Derivatives Service Bureau

Foreign Exchange : Option : NDO

UPI Product Definition

Version 3

Date	Status	Version	Revision Details
8 Aug 2022	Draft	1	Initial Version
26 Jan 2023	Draft	2	• Update example values in the Request and Record templates layout • Insert Underlier Name attribute and Derivation rules
05 Sep 2023	Draft	3	• 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)	**H**	Non-listed and Complex listed options	
	Asset Class (Group)	**F**	Foreign Exchange	
Attr #1	**Underlying Assets**	**T**	Spot	An option on an FX transaction in which two parties agree to buy one currency against selling another currency at an agreed price for settlement on the spot date
Attr #2	**Option style and type**	**A**	European-Call	An option on a contract which allows its holder (buyer) to exercise the right to buy specified assets (interest rates product) at a fixed price only on the expiration date of the call
		B	American-Call	An option on a contract which allows its holder (buyer) to exercise the right to buy specified assets (interest rates product) at a fixed price at any time during the term of the call option, up to and including the expiration date of the call
		C	Bermudan-Call	An option on a contract which allows its holder (buyer) to exercise the right to buy specified assets (interest rates product) at a fixed price on a number of specific dates within the exercise period of the call
		D	European-Put	An option on a contract which allows its holder (buyer) to exercise the right to sell specified assets (interest rates product) at a fixed price only on the expiration date of the put
		E	American-Put	An option on a contract which allows its holder (buyer) to exercise the right to sell specified assets (interest rates product) at a fixed price at any time during the term of the put option, up to and including the expiration date of the put
		F	Bermudan-Put	An option on a contract which allows its holder (buyer) to exercise the right to sell specified assets (interest rates product) at a fixed price on a number of specific dates within the exercise period of the put
		G	European-Chooser	An option on a contract which allows its holder (buyer) to exercise the right to buy (call) or sell (put) specified assets (interest rates product) at a fixed price, only on the contract's expiration date; the buyer does not have to decide whether the contract will be a put or a call until an agreed future date, prior to expiration
		H	American-Chooser	An option on a contract which allows its holder (buyer) to exercise the right to buy (call) or sell (put) specified assets (interest rates product) at a fixed price at any time during the term of the contract, up to and including the expiration date of the call or put; the buyer does not have to decide whether the contract will be a put or a call until an agreed future date, prior to expiration
		I	Bermudan-Chooser	An option on a contract which allows its holder (buyer) to exercise the right to buy (call) or sell (put) specified assets (interest rates product) at a fixed price on a number of specific dates within the exercise period of the contract; the buyer does not have to decide whether the contract will be a put or a call until an agreed future date, prior to expiration

Attr #3	**Valuation method or trigger**	**V**	Vanilla	an option for which all terms are standardized
		A	Asian	an option where either the strike price or the settlement price is the average level of an underlying instrument over a predetermined period; the averaging can be either a geometric or arithmetic average
		L	Lookback	an option that minimizes the uncertainties related to the timing of market entry; there are two types of look-back options: fixed and floating; the fixed option strike is determined at purchase, and the floating option strike is determined at maturity
		P	Other path dependent	an option on a contract whose payoff is directly related to the price pattern the underlying asset follows during the life of the contract
		M	Others	Miscellaneous
Attr #4	**Delivery Type**	**C**	Cash	the discharge of an obligation by payment or receipt of a net cash amount instead of payment or delivery by both parties

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	NDO		NDO

3 REQUEST TEMPLATE

This section describes the input message received by UPI service.

Template name	Template details	Release
Request.Foreign_Exchange.Option.NDO.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	Option	
	Product	Set	M	NDO	
	Level	Set	M	UPI	
Attribute Section	Underlier ID	Enum	M	EUR	E numerated List
	Underlier ID Source	String	M	CCY	[CCY]
	Other Underlier ID	Enum	M	KRW	Enumerated List
	Other Underlier ID Source	String	M	CCY	[CCY]
	Option Exercise Style	Enum	M	EURO	[AMER; BERM: EURO]
	Option Type	Enum	M	CALL	[CALL; PUTO; OPTL]
	Settlement Currency	Enum	M	EUR	Enumerated List
	Valuation Method or Trigger	Enum	M	Vanilla	[Vanilla; Asian; Lookback; etc]

3.1 Underlier Input Method

For products that has 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 • 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.

4 Record Template

This section describes the record returned by the UPI service.

Version	Template name	Template details	Release
V.1	**Foreign_Exchange.Option.NDO.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	Option	
	Product	Set	M	NDO	
	Level	Set	M	UPI	
	Template Version	Integer	D	1	
Attribute Section	Notional Currency	Enum	M	EUR	Enumerated List
	Other Notional Currency	Enum	M	KRW	Enumerated List
	Option Exercise Style	Enum	M	EURO	[AMER; BERM: EURO]
	Option Type	Enum	M	CALL	[CALL; PUTO; OPTL]
	Settlement Currency	Enum	M	EUR	Enumerated List
	Valuation Method or Trigger	Enum	M	Vanilla	[Vanilla; Asian; Lookback; etc.]
Identifier Section	UPI	String	D	QZCXMQG5PRK8	
	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	HFTAVC	See Derivation Rules
	Short Name	String	D	NA/O NDO Call EUR KRW	See Derivation Rules
	Underlier Name	String	D	EUR KRW	See Derivation Rules
	Underlying Asset Type	String	D	Spot	Fixed Value
	CFI Option Style and Type	String	D	European-Call	See Derivation Rules
	Delivery Type	String	D	CASH	Fixed Value
	CFI Delivery Type	String	D	Cash	Fixed Value

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 + Option Type / Style + Valuation Method or Trigger + Delivery Type		
Example	HFTAVC		
Source	ISO 10962 (CFI) – Third edition 2015-07-15		
Source Attribute	**Source Value**	**Derivation Method**	**Result**
Instrument Type	Option	Fixed Mapping	H
Asset Class	Foreign Exchange	Fixed Mapping	F
Underlying Assets	Spot	Fixed Mapping	T
Option Type / Style	PUTO/AMER	Mapped to =>	E
	PUTO/BERM	Mapped to =>	F
	PUTO/EURO	Mapped to =>	D
	CALL/AMER	Mapped to =>	B
	CALL/BERM	Mapped to =>	C
	CALL/EURO	Mapped to =>	A
	OPTL/AMER	Mapped to =>	H
	OPTL/BERM	Mapped to =>	I
	OPTL/EURO	Mapped to =>	G
Valuation Method or Trigger	Vanilla	Mapped to =>	V
	Asian	Mapped to =>	A
	Lookback	Mapped to =>	L
	Other Path Dependent	Mapped to =>	P
	Other	Mapped to =>	M
Delivery Type	Cash	Fixed Mapping	C

4.2.2 Short Name

Attribute	Short Name		
Structure	"NA" + "/" + Instrument Type + Product + Option Type + Notional Currency + Other Notional Currency		
Example	NA/O NDO Call EUR KRW		
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	Option	Fixed Abbreviation	O
Product	Non-Deliverable Option	Fixed Abbreviation	NDO
Option Type	PUTO	Mapped to =>	Put
	CALL	Mapped to =>	Call
	OPTL	Mapped to =>	O
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	EUR KRW

4.2.4 Delivery Type

Attribute	Delivery Type		
Source Attribute	**Source Value**	**Derivation Method**	**Result**
Delivery Type	N/A	Fixed Value	CASH

4.2.5 CFI Delivery Type

Attribute	CFI Delivery Type		
Source Attribute	**Source Value**	**Derivation Method**	**Result**
Delivery Type	CASH	Mapped to =>	Cash

4.2.6 CFI Option Style and Type

Attribute	CFI Option Style and Type		
Source Attribute	**Source Value**	**Derivation Method**	**Result**
Option Style and Type	PUTO/AMER	Mapped to =>	American-Put
	PUTO/BERM	Mapped to =>	Bermudan-Put
	PUTO/EURO	Mapped to =>	European-Put
	CALL/AMER	Mapped to =>	American-Call
	CALL/BERM	Mapped to =>	Bermudan-Call
	CALL/EURO	Mapped to =>	European-Call
	OPTL/AMER	Mapped to =>	American-Chooser
	OPTL/BERM	Mapped to =>	Bermudan-Chooser
	OPTL/EURO	Mapped to =>	European-Chooser

5 SUPPLEMENTARY INFORMATION

5.1 Best Practice Guidelines

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 Option Type enumerated values of UPI will be based on current DSB OTC ISIN values [CALL; PUTO; OPTL] rather than the ISO 20022 values [CALL; PUTO; OTHR].

- The shortname abbreviation for option type – Put is “P” for rates option while in equity and foreign exchange, shortname abbreviation for the option type – Put is “Put”. Same as for Option Type – OPTL whereas in FX it is “O” and “Opt” for Rates and Equity.

- For NDO product, only “CASH” is supported as Delivery type and will display the value in the derived section. The value will differ in the request since DSB OTC ISIN added the delivery type in the request attributes but does not allow to choose “Physical” & “Elect at Exercise” as Delivery type.

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	Not Required	Delivery Type
		Not Required	CFI Delivery Type
Option Style	M	Option Exercise Style	
Option Type	C	Option Type	
Return, pricing method or payout trigger	M	Valuation Method or Trigger	
Settlement Currency	C	Settlement Currency	
Underlier ID	C	Underlier ID	Notional Currency
	C	Other Underlier ID	Other Notional Currency
Underlier ID source	C	Underlier ID Source	Not Required
	C	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	Option	
Use Case	Direct Map	Product	NDO	
Level	Set to "UPI"	Level	UPI	
Notional Currency	Map To	Underlier ID	EUR	
	Set to “CCY”	Underlier ID Source	CCY	
Expiry Date	No Mapping			
Option Type	Direct Map	Option Type	CALL	
Option Exercise Style	Direct Map	Option Exercise Style	EURO	
Valuation Method or Trigger	Direct Map	Valuation Method or Trigger	Vanilla	
Other Notional Currency	Map To	Other Underlier ID	KRW	
	Set to “CCY”	Other Underlier ID Source	CCY	
Settlement Currency	Direct Map	Settlement Currency	EUR	
Delivery Type	No Mapping			Delivery Type attribute for the UPI is in the Derived section of the Record template.
Price Multiplier	No Mapping			

