Derivatives Service Bureau (UPI)

CHANGE REQUEST FORM

Version	State	Author	Date	Description
1	Initial Draft	Simon Wiltshire	24 March 2021	Initial Document
2	Update	M.A. Gariplan	30 Apr 2021	-Added statement/s in Background; in Requirements; in Assumptions; in Validation; in Normalization; in Comments. -Added Attribute Data Dictionary section
3	Update	M.A. Gariplan	05 May 2021	-Updated statement and error message in Validation: Underlier ID [UPI]
4	Update	Simon Wiltshire	05 May 2021	-Removed Underlying Contract Tenor Term Value and Unit. -Removed Underlying Asset Type validation.
5	Update	M. Surop	26 July 2021	-Removed active hyperlinks in Data Dictionary. -Amended References section with standard text. -Removed Short Name comment in the Comment section.
6	Update	M. Surop	16 Aug 2021	-Updated Classification Type in Derivation section. -Updated Shortname abbreviation for Underlying Asset Type.
7	Update	J. Lim M. Surop	02 Sep 2021	-Updated UPI validation and error message. -Updated Derivation and Comment sections for Underlying Asset Type.
8	Update	M. Surop	22 Sept 2021	-Updated GUI details for CFI Option Style and Type.

Title	RATES OPTION Swaption Template Definition		
Background	The following CRF presents a specification for the generation and retrieval of a Unique Product Identifier for the following product: • **Rates : Option : Swaption** This product is based on an underlying UPI Swap and will derive data elements from the provided UPI.	**DSB-ID**	**UPI-0103**
		Type	New Template
		Owner	Simon Wiltshire
		Version	8
		State	Draft
Terms of Reference			
Scope	• This CRF specifies the product definition required for the generation / retrieval of a UPI only. • This CRF covers both the input (Request) and output (Record) templates. • Support for local jurisdiction / alternate underlier identifier input is currently out of scope. • Support for CFI 2019 values is currently out of scope.		
Requirements	• The product definition will conform to ISO 4194 (UPI). • Where possible, the product definition is to be based on the attributes, values and behaviour of the equivalent OTC ISIN. • The product definition will return a product short name (FISN). • All UPI records stored on the DSB RDL will include the ISO 10962 (CFI) code associated with the UPI along with an equivalent text value for all attributes that are included in the definition of the CFI.		
Dependencies	• This specification is dependent on final sign-off of the ISO 4194 (UPI) specification. • This specification is dependent on PC approval for the use of the OTC ISIN definitions as a basis for the UPI. • This specification is dependent on PC approval for the inclusion of ISO 4194 (UPI) conditional attributes. • This specification is dependent on TAC Approval for the DSB approach to ISO 10962 (CFI:2019) migration. • This specification is dependent on the provision of a human-readable alias for the primary underlier for inclusion in the Short Name (FISN). • The format of the Short Name is dependent upon the outcome of the ISO 18874 (FISN) systematic review.		
Assumptions	• This specification assumes that, unless stated, all values and behaviours are based on those of the equivalent OTC ISIN product definition. • This specification assumes that no input values are to be defaulted by the system.		

	• This specification is based on the current ISO 4194 (UPI) specification (CD) – including attributes that are not currently supported by the equivalent OTC ISIN. • This specification is based on the DSB's current equivalent OTC ISIN product definition. • This specification is based on the attributes and values defined in ISO 10962 (CFI:2015). • In order to provide an example Short Name, this specification defines a format for this attribute that may not conform to the eventually agreed FISN format for the UPI. This specification assumes that the Short Name is defined using the same attributes (where available) as the OTC ISIN Short Name. • Where possible, this specification derives GUI details from the ISO 4194 (UPI) specification for attributes that are not included in the current OTC ISIN product definition. • The display information in the GUI for the existing attributes (and values) are taken from the OTC ISIN. If such information contains an "ISIN" in the description, replace the value into "UPI". • The specification for UPI does not include expiry date as part of the attributes, hence "expired" status does not apply. • The inclusion of Underlying Contract Tenor Period / Multiplier in ISO 4914 (UPI) is subject to review by the CDIDE. Until the review is complete, these attributes will not be included in the specification for this product.

Request Template Layout

Section	Attribute	Format	Cat	Example Value	Validation / Derivation	Enum Source	Origin
Header Section	Asset Class	Set	M	Rates		CFI:2015 Char#2 (HR****)	ISIN
	Instrument Type	Set	M	Option		CFI:2015 Char#1 (HR****)	ISIN
	Product	Set	M	Swaption			ISIN
	Level	Set	M	UPI			NEW
Attribute Section	Underlier ID	String	M	QZ1234567890	Rates/Swap UPI	UPI RDL	NEW
	Underlier ID Source	Enum	M	UPI	[UPI]	Internal	NEW
	Notional Currency	Enum	M	USD	ISOCurrencyCode.json	ISO 4217 (3-Char CCY)	ISIN
	Option Type	Enum	M	CALL	[PUTO; CALL; OPTL]	ISO 20022	ISIN
	Option Exercise Style	Enum	M	AMER	[AMER; BERM; EURO]	ISO 20022	ISIN
	Valuation Method or Trigger	Enum	M	Vanilla	[Vanilla; Asian; Barrier; Lookback etc.]	CFI:2015 Char#5 (HR****)	ISIN
	Delivery Type	Enum	M	PHYS	[CASH; PHYS; OPTL]	ISO 20022	ISIN

Record Template Layout

Section	Attribute	Format	Cat	Example Value	Validation / Derivation	Enum Source	Origin
Header Section	Asset Class	Set	M	Rates			ISIN
	Instrument Type	Set	M	Option			ISIN
	Product	Set	M	Swaption			ISIN
	Level	Set	M	UPI			NEW
	Template Version	Integer	D	1			ISIN
Attribute Section	Underlying Instrument UPI	String	M	QZ1234567890	Rates/Swap UPI	UPI RDL	NEW
	Notional Currency	Enum	M	USD	ISOCurrencyCode.json	ISO 4217 (3-Char CCY)	ISIN
	Option Type	Enum	M	CALL	[PUTO; CALL; OPTL]	ISO 20022	ISIN
	Option Exercise Style	Enum	M	AMER	[AMER; BERM; EURO]	ISO 20022	ISIN
	Valuation Method or Trigger	Enum	M	Vanilla	[Vanilla; Asian; Barrier; Lookback etc.]	CFI:2015 Char#5 (HR****)	ISIN
	Delivery Type	Enum	M	PHYS	[CASH; PHYS; OPTL]	ISO 20022	ISIN
Identifier Section	Identifier	String	D	QZ2093849381	UPI		ISIN
	Status	String	D	New			ISIN
	Status Reason	String	D	<null>	Not applicable to a New record		ISIN
	Last Update Date Time	DtTm	D	2020-11-30T00:00:13	YYYY-MM-DDThh:mm:ss		ISIN
Derived Section	Classification Type	String	D	HRCDVC	See CRF (Derivations)		ISIN
	Short Name	String	D	NA/O P Epn Fxd Flt EUR	See CRF (Derivations)	ISO 18874	NEW
	Underlying Asset Type	String	D	Fixed - Floating	See CRF (Derivations)	CFI:2015 Char#3 (HR****)	ISIN
	CFI Option Style and Type	String	D	American-Put	See CRF (Derivations)	CFI:2015 Char#4 (HR****)	NEW
	CFI Delivery Type	String	D	[Cash, Physical, Elect at Exercise]	See CRF (Derivations)	CFI:2015 Char#6 (HR****)	NEW

Product Definition	
Attributes	See Template Layout (above).
Validation	See Template Layout (above). **1. Underlier ID [UPI]** a. The following validation will be applied to the Underlier ID and must be a valid UPI RDL record.

<table>
<tr><td></td><td>

- UPI 12 characters (Prefix “QZ”, 9 Alphanumeric, 1 Alphanumeric check character)
UPI code structure based on ISO 4914 (UPI) specification

b. If input UPI has more than 12 characters or does not have prefix “QZ”, an error message will apply before it proceeds to create “Value must match the pattern ^QZ([0-9BCDFGHJ-NPQ-TVWXZ]){10}$”.

2. Underlying Instrument UPI in the record

a. User inputs underlier ID and must be a valid UPI RDL record with status not “Deleted”.
b. If input underlier ID does not exist in UPI RDL, an error message will apply: “Error: Underlier ID [UPI] not found”.

3. Underlying Instrument UPI

a. The following validation will be applied to Underlying Instrument UPI record returned from the UPI RDL.

- Asset Class “Rates”
- Instrument Type “Swap”
- Status not = “Deleted”

If the above validation rules are not satisfied, an error message will apply: “Error: Underlier ID [UPI] must be a valid and existing Rates Swap.

</td></tr>
<tr><td>Normalization</td><td>Not required.</td></tr>
<tr><td>Attribute Data Dictionary</td><td>
This section provides the exact reference or source of the attribute.
<table>
<tr><th>Full Name</th><th>Source</th><th>Type</th></tr>
<tr><td>Underlying Instrument UPI</td><td>UPI RDL</td><td>Max of 12 text (pattern)
[QZ] – first 2 characters
[A-Z], [0-9] – Next 9 characters
[A-Z], [0-9] – Last value is based on UPI calculation</td></tr>
<tr><td>Notional Currency</td><td>ISO 4217 Currency Codes</td><td>Pattern: [A-Z]{3,3}</td></tr>
<tr><td>Option Type</td><td>ISO 20022 FinancialInstrumentReportingReferenceDataReportV01</td><td>Enums [CALL; PUTO; OPTL]</td></tr>
<tr><td>Option Exercise Style</td><td>ISO 20022 FinancialInstrumentReportingReferenceDataReportV01</td><td>Enums [AMER; BERM; EURO]</td></tr>
<tr><td>Valuation Method or Trigger</td><td>ISO 10962 Classification of financial instruments (CFI code)</td><td>Enums [Vanilla; Asian; Digital (Binary); Barrier; Digital Barrier; Lookback; Other Path Dependent; Other]</td></tr>
<tr><td>Delivery Type</td><td>ISO 20022 FinancialInstrumentReportingReferenceDataReportV01</td><td>Enums [CASH, PHYS, OPTL]</td></tr>
<tr><td>CFI Delivery Type</td><td>ISO 10962 Classification of financial instruments (CFI code)</td><td>Enums [Cash; Physical; Elect at Exercise]</td></tr>
</table>
</td></tr>
<tr><td>Derivation</td><td>
This section provides additional details to the derivation logic specified in the Template Layout sections (above).
<table>
<tr><td>Classification Type</td><td>

Concatenation of the following attributes/values:

- Instrument Type: “H”
- Asset Class: “R”
- Underlying Asset Type: from Underlying ID (UPI Record)
  - Basis Swap (Float - Float) → “A”
  - Fixed – Floating → “C”
  - Fixed – Fixed → “D”
  - Inflation Rate Index → “G”
  - Overnight Index Swap (OIS) → “H”
  - Zero Coupon → “M”
  - Other → “M”
- Option Type/Style: from Request.OptionType and Request.OptionExerciseStyle

</td></tr>
</table>
</td></tr>
</table>

		- PUTO/AMER → "E" - PUTO/BERM → "F" - PUTO/EURO → "D" - CALL/AMER → "B" - CALL/BERM → "C" - CALL/EURO → "A" - OPTL/AMER → "H" - OPTL/BERM → "I" - OPTL/EURO → "G" • Valuation Method or Trigger: from Request.ValuationMethodorTrigger - Vanilla → "V" - Asian → "A" - Digital (Binary) → "D" - Barrier → "B" - Digital Barrier → "G" - Lookback → "L" - Other Path Dependent → "P" - Other → "M" • Delivery Type: from Request.Delivery Type… - CASH → "C" - PHYS → "P" - OPTL → "E" E.g.: "HRADVE"
	Short Name	Concatenation of the following attributes/values: • Issuer: "NA/" • Instrument Type: "O" (fixed value) • Option Type from Request.OptionType - PUTO "P" - CALL "Call" - OPTL "Opt" • Option Exercise Style from Request.OptionExerciseStyle - AMER "Amr" - BERM "Brm" - EURO "Epn" • Underlying Asset Type: from Underlying ID (UPI Record) - Basis Swap (Float - Float) → "Flt Flt" - Fixed – Floating → "Fxd Flt" - Fixed – Fixed → "Fxd Fxd" - Inflation Rate Index → "Infl Idx" - Overnight Index Swap (OIS) → "OIS" - Zero Coupon → "Oth" - Other → "Oth" • Notional Currency: e.g.: USD – from ISO 4217 input value E.g.: "NA/O P Amr Flt Flt USD"
	Underlying Asset Type	Derived from the Underlying Asset Type of the Underlying ID (UPI Record). • Basis Swap (Float - Float) → "Basis Swap (Float - Float)" • Fixed – Floating → "Fixed – Floating" • Fixed – Fixed → "Fixed – Fixed" • Inflation Rate Index → "Inflation Rate Index" • Overnight Index Swap (OIS) → "Overnight Index Swap (OIS)" • Zero Coupon → "Other" • Other → "Other"
	CFI Option Style and Type	Derived from the Underlying Request.OptionType and Request.OptionExerciseStyle • PUTO/AMER → "American-Put" • PUTO/BERM → "Bermudan-Put" • PUTO/EURO → "European-Put" • CALL/AMER → "American-Call" • CALL/BERM → "Bermudan-Call" • CALL/EURO → "European-Call" • OPTL/AMER → "American-Chooser"

	• OPTL/BERM → "Bermudan-Chooser" • OPTL/EURO → "European-Chooser"
CFI Delivery Type	Derived from the input Delivery Type… • CASH → "Cash" • PHYS → "Physical" • OPTL → "Elect at Exercise"

GUI Details

The following section provides display information for any attributes (and values) that are not included in the related OTC ISIN definition.

Attribute	Display Name	Tool Tip (and • *value elaboration*)
Underlier ID	Underlier ID	An identifier that can be used to determine the asset(s), index (indices) or benchmark underlying a contract or, in the case of a foreign exchange derivative, identification of the currency pair or index
Underlier ID Source	Underlier ID Source	The origin, or publisher, of the associated underlier ID.
UPI	Identification	The Unique Product Identifier as defined by ISO 4914.
CFI Option Style and Type	CFI Option Style and Type	The Option Style and Type as defined by CFI code: ISO 10962. • *As defined by CFI Code: ISO 10962*
CFI Delivery Type	CFI Delivery Type	The Delivery Type as defined by CFI code: ISO 10962. • *As defined by CFI Code: ISO 10962*

Additional Information

Reference

References to external documents can be found on the DSB website at this address [https://www.anna-dsb.com/upi-external-reference-documents/].

Comments

- The short name abbreviation for option type – Put is "P" for rates option while in equity option, short name abbreviation for the option type – Put is "Put".
- 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].
- Current OTC ISIN has Underlying Asset Type values such as [Basis Swap (Float-Float); Fixed-Floating; Fixed-Fixed; Inflation Rate Index; Overnight Index Swap (OIS) & Other]. In order to maintain UPI/ISIN hierarchy, Underlying Instrument UPI with derived underlying asset type "Zero Coupon" will be treated as "Other".

ISO 4914 Equivalence

ISO 4914		Request Attribute	Record Attribute
Asset Class	M	Asset Class	Asset Class
Instrument Type	M	Instrument Type	Instrument Type
Currency associated with an underlying reference rate	M	Notional Currency	Notional Currency
Delivery Type	M	Delivery Type	Delivery Type CFI Delivery Type
Option Style	M	Option Exercise Style	Option Exercise Style
Option Type	M	Option Type	Option Type
Return, Pricing Method or Payout Trigger	M	Valuation Method or Trigger	Valuation Method or Trigger
Underlier ID	C	Underlier ID	Underlying Instrument UPI
Underlier ID Source	C	Underlier ID source	Not Required
Underlier Type	M	Not Required	Underlying Asset Type
Underlying Rate Index Tenor Period	C	Not Applicable*	

	Underlying Rate Index Tenor Period Multiplier	C	Not Applicable*
	Underlying Contract Tenor Period	C	Not Required**
	Underlying Contract Tenor Period Multiplier	C	Not Required**

* Underlying Rate Index Tenor Period / Multiplier applies to OTC derivatives with an Underlying Reference Rate (Index).
** Underlying Contract Tenor Period / Multiplier attributes are subject to review by the CDIDE and so are excluded from this product definition.