Derivatives Service Bureau (UPI)

CHANGE REQUEST FORM

Version	State	Author	Date	Description
1	Draft	J. Lim	05 Apr 2021	Initial Document
2	Draft	J. Lim	29 Apr 2021	Updated TOR and comments
3	Draft	J. Lim	30 Jun 2021	Updated validation message
4	Draft	J. Lim	21 Jul 2021	Updated template layout, attribute section, attribute data dictionary, GUI details and reference
5	Draft	J. Lim	07 Oct 2021	Updated error message for ISIN validation

Title	EQUITY OPTION Single Index Template Definition		
Background	The following CRF presents a specification for the generation and retrieval of a Unique Product Identifier for the following product: • **Equity : Option : Single_Index**	**DSB-ID**	**UPI-0129**
		Type	New Template
		Owner	J.Lim
		Version	5
		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.

Request Template Layout

Section	Attribute	Format	Cat	Example Value	Validation / Derivation	Enum Source	ORIGIN
Header Section	Asset Class	Set	M	Equity		CFI:2015 Char#2	ISIN
	Instrument Type	Set	M	Option		CFI 2015 Char#1	ISIN
	Product	Set	M	Single Index			ISIN
	Level	Set	M	UPI			NEW
Attribute Section	**Underlier Type (oneOf)**	String	M	Single Stock	[Single Stock]		NEW
	Underlier ID Source	String	M	ISIN	[ISIN]	internal	NEW
	Underlier ID	Enum	M	JP3896800004	See CRF (Validation)		NEW
	Underlier Type (oneOf)	String	M	Equity Index	[Equity Index]		NEW
	Underlier ID Source	String	M	ESMA	[ESMA]	internal	NEW
	Underlier ID	Enum	M	35X3I	EsmaEquityIndex.json	ESMA TTC	NEW
	Underlier Type (oneOf)	String	M	Proprietary Index	[Proprietary Index]		NEW
	Underlier ID Source	String	M	PROP	[PROP]	internal	NEW
	Underlier ID	Enum	M	34810-JPOSTEDN	See CRF (Validation)		NEW
	Option Type	Enum	M	PUTO	[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#4 (HE****)	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	Equity		CFI:2015 Char#2	ISIN
	Instrument Type	Set	M	Option		CFI 2015 Char#1	ISIN
	Product	Set	M	Single Index			ISIN
	Level	Set	M	UPI			NEW
	Template Version	Integer	D	1			ISIN
Attribute Section	Underlying Instrument ISIN	String	C	JP3896800004	See CRF (Validations)		ISIN
	Underlying Instrument Index	String	C	35X3I	See CRF (Normalization and Validations)	ESMA TTC	ISIN
	Underlying Instrument Index Prop	String	C	34810-JPOSTEDN	See CRF (Validations)	DSB Proprietary Index Enumeration	ISIN
	Option Type	Enum	M	PUTO	[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 (HE****)	ISIN
	Delivery Type	Enum	M	CASH	[CASH; PHYS; OPTL]	ISO 20022	ISIN
Identifier Section	UPI	String	D	QZGP9LJR3882	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	HEIDVC	See CRF (Derivations)	ISO 10962:2015	ISIN
	Short Name	String	D	NA/O Idx Put Epn	See CRF (Derivations)	ISO 18774: 2015	NEW
	Underlying Asset Type	String	D	Index	Fixed value	CFI:2015 Char#3 (HEI***)	ISIN
	CFI Option Style and Type	String	D	European-Put	See CRF (Derivations)	CFI:2015 Char#4 (HE****)	NEW
	CFI Delivery Type	String	D	Cash	See CRF (Derivations)	CFI:2015 Char#6 (HE****)	NEW

Product Definition	
Attributes	See Template Layout (above). **a) Underlier Type** The Request template described in this document supports products that can be defined on the basis of more than one type of underlier. For this product, the user is asked to select one of the following: • Single Stock • Equity Index • Proprietary Index Once the Underlier Type is chosen, the user will be asked to select one of the Underlier ID Sources associated with that Underlier Type and enter the Underlier ID that matches the ID Source. ** Please see Underlier Input Method Document (see Reference Section below) for further details.*
Validation	**1. Underlier ID** The following validation will be applied to Underlier ID based on the value selected on Underlier ID Source [ISIN, ESMA, PROP]. a. ISIN

- The input text by user must be in 12 characters (2 alpha, 9 alphanumeric, 1 numeric).
- The input text must not have a prefix of “QZ” or “EZ”.
- A syntactic validation is being performed to confirm an ISIN when hitting create.
- If the input ISIN is less or more than 12 characters and/or is not aligned with the above pattern before hitting create, an error message will apply “Value must match the pattern ^(?!(EZ|QZ))[A-Z]{2}[A-Z0-9]{9}[0-9]$.”
- If the input ISIN is not aligned with the above pattern after hitting create, an error message will apply “Error: /Attributes/Underlying: instance failed to match exactly one schema (matched 0 out of 3)”.
- If the input ISIN is aligned with the pattern criteria but ISIN value does not conform with syntactic validation, an error message will apply "Error: ISIN/s must be valid".

b. ESMA
- Enumeration list is based on JSON codeset (EsmaEquityIndex.json).

c. PROP
- The input text by user must exist in the DSB Proprietary Index Enumeration.
- The Proprietary index is made on a per asset class and only relevant to the particular asset class based on DSB data. The only exception is asset class “Other” which is applicable to all asset classes.
- If the input Prop Index does not exist in the DSB Proprietary Index Enumeration, value will be rejected with an error message “Error: Given Index/ices must be an existing and valid Equity or Multi-Asset Index”.

Attribute Data Dictionary

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

Full Name	Source	Type
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 Exercise Style	ISO 20022 FinancialInstrumentReportingReferenceDataReportV01	Enums *[AMER; BERM; EURO]*
Option Type	ISO 20022 FinancialInstrumentReportingReferenceDataReportV01	Enums *[CALL; PUTO; OPTL]*
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 Instrument ISIN	Not Available	Max of 12 text (pattern) [A-Z] – firsts 2 characters [A-Z], [0-9] – Next 9 characters [0-9] – Last value is based on ISIN calculation
Underlying Instrument Index	ESMA TTC	Max of 350Text (based on string) minLength: 1 maxLength: 350
Underlying Instrument Index Prop	DSB Proprietary Index Enumerations	(Based on string)

Normalization

1. Underlying Instrument Index
   - For any given Equity Index submission, a validation will apply against the existence of an ISIN and return the Index ISIN as part of the record in place of the Index Name.

Request Template		Record Template
Underlying Instrument Index	→	Underlying Instrument ISIN
KOSPI 200		KRD020020016

		• If Index name has no associated Index ISIN, the index name input by the user will return in the record. <table><tr><th>Request Template</th><th></th><th>Record Template</th></tr><tr><td>Underlying Instrument Index</td><td>→</td><td>Underlying Instrument Index</td></tr><tr><td>MSCI EM USD</td><td></td><td>MSCI EM USD</td></tr></table>List of Indices and associated ISINs can be found here.
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: "E" • Underlying Asset Type: "I" • 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.: "HEIDVC"
	Short Name	Concatenation of the following attributes/values: • Issuer Name: "NA/" • Instrument Type: "O" (fixed value) • Underlying Asset Type: "Idx" (fixed value) • Option Type: from request.OptionType - PUTO "Put" - CALL "Call" - OPTL "Opt" • Option Exercise Style: from request.OptionExerciseStyle - AMER "Amr" - BERM "Brm" - EURO "Epn" E.g.: "NA/O Idx Put Epn" *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 Type	Underlier Type	Indicates the type of underlying asset or entity on which the product is based.
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

- Text values in the Short Name are taken from "ISO Abbrev w acronyms-Final_v0.5.5.FINAL."
- Currently the system does not hold reference data to support the validation of the LEI or ISIN. This means that it is not possible to validate the existence or classification of the Underlier ID. In addition, this means that human-readable alias is not currently supported for inclusion in the Short Name attribute.
- Option Type enumerated values in the DSB OTC ISIN are [CALL; PUTO; OPTL] whereas in ISO 20022, values are [CALL; PUTO; OTHR].
- Codeset name change from FpmlEquityindex.json to EsmaEquityIndex.json.

ISO 4914 Equivalence

ISO 4914		**Request Attribute**	**Record Attribute**
Asset Class	M	Asset Class	Asset Class
Instrument Type	M	Instrument Type	Instrument Type
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 ISIN
	C		Underlying Instrument Index
	C		Underlying Instrument Index Prop

	Underlier ID source	C	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 single stock/index and so these attributes are not required.