number of Options and the Outstanding Number of Options should be equal to the current number of options.
DR4261	{0} definition must exist for {1} transaction type.
DR4262	Expiration Date must be after the Trade Date.
DR4265	The sum of the change in notional amount 1 and the outstanding notional amount 1 should be equal to the current deal notional amount (for Equity Swap) or variance amount (for Variance Swap).
DR4268	The currency of Change in Notional Amount 1 must be same as the currency of Outstanding Notional Amount 1 and these must match with the Deal Notional Amount (for Equity Swap) or Variance Amount (for Variance Swap) currency of the original trade.
DR4271	For Partial Termination, the outstanding notional amount 1 must be smaller than the current deal notional (for Equity Swap) or variance amount (for Variance Swap) of the trade.
DR4273	For Full Termination, the outstanding number of options must be zero.
DR4274	For Full Termination, the outstanding notional amount 1 must be zero.
DR4277	For Partial Termination, the outstanding number of options cannot be zero.
DR4278	For Partial Termination, the outstanding notional amount 1 cannot be zero.
DR4282	The deal notional amount currency is not allowed to modify.
DR4283	The variance amount currency is not allowed to modify
DR4285	The Backloading Date must be equal to or before the Value Date (for FX NDF or FX Forward) or Expiration Date (for FX Option or FX NDO) or Final Maturity Date (for FX Other).
DR4286	The Event Date ({0}) of the post trade event must be before or equal to the Value Date (for FX NDF or FX Forward) or Expiration Date (for FX Option or FX NDO) or Final Maturity Date (for FX Other) specified in that event.
DR4287	The Event Date ({0}) of the post trade event must be before the original Value Date (for FX NDF or FX Forward) or Expiration Date (for FX Option or FX NDO) of the original trade.

Return Code	Description
DR4288	The Effective Date of post trade event must be before or equal to the Value Date (for FX NDF or FX Forward) or Expiration Date (for FX Option or FX NDO) or Final Maturity Date (for FX Other) specified in that event.
DR4289	The Effective Date of post trade event must be before the Value Date (for FX NDF or FX Forward) or Expiration Date (for FX Option or FX NDO) of the original trade.
DR4290	The Backloading Date must be equal to or before the Later Termination Date of the legs (for IR Swap or Cross Currency), Termination Date (for IR CapFloor or FRA), Expiration Date (for European and American style in IR Option) or last Bermuda exercise date (for Bermuda style in IR Option), Final Maturity Date (for IR Other).
DR4291	The Backloading Date must be equal to or before the Expiration Date (for Equity Option), Valuation Date (for Variance Swap), Termination Date of Interest Leg / Equity Leg (for Equity Swap), Termination Date of Dividend Leg (for Dividend Swap) or Final Maturity Date (for Equity Other).
DR4292	The Event Date ({0}) of the post trade event must be before or equal to the Later Termination Date of the legs (for IR Swap or Cross Currency), Termination Date (for IR CapFloor or FRA), Expiration Date (for European and American style in IR Option) or last Bermuda exercise date (for Bermuda style in IR Option), Final Maturity Date (for IR Other).
DR4293	The Event Date ({0}) of amendment event must be before or equal to the Expiration Date (for Equity Option), Valuation Date (for Variance Swap), Termination Date of Interest Leg / Equity Leg (for Equity Swap), Termination Date of Dividend Leg (for Dividend Swap) or Final Maturity Date (for Equity Other).
DR4294	The Event Date ({0}) of the post trade event must be before the original Later Termination Date of the legs (for IR Swap or Cross Currency), Termination Date (for IR CapFloor or FRA), Expiration Date (for European and American style in IR Option) or last Bermuda exercise date (for Bermuda style in IR Option).
DR4295	The Event Date ({0}) of post trade event must be before the original Expiration Date (for Equity Option), Valuation Date (for Variance Swap), Termination Date of Interest Leg / Equity Leg (for Equity Swap) or Termination Date of Dividend Leg (for Dividend Swap).
DR4296	The Effective Date of post trade event must be before or equal to the Later Termination Date of the legs (for IR Swap or Cross Currency), Termination Date (for IR CapFloor or FRA), Expiration Date (for European and American style in IR Option) or last Bermuda exercise date (for Bermuda style in IR Option), Final Maturity Date (for IR Other).
DR4297	The Effective Date of amendment event must be before or equal to the Expiration Date (for Equity Option), Valuation Date (for Variance Swap), Termination Date of Interest Leg / Equity Leg (for Equity Swap), Termination Date of Dividend Leg (for Dividend Swap) or Final Maturity Date (for Equity Other).
DR4298	The Effective Date of post trade event must be before the Later Termination Date of the legs (for IR Swap or Cross Currency), Termination Date (for IR

Return Code	Description
	CapFloor or FRA), Expiration Date (for European and American style in IR Option) or last Bermuda exercise date (for Bermuda style in IR Option) in the original trade.
DR4299	The Effective Date of post trade event must be before the original Expiration Date (for Equity Option), Valuation Date (for Variance Swap), Termination Date of Interest Leg / Equity Leg (for Equity Swap) or Termination Date of Dividend Leg (for Dividend Swap).
DR4300	The Trade Date must be equal to or before the Valuation Date (for Variance Swap), Termination Date of Interest Leg / Equity Leg (for Equity Swap), Termination Date of Dividend Leg (for Dividend Swap) or Final Maturity Date (for Equity Other).
DR4302	The party type and ID of Reporting For must be same as the party type and ID of the Trade Party 1 or Trade Party 2.
DR4303	The Trade Party 1 must not be equal to the Trade Party 2.
DR4304	Required fields check failed. Please make sure {0} is not {1}.
DR4307	For Partial Termination, the outstanding number of options must be less than the current number of options.
DR4308	UTI-TID ({0}) must be unique for the reporting party within the reporting view (except the status of the trade is withdrawn/quit/terminated).
DR4309	There must be only 1 inflation leg for Inflation Swap. No inflation leg should be found on other Interest Rate product.
DR4310	The Reporting For must be the Reporting Party itself or a designated TR business entity of the Reporting Party.
DR4311	The Final Maturity Date must be equal to or after Trade Date.
DR4312	The Backloading Date must be equal to or before the Swap Termination Date (for CM Swap) or Expiration Date of option exercise/option physical exercise (for CM Option) or Value Date (for CM Forward) or Final Maturity Date (for CM Other).
DR4313	The Event Date ({0}) of the post trade event must be before or equal to the Swap Termination Date (for CM Swap) or Expiration Date of option exercise/option physical exercise (for CM Option) or Value Date (for CM Forward) or Final Maturity Date (for CM Other) specified in that event.
DR4314	The Event Date ({0}) of the post trade event must be before the original the Swap Termination Date (for CM Swap) or Expiration Date of option exercise/option physical exercise (for CM Option) or Value Date (for CM Forward) of the original trade.
DR4315	The Effective Date of post trade event must be before or equal to the Swap Termination Date (for CM Swap) or Expiration Date of option exercise/option physical exercise (for CM Option) or Value Date (for CM Forward) or Final Maturity Date (for CM Other) specified in that event.
DR4316	The Effective Date of post trade event must be before the Swap Termination Date (for CM Swap) or Expiration Date of option exercise/option physical

Return Code	Description
	exercise (for CM Option) or Value Date (for CM Forward) of the original trade.
DR4318	The Trade Date must be equal to or before the Swap Termination Date (for CM Swap), Expiration Date of option exercise or the latest expiration date of option physical exercise (for CM Option) or Value Date (for CM Forward) or Final Maturity Date (for CM Other).
DR4320	{0}: Invalid value in the change in number of unit ({1}) or outstanding number of unit ({2}). The sum of the change in number of unit and the outstanding number of unit should be equal to the current number of unit.
DR4321	For Full Termination, the outstanding number of units must be zero.
DR4322	{0}: The outstanding number of units must be smaller than the current number of units.
DR4323	The Change in Notional Amount and Outstanding Notional Amount cannot be zero.
DR4324	If one of the quantities is zero, the other one must be zero.
DR4327	The Backloading Date must be equal to or before the Scheduled Termination Date (for Credit Single Name, Credit Index and Credit Index Tranche) or Final Maturity Date (for Credit Other).
DR4328	The Trade Date must be equal to or before the Final Maturity Date.
DR4329	The Event Date ({0}) of amendment event must be before or equal to the Scheduled Termination Date (for Credit Single Name, Credit Index and Credit Index Tranche) or Final Maturity Date (for Credit Other).
DR4330	The Event Date ({0}) of the post trade event must be before the original Scheduled Termination Date (for Credit Single Name, Credit Index and Credit Index Tranche).
DR4331	The Effective Date of amendment event must be before or equal to the Scheduled Termination Date (for Credit Single Name, Credit Index and Credit Index Tranche) or Final Maturity Date (for Credit Other).
DR4332	The Effective Date of post trade event must be before the original Scheduled Termination Date (for Credit Single Name, Credit Index and Credit Index Tranche).
DR4333	The target trade for the trade event must exist and the status is active, matured, terminated or quitted by the system.
DR4334	If the target trade is terminated, the event date of the post trade event must be same as the event date of the lastly submitted event.
DR4335	It is not allowed to update the trade status of the terminated trade.
DR4336	The Event Date ({0}) of the post trade event must be before or equal to the original Later Termination Date of the legs (for IR Swap or Cross Currency), Termination Date (for IR CapFloor or FRA), Expiration Date (for European and

Return Code	Description
	American style in IR Option) or last Bermuda exercise date (for Bermuda style in IR Option), Final Maturity Date (for IR Other).
DR4337	The Event Date ({0}) of the post trade event must be before or equal to the original Value Date (for FX NDF or FX Forward) or Expiration Date (for FX Option or FX NDO) or Final Maturity Date (for FX Other) of the original trade.
DR4338	The Event Date ({0}) of post trade event must be before or equal to the original Expiration Date (for Equity Option), Valuation Date (for Variance Swap), Termination Date of Interest Leg / Equity Leg (for Equity Swap), Termination Date of Dividend Leg (for Dividend Swap) or Final Maturity Date (for Equity Other).
DR4339	The Event Date ({0}) of the post trade event must be before or equal to the original the Swap Termination Date (for CM Swap) or Expiration Date of option exercise/option physical exercise (for CM Option) or Value Date (for CM Forward) or Final Maturity Date (for CM Other) of the original trade.
DR4340	The Event Date ({0}) of the post trade event must be before or equal to the original Scheduled Termination Date (for Credit Single Name, Credit Index and Credit Index Tranche) or Final Maturity Date (for Credit Other).
DR4341	The Effective Date of post trade event must be before or equal to the Later Termination Date of the legs (for IR Swap or Cross Currency), Termination Date (for IR CapFloor or FRA), Expiration Date (for European and American style in IR Option) or last Bermuda exercise date (for Bermuda style in IR Option), Final Maturity Date (for IR Other) in the original trade.
DR4342	The Effective Date of post trade event must be before or equal to the Value Date (for FX NDF or FX Forward) or Expiration Date (for FX Option or FX NDO) or Final Maturity Date (for FX Other) of the original trade.
DR4343	The Effective Date of post trade event must be before or equal to the original Expiration Date (for Equity Option), Valuation Date (for Variance Swap), Termination Date of Interest Leg / Equity Leg (for Equity Swap), Termination Date of Dividend Leg (for Dividend Swap) or Final Maturity Date (for Equity Other).
DR4344	The Effective Date of post trade event must be before or equal to the Swap Termination Date (for CM Swap) or Expiration Date of option exercise/option physical exercise (for CM Option) or Value Date (for CM Forward) or Final Maturity Date (for CM Other) of the original trade.
DR4345	The Effective Date of post trade event must be before or equal to the original Scheduled Termination Date (for Credit Single Name, Credit Index and Credit Index Tranche) or Final Maturity Date (for Credit Other).
DR4346	The sum of the Change in Number of Units and the Outstanding Number of Units should be equal to the current number of units.
DR4347	For Full Termination, the outstanding number of units must be zero.
DR4348	For Partial Termination, the outstanding number of units must be less than the current number of units.
DR4349	For Partial Termination, the outstanding number of units cannot be zero.

Return Code	Description
DR4350 DR4351 DR4352	Required fields check failed. Please make sure {0} is not {1}.
DR4353	The Leg Type (Leg 1) and Leg Type (Leg 2) must match with the leg types of the original trade.
DR4354	Existence of Known Currency and Amount does not support partial termination event
DR4355 DR4356 DR4357	Required fields check failed. Please make sure {0} is not {1}.
DR9997	Application error: {0}
DR9998	Rejected as previous trade event is invalid.
DV4001	Multiple trades are correlated for the valuation request.
DV4002	Valuation Request ID must be unique within the reporting view for the Submitting Party.
DV4008	For the valuation request submitted by reporting party, either one of the following trade references can be used to correlate the valuation request to the target trade. TR Trade Reference, User Trade Reference, UTI and UTI-TID
DV4009	For the valuation request submitted by agent, either one of the following trade references can be used to correlate the valuation request to the target trade. TR Trade Reference, Agent Trade Reference, User Trade Reference, UTI and UTI-TID
DV4010	The Valuation Date should not be earlier than the effective date of valuation service.
DV4011	The target trade for the valuation request must exist and the status is not withdrawn.
DV4012	The Valuation Date must not be a future date.
DV4013	Submitting party is ineligible to submit a valuation request for the reporting party.
DV4017	The Valuation Date must be equal to or later than the Trade Date of new trade or the Backloading Date of backloaded trade.
DV4019	The target valuation must exist.
FP0000	No file level error found.
FP0001	Invalid file extension.
FP0002	Invalid file name pattern.
FP0003	File name participant ID is different from the participant ID of the uploader.

Return Code	Description
FP0005	Invalid file purpose. Please check if the file header is well-formatted.
FP0007	The file prefix does not match with the file purpose stated in the content.
FP0008	Problem occurs during valuation message deblocking. {0}
IN0011	Virus Check Failed.
IN0013	The file "{0}" with size {1} bytes exceeds the size limit of {2} bytes.
MT0001	File reference already in use. [fileRef={0}, submittingPartyId={1}]
MT0002	Number of items specified in file header ({0}) does not match the number of items found in file content ({1}).
MT0003	Error parsing file header. {0}
MT0004	Wrong Submitting Party ID "{0}". It does not match with uploader's identity.
MT0007	The file reference "{0}" extracted from file name does not match the file reference "{1}" in file content.
MT0008	Error in transforming message item by FpML parser.
MT0009	The file purpose is "{0}" but the file contains unrelated element ({1}).
MT0011	The number of message items in submitting file should be between 1 and {0}.
MT0012	The file capture date "{0}" is before the system launch date "{1}".
MT0013	The file contains invalid character set.
MT0014	The file purpose "{0}" is not supported by the system.
MT0015	Message version "{0}" is not supported.
MT0016	File content is empty.
MT0017	Uploading a file with purpose "{0}" through a channel of service "{1}" is not allowed.
MT1000	Specified product is not supported by the system.
MT1001	Sent-By Party "{0}" is not same as the submitting party "{1}" in the file header.
MT1002	Duplicated message ID "{0}" found for the same submitting party.
MT1003	Specified event type is not supported by the system. Please check if event type under TR namespace is used.
MT1004	Either the product type "{1}", product sub-type "{0}" or their combination is not supported by the system.
MT1006	There must be exactly 1 fixed leg and 1 floating leg for product type "{0}".
MT1007	There must be exactly 2 floating legs for product type "{0}".
MT1008	The FpML element "rateCalculation" can only be substituted by the FpML element "floatingRateCalculation".
MT1009	FpML validation failed. Error code = "{0}".

Return Code	Description
MT1010	The size of the list field "{0}" (with list size = "{1}") exceeds its maximum limit: "{2}".
MT1011	Coding scheme validation failed: Value "{1}" at field "{0}" is not allowed by the coding scheme defined in the system.
MT1012	The length of string field "{0}" (with string length = "{1}") exceeds its maximum length limit: "{2}".
MT1015	Failed in number value checking at field "{0}" with value = "{1}".
MT1016	For stubs in fixed leg, the presence of "resetDates", "floatingRate" or "stubRate" elements is prohibited.
MT1018	Duplicated partyId in party list.
MT1019	The number of <tradeId> element exceeds its maximum allowed for the specified trade event type.
MT1021	Reporting Party "{0}" in file header is not the same as the Reporting Party "{1}" specified in ReportingFor element.
MT1027	Empty message ID is found.
MT1029	Party information of {0} cannot be retrieved.
MT1030	The string field "{0}" should not be empty.
MT1031	Length of message ID "{0}" is too long.
MT1032	Missing/Incorrect XSI type on element <{0}>. Parent Class={1}.
MT1033	Element <{0}> is prohibited. Parent Class={1}.
MT1034	Failed in character set checking at field {0}. Character set {1}, value={2}.
MT1036	<onBehalfOf> tag: {0}, if present, should be the same as the reporting party in file header.
MT1037	The scheme "{0}" in element "{1}" with value = "{2}" is not supported by the system.
MT1038	The required scheme "{0}" in element "{1}" is missing.
MT1039	If the request is submitted by agent, <onBehalfOf> tag must exist.
MT1041	Invalid content in <relatedParty> element(s): {0}
MT1042	Invalid coding scheme value "{0}" for <relatedParty> element.
MT1043	If the request is submitted by reporting party itself, <onBehalfOf> tag is not allowed.
MT1047	Invalid UTI. Field: "{0}"; Value: "{1}"; Reason: "{2}"
MT1048	Invalid UPI "{0}": {1}
MT1049	The value of the field "{0}" should be negative or zero.
MT1050	CP Party information cannot be retrieved.

Return Code	Description
MT1051	The tradeIdScheme "{0}" is not supported for the specified trade event type.
MT1053	The length of string field "{0}" (with string length = "{1}") is below its minimum length limit "{2}".
MT1054	String format validation failed for {0}: {1}
MT1055	Inconsistency found between FpML product element and product type value.
MT1056	The correlation ID "{0}" and the event ID "{1}" are not consistent.
MT1057	{0}: values of period and periodMultiplier must co-exist.
MT1058	<tradeId> values for {0} are not consistent among <partyTradeIdentifier> elements.
MT1061	Missing tradeIdentifier for new/updated User Trade Reference.
MT1065	<tradeId> values for {0} are not consistent among <partyTradeIdentifier> elements with partyReference = "{1}".
MT1066	Product taxonomy "{0}" is not supported by the system.
MT1067	The FpML element "rateCalculation" can only be substituted by the FpML element "floatingRateCalculation" or "inflationRateCalculation".
MT1068	There must be 2 and only 2 Fixed Legs / Known Amounts for product taxonomy "{0}".
MT1069	There must be exactly 1 capFloorStream, premium and floatingRateCalculation in the capFloor element for product type "{0}".
MT1071	There must be one and only one return leg in EquitySwapTransactionSupplement.
MT1073	Duplicated Fee-In or Fee-Out is found.
MT1074	Missing tradeIdentifier for trade correlation ({0}).
MT1076	The year value of date field "{0}" exceeds 9999.
MT1077	There must be 2 and only 2 swapStream elements, and each of the two legs must be either Floating Leg / Fixed Leg / Known Amount for product taxonomy "{0}".
MT1078	There is one and only one Inflation Rate Calculation.
MT1079	There must be exactly 1 Inflation Leg for Interest Rate Inflation
MT1080	FloatingRateIndexScheme is a required attribute.
MT1081	Invalid party for {0}
MT1082	There is one and only one referenceInformation for product type "{0}".
MT1083	There is one and only one indexReferenceInformation for product type "{0}".
MT1084	Correlation ID / Correlation ID Scheme does not exist.
MT1086	There must be two productType for Commodity products. One with fpML code

Return Code	Description
	scheme while another with HKICL code scheme.
MT1087	<partyId> is blank in FpML <party> element [id={0}, partyIdScheme={1}].
MT1088	The legs must be "{0}" and "{1}" for product taxonomy "{2}".
MT1089	There should have a <partyTradeInformation> block with <partyReference> link to "{0}".
MT1090	<partyId> values are not consistent in FpML <party> element [id={0}, partyIdScheme={1}].
MT1091	The tradeIdScheme "{0}" is not supported for the specified trade event type or under the specified <partyTradeIdentifier> / <tradeIdentifier> message structure.
MT1092	Multiple <partyTradeIdentifier> / <tradeIdentifier> elements are not allowed.
MT1093	<partyReference> value in trade identifier block does not point to reporting party.
MT1094	Multiple <partyTradeIdentifier> / <tradeIdentifier> elements, containing <partyReference> elements, are not allowed.
MT1095	There is no <partyTradeIdentifier> / <tradeIdentifier> element containing <partyReference> element.
MT2000	Error parsing CSV item. {0}
MT2002	Invalid data for "{0}" [{1}].
MT2003	TR system does not support request with values ({0}).
MT2004	Duplicated request ID "{0}" found for the same submitting party.
MT2007	Empty request ID is found.
MT2009	Length of request ID "{0}" is too long.
MT2012	Invalid exercise style for field "{0}". It should be either "American", "Bermuda" or "European".
MT2013	There must be 1 and only 1 Fixed Leg / Known Amount, and 1 and only 1 Floating Leg for product taxonomy "{0}".
MT2014	The field "{0}" should be empty when leg type is "{1}".
MT2015	The field "{0}" should be empty when using {1} as the exercise style for {2}.
MT2016	The field "{0}" should not be empty when using {1} as the exercise style for {2}.
MT2017	It is not allowed to input both fixed rate / known amount and floating rate fields in same leg.
MT2018	It should not be empty in both fixed rate / known amount and floating rate fields in same leg for product taxonomy "{0}"
MT2027	The field "{0}" is not allowed when {1} is not supplied.

Return Code	Description
MT2029	Underlyer Asset Type, Instrument ID Type and Instrument ID on leg {0} are required if any optional fields under Underlying Asset leg have value.
MT2030	There must be exactly 2 floating legs for product taxonomy "{0}".
MT2031	There must be at least 1 floating leg for product taxonomy "{0}".
MT2034	{0} field(s) is forbidden for {1} product.
MT2035	Asset Type, ID Type and Instrument ID of Reference Obligation on item {0} are required if any fields under Reference Obligation on item {0} have value.
MT4000	Empty valuation request ID is found.
MT4001	Length of valuation request ID "{0}" is too long.
MT4002	Duplicated valuation request ID "{0}" found for the same submitting party.
MT4501	The tradeIdScheme "{0}" is not supported for the valuation request or under the specified <partyTradeIdentifier> message structure.
MT4503	Missing tradeIdentifier for trade correlation (TR Trade Reference, User Trade Reference, Agent Trade Reference, UTI or UTI-TID).
MT4504	<assetValuation> element with id="reportingForParty" must exist.
MT4505	Empty valuation message ID is found.
MT4506	Length of valuation message ID "{0}" is too long.
MT4507	Duplicated valuation message ID "{0}" found for the same submitting party.
MT5003	The number of message items in submitting file should be between 1 and {0}.
PT0001	(({0})), which is mandatory field, is blank.
PT0002	Error in conditional checking. {0}
PT0003	Product Type / Product Sub-type / Asset Class field: {0} is inputted incorrectly.
PT0004	{0} is/are {1} required for {2}.
PT0005	Message Transform Error: {0} party is not populated.
PT0006	Agent Event Reference ({0}) is not allowed for the {1}.
PT0007	User Event Reference ({0}) is not allowed for the agent.
PT0008	Value (Basket) at underlyer asset identifier type should only be applicable to product Equity:Other.
SE0210	System in restricted operating mode, the operation is not allowed.
SE0216	Not allowed during housekeeping period.
SE0217	Not authorized to access.
SE0218	The agent is not authorized to submit file for the participant.
SE0219	{0} is in restricted operating mode, operation not allowed.

<b>Return Code</b>	<b>Description</b>
SE0220	Organization is not authorised to perform the operation.
SE0222	The participant {0} is not in active status.
SE0224	Organization is not authorised for the requested service.
SE0300	Not authorized to access the data.
SE0301	The agent is not allowed to submit trade event on behalf of the participant for this product taxonomy via this channel.
SE0302	Non-trading participant agent is not allowed to submit trade event on behalf of itself.
SE0304	The agent is not allowed to submit valuation request on behalf of the participant for this product taxonomy via this channel.
SY0061	Duplicated file name.

Note:

- The parameters {0}, {1} and {2} indicate the additional information if any when runtime error is encountered.

#### 4.9 Reporting of Zero coupon swap using the “Known Amount” field

The "Known Amount" field only presents under CSV 2.1 (Appendix C) and FpML 5.5 (Appendix A) of IRS. When this data field is populated, other data fields specifically relating to the fixed leg (e.g. Fixed Rate) and floating leg / Inflation Leg (e.g. Floating Rate Index) should left blank and are not allowed to provide. Please refer to the field requirement stated under Appendix A and C in the AIDG template.