Derivatives Service Bureau

Credit : Option : Single_Name_Swaption

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
30 Aug 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)	**C**	Credit	
Attr #1	**Underlying Assets**	**U**	CDS on a Single Name	A CDS where the underlying risk is a single reference entity or single reference obligation
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 settle-ment price is the average level of an underlying instrument over a predetermined 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 bar-rier 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 look-back 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 2.0 taxonomy.

Asset Class	Base Product	Sub-Product	Transaction Type	DSB Product Definition Name
Credit	Swaptions	*Various entries*	*Various entries*	Single_Name_Swaption

3 REQUEST TEMPLATE

This section describes the input message received by UPI service.

Template name	Template details	Release
Request.Credit.Option.Single_Name_Swaption.UPI.json	Initial version	Initial

Section	Attribute	Format	Cat	Example Value	Validation
Header Section	Asset Class	Set	M	Credit	
	Instrument Type	Set	M	Option	
	Product	Set	M	Single_Name_Swaption	
	Level	Set	M	UPI	
Attribute Section	Underlier ID	String	M	QZQBT22R6XX4	Credit/Swap UPI
	Underlier ID Source	Enum	M	UPI	[UPI]
	Option Type	Enum	M	CALL	[CALL, PUTO, OPTL]
	Option Exercise Style	Enum	M	EURO	[AMER, BERM, EURO]
	Valuation Method or Trigger	Enum	M	Vanilla	[Vanilla, Asian, Barrier, Lookback, etc.]
	Delivery Type	Enum	M	PHYS	[CASH, PHYS, OPTL]

3.1 Underlier Input Method

For products that has a Single Underlier, users have an option to select a Primary or Alternate Underlier, if available.

Title	Description	
Select Underlier ID Source	User is able to select a Primary or Alternate Underlier from the available options. • UPI	
Input Underlier ID	UPI	This is validated against the UPI RDL record.

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	**Credit.Option.Single_Name_Swaption.UPI.V1.json**	Initial version	Initial

Section	Attribute	Format	Cat	Example Value	Derivation
Header Section	Asset Class	Set	M	Credit	
	Instrument Type	Set	M	Option	
	Product	Set	M	Single_Name_Swaption	
	Level	Set	M	UPI	
	Template Version	Integer	D	1	
Attribute Section	Underlying Instrument UPI	String	M	QZD1V8PXF2RG	Credit/Swap UPI
	Option Type	Enum	M	CALL	[CALL, PUTO, OPTL]
	Option Exercise Style	Enum	M	EURO	[AMER, BERM, EURO]
	Valuation Method or Trigger	Enum	M	Vanilla	[Vanilla, Asian, Barrier, Lookback, etc.]
	Delivery Type	Enum	M	PHYS	[CASH, PHYS, OPTL]
Identifier Section	UPI	String	D	QZHNPYP8QBB5	
	Status	String	D	New	[New; Updated; Deleted; Deprecated]
	Status Reason	String	D	<null>	
	Last Update Date Time	DtTm	D	2021-04-27T05:03:13	YYYY-MM-DDThh:mm:ss
Derived Section	Classification Type	String	D	HCUAVP	See Derivation Rules
	Short Name	String	D	NA/CDS SN Swt	See Derivation Rules
	Underlier Name	String	D	NA/CDS Corp SN Sr	See Derivation Rules
	Underlying Asset Type	String	D	CDS on Single Name	Fixed value
	Underlying Issuer Type	String	D	[Corporate, Sovereign, Local]	See Derivation Rules
	CFI Option Style and Type	String	D	European-Call	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	HCUAVP		
Source	ISO 10962 (CFI) – Third edition 2015-07-15		
Source Attribute	**Source Value**	**Derivation Method**	**Result**
Instrument Type	Non-listed and complex listed options	Fixed Mapping	H
Asset Class	Credit	Fixed Mapping	C
Underlying Asset Type	CDS on a Single Name	Fixed Mapping	U
Option Style and Type	PUTO/EURO	Mapped to =>	D
	CALL/EURO	Mapped to =>	A
	OPTL/EURO	Mapped to =>	G
	PUTO/AMER	Mapped to =>	E
	PUTO/BERM	Mapped to =>	F
	CALL/AMER	Mapped to =>	B
	CALL/BERM	Mapped to =>	C
	OPTL/AMER	Mapped to =>	H
	OPTL/BERM	Mapped to =>	I
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" + "/" + Underlying Product + Product Type		
Example	NA/CDS SN Swt		
Source	ISO 18774 (Financial Instrument Short Name) - First edition 2015-11		
Source Attribute	**Source Value**	**Derivation Method**	**Result**
Issuer Name	None	Fixed Value	NA/
Underlying Product	Credit Default Swap (CDS)	Fixed Abbreviation	CDS
Product Type	Single Name Swaption	Fixed Abbreviation	SN Swt

4.2.3 Underlier Name

Attribute	Underlier Name		
Underlying Asset	**Underlier Name Source**	**Underlier Name Source Attribute**	**Underlier Name**
Underlying ID with Underlying ID Source [UPI]	Underlying UPI record	FISN of Underlying Instrument UPI	NA/CDS Corp SN Sr

4.2.4 Underlying Issuer Type

Attribute	Underlying Issuer Type		
Source Attribute	**Source Value**	**Derivation Method**	**Result**
Underlying Issuer Type	Corporate	Mapped to =>	Corporate
	Sovereign	Mapped to =>	Sovereign
	Local	Mapped to =>	Local

4.2.5 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

4.2.6 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.

- Standard Contract Specificaton only applies to CDS Products [Credit.Swap.Corporate, Credit.Swap.Municipal, Credit.Swap.Sovereign, Credit.Swap.Non_Standard].

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
Seniority*	M	Not Required	
Standard Contract Specification**	C	Not Required	
Underlier ID	C	Underlier ID	Underlying Instrument UPI
Underlier ID source	C	Underlier ID Source	Not Required
Underlier type	M	Not Required	Underlying Asset Type
Underlier sub-type (first level)	M	Not Required	Underlying Issuer Type
Underlying credit index series***	C	Not Required	
Underlying credit index version***	C	Not Required	

**Seniority applies only if the Underlying Instrument is a Legal Entity or a Debt Instrument. For this product, the underlying is another derivative contract in the UPI record and so this attribute is not required.*
***Standard Contract Specification does not apply for this product, see Additional Comment section above.*
****Underlying Credit Index Series/Version applies only to an underlying Credit Index [CRIDX]. For this product, the underlying is another derivative contract in the UPI record and so these attributes are not required.*

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 Values	Comments
Asset Class	Direct Map	Asset Class	Credit	
Instrument Type	Direct Map	Instrument Type	Option	
Use Case	Direct Map	Product	Single_Name_Swaption	
Level	Set to "UPI"	Level	UPI	
Notional Currency	No Mapping			
Expiry Date	No Mapping			
Underlying Instrument ISIN	From Underlying Instrument ISIN/Parent/UPI	Underlier ID	QZQBT22R6XX4	
	Set to "UPI"	Underlier ID Source	UPI	
Option Type	Direct Map	Option Type	CALL	
Option Exercise Style	Direct Map	Option Exercise Style	EURO	
Valuation Method or Trigger	Direct Map	Valuation Method or Trigger	Vanilla	
Underlying Asset Type	No Mapping			Underlying Asset Type attribute for the UPI is in the Derived section of the Record template.
Delivery Type	Direct Map	Delivery Type	PHYS	
Price Multiplier	No Mapping			