Derivatives Service Bureau (UPI)

CHANGE REQUEST FORM

Version	State	Author	Date	Description
1	Draft	M.A. Gariplan	30 April 2021	Initial Document
2	Draft	M.A. Gariplan	19 Jul 2021	Removed active hyperlinks in Data Dictionary; Amended References section with standard text; Removed Short Name comment in the Comment section

<table>
<tr><th>Title</th><th colspan="3">Foreign Exchange Option Digital Option Template Definition</th></tr>
<tr><td rowspan="5">Background</td><td rowspan="5">The following CRF presents a specification for the generation and retrieval of a Unique Product Identifier for the following product:
Foreign_Exchange : Option : Digital_Option</td><td>DSB-ID</td><td>UPI-0249</td></tr>
<tr><td>Type</td><td>New Template</td></tr>
<tr><td>Owner</td><td>M.A. Gariplan</td></tr>
<tr><td>Version</td><td>2</td></tr>
<tr><td>State</td><td>Draft</td></tr>
<tr><td colspan="4">Terms of Reference</td></tr>
<tr><td>Scope</td><td colspan="3">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.</td></tr>
<tr><td>Requirements</td><td colspan="3">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.</td></tr>
<tr><td>Dependencies</td><td colspan="3">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.</td></tr>
<tr><td>Assumptions</td><td colspan="3">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 Settlement Currency as a mandatory attribute for all FX OTC Derivatives is subject for review and approval by CDIDE as part of ISO 4914 standard.</td></tr>
</table>

Request Template Layout

Section	Attribute	Format	Cat	Example Value	Validation / Derivation	Enum Source	Origin
Header Section	Asset Class	Set	M	Foreign_Exchange		CFI:2015 Char#2 (HF****)	ISIN
	Instrument Type	Set	M	Option		CFI:2015 Char#1 (HF****)	ISIN
	Product	Set	M	Digital_Option			ISIN
	Level	Set	M	UPI			NEW
Attribute Section	Underlier ID	Enum	M	USD	ISOCurrencyCode.json	ISO 4217 (3-Char CCY)	NEW
	Underlier ID Source	String	M	CCY	[CCY]	Internal	NEW
	Other Underlier ID	Enum	M	CAD	ISOCurrencyCode.json	ISO 4217 (3-Char CCY)	NEW
	Other Underlier ID Source	String	M	CCY	[CCY]	Internal	NEW
	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	Digital (Binary)	[Digital (Binary), Digital Barrier]	CFI:2015 Char#5 (HF****)	ISIN
	Settlement Currency	Enum	M	USD	ISOCurrencyCode.json	ISO 4217 (3-Char CCY)	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	Foreign_Exchange		CFI:2015 Char#2 (HF****)	ISIN
	Instrument Type	Set	M	Option		CFI:2015 Char#1 (HF****)	ISIN
	Product	Set	M	Digital_Option			ISIN
	Level	Set	M	UPI			NEW
	Template Version	Integer	D	1			ISIN
Attribute Section	Notional Currency	Enum	M	CAD	See CRF (Normalization)	ISO 4217 (3-Char CCY)	ISIN
	Other Notional Currency	Enum	M	USD	See CRF (Normalization)	ISO 4217 (3-Char CCY)	ISIN
	Option Type	Enum	M	PUTO	See CRF (Normalization)	ISO 20022	ISIN
	Option Exercise Style	Enum	M	EURO	[AMER, BERM, EURO]	ISO 20022	ISIN
	Valuation Method or Trigger	Enum	M	Digital (Binary)	[Digital (Binary), Digital Barrier]	CFI:2015 Char#5 (HF****)	ISIN
	Settlement Currency	Enum	M	USD	ISOCurrencyCode.json	ISO 4217 (3-Char CCY)	ISIN
	Delivery Type	Enum	M	PHYS	[CASH, PHYS, OPTL]	ISO 20022	ISIN
Identifier Section	UPI	String	D	QZG45WGV93LM	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	2021-04-30T06:01:35	YYYY-MM-DDThh:mm:ss		ISIN
Derived Section	Classification Type	String	D	HFTDDP	See CRF (Derivations)	ISO 10962:2015	ISIN
	Short Name	String	D	NA/O Dig Put CAD USD	See CRF (Derivations)	ISO 18774	NEW
	Underlying Asset Type	String	D	Spot	Fixed value	CFI:2015 Char#3 (HFT***)	ISIN
	CFI Option Style and Type	String	D	European-Put	See CRF (Derivations)	CFI:2015 Char#4 (HF****)	NEW
	CFI Delivery Type	String	D	Physical	See CRF (Derivations)	CFI:2015 Char#6 (HF****)	NEW

<table>
<tr><th colspan="2">Product Definition</th></tr>
<tr><td>Attributes</td><td>See Template Layout (above).</td></tr>
<tr><td>Validation</td><td>1. Notional Currency and Other Notional Currency
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.”</td></tr>
<tr><td>Normalization</td><td>1. Notional Currency and Other Notional Currency
For an FX Option, the option type is always associated with the Notional Currency. To ensure that only one UPI is generated for a Put or Call Option on a currency pair, below normalization shall apply:

a. Order “Notional Currency” and “Other Notional Currency” alphabetically.
b. If “Notional Currency” is first alphabetically, then record the currency pair and option type value as is in the record.
<table>
<tr><td>Notional Currency</td><td>EUR</td><td rowspan="4">→</td><td>Notional Currency</td><td>EUR</td></tr>
<tr><td>Other Notional Currency</td><td>USD</td><td>Other Notional Currency</td><td>USD</td></tr>
<tr><td>Option Type</td><td>CALL</td><td>Option Type</td><td>CALL</td></tr>
<tr><td>Option Exercise Style</td><td>EURO</td><td>Option Exercise Style</td><td>EURO</td></tr>
</table>
c. If “Notional Currency” is not first alphabetically, then record it as “Other Notional Currency” and change the option type value. If option type value is “PUTO” change it to “CALL” and vice versa.
<table>
<tr><td>Notional Currency</td><td>USD</td><td rowspan="4">→</td><td>Notional Currency</td><td>EUR</td></tr>
<tr><td>Other Notional Currency</td><td>EUR</td><td>Other Notional Currency</td><td>USD</td></tr>
<tr><td>Option Type</td><td>CALL</td><td>Option Type</td><td>PUTO</td></tr>
<tr><td>Option Exercise Style</td><td>EURO</td><td>Option Exercise Style</td><td>EURO</td></tr>
</table>
d. If option type value is “Chooser”, alphabetical normalization approach in the currency pair shall apply and keep option value type as “Chooser”.</td></tr>
</table>

Attribute Data Dictionary

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

Full Name	Source	Type
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 *[Digital (Binary); Digital Barrier]*
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]*
Notional Currency	ISO 4217 Currency Codes	Pattern: [A-Z]{3,3}
Other Notional Currency		
Settlement Currency		

*The Delivery Type for Foreign Exchange Option is based on the current DSB OTC ISIN and only supports CASH (Cash), PHYS (Physical) and OPTL (Elect at Exercise). Therefore, Non-Deliverable value is not supported even if it is included in the ISO 10962 (CFI 2015).

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: "F"
- Underlying Asset Type: "T"
- Option Type/Style: from Request.OptionExerciseStyle and OptionType (output value)…
  - 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…
  - Digital (Binary) → D
  - Digital Barrier → G
- Delivery Type: from Record.DeliveryType…
  - *CASH →* *C*
  - *PHYS →* *P*
  - *OPTL →* *E*

E.g.: "HFTDDP"

Short Name

Concatenation of the following attributes/values:

- Issuer: "NA/"
- Instrument Type: "O" (fixed value)
- Valuation Method or Trigger: from Request.ValuationMethodorTrigger…
  - Digital (Binary) → Dig
  - Digital Barrier → DigBar
- Option Type: from OptionType (output value)…
  - CALL → Call
  - PUTO → Put
  - OPTL → O

<table>
<tr><td rowspan="3"></td><td></td><td>
Notional Currency: e.g.: CAD – from ISO 4217 output value
Other Notional Currency: e.g.: USD – from ISO 4217 output value
E.g.: “NA/O Dig Put CAD USD”
Note: The Short Name is based on the OTC ISIN that excludes the following field:
- Expiry Date</td></tr>
<tr><td>CFI Option Style and Type</td><td>Derived from the Request.OptionExerciseStyle and OptionType (output value) …
PUTO/EURO → “European-Put”
CALL/EURO → “European-Call”
OPTL/EURO → “European-Chooser”
PUTO/AMER → “American-Put”
CALL/AMER → “American-Call”
OPTL/AMER → “American-Chooser”
PUTO/BERM → “Bermudan-Put”
CALL/BERM → “Bermudan-Call”
OPTL/BERM → “Bermudan-Chooser”</td></tr>
<tr><td>CFI Delivery Type</td><td>Derived from the input Delivery Type…
CASH → “Cash”
PHYS → “Physical”
OPTL → “Elect at Exercise”</td></tr>
<tr><td>GUI Details</td><td colspan="2">The following section provides display information for any attributes (and values) that are not included in the related OTC ISIN definition.
<table>
<tr><th>Attribute</th><th>Display Name</th><th>Tool Tip (and • value elaboration)</th></tr>
<tr><td>Underlier ID</td><td>Underlier ID</td><td>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</td></tr>
<tr><td>Underlier ID Source</td><td>Underlier ID Source</td><td>The origin, or publisher, of the associated underlier ID.</td></tr>
<tr><td>Other Underlier ID</td><td>Other Underlier ID</td><td>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</td></tr>
<tr><td>Other Underlier ID Source</td><td>Other Underlier ID Source</td><td>The origin, or publisher, of the associated underlier ID.</td></tr>
<tr><td>UPI</td><td>Identification</td><td>Unique Product Identifier (ISO 4914).</td></tr>
<tr><td>CFI Delivery Type</td><td>CFI Delivery Type</td><td>The Delivery Type as defined by CFI code: ISO 10962
• As defined by CFI Code: ISO 10962</td></tr>
<tr><td>CFI Option Style and Type</td><td>CFI Option Style and Type</td><td>The Option Style and Type as defined by CFI code: ISO 10962
• As defined by CFI Code: ISO 10962</td></tr>
</table></td></tr>
<tr><td colspan="3">Additional Information</td></tr>
<tr><td>Reference</td><td colspan="2">References to external documents can be found on the DSB website at this address [https://www.anna-dsb.com/upi-external-reference-documents/].</td></tr>
<tr><td>Comments</td><td colspan="2">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.
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].</td></tr>
<tr><td>ISO 4914 Equivalence</td><td colspan="2">
<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>Asset Class</td><td>Asset Class</td></tr>
<tr><td>Instrument type</td><td>M</td><td>Instrument Type</td><td>Instrument Type</td></tr>
</table></td></tr>
</table>

	Delivery type	M	Delivery Type	Delivery Type
				CFI Delivery Type
	Option Style	M	Option Exercise Style	Option Exercise Style
	Option Type	C	Option Type	Option Type
	Return, pricing method or payout trigger	M	Valuation Method or Trigger	Valuation Method or Trigger
	Settlement Currency	M	Settlement Currency	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
	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 a currency pair, so these attributes are not required.