Derivatives Service Bureau

Commodities : Option : Single_Index

UPI Product Definition

Version 3

Date	Status	Version	Revision Details
30 Aug 2022	Draft	1	Initial Version
02 Feb 2023	Draft	2	• Update example values in the Request and Record templates layout • Insert Underlier Name attribute and Derivation rules
07 Sep 2023	Draft	3	• Remove "Classified as Confidential" in the Footer section. • Update Associated Documentation to include Best Practice Guidelines and FAQs. • Update Best Practice Guidelines to include the link to Best Practice Guidelines and FAQs.

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1 INTRODUCTION

This document is designed to act as a manual for users to interpret the Product Definitions in the DSB UPI Service.

This document provides the user with the detailed description of the UPI Product Definition content such as attribute enumerations, validation, normalization, and derivation where applicable.

1.1 Associated Documentation

Each UPI Product Definition template links to reference documents where values will be maintained for the sake of consistency and ease of access e.g., Enumerations, Data Dictionary, Validation and Normalizations, etc.

These documents are made available for references as follows:

- UPI Enumerations Document can be found in the Enumerations section on the DSB website.
- UPI Product Definition Data Dictionary can be found in the Other Documents section on the DSB website.
- UPI Product Definition Validations and Normalizations Document can be found in the Other Documents section on the DSB website.
- UPI Underlier Input Method can be found in the Other Documents section on the DSB website.
- Best Practice Guidelines and FAQs can be found in the Other Documents section on the DSB website.
- Links to the relevant JSON templates can be found in the GitHub Environment Section on the DSB website.

2 Product Taxonomy

2.1 CFI Taxonomy

Source: ISO 10962 (CFI) – Third edition 2015-07-15

Attr #	Title	Values	Name	Description
	Instrument (Category)	**H**	Non-listed and complex listed options	
	Asset Class (Group)	**T**	Commodities	
Attr #1	**Underlying Assets**	**I**	Index	An option where the underlying reference entity is a commodity index
Attr #2	**Option style and type**	**A**	European-Call	An option on a contract which allows its holder (buyer) to exercise the right to buy specified assets (interest rates product) at a fixed price only on the expiration date of the call
		B	American-Call	An option on a contract which allows its holder (buyer) to exercise the right to buy specified assets (interest rates product) at a fixed price at any time during the term of the call option, up to and including the expiration date of the call
		C	Bermudan-Call	An option on a contract which allows its holder (buyer) to exercise the right to buy specified assets (interest rates product) at a fixed price on a number of specific dates within the exercise period of the call
		D	European-Put	An option on a contract which allows its holder (buyer) to exercise the right to sell specified assets (interest rates product) at a fixed price only on the expiration date of the put
		E	American-Put	An option on a contract which allows its holder (buyer) to exercise the right to sell specified assets (interest rates product) at a fixed price at any time during the term of the put option, up to and including the expiration date of the put
		F	Bermudan-Put	An option on a contract which allows its holder (buyer) to exercise the right to sell specified assets (interest rates product) at a fixed price on a number of specific dates within the exercise period of the put
		G	European-Chooser	An option on a contract which allows its holder (buyer) to exercise the right to buy (call) or sell (put) specified assets (interest rates product) at a fixed price, only on the contract's expiration date; the buyer does not have to decide whether the contract will be a put or a call until an agreed future date, prior to expiration
		H	American-Chooser	An option on a contract which allows its holder (buyer) to exercise the right to buy (call) or sell (put) specified assets (interest rates product) at a fixed price at any time during the term of the contract, up to and including the expiration date of the call or put; the buyer does not have to decide whether the contract will be a put or a call until an agreed future date, prior to expiration
		I	Bermudan-Chooser	An option on a contract which allows its holder (buyer) to exercise the right to buy (call) or sell (put) specified assets (interest rates product) at a fixed price on a number of specific dates within the exercise period of the contract; the buyer does not have to decide whether the contract will be a put or a call until an agreed future date, prior to expiration

Attr #3	**Valuation Method or Trigger**	**V**	Vanilla	An option for which all terms are standardized
		A	Asian	An option where either the strike price or the settlement price is the average level of an underlying instrument over a redetermined period; the averaging can be either a geometric or arithmetic average
		D	Digital (Binary)	An option that has a pre-determined pay-out if the option is in-the-money and the payoff condition is satisfied; also referred to as a “binary option” or an “all-or-nothing option”
		B	Barrier	An option whose final exercise depends upon the path taken by the price of an underlying instrument; for a “knock-out” barrier option, the option is cancelled if the underlying price crosses a predetermined barrier level; for a “knock-in” barrier option, the option becomes available-for-exercise if the underlying price crosses a predetermined barrier level
		G	Digital Barrier	A digital option embedded with a barrier option; there are different variations of this type of option; as an example, a down-and-out digital call option will pay a fixed payoff, or the underlying, at any time before maturity that the underlying price is equal to or greater than the barrier level; it will pay zero if the underlying price is less than the barrier level
		L	Lookback	An option that minimizes the uncertainties related to the timing of market entry; there are two types of lookback options: fixed and floating; the fixed option strike is determined at purchase, and the floating option strike is determined at maturity
		P	Other Path Dependent	An option on a contract whose payoff is directly related to the price pattern the underlying asset follows during the life of the contract
		M	Others	Others (miscellaneous)
Attr #4	**Delivery Type**	**C**	Cash	The discharge of an obligation by payment or receipt of a net cash amount instead of payment or delivery by both parties
		P	Physical	The meeting of a settlement obligation under a derivative contract through the receipt or delivery of the actual underlying instrument(s) instead of through cash settlement
		E	Elect at Exercise	The method of delivery of the underlying instrument when the option is exercised shall be determined at the time of exercise

2.2 ISDA Taxonomy

The table below is based on the products identified as part of the ISDA Commodities Taxonomy v2.0.

Node 1 Asset Class	Node 2 Transaction Type	Node 3 Settlement Type*	Node 4 and/or Node 7 Commodity
Commodity	Option	Cash	Agricultural Products
		Physical	Composite Commodity Indices
			Energy
			Freight
			Metals
			Paper
			Plastic
			Composite Commodity Indices
			Other

**There is no exact match in the ISDA Taxonomy 2.0 for this product template. The current taxonomy 2.0 only provides for Settlement values [Cash, Physical] and Commodity values [Agricultural Products, Composite Commodity Indices, Energy, Freight, Metals, Paper, Plastic, Composite Commodity Indices, Other]. This product template is a catch all for products that fall outside of these specified Settlement Type [Node 3] and Commodity [Node 4 and/or Node 7].*

3 REQUEST TEMPLATE

This section describes the input message received by the UPI service.

Template name	Template details	Release
Request.Commodities.Option.Single_Index.UPI.json	Initial version	Initial

Section	Attribute		Format	Cat	Example Value	Validation
Header Section	Asset Class		Set	M	Commodities	
	Instrument Type		Set	M	Option	
	Product		Set	M	Single_Index	
	Level		Set	M	UPI	
Attribute Section	Underlier Type (oneOf)		Object	M	Commodity Index	
		Underlier ID Source	String	(M)	COIDX	[COIDX]
		Underlier ID	Enum	(M)	OTHER	Enumerated List
	Underlier Type (oneOf)		Object	M	Proprietary Index	
		Underlier ID Source	String	(M)	PROP	[PROP]
		Underlier ID	String	(M)	11339-BABXSG01	See Validation Rules
	Base Product		Enum	M	NRGY	[AGRI, NRGY, ENVR, etc.]
	Option Type		Enum	M	PUTO	[CALL, PUTO, OPTL]
	Option Exercise Style		Enum	M	EURO	[AMER, BERM, EURO]
	Valuation Method or Trigger		Enum	M	Asian	[Vanilla, Asia, Digital (Binary], etc.]
	Delivery Type		Enum	M	PHYS	[CASH, PHYS, OPTL]

3.1 Underlier Input Method

This product supports the entry of Commodity Index or Proprietary Index as an underlier type.

Title	Description
Select Underlier ID Source	User is able to select a single required Underlier ID Source from the available options based on the selected Underlier Type. • Commodity Index [COIDX] • Proprietary Index [PROP]
Input Underlier ID	User enters a valid Underlier ID based on the selected Underlier ID Source.

3.2 Validation Rules

For non-specific product validation rules, please refer to UPI Product Definition Validations and Normalizations Document can be found in the Other Documents section on the DSB website.

4 RECORD TEMPLATE

This section describes the record returned by the UPI service.

Version	Template name	Template details	Release
V.1	**Commodities.Option.Single_Index.UPI.V1.json**	Initial version	Initial

Section	Attribute	Format	Cat	Example Value	Derivation
Header Section	Asset Class	Set	M	Commodities	
	Instrument Type	Set	M	Option	
	Product	Set	M	Single_Index	
	Level	Set	M	UPI	
	Template Version	Integer	D	1	
Attribute Section	Underlying Instrument Index	Enum	C	OTHER	Enumerated List
	Underlying Instrument Index Prop	String	C	11339-BABXSG01	See Validation Rules
	Base Product	Enum	M	NRGY	[AGRI, NRGY, ENVR, etc.]
	Option Type	Enum	M	PUTO	[CALL, PUTO, OPTL]
	Option Exercise Style	Enum	M	EURO	[AMER, BERM, EURO]
	Valuation Method or Trigger	Enum	M	Asian	[Vanilla, Asia, Digital (Binary], etc.]
	Delivery Type	Enum	M	PHYS	[CASH, PHYS, OPTL]
Identifier Section	UPI	String	D	QZFCJ6DM3GV5	
	Status	String	D	New	[New; Updated; Deleted; Deprecated]
	Status Reason	String	D	<null>	
	Last Update Date Time	DtTm	D	2021-05-17T08:57:53	YYYY-MM-DDThh:mm:ss
Derived Section	Classification Type	String	D	HTIDAP	See Derivation Rules
	Short Name	String	D	NA/O NRGY Put	See Derivation Rules
	Underlier Name	String	D	11339-BABXSG01	See Derivation Rules
	Underlying Asset type	String	D	Index	Fixed value
	CFI Option Style and Type	String	D	European-Put	See Derivation Rules
	CFI Delivery Type	String	D	[Cash, Physical, Elect at Exercise]	See Derivation Rules

4.1 Normalization Rules

For non-specific product normalization rules, please refer to UPI Product Definition Validations and Normalizations Document can be found in the Other Documents section on the DSB website.

4.2 Derivation Rules

This section describes the derivations of product attributes highlighted in the Record Template.

4.2.1 Classification Type

Attribute	Classification Type		
Structure	Instrument Type + Asset Class + Underlying Asset Type + Option Type/Style + Valuation Method or Trigger + Delivery Type		
Example	HTIDAP		
Source	ISO 10962 (CFI) – Third edition 2015-07-15		
Source Attribute	**Source Value**	**Derivation Method**	**Result**
Instrument Type	Option	Fixed Mapping	H
Asset Class	Commodities	Fixed Mapping	T
Underlying Asset Type	Index	Fixed Mapping	I
Option Type/Style	PUTO/AMER	Mapped to =>	E
	PUTO/BERM	Mapped to =>	F
	PUTO/EURO	Mapped to =>	D
	CALL/AMER	Mapped to =>	B
	CALL/BERM	Mapped to =>	C
	CALL/EURO	Mapped to =>	A
	OPTL/AMER	Mapped to =>	H
	OPTL/BERM	Mapped to =>	I
	OPTL/EURO	Mapped to =>	G
Valuation Method or Trigger	Vanilla	Mapped to =>	V
	Asian	Mapped to =>	A
	Digital (Binary)	Mapped to =>	D
	Barrier	Mapped to =>	B
	Digital Barrier	Mapped to =>	G
	Lookback	Mapped to =>	L
	Other Path Dependent	Mapped to =>	P
	Other	Mapped to =>	M
Delivery Type	CASH	Mapped to =>	C
	PHYS	Mapped to =>	P
	OPTL	Mapped to =>	E

4.2.2 Short Name

Attribute	Short Name		
Structure	"NA" + "/" + Instrument Type + Base Product + Option Type		
Example	NA/O NRGY Put		
Source	ISO 18774 (Financial Instrument Short Name) - First edition 2015-11		
Source Attribute	**Source Value**	**Derivation Method**	**Result**
Issuer Name	None	Fixed Value	NA/
Instrument Type	Option	Fixed Abbreviation	O
Base Product	AGRI	Mapped to =>	AGRI
	NRGY	Mapped to =>	NRGY
	ENVR	Mapped to =>	ENVR
	FRGT	Mapped to =>	FRGT
	FRTL	Mapped to =>	FRTL
	INDP	Mapped to =>	INDP
	INFL	Mapped to =>	INFL
	OEST	Mapped to =>	OEST
	METL	Mapped to =>	METL
	PAPR	Mapped to =>	PAPR
	POLY	Mapped to =>	POLY
	OTHC	Mapped to =>	OTHC
	OTHR	Mapped to =>	OTHR
Option Type	PUTO	Mapped to =>	Put
	CALL	Mapped to =>	Call
	OPTL	Mapped to =>	OPTL

4.2.3 Underlier Name

Attribute	Underlier Name		
Underlying Asset	**Underlier Name Source**	**Underlier Name Source Attribute**	**Underlier Name**
Underlying Index	UPI Record	Underlying Instrument Index	OTHER
Underlying Index Prop	UPI Record	Underlying Instrument Index Prop	11339-BABXSG01

4.2.4 CFI Option Style and Type

Attribute	CFI Option Style and Type		
Source Attribute	**Source Value**	**Derivation Method**	**Result**
Option Style and Type	PUTO/AMER	Mapped to =>	American-Put
	PUTO/BERM	Mapped to =>	Bermudan-Put
	PUTO/EURO	Mapped to =>	European-Put
	CALL/AMER	Mapped to =>	American-Call
	CALL/BERM	Mapped to =>	Bermudan-Call
	CALL/EURO	Mapped to =>	European-Call
	OPTL/AMER	Mapped to =>	American-Chooser
	OPTL/BERM	Mapped to =>	Bermudan-Chooser
	OPTL/EURO	Mapped to =>	European-Chooser

4.2.5 CFI Delivery Type

Attribute	CFI Delivery Type		
Source Attribute	**Source Value**	**Derivation Method**	**Result**
Delivery Type	CASH	Mapped to =>	Cash
	PHYS	Mapped to =>	Physical
	OPTL	Mapped to =>	Elect at Exercise

5 Supplementary Information

5.1 Best Practice Guidelines

Please refer to Best Practice Guidelines and FAQs that can be found in the Other Documents section on the DSB website.

5.2 Additional Comments

- The short name abbreviation for Option Type [CALL, PUTO, OPTL] within Commodity Asset Class are [Call, Put, OPTL] whereas Rates use [Call, P, Opt], Equities use [Call, Put, Opt] and Foreign_Exchange use [Call, Put, O]. For Credit Asset Class, Option Type is not part of the short name.

- There is no existing reference data that will support the validation of Underlying Instrument Index.

6 Appendix 1 – ISO 4914 Equivalence

This section describes the attributes as per the ISO 4914 Unique Product Identifier (UPI).

ISO 4914 Reference Data Elements		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 Index
			Underlying Instrument Index Prop
Underlier ID source	C	Underlier ID Source	Not Required
Underlier type	M	Base Product	Base Product
Underlier sub-type (first level)	M	Not Required	Underlying Asset Type
Underlier sub-type (second level)*	C	Not Required	Not Required

**Underlier sub-type (second level) does not apply for this product as the underlying is an Index, so this attribute is not required.*

7 APPENDIX 2 - OTC ISIN-UPI MAPPING

This section describes the mapping between the ISIN and UPI input attributes.

One Of	ISIN Input Attributes	Mapping Logic	UPI Input Attributes	Sample UPI Values	Comments
	Asset Class	Direct Map	Asset Class	Commodities	
	Instrument Type	Direct Map	Instrument Type	Option	
	Use Case	Direct Map	Product	Single_Index	
	Level	Set to "UPI"	Level	UPI	
	Notional Currency	No Mapping			
	Expiry Date	No Mapping			
	Base Product	Direct Map	Base Product	NRGY	
A	Underlying Instrument Index	Set to “Commodity Index”	Underlier Type	Commodity Index	“oneOf” Underlier Type
		Map to	Underlier ID	OTHER	
		Set to "COIDX"	Underlier ID Source	COIDX	
B	Underlying Instrument Index Prop	Set to “Proprietary Index”	Underlier Type	Proprietary Index	“oneOf” Underlier Type
		Map to	Underlier ID	11339-BABXSG01	
		Set to "PROP"	Underlier ID Source	PROP	
	Option Type	Direct Map	Option Type	PUTO	
	Option Exercise Style	Direct Map	Option Exercise Style	EURO	
	Valuation Method or Trigger	Direct Map	Valuation Method or Trigger	Asian	
	Delivery Type	Direct Map	Delivery Type	PHYS	
	Transaction Type	No Mapping	Not Used		
	Final Price Type	No Mapping	Not Used		
	Price Multiplier	No Mapping	Not Used		