



Derivatives Service Bureau

Foreign Exchange : Swap : Non_Deliverable_FX_Swap

UPI Product Definition

Version 4

Date	Status	Version	Revision Details
8 Aug 2022	Draft	1	Initial Version
24 Jan 2023	Draft	2	<ul style="list-style-type: none">Update example values in the Request and Record templates layoutInsert Underlier Name attribute and Derivation rules
28 Mar 2023	Draft	3	<ul style="list-style-type: none">Update Settlement Currency as a conditional attributeAdd Place of Settlement as a conditional attributeUpdate Supplementary Information for Best Practice Guidelines and Additional Comments
06 Sep 2023	Draft	4	<ul style="list-style-type: none">Update Associated Documentation to include Best Practice Guidelines and FAQs.Update Best Practice Guidelines to include the link to Best Practice Guidelines and FAQs.

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1 INTRODUCTION

This document is designed to act as a manual for users to interpret the Product Definitions in the DSB UPI Service.

This document provides the user with the detailed description of the UPI Product Definition content such as attribute enumerations, validation, normalization, and derivation where applicable.

1.1 Associated Documentation

Each UPI Product Definition template links to reference documents where values will be maintained for the sake of consistency and ease of access e.g., Enumerations, Data Dictionary, Validation and Normalizations, etc.

These documents are made available for references as follows:

- UPI Enumerations Document can be found in the Enumerations section on the [DSB website](#).
- UPI Product Definition Data Dictionary can be found in the Other Documents section on the [DSB website](#).
- UPI Product Definition Validations and Normalizations Document can be found in the Other Documents section on the [DSB website](#).
- UPI Underlier Input Method can be found in the Other Documents section on the [DSB website](#).
- Best Practice Guidelines and FAQs can be found in the Other Documents section on the [DSB website](#).
- Links to the relevant JSON templates can be found in the GitHub Environment Section on the [DSB website](#).

2 PRODUCT TAXONOMY

2.1 CFI Taxonomy

Source: [ISO 10962](#) (CFI Code) – Third edition 2015-07-15

Attr #	Title	Values	Name	Description
	Instrument (Category)	S	Swap	
	Asset Class (Group)	F	Foreign Exchange	
Attr #1	Underlying Assets	C	Forward-Forward swap	A transaction that involves both an exchange of two currencies on a specified future date at a fixed rate that is agreed upon at the inception of the contract covering the exchange; and a reverse exchange of the same two currencies at a further future date, at a fixed rate that is agreed upon at the inception of the contract covering the exchange, e.g. a swap between the 3 month forward and 6 month forward dates
Attr #2	Not Applicable / undefined	X	Not applicable / undefined	Not applicable/undefined
Attr #3	Not Applicable / Undefined	X	Not applicable / undefined	Not applicable/undefined
Attr #4	Delivery Type	P	Physical	Delivery of traded currencies on settlement date
		N	Non-deliverable	On settlement date of the trade, if the settlement amount is positive, then the currency buyer will pay that amount in the settlement currency to the currency seller; if that amount is negative, the seller will make that payment to the buyer

2.2 ISDA Taxonomy

The table below is based on the products identified as part of the [ISDA 2.0 taxonomy](#).

Asset Class	Base Product	Sub-Product	DSB Product Definition Name
Foreign Exchange	Swap		Non_Deliverable_FX_Swap

3 REQUEST TEMPLATE

This section describes the input message received by UPI service.

Template name	Template details	Release
Request.Foreign_Exchange.Swap.Non_Deliverable_FX_Swap.UPI.json	Initial version	Initial

Section	Attribute	Format	Cat	Example Value	Validation / Derivation
Header Section	Asset Class	Set	M	Foreign_Exchange	
	Instrument Type	Set	M	Swap	
	Product	Set	M	Non_Deliverable_FX_Swap	
	Level	Set	M	UPI	
Attribute Section	Underlier ID	Enum	M	USD	Enumerated List
	Underlier ID Source	String	M	CCY	[CCY]
	Other Underlier ID	Enum	M	CNY	Enumerated List
	Other Underlier ID Source	String	M	CCY	[CCY]
	Settlement Currency	Enum	C	CNY	Enumerated List
	Place of Settlement	Enum	C	Hong Kong	Enumerated List
	Delivery Type	Enum	M	OPTL	[PHYS; OPTL]

3.1 Underlier Input Method

For products that have a Single Underlier, users have an option to select a Primary or Alternate Underlier, if available.

Title	Description
Select Underlier ID Source	User is able to select a single required Underlier Source <ul style="list-style-type: none"> Currency Pair [CCY]
Input Underlier ID	CCY This is validated against ISO Currency Code List.

3.2 Validation Rules

For non-specific product validation rules, please refer to UPI Product Definition Validations and Normalizations Document can be found in the Other Documents section on the [DSB website](#).

3.2.1 Notional Currency and Other Notional Currency

- The currency for both legs cannot be identical.
- If the following attributes have the same currency, an error message will apply "Error: Notional Currency and Other Notional Currency cannot be identical".
- If the Notional and Other Notional Currency are both CNY and has no Place of Settlement attribute, an error message will apply "Error: Notional Currency and Other Notional Currency cannot be identical".
- If the Notional and Other Notional Currency are both CNY and has Place of Settlement of "Hong Kong", the combination string is acceptable.
- If the Notional and Other Notional Currency is both CNY and Place of Settlement is not "Hong Kong, an error message will apply "Error: Place of Settlement must be Hong Kong for CNY/CNY request".

4 RECORD TEMPLATE

This section describes the record returned by the UPI service.

Version	Template name	Template details	Release
V.1	Foreign_Exchange.Swap.Non_Deliverable_FX_Swap.UPI.V1.json	Initial version	Initial

Section	Attribute	Format	Cat	Example Value	Derivation
Header Section	Asset Class	Set	M	Foreign_Exchange	
	Instrument Type	Set	M	Swap	
	Product	Set	M	Non_Deliverable_FX_Swap	
	Level	Set	M	UPI	
	Template Version	Integer	D	1	
Attribute Section	Notional Currency	Enum	M	CNY	Enumerated List
	Other Notional Currency	Enum	M	USD	Enumerated List
	Settlement Currency	Enum	C	CNY	Enumerated List
	Place of Settlement	Enum	C	Hong Kong	Enumerated List
	Delivery Type	Enum	M	OPTL	[PHYS; OPTL]
Identifier Section	UPI	String	D	QZK2H09JZL04	
	Status	String	D	New	[New; Updated; Deleted; Deprecated]
	Status Reason	String	D	<null>	
	Last Update Date Time	DtTm	D	2020-11-30T00:00:13	YYYY-MM-DDThh:mm:ss
Derived Section	Classification Type	String	D	SFCXXN	See Derivation Rules
	Short Name	String	D	NA/Swaps NDS CNY USD	See Derivation Rules
	Underlier Name	String	D	CNY USD	See Derivation Rules
	Underlying Asset Type	String	D	Forward-Forward Swap	Fixed Value
	CFI Delivery Type	String	D	[Physical; Non-Deliverable]	See Derivation Rules

4.1 Normalization Rules

For non-specific product normalization rules, please refer to UPI Product Definition Validations and Normalizations Document can be found in the Other Documents section on the [DSB website](#).

4.2 Derivation Rules

This section describes the derivations of product attributes highlighted in the Record Template.

4.2.1 Classification Type

Attribute		Classification Type	
Structure	Instrument Type + Asset Class + Underlying Asset Type + NA + NA + Delivery Type		
Example	SFCXXN		
Source	ISO 10962 (CFI) – Third edition 2015-07-15		
Source Attribute	Source Value	Derivation Method	Result
Instrument Type	Swap	Fixed Mapping	S
Asset Class	Foreign Exchange	Fixed Mapping	F
Underlying Asset Type	Forward-Forward swap	Fixed Mapping	C
Not Applicable / Undefined	Not Applicable / Undefined	Fixed Mapping	X
Not Applicable / Undefined	Not Applicable / Undefined	Fixed Mapping	X
Delivery Type	Physical	Mapped to =>	P
	Non-deliverable	Mapped to =>	N

4.2.2 Short Name

Attribute		Short Name	
Structure	"NA" + "/" + Instrument Type + Product + Notional Currency + Other Notional Currency		
Example	NA/Swaps NDS CNY USD		
Source	ISO 18774 (Financial Instrument Short Name) - First edition 2015-11		
Source Attribute	Source Value	Derivation Method	Result
Issuer Name	None	Fixed Value	NA/
Instrument Type	Swap	Fixed Abbreviation	Swaps
Product	Non-Deliverable	Fixed Abbreviation	NDS
Notional Currency	Notional Currency	Mapped Enumeration	e.g., USD, EUR, GBP
Other Notional Currency	Other Notional Currency	Mapped Enumeration	e.g., USD, EUR, GBP

4.2.3 Underlier Name

Attribute		Underlier Name	
Underlying Asset	Underlier Name Source	Underlier Name Source Attribute	Underlier Name
Currency Pair	UPI record	Notional Currency / Other Notional Currency	CNY USD

4.2.4 CFI Delivery Type

Attribute		CFI Delivery Type	
Source Attribute	Source Value	Derivation Method	Result
Delivery Type	PHYS	Mapped to =>	Physical
	OPTL	Mapped to =>	Non-Deliverable

5 SUPPLEMENTARY INFORMATION

5.1 Best Practice Guidelines

The DSB has adopted the ISO Currency Code list (ISO 4217) for all currency attributes. To accommodate offshore currencies, the DSB has introduced 'Place of Settlement' (ISO 3166) as an additional attribute in the FX Non-Standard Product Definitions. This allows an offshore location to be input against an onshore currency for example to recognise CNH, the user should input CNY into 'Settlement Currency' and Hong Kong into 'Place of Settlement'.

Non-Deliverable Swap UPIs for Offshore variations of non-deliverable currencies (such as the Chinese Yuan/Renminbi) can be generated using underlying currency pair which should include the ISO 4217 currency code (eg: CNY) and an appropriate ISO 3166 Place of Settlement (eg: "Hong Kong").

Please refer to Best Practice Guidelines and FAQs that can be found in the Other Documents section on the [DSB website](#).

5.2 Additional Comments

The approach to Short Name abbreviation follows the OTC ISIN methodology.

6 APPENDIX 1 – ISO 4914 EQUIVALENCE

This section describes the attributes as per the ISO 4914 Unique Product Identifier (UPI).

ISO 4914 Reference Data Elements		Request Attribute	Record Attribute
Asset Class	M	Asset Class	Asset Class
Instrument Type	M	Instrument Type	Instrument Type
Delivery Type	M	Delivery Type	Delivery Type
			CFI Delivery Type
Settlement Currency	C	Settlement Currency	Settlement Currency
Underlier ID	C	Underlier ID	Notional Currency
		Other Underlier ID	Other Notional Currency
Underlier ID source	C	Underlier ID Source	Not Required
		Other Underlier ID Source	Not Required
Underlier Type	M	Not Required	Underlying Asset Type

7 APPENDIX 2 - OTC ISIN-UPI MAPPING

This section describes the mapping between the ISIN and UPI input attributes.

ISIN Input Attributes	Mapping Logic	UPI Input Attributes	Sample UPI Values	Comments
Asset Class	Direct Map	Asset Class	Foreign_Exchange	
Instrument Type	Direct Map	Instrument Type	Swap	
Use Case	Direct Map	Product	Non_Deliverable_FX_Swap	
Level	Set to "UPI"	Level	UPI	
Instrument ISIN Near Leg	Derived from ISIN	Underlier ID	USD	Underlier ID is derived from the underlying Near Leg NDF (OTC ISIN Record).
	Set to "CCY"	Underlier ID Source	CCY	
Instrument ISIN Far Leg	Derived from ISIN	Other Underlier ID	CNY	Other Underlier ID is derived from the underlying Far Leg NDF (OTC ISIN Record).
	Set to "CCY"	Other Underlier ID Source	CCY	
Delivery Type	Direct Map	Delivery Type	OPTL	
Price Multiplier	No Mapping			
	Derived from ISIN	Settlement Currency	CNY	Settlement Currency is derived from the underlying Near Leg NDF (OTC ISIN Record).
	No Mapping	Place of Settlement	Hong Kong	New attribute to accommodate offshore currencies