9=Derivatives Service Bureau (UPI)

CHANGE REQUEST FORM

Version	State	Author	Date	Description
1	Draft	J. Lim	04 Jun 2021	Initial Document
2	Draft	J. Lim	21 Jul 2021	Updated template layout, attribute section, attribute data dictionary, GUI details and reference

Title	RATES OPTION Non Standard 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 : Non_Standard**	**DSB-ID**	**UPI-0419**
		Type	New Template
		Owner	J.Lim
		Version	2
		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 for UPI will not require user to identify individual constituent identifiers if the OTC derivative has more than one underlier ID. This is also in agreement with PC to align with ISO 4914 (UPI) specification and CPMI/IOSCO.		

Request Template Layout

Section		Attribute	Format	Cat	Example Value	Validation / Derivation	Condition	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	Non_Standard				ISIN
		Level	Set	M	UPI				NEW
Attribute Section		**Underlying Structure (oneOf)**	String	M	Single Underlier	See CRF (Validation)	Populated if not a basket		NEW
	A	Underlier ID Source	String	M	FPML	[FPML]		internal	NEW
	A	Underlier ID	Enum	M	AUD-CPI	See CRF (Validation and Normalization)		Fpml Coding Scheme 5.98 & 5.108	NEW
	A	Reference Rate Term Value	Integer	M	3	-999 to 999 (excluding 0)			ISIN
	A	Reference Rate Term Unit	Enum	M	MNTH	[DAYS, WEEK, MNTH, YEAR]		ISO 20022	ISIN
		Underlying Structure (oneOf)	String	M	Basket	See CRF (Validation)	Populated for a basket		NEW
	B	Underlier Characteristic	Enum	M	Basket	See CRF (Validation)		Internal	NEW
		Notional Currency	Enum	M	EUR	ISOCurrencyCode.json		ISO 4217 (3-Char CCY)	ISIN
		Underlying Asset Type	Enum	M	Inflation Rate Index	[Basis Swap (Float - Float); Fixed - Floating etc.]		CFI:2015 Char#3 (HR****)	ISIN
		Option Type	Enum	M	CALL	[CALL; PUTO; OPTL]		ISO 20022	ISIN
		Option Exercise Style	Enum	M	EURO	[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]		ISO 20022	ISIN

Record Template Layout

Section		Attribute	Format	Cat	Example Value	Validation / Derivation	Condition	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	Non_Standard				ISIN
		Level	Set	M	UPI				NEW
		Template Version	Integer	D	1				ISIN
	A	Reference Rate	Enum	M	AUD-CPI	See CRF (Validation and Normalization)	Populated if not a basket	Fpml Coding Scheme 5.98 & 5.108	ISIN
	A	Reference Rate Term Value	Integer	M	3	-999 to 999 (excluding 0)			ISIN
	A	Reference Rate Term Unit	Enum	M	MNTH	[DAYS, WEEK, MNTH, YEAR]		ISO 20022	ISIN
		Notional Currency	Enum	M	EUR	ISOCurrencyCode.json		ISO 4217 (3-Char CCY)	ISIN
		Underlying Asset Type	Enum	M	Inflation Rate Index	[Basis Swap (Float - Float); Fixed - Floating etc.]		CFI:2015 Char#3 (HR****)	ISIN
		Option Type	Enum	M	CALL	[CALL; PUTO; OPTL]		ISO 20022	ISIN
		Option Exercise Style	Enum	M	EURO	[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]		ISO 20022	ISIN
Identifier Section		UPI	String	D	QZFGL6762T52	See UPI Document (UPI Code structure and Annex C)		ISO 4914	NEW
		Status	String	D	New				ISIN
		Status Reason	String	D	<null>	Not applicable to a New record			ISIN
		Last Update Date Time	DdTm	D	2021-02-23T00:00:13	YYYY-MM-DDThh:mm:ss			ISIN
Derived Section		Classification Type	String	D	HRGAVP	See CRF (Derivations)		ISO 10962:2015	ISIN
		Short Name	String	D	NA/O Nstd Infl Idx EUR	See CRF (Derivations)		ISO 18774: 2015	NEW
		Underlier Characteristic	String	D	Single	See CRF (Derivations)	Derived from underlying structure selection	internal	NEW
		CFI Option Style and Type	String	D	European-Call	See CRF (Derivations)		CFI:2015 Char#4 (HR****)	NEW
		CFI Delivery Type	String	D	Physical	See CRF (Derivations)		CFI:2015 Char#6 (HR****)	NEW

Product Definition

Attributes

See Template Layout (above).

a. **Underlier Structure**

The above Request template described in this document supports products that can be defined with either a single underlier or a custom basket of (multiple) underliers. For this product the user is asked to select one of the following:

- Single Underlier
- Basket

The selection of "Single Underlier" allows the user to enter the identifier for that individual underlier whereas the selection of "Basket" is considered a sufficient level of granularity (see ISO 4914 (UPI)) and so the user is not required to input a set of identifiers.

Please note that basis-style products are not considered to be custom baskets and so the Request template allows the user to specify the individual underliers for each leg for this product.

Validation

1. **Underlier ID and Underlier Characteristic [oneOf structure]**

- User can only select either Underlier ID (Single value) or Underlier Characteristic (Multiple value) and is a required field.
- If underlier ID is selected, the associated attributes must be present in the REQUEST message and only one value can be selected in the enumeration.
  **Associated attributes: Underlier ID Source; Reference Rate Term Value; Reference Rate Term Unit
- If Underlier Characteristic is selected, underlier ID and its associated attributes will not be present in Request and Record template.
- Only "Basket" is allowed value in the REQUEST message if Underlier characteristic is selected.

Attribute Data Dictionary

This section provides the exact reference or source of the attribute.

Full Name	Source	Type
Notional Currency	ISO 4217 Currency Codes	Pattern: [A-Z]{3,3}
Delivery Type	ISO 20022 FinancialInstrumentReportingReferenceDataReportV01	Enums *[CASH; PHYS; OPTL]*
CFI Delivery Type	ISO 10962 Classification of financial instruments (CFI code)	Enums *[Cash; Physical; Elect at Exercise]*
Option Type	ISO 20022 FinancialInstrumentReportingReferenceDataReportV01	Enums *[CALL; PUTO; OPTL]*
Option Exercise Style	ISO 20022 FinancialInstrumentReportingReferenceDataReportV01	Enums *[AMER; BERM; EURO]*
Valuation Method or Trigger	ISO 10962 Classification of financial instruments (CFI code)	Enums [*Vanilla; Asian; Digital (Binary); Barrier; Digital Barrier; Lookback; Other Path Dependent; Other]*
Underlying Asset Type	ISO 20022 FinancialInstrumentReportingReferenceDataReportV01	Enums *[Basis Swap (Float - Float); Fixed – Floating; Fixed – Fixed; Inflation Rate Index; Overnight Index Swap (OIS); Options; Forwards; Futures; Other]*
Reference Rate	FpML Coding Schemes	Max25Text (based on string) minLength: 1 maxLength: 25
Reference Rate Term Value	Integer – Positive or negative but not 0	Max3Number (based on decimal) fractionDigits: 0 totalDigits: 3
Reference Rate Term Unit	ISO 20022 FinancialInstrumentReportingReferenceDataReportV01	Max35Text (based on string) minLength: 1 maxLength: 35

Normalization

1. **Underlying Instrument Index Term Value and Underlying Instrument Index Term Unit**

- If Underlying Instrument Index Term Unit = “DAYS” and Underlying Instrument Index Term Value is divisible by 7, record it in weeks

Underlying Instrument Index Term Value	7	→	Underlying Instrument Index Term Value	1
Underlying Instrument Index Term Unit	DAYS		Underlying Instrument Index Term Unit	WEEK

- If Underlying Instrument Index Term Unit = “MNTH” and Underlying Instrument Index Term Value is divisible by 12, record it in years

Underlying Instrument Index Term Value	12	→	Underlying Instrument Index Term Value	1
Underlying Instrument Index Term Unit	MNTH		Underlying Instrument Index Term Unit	YEAR

Derivation

This section provides additional details to the derivation logic specified in the Template Layout sections (above).

Classification Type

Concatenation of the following attributes/values:

- Instrument Type: “H”
- Asset Class: “R”
- Underlying Asset Type: from Request.UnderlyingAssetType
  - *Basis Swap (Float - Float)* → *A*
  - *Fixed – Floating* → *C*
  - *Fixed – Fixed* → *D*

		- *Inflation Rate Index →* *G* - *Overnight Index Swap (OIS) →* *H* - *Options →* *O* - *Forwards →* *R* - *Futures →* *F* - *Other →* *M* • Option Type/Style: from Request.OptionType and Request. OptionExercise Style… - *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.: "HRGAVP"
	Short Name	Concatenation of the following attributes/values: • Issuer Name: "NA/" • Instrument Type: "O" (fixed value) • Product: "Nstd" (fixed value) • Underlying Asset type: from Request.UnderlyingAssetType - *Basis Swap (Float - Float) →* *Flt Flt* - *Fixed – Floating →* *Fxd Flt* - *Fixed – Fixed →* *Fxd Fxd* - *Inflation Rate Index →* *Infl Idx* - *Overnight Index Swap (OIS) →* *OIS* - *Options →* *O* - *Forwards →* *Forwards* - *Futures →* *Futures* - *Other →* *Oth* • Notional Currency: e.g., EUR - from request.NotionalCurrency E.g.: "NA/O Nstd Infl Idx EUR" *Note: The Short Name is based on the OTC ISIN that excludes the following fields:* - *Expiry Date*
	Underlier Characteristic	Based on the attribute selected, the following derivations will apply: 1. If in the oneOf Reference Rate is selected; • then set the Underlier Characteristic to "Single". 2. If in the oneOf a Basket is selected; • then set the Underlier Characteristic to "Basket".
	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*)**
Underlying Structure	Underlying Structure	Indicates whether the product is based on a single underlier or a basket of underliers.
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.
Underlier Characteristic	Underlier Characteristic	An attribute that is used to specify whether the product is based on a single or multiple underliers.
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	• Text values in the Short Name are taken from "ISO Abbrev w acronyms-Final_v0.5.5.FINAL." • 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].

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	Reference Rate
Underlier ID source	C	Underlier ID source	Not Required
Underlier Type	M	Not Required	Underlying Asset Type

	Underlying Rate Index Tenor Period	C	Reference Rate Term Unit	Reference Rate Term Unit
	Underlying Rate Index Tenor Period Multiplier	C	Reference Rate Term Value	Reference Rate Term Value
	Underlying contract tenor period *	C	Not Required	
	Underlying contract tenor period multiplier *	C	Not Required	

*Underlying Contract Tenor Period / Multiplier applies only to a derivative contract underlying another derivative. For this product, the underlying is Reference Rates and so these attributes are not required.