

DERIVATIVES SERVICE BUREAU (DSB) LTD

Credit : Swap : Non_Standard

UPI Product Definition

Version 3

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31 Aug 2022	Draft	1	Initial Version
6 Feb 2023	Draft	2	<ul style="list-style-type: none"> • Update example values in the Request and Record templates layout • Insert Underlier Name attribute and Derivation rules
30 Aug 2023	Draft	3	<ul style="list-style-type: none"> • Remove “Classified as Confidential” in the Footer section. • Remove “RIC” as Alternate Underlier ID Source. • Update Associated Documentation to include Best Practice Guidelines and FAQs. • Update Best Practice Guidelines to include the link to Best Practice Guidelines and FAQs

Contents

1	Introduction.....	3
1.1	Associated Documentation.....	3
2	Product Taxonomy.....	4
2.1	CFI Taxonomy.....	4
2.2	ISDA Taxonomy.....	5
3	Request Template.....	6
3.1	Underlier Input Method.....	6
3.2	Validation Rules.....	7
3.2.1	Underlying Structure [oneOf structure].....	7
3.2.2	Underlying Asset Type.....	7
3.2.3	Underlying Instrument Index Term Value / Underlying Instrument Index Term Unit.....	8
3.2.4	Underlying Credit Index Series / Underlying Credit Index Version.....	8
3.2.5	Contract Specification.....	9
4	Record Template.....	10
4.1	Normalization Rules.....	10
4.2	Derivation Rules.....	10
4.2.1	Classification Type.....	10
4.2.2	Short Name.....	11
4.2.3	Underlier Name.....	12
4.2.4	CFI Delivery Type.....	13
5	Supplementary Information.....	14
5.1	Best Practice Guidelines.....	14
5.2	Additional Comments.....	14
6	Appendix 1 – ISO 4914 Equivalence.....	15
7	Appendix 2 - OTC ISIN-UPI Mapping.....	16

I. 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.

I.1 Associated Documentation

The reference documents below contain values and information maintained by the DSB for consistency and ease of access.

These documents are made available on the ANNA DSB website (Product Definitions page):

Title	Description	Location
Enumerations Document	Lists all fixed values used for a product	Enumerations section
Product Definition Data Dictionary	Defines attributes in the Request and Record templates; and from which they are referenced on	Other Documents section
Product Definition Validations and Normalizations Document	Specifies details on validation and normalization rules	
UPI Underlier Input Method	Defines the structure for the input of the underlier following the rules that allow users to identify the Asset Class, Underlying Structure, Underlying Type, and Underlying ID Source.	
Best Practice Guidelines and FAQs	Lists answers to queries raised by users and provides guidance on the use of the templates	
GitHub Environment Section	ANNA DSB Github Environment where the JSON templates for each product is found	

2. Product Taxonomy

2.1 CFI Taxonomy

Source: [ISO 10962](#) (CFI Code) – Third edition 2015-07-15

Attr #	Title	Values	Name	Description
	Instrument (Category)	S	Swap	
	Asset Class (Group)	C	Credit	
Attr #1	Underlying Assets	U	Single Name	The underlying risk is a single reference entity or reference obligation
		V	Index Tranche	A synthetic Collateralized Debt Obligation (CDO) based on a CDS index where each tranche references a different segment of the loss distribution of the underlying CDS index; each tranche has a different priority of claims on the principal and interest flows from the collateral pool, and are traditionally portioned into rising levels of seniority
		I	Index	Family of standardized credit derivative indices, where the underlying reference entities are a defined basket of credit from a particular geographic region (for instance, Asia, North America, Europe, etc.), and/or credit rating level (for instance Emerging Markets, high yield, investment grade, etc.); credit default indices trade in standard maturities, and the reference entities are typically the most liquid; the reference portfolio is reassessed periodically to maintain this
		B	Basket	A synthetic credit derivative where the underlying reference entities are a bespoke portfolio whose constituents have been agreed to by the parties to the trade
		M	Others	Others (miscellaneous)
Attr #2	Return or payout trigger	C	Credit default	Credit default
		T	Total return	Total return
		M	Others	Others (miscellaneous)
Attr #3	Underlying Issuer Type	C	Corporate	The underlying exposure is a corporate (a private sector entity)
		S	Sovereign	The underlying exposure is a sovereign, e.g. country; thus, investor's risk is that a country may not (be able to) pay its debt obligations; supranationals would be included here
		L	Local	A municipality or local government authority

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
		A	Auction	An independently administered synthetic auction process on a set of defined deliverable obligations that sets a reference final price that can be used to facilitate cash settlement of all covered transactions following a credit event

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	Exotic	Various entries	Various entries	Non_Standard_Swap

3. Request Template

The Request Template describes the input message received by the UPI service.

Users can find the detailed description of this template in the Credit spreadsheet that contains the layout of all templates. This can be found in the Credit section of the Product Definitions page on the ANNA DSB website.

Change details of the template can be found on the appropriate Github page.

Template name	Template details	Release
Request.Credit.Swap.Non_Standard.UPI.json	Initial version	Initial

3.1 Underlier Input Method

For products that has an option for a Single or Multiple Underliers, users must select an underlying structure applicable [Single Underlier, Basket]. If a Basket is selected, underlier entry is not required.

Title	Description
Select Underlying Structure	User is able to select whether the underlying is a single underlier or basket based on its product. <ul style="list-style-type: none">• Single Underlier• Basket
Select Underlier Type	User is able to select a single required Underlier Type from the available options. <ul style="list-style-type: none">• Fixed Income Security• Legal Entity• Credit Index• Proprietary Index
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. <ul style="list-style-type: none">• Fixed Income Security [ISIN, FIGI, CUSIP, SEDOL]• Legal Entity [LEI]• Credit Index [CRIDX]• 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.

3.2.1 Underlying Structure [oneOf structure]

- If Underlying Structure selected is a “Single Underlier”, Underlying Asset Type attribute will be present in the REQUEST and RECORD messages with enumerated values [Single Name, Index, Index Tranche, Other].
- If Underlying Structure selected is a "Single Underlier", attributes Underlier ID and Underlier ID Source [ISIN, FIGI, CUSIP, SEDOL, LEI, CRIDX or PROP] will be required in the REQUEST message and only one value can be selected in the enumeration.
- If Underlying Structure selected is a “Basket”, Underlying Asset Type attribute will be present in the REQUEST and RECORD templates with enumerated values [Basket, Other].
- If Underlying Structure selected is a “Basket”, attributes Underlier ID and Underlier ID Source will not be present in the REQUEST and RECORD templates.

3.2.2 Underlying Asset Type

The following validations will apply based on the Underlying Asset Type selected. For each given Underlying Asset Type, the attributes will vary accordingly:

- a. “Single Name”
 - If Underlying Asset Type selected is a “Single Name”, Underlier ID and Underlier ID Source attributes will be required in the REQUEST message.
 - Underlier ID Source must be [ISIN, FIGI, CUSIP, SEDOL or LEI] and only single value is allowed.
 - Validation of the Underlier ID will apply based on the Underlier ID Source [ISIN, FIGI, CUSIP, SEDOL or LEI].
- b. “Index”
 - If Underlying Asset Type selected is an “Index”, Underlier ID and Underlier ID Source attributes will be required in the REQUEST message.
 - Underlier ID Source must be [CRIDX or PROP] and only single value is allowed.
 - Validation of the Underlier ID will apply based on the Underlier ID Source [CRIDX or PROP].
- c. “Index Tranche”
 - If Underlying Asset Type selected is an “Index Tranche”, Underlier ID and Underlier ID Source attributes will be required in the REQUEST message.
 - Underlier ID Source must be [CRIDX or PROP] and only single value is allowed.
 - Validation of the Underlier ID will apply based on the Underlier ID Source [CRIDX or PROP].
- d. “Other”
 - If Underlying Asset Type selected is “Other”, Underlier ID and Underlier ID Source attributes will be required in the REQUEST templates.
 - If Underlier ID is present, Underlier ID Source must be [ISIN, FIGI, CUSIP, SEDOL, LEI, CRIDX or PROP] and only single value is allowed.
 - Validation of the Underlier ID will apply based on the Underlier ID Source [ISIN, FIGI, CUSIP, SEDOL, LEI, CRIDX or PROP].

3.2.3 Underlying Instrument Index Term Value / Underlying Instrument Index Term Unit

- a. If Underlier ID Source selected is CRIDX, the following validation will apply:
 - Underlying Instrument Index Term Value and Underlying Instrument Index Term Unit must be present in the REQUEST and RECORD messages.
 - Underlying Instrument Index Term Unit: [DAYS; WEEK; MNTH; YEAR].
 - Underlying Instrument Index Term Value: Input text must be an integer from -999 to 999 (but not 0).
 - If the input text is more than the value of 999, an error message will apply “Value must be at most 999.”.
 - If the input text is more than the value of -999, an error message will apply “Value must be at least -999.”.
 - If input text is equal to “0”, an error message will apply “Value must not validate against the provided schema. Value can't be 0.”.
- b. If Underlier ID Source selected is PROP, the following validation will apply:
 - Underlying Instrument Index Term Value and Underlying Instrument Index Term Unit must be present in the REQUEST and RECORD messages.
 - Underlying Instrument Index Term Unit: [DAYS; WEEK; MNTH; YEAR].
 - Underlying Instrument Index Term Value: Input text must be an integer from -999 to 999 (including 0).
 - If the input text is more than the value of 999, an error message will apply “Value must be at most 999.”.
 - If the input text is more than the value of -999, an error message will apply “Value must be at least -999.”.
- c. If Underlier ID Source selected is [ISIN, FIGI, CUSIP, SEDOL or LEI] Underlying Instrument Index Term Value/Unit attributes will not be present in the REQUEST and RECORD messages.

3.2.4 Underlying Credit Index Series / Underlying Credit Index Version

- a. If Underlier ID Source selected is CRIDX, the following validations will apply:
 - Underlying Credit Index Series and Underlying Credit Index Version attributes must be present in the REQUEST and RECORD messages.
 - The input text by the user must be a positive integer from 1 to 999.
 - If the input text has a prefix of negative (-), an error message will apply: “Value must be at least 1.”
 - If the input contains negative (-) after the integer, an error message will apply “Value must be of type integer. Value must be at most 999. Value must be at least 1.”
 - If the input text contains character, remove the character and retain the integer if exists.
- b. If Underlier ID Source selected is PROP, the following validations will apply:
 - The input text by the user must be a positive integer from 0 to 999.
 - If the input text has a prefix of negative (-), an error message will apply: “Value must be at least 0.”
 - If the input contains negative (-) after the integer, an error message will apply “Value must be of type integer. Value must be at most 999. Value must be at least 0.”
 - If the input text contains character, remove the character and retain the integer if exists.
- c. If Underlier ID Source selected is [ISIN, FIGI, CUSIP, SEDOL or LEI], Underlying Credit Index Series/Version attributes will not be present in the REQUEST and RECORD messages.

3.2.5 Contract Specification

- The Contract Specification must be present as an Optional attribute in the REQUEST and RECORD templates.
- If the Contract Specification attribute is not selected in the Request template, this attribute must not be present in the RECORD template.
- If Contract Specification is selected, the supported enumerated values are dependent to the Underlying Issuer Type selected [Corporate, Sovereign, Local].

4. Record Template

The Record Template describes the record returned by the UPI service.

Users can find the detailed description of this template in the Credit spreadsheet that contains the layout of all templates. This can be found in the Credit section of the Product Definitions page on the ANNA DSB website.

Change details of the template can be found on the appropriate Github page.

Version	Template name	Template details	Release
V.1	Credit.Swap.Non_Standard.UPI.V1.json	Initial version	Initial

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 + Return or Payout Trigger + Underlying Issuer Type + Delivery Type		
Example	SCITCC		
Source	ISO 10962 (CFI) – Third edition 2015-07-15		
Source Attribute	Source Value	Derivation Method	Result
Instrument Type	Swap	Fixed Mapping	S
Asset Class	Credit	Fixed Mapping	C
Underlying Asset Type	Single Name	Mapped to =>	U
	Index Tranche	Mapped to =>	V
	Index	Mapped to =>	I
	Basket	Mapped to =>	B
	Other	Mapped to =>	M

Return or Payout Trigger	Credit Default	Mapped to =>	C
	Total Return	Mapped to =>	T
	Other	Mapped to =>	M
Underlying Issuer Type	Corporate	Mapped to =>	C
	Sovereign	Mapped to =>	S
	Local	Mapped to =>	L
Delivery Type	CASH	Mapped to =>	C
	PHYS	Mapped to =>	P
	OPTL	Mapped to =>	A

4.2.2 Short Name

Attribute	Short Name		
Structure	"NA" + "/" + Instrument Type + Underlying Issuer Type + Underlying Asset Type + Debt Seniority*		
Example	NA/CDS Corp Idx		
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	Swap	Fixed Abbreviation	CDS
Underlying Issuer Type	Corporate	Mapped to =>	Corp
	Sovereign	Mapped to =>	Sov
	Local	Mapped to =>	Mun
Underlying Asset Type	Single Name	Mapped to =>	SN
	Index Tranche	Mapped to =>	Idx Tra
	Index	Mapped to =>	Idx
	Basket	Mapped to =>	Basket

	Other	Mapped to =>	Oth
Debt Seniority*	SNDB	Mapped to =>	Sr
	MZZD	Mapped to =>	Mz
	SBOD	Mapped to =>	Sub
	JUND	Mapped to =>	Jr

*Debt Seniority only applies if Underlier ID Source selected is [ISIN, FIGI, CUSIP, SEDOL, LEI].

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 [ISIN]	ISIN Reference Data	longName of Underlying Instrument ISIN	ISIN is found in ISIN Reference Data.	VODAFONE GROUP PLC
			ISIN is found in ISIN Reference Data, but its description is missing.	No name available
			ISIN is not found in ISIN Reference Data.	No name obtainable
Underlying ID with Underlying ID Source [LEI]	LEI Reference Data	The name of the legal entity	LEI is found in LEI Reference Data.	MICROSOFT CORPORATION
			LEI is found in LEI Reference Data, but its legal name is missing.	No name available
			LEI is not found in LEI Reference Data.	No name obtainable
Underlying ID with Underlying ID Source [CRIDX]	UPI record	Underlying Instrument Index		ITRAXX EUROPE
Underlying ID with Underlying ID Source [PROP]	UPI record	Underlying Instrument Index Prop		I1339-MLSREISU
Basket	Constant	N/A		Basket

4.2.4 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 =>	Auction

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 Instrument Type within the Equity and Foreign_Exchange Asset Classes is “Swaps”, Rates and Commodities Asset Classes uses “Swap” whereas Credit uses CDS.
- The Contract Specification attribute only applies to Credit.Swap.Corporate; Credit.Swap.Municipal; Credit.Swap.Sovereign and Credit.Swap.Non_Standard. It does not apply to Credit.Swap.Loan; Credit.Swap.ABS; Credit.Swap.Index; Credit.Swap.Index_Tranche and Credit.Swap.Total_Return_Swap.
- The Contract Specification is an Optional attribute to maintain the UPI – OTC ISIN hierarchy.
- The current behaviour of underlying asset type in OTC ISIN where it accepts “Other” applies to UPI if single or multiple underliers is selected.
- In order to maintain UPI-OTC ISIN hierarchy, the underlying asset type “Other” applies if the selected underlying structure is a Single Underlier or a Basket.

6. Appendix I – 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
Return, pricing method or payout trigger	M	Return or Payout Trigger	Return or Payout Trigger
Seniority*	M	Debt Seniority	Debt Seniority
Standard Contract Specification	C	Contract Specification	Contract Specification
Underlier ID	C	Underlier ID	Underlying Instrument ISIN
			Underlying Instrument LEI
			Underlying Instrument Index
			Underlying Instrument Index Prop
Underlier ID source	C	Underlier ID Source	Not Required
Underlier type	M	Underlying Asset Type	Underlying Asset Type
Underlier sub-type (first level)	M	Underlying Issuer Type	Underlying Issuer Type
Underlying credit index series**	C	Underlying Credit Index Series	Underlying Credit Index Series
Underlying credit index version**	C	Underlying Credit Index Version	Underlying Credit Index Version

*Seniority applies only if the underlying is a Legal Entity or a Fixed Income Security.

**Underlying Credit Index Series and Index Version applies only if the underlying is a Credit Index or a Proprietary Index.

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 Value	Comments
	Asset Class		Direct Map	Asset Class	Credit	
	Instrument Type		Direct Map	Instrument Type	Swap	
	Use Case		Direct Map	Product	Non_Standard	
	Level		Set to "UPI"	Level	UPI	
	Notional Currency		No Mapping			
	Expiry Date		No Mapping			
	Price Multiplier		No Mapping			
A	Underlying Instrument ISIN	If Underlying Asset Type = "Single Name" or "Other"	Set to "Fixed Income Security"	Underlier Type	Fixed Income Security	"One Of" Underlier Type
			Map to	Underlier ID	US92857WBQ24	
			Set to "ISIN, FIGI, CUSIP, SEDOL"	Underlier ID Source	ISIN	
		If Underlying Asset Type = "Basket" AND If Underlying Instrument > 1	Map to	Underlying Structure	Basket	
	Debt Seniority		Direct Map	Debt Seniority	SNDB	
B	Underlying Instrument LEI	If Underlying Asset Type = "Single Name" or "Other"	Set to "Legal Entity"	Underlier Type	Legal Entity	"One Of" Underlier Type
			Map to	Underlier ID	INR2EJN1ERAN0W5ZP974	
			Set to "LEI"	Underlier ID Source	LEI	
		If Underlying Asset Type = "Basket" AND If Underlying Instrument > 1	Map to	Underlying Structure	Basket	

	Debt Seniority		Direct Map	Debt Seniority	SNDB	
C	Underlying Instrument Index	If Underlying Asset Type = "Index" or "Index Tranche" or "Other"	Set to "Credit Index"	Underlier Type	Credit Index	"One Of" Underlier Type
			Map to	Underlier ID	ITRAXX EUROPE	
			Set to "CRIDX"	Underlier ID Source	CRIDX	
	Underlying Instrument Index	If Underlying Asset Type = "Basket" AND If Underlying Instrument > 1	Map to	Underlier Characteristic	Basket	
	Underlying Instrument Index Term Value		Direct Map	Underlying Instrument Index Term Value	7	
	Underlying Instrument Index Term Unit		Direct Map	Underlying Instrument Index Term Unit	DAYS	
Underlying Credit Index Series		Direct Map	Underlying Credit Index Series	3		
Underlying Credit Index Version		Direct Map	Underlying Credit Index Version	5		
D	Underlying Instrument Index Prop	If Underlying Asset Type = "Index" or "Index Tranche" or "Other"	Set to "Proprietary Index"	Underlier Type	Proprietary Index	"One Of" Underlier Type
			Map to	Underlier ID	I1339-MLSREISU	
			Set to "PROP"	Underlier ID Source	PROP	
	Underlying Instrument Index Prop	If Underlying Asset Type = "Basket" AND If Underlying Instrument > 1	Map to	Underlying Structure	Basket	
	Underlying Instrument Index Term Value		Direct Map	Underlying Instrument Index Term Value	7	
	Underlying Instrument Index Term Unit		Direct Map	Underlying Instrument Index Term Unit	DAYS	
Underlying Credit Index Series		Direct Map	Underlying Credit Index Series	3		

	Underlying Credit Index Version		Direct Map	Underlying Credit Index Version	5	
	Return or Payout Trigger		Direct Map	Return or Payout Trigger	Total Return	
	Underlying Issuer Type		Direct Map	Underlying Issuer Type	Corporate	
	Delivery Type		Direct Map	Delivery Type	CASH	
	Underlying Asset Type		Direct Map	Underlying Asset Type	Other	
	Contract Specification		Direct Map	Contract Specification	StandardEuropeanCorporate	