Derivatives Service Bureau

Equity : Option : Basket

UPI Product Definition

Version 3

Date	Status	Version	Revision Details
18 Aug 2022	Draft	1	Initial Version
30 Jan 2023	Draft	2	Insert Underlier Name attribute and Derivation rules
05 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 Code) – Third edition 2015-07-15

Attr #	Title	Values	Name	Description
	Instrument (Category)	**H**	Non-listed and complex listed options	
	Asset Class (Group)	**E**	Equity	
Attr #1	**Underlying Assets**	**B**	Basket	An option on a contract that may be exercised based on the weighted average performance of several underlying equities instruments
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	Miscellaneous
Attr #4	**Delivery Type**	**C**	Cash	Cash
		P	Physical	Physical
		E	Elect at Exercise	Elect at exercise

2.2 ISDA Taxonomy

The table below is based on the products identified as part of the ISDA 2.0 taxonomy.

Asset Class	Base Product	Sub-Product*	Transaction Type	DSB Product Definition Name
Equity	Option		Basket	Basket

**There is no exact match in the ISDA Taxonomy 2.0 for this product template. The current taxonomy 2.0 only provides for Sub-Product values [Price Return Basic Performance, Parameter Return Dividend, Parameter Return Variance, Parameter Return Volatility]. This product template is a catch all for products that fall outside of these specified Sub-Product types.*

3 Request Template

This section describes the input message received by UPI service.

Template name	Template details	Release
Request.Equity.Option.Basket.UPI.json	Initial version	Initial

Section	Attribute	Format	Cat	Example Value	Validation
Header Section	Asset Class	Set	M	Equity	
	Instrument Type	Set	M	Option	
	Product	Set	M	Basket	
	Level	Set	M	UPI	
Attribute Section	Option Type	Enum	M	PUTO	[CALL, PUTO, OPTL]
	Option Exercise Style	Enum	M	EURO	[AMER, BERM, EURO]
	Valuation Method or Trigger	Enum	M	Barrier	[Vanilla, Asian, Barrier, Lookback, etc.]
	Delivery Type	Enum	M	PHYS	[CASH, PHYS, OPTL]

3.1 Underlier Input Method

This product is assumed to be a "Basket" in all cases, hence in accordance with ISO 4914 (UPI), there is no need to define individual constituents within this template *(see Appendix 1 - ISO 4914 Equivalence)* and so Underlier Input Method does not apply for this product.

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	**Equity.Option.Basket.UPI.V1.json**	Initial version	Initial

Section	Attribute	Format	Cat	Example Value	Derivation
Header Section	Asset Class	Set	M	Equity	
	Instrument Type	Set	M	Option	
	Product	Set	M	Basket	
	Level	Set	M	UPI	
	Template Version	Integer	D	1	
Attribute Section	Option Type	Enum	M	PUTO	[CALL, PUTO, OPTL]
	Option Exercise Style	Enum	M	EURO	[AMER, BERM, EURO]
	Valuation Method or Trigger	Enum	M	Barrier	[Vanilla, Asian, Barrier, Lookback, etc.]
	Delivery Type	Enum	M	PHYS	[CASH, PHYS, OPTL]
Identifier Section	UPI	String	D	QZGP9LP73HL2	
	Status	String	D	New	[New; Updated; Deleted; Deprecated]
	Status Reason	String	D	<null>	
	Last Update Date Time	DtTm	D	2021-02-23T00:00:13	YYYY-MM-DDThh:mm:ss
Derived Section	Classification Type	String	D	HEBDBP	See Derivation Rules
	Short Name	String	D	NA/O Bskt Put Epn	See Derivation Rules
	Underlier Name	String	D	Basket	See Derivation Rules
	Underlying Asset type	String	D	Basket	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	HEBDBP		
Source	ISO 10962 (CFI) – Third edition 2015-07-15		
Source Attribute	**Source Value**	**Derivation Method**	**Result**
Instrument Type	Option	Fixed Mapping	H
Asset Class	Equity	Fixed Mapping	E
Underlying Asset Type	Basket	Fixed Mapping	B
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 + Underlying Asset Type + Option Type + Option Exercise Style		
Example	NA/O Bskt Put Epn		
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
Underlying Asset Type	Basket	Fixed Abbreviation	Bskt
Option Type	PUTO	Mapped to =>	Put
	CALL	Mapped to =>	Call
	OPTL	Mapped to =>	Opt
Option Exercise Style	AMER	Mapped to =>	Amr
	BERM	Mapped to =>	Brm
	EURO	Mapped to =>	Epn

4.2.3 Underlier Name

Attribute	Underlier Name		
Underlying Asset	**Underlier Name Source**	**Underlier Name Source Attribute**	**Underlier Name**
Basket	Constant	N/A	Basket

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 [PUT] within the Rates Asset Class is “P” whereas Equity and Foreign_Exchange Asset Classes use “Put”. For Option Type [OPTL] within Foreign Exchange Asset Class is “O” whereas Rates and Equity Asset Classes use “Opt”.

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	Not Required	
Underlier ID source*	C	Not Required	
Underlier type	M	Not Required	Underlying Asset Type

**Underlier ID/source are not required for a custom basket defined in the ISO 4914 (UPI) specification.*

7 Appendix 2 - OTC ISIN-UPI Mapping

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

ISIN Input Attributes	Mapping Logic	UPI Input Attributes	Example UPI Value	Comments
Asset Class	Direct Map	Asset Class	Equity	
Instrument Type	Direct Map	Instrument Type	Option	
Use Case	Direct Map	Product	Basket	
Level	Set to "UPI"	Level	UPI	
Notional Currency	No Mapping			
Expiry Date	No Mapping			
Underlying Instrument ISIN	No Mapping			
Underlying Instrument Index	No Mapping			
Underlying Instrument Index Prop	No Mapping			
Strike Price	No Mapping			
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	Barrier	
Delivery Type	Direct Map	Delivery Type	PHYS	
Price Multiplier	No Mapping			