Derivatives Service Bureau (UPI)

CHANGE REQUEST FORM

Version	State	Author	Date	Description
1	Draft	M. Surop	11 May 2021	Initial Document
2	Draft	M. Surop	19 July 2021	Removed active hyperlinks in Data Dictionary; Amended References section with standard text; Removed Short Name comment in the Comment section; Updated Validation for error message.
3	Draft	M. Surop	15 Dec 2021	Updated Record Template Layout for Underlying Asset Type.

Title	COMMODITIES 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: • **Commodities : Option : Swaption** ***Note: This product is based on an underlying UPI and will derive data elements from the provided UPI.***	**DSB-ID**	**UPI-0301**
		Type	New Template
		Owner	M. Surop
		Version	3
		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 4914 (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 4914 (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 4914 (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) and a human-readable alias for the Contract Specification. • The format of the Short Name is dependent upon the outcome of the ISO 18774 (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 4914 (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 4914 (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 specification assumes that UPI Swaptions will be based on an underlying UPI Swap – and will NOT be extended to support an ISIN underlier.

Request Template Layout

Section	Attribute	Format	Cat	Example Value	Validation / Derivation	Enum Source	Origin
Header Section	Asset Class	Set	M	Commodities		CFI:2015 Char#2 (HT****)	ISIN
	Instrument Type	Set	M	Option		CFI:2015 Char#1 (HT****)	ISIN
	Product	Set	M	Swaption			ISIN
	Level	Set	M	UPI			NEW
Attribute Section	Underlier ID	Enum	M	QZ3MPG0CG2Q5	See CRF (Validation)	UPI RDL	NEW
	Underlier ID Source	String	M	UPI	[UPI]	Internal	NEW
	Option Type	Enum	M	CALL	[CALL; PUTO; 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; Digital (Binary); etc.]	CFI:2015 Char#5 (HT****)	ISIN
	Delivery Type	Enum	M	CASH	[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	Commodities		CFI:2015 Char#2 (HT****)	ISIN
	Instrument Type	Set	M	Option		CFI:2015 Char#1 (HT****)	ISIN
	Product	Set	M	Swaption			ISIN
	Level	Set	M	UPI			NEW
	Template Version	Integer	D	1			ISIN
Attribute Section	Underlying Instrument UPI	Enum	M	QZ3MPG0CG2Q5	See CRF (Validation)	UPI RDL	NEW
	Option Type	Enum	M	CALL	[CALL; PUTO; 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; Digital (Binary); etc.]	CFI:2015 Char#5 (HT****)	ISIN
	Delivery Type	Enum	M	CASH	[CASH; PHYS; OPTL]	ISO 20022	ISIN
Identifier Section	UPI	String	D	QZLM6CTZ8L65	UPI	ISO 4914	NEW
	Status	String	D	New			ISIN
	Status Reason	String	D	<null>	Not applicable to a New record		ISIN
	Last Update Date Time	DtTm	D	2021-05-06T01:17:34	YYYY-MM-DDThh:mm:ss		ISIN
Derived Section	Classification Type	String	D	HTJBVC	See CRF (Derivations)	ISO 10962: 2015	ISIN
	Short Name	String	D	NA/O Swt Call	See CRF (Derivations)	ISO 18774: 2015	NEW
	Underlying Asset Type	String	D	Energy	See CRF (Derivations)	CFI:2015 Char#3 (HT****)	ISIN
	CFI Option Style and Type	String	D	American-Call	See CRF (Derivations)	CFI:2015 Char#4 (HT****)	NEW
	CFI Delivery Type	String	D	Cash	See CRF (Derivations)	CFI:2015 Char#6 (HT****)	NEW

Product Definition	
Attributes	See Template Layout (above).
Validation	**1. Underlier ID [UPI]** a. The following validation will be applied to Underlier ID and must be a valid UPI RDL record: • UPI 12 characters (prefix “QZ”, 9 alphanumeric, 1 alphanumeric check character) UPI Code structure based on UPI 4914 (UPI) specification b. If input UPI has more than 12 characters or does not have prefix of “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 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 data attributes** a. The following validation will be applied to Underlying Instrument UPI record returned from the UPI RDL. • Asset Class “Commodities” • Instrument Type “Swap”

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

Product “Basis_Swap” or “Multi_Exotic_Swap” or “Single_Index” or “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 Commodities 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>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>
<tr><td>Option Exercise Style</td><td>ISO 20022 FinancialInstrumentReportingReferenceDataReportV01</td><td>Enums [AMER; BERM; EURO]</td></tr>
<tr><td>Option Type</td><td>ISO 20022 FinancialInstrumentReportingReferenceDataReportV01</td><td>Enums [CALL; PUTO; OPTL]</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>Underlying Instrument UPI</td><td>UPI RDL</td><td>Max of 12 text (pattern)
[QZ] – firsts 2 characters
[A-Z], [0-9] – Next 9 characters
[A-Z], [0-9] – Last value based on UPI check calculation</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>Underlying Asset Type</td><td>
Derived from the Underlying Asset Type of the Underlying ID (UPI Record).

Agriculture → “Agriculture”
Energy → “Energy”
Environmental → “Environmental”
Freight → “Freight”
Fertilizer → “Fertilizer”
Index → “Index”
Metals → “Metals”
Multi Commodity → “Multi Commodity”
Paper → “Paper”
Polypropylene Products → “Polypropylene Products”
Other → “Other”

</td></tr>
<tr><td>Classification Type</td><td>
Concatenation of the following attributes/values:

Instrument Type: “H”
Asset Class: “T”
Underlying Asset Type: from Underlying ID (UPI Record)
- Energy → J
- Metals → K
- Agriculture → A
- Environmental → N
- Freight → G
- Polypropylene products → P
- Fertilizer → S
- Paper → T
- Index → I
- Multi Commodity → Q

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

		- *Other →* *M* • Option Type/Style: from Request.OptionType and Request.OptionExerciseStyle - *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.DeliveryType… - *CASH →* *C* - *PHYS →* *P* - *OPTL →* *E* E.g.: "HTJBVC"
	Short Name	Concatenation of the following attributes/values: • Issuer: "NA/" • Instrument Type: "O" (fixed value) • Product: "Swt" (fixed value) • Option Type: from Request.OptionType… - PUTO "Put" - CALL "Call" - OPTL "OPTL" E.g.: "NA/O Swt Call" *Note: The Short Name is based on the OTC ISIN that excludes the following fields:* - *Notional Currency* - *Expiry Date*
	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	Unique Product Identifier (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

- Underlying contract tenor term value/unit are not included in the current DSB OTC ISIN. In UPI, as part of ISO 4914 standard, the attributes are part of the requirement if the underlying is derivative contract underlying another derivative.
- 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].
- In Commodities, the Short name abbreviation for Option Type [CALL; PUTO; OPTL] are [Call; Put; OPTL] whereas Rates has [Call; P; Opt]; Equities [Call; Put; Opt] and Foreign_Exchange [Call; Put; O]. For Credit, option type is not part of the Short name.
- The following Underlying Asset Types - Options, Forwards, Futures and Swaps are included in DSB OTC ISIN as input by the user but not in UPI, as the basis of the underlying asset type for commodities swaption will be derived from the provided UPI.
- Currently DSB OTC ISIN does not hold reference data to support the validation of the underlying instrument ISIN where the underlying asset type does not match. If the underlying instrument ISIN is created that does not match the input underlying asset type, then OTC ISIN will not have an equivalent UPI.
- Data elements [Base Product; Sub Product; Additional Sub Product] are excluded in UPI to align with the current DSB OTC ISIN and to keep the hierarchy within them.

ISO 4914 Equivalence

<table>
<tr><th colspan="2">ISO 4914</th><th>Request Attribute</th><th>Record Attribute</th></tr>
<tr><td>Asset Class</td><td>M</td><td colspan="2">Asset Class</td></tr>
<tr><td>Instrument type</td><td>M</td><td colspan="2">Instrument Type</td></tr>
<tr><td rowspan="2">Delivery type</td><td rowspan="2">M</td><td rowspan="2">Delivery Type</td><td>Delivery Type</td></tr>
<tr><td>CFI Delivery Type</td></tr>
<tr><td>Option style</td><td>M</td><td colspan="2">Option Exercise Style</td></tr>
<tr><td>Option type</td><td>M</td><td colspan="2">Option Type</td></tr>
<tr><td>Return, pricing method or payout trigger</td><td>M</td><td colspan="2">Valuation Method or Trigger</td></tr>
<tr><td>Underlier ID</td><td>C</td><td>Underlier ID</td><td>Underlying Instrument UPI</td></tr>
<tr><td>Underlier ID source</td><td>C</td><td>Underlier ID Source</td><td>Not Required</td></tr>
<tr><td>Underlier type</td><td>M</td><td>Not Required</td><td>Underlying Asset Type</td></tr>
<tr><td>Underlier sub-type (first level)*</td><td>M</td><td colspan="2">Not Required</td></tr>
<tr><td>Underlier sub-type (second level)*</td><td>C</td><td colspan="2">Not Required</td></tr>
<tr><td>Underlying contract tenor period**</td><td>C</td><td colspan="2">Not Required</td></tr>
<tr><td>Underlying contract tenor period multiplier**</td><td>C</td><td colspan="2">Not Required</td></tr>
</table>

*Underlier sub-type (first/second levels) are not required, refer to comments above.
**The PC agreed that Underlying contract tenor period/multiplier are not required for swaption underlying another derivative contract.