

DERIVATIVES SERVICE BUREAU (DSB) LTD

Other : Forward : Non_Standard

UPI Product Definition

Version 6

Date	Status	Version	Revision Details
05 Sep 2022	Draft	1	Initial Version
21 Sep 2022	Draft	2	<ul style="list-style-type: none"> Update Request and Record templates layout and validation rules Update OTC ISIN-UPI Mapping for Underlying Asset Class.Commodities
15 Nov 2022	Draft	3	Update Request Template Layout for “anyOf” in Underlying Asset Class
19 Dec 2022	Draft	4	Update Request and Record templates layout and validation rules
16 Jan 2023	Draft	5	<ul style="list-style-type: none"> Update example values in the Request and Record templates layout Rename Underlier ID Source values Insert Underlier Name attribute and derivation rules
08 Sep 2023	Draft	6	<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.

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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)	M	Others (miscellaneous)	
	Asset Class (Group)	M	Other assets (miscellaneous)	
Attr #1	Further Grouping	S	Other OTC derivative products	Other OTC derivative products
Attr #2	Not applicable/undefined	X	Not applicable/undefined	Not applicable/undefined
Attr #3	Not applicable/undefined	X	Not applicable/undefined	Not applicable/undefined
Attr #4	Not applicable/undefined	X	Not applicable/undefined	Not applicable/undefined

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
All	Exotic			Non-Standard Forward

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 Non Standard spreadsheet that contains the layout of all templates. This can be found in the Non Standard 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.Other.Forward.Non_Standard.UPI.json	Initial version	Initial

3.1 Underlier Input Method

This section describes the underlier input method to support products that are based on multiple asset classes.

Title	Description
Select Underlying Asset Class	User is allowed to identify and select the underlying asset class of a certain product. <ul style="list-style-type: none">• Rates• Credit• Equity• Foreign Exchange• Commodities
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 based on the selected Underlying Asset Class. <ul style="list-style-type: none">• Commodities<ul style="list-style-type: none">○ Commodity Ref Price○ Commodity Index○ Proprietary Index• Credit

	<ul style="list-style-type: none"> ○ Fixed Income Security • Equity <ul style="list-style-type: none"> ○ Equity Identifier* ○ Equity Index Name ○ Proprietary Index <p><i>*For Underlier Type “Equity Identifier”, user is able to enter an ISIN of a Single Stock or an Equity Index.</i></p> • Rates <ul style="list-style-type: none"> ○ Reference Rate ○ Fixed Income Security
Select Underlier ID Source	<p>User is able to select a single required Underlier ID Source from the available options based on the selected Underlier Type.</p> <ul style="list-style-type: none"> • Commodities <ul style="list-style-type: none"> ○ Commodity Ref Price [COMM] ○ Commodity Index [COIDX] ○ Proprietary Index [PROP] • Credit <ul style="list-style-type: none"> ○ Fixed Income Security [ISIN; FIGI; CUSIP; SEDOL] • Equity <ul style="list-style-type: none"> ○ Equity Identifier [ISIN; FIGI; CUSIP; SEDOL] ○ Equity Index Name [EQIDX] ○ Proprietary Index [PROP] • Rates <ul style="list-style-type: none"> ○ Floating Rate Index (FPML) ○ Inflation Rate Index [FPML] ○ Fixed Income Security [ISIN; FIGI; CUSIP; SEDOL] • Foreign Exchange <ul style="list-style-type: none"> ○ Currency Pair [CCY]
Input Underlier ID	<p>User enters a valid Underlier ID based on the selected Underlier ID Source.</p>

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 Asset Class.Rates

- a. Underlying Structure [oneOf structure]
 - User can only select either Single Underlier (Single Value) or Basket (Multiple Values) and is a required field.
 - If “Single Underlier” is selected, the Underlier ID and its Source [FPML; ISIN; FIGI; CUSIP; SEDOL] will be present in the REQUEST template.
 - If Underlying Structure selected is “Single Underlier” and Underlier ID and its Source is [FPML], Reference Rate Term Value/Unit will be present in the REQUEST template.
 - If “Basket” is selected, the underlier ID and its associated attributes will not be present in the REQUEST and RECORD template.
 - Only “Basket” is allowed value in REQUEST template for multiple underliers.

3.2.2 Underlying Asset Class.Equity

- a. Underlying Structure [oneOf structure]
 - User can only select either Single Underlier (Single value) or Basket (Multiple values) and is a required field.
 - If “Single Underlier” is selected, the Underlier ID and its Source [ISIN; FIGI; CUSIP; SEDOL; EQIDX; PROP] will be present in the REQUEST template.
 - If “Basket” is selected, the Underlier ID and Underlier ID Source will not be present in the REQUEST and RECORD templates.
 - Only “Basket” is allowed value in REQUEST template for multiple underliers.

3.2.3 Underlying Asset Class.Credit

- a. Underlying Structure [oneOf structure]
 - User can only select either Single Underlier (Single value) or Basket (Multiple values) and is a required field.
 - If “Single Underlier” is selected, the Underlier ID and its Source [ISIN; FIGI; CUSIP; SEDOL] will be present in the REQUEST template.
 - If “Basket” is selected, the underlier ID and its associated attributes will not be present in the REQUEST and RECORD template.
 - Only “Basket” is allowed value in REQUEST message for multiple underliers.

3.2.4 Underlying Asset Class.Commodities

- a. Underlying Structure [oneOf structure]
 - User can only select either Single Underlier (Single value) or Basket (Multiple values) and is a required field.
 - If “Single Underlier” is selected, the Underlier ID and its Source [COMM; COIDX; PROP], Base Product, Sub Product and Additional Sub Product will be present in the REQUEST template.
 - If “Basket” is selected, the Underlier ID and its associated attributes will not be present in the REQUEST and RECORD templates. However, Base Product, Sub Product and Additional Sub Product must be present in the REQUEST template.
 - Only “Basket” is allowed value in REQUEST template for multiple underliers.

3.2.5 Underlying Asset Class = “Null”

- If user did not select any values in the Underlying Asset Class, an error message shall apply “Error: At least one Underlying Asset Class must be selected”.

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 Non Standard spreadsheet that contains the layout of all templates. This can be found in the Non Standard 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	Other.Forward.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 + Further Grouping + N/A + N/A + N/A		
Example	MMSXXX		
Source	ISO 10962 (CFI) – Third edition 2015-07-15		
Source Attribute	Source Value	Derivation Method	Result
Instrument Type	Others (miscellaneous)	Fixed Mapping	M
Asset Class	Other assets	Fixed Mapping	M
Further Grouping	Other OTC derivative products	Fixed Mapping	S
Not applicable/undefined	Not applicable/undefined	Fixed Mapping	X
Not applicable/undefined	Not applicable/undefined	Fixed Mapping	X

Not applicable/undefined	Not applicable/undefined	Fixed Mapping	X
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4.2.2 Short Name

Attribute	Short Name		
Structure	"NA" + "/" + Instrument Type + Asset Class + Product Type		
Example	NA/Forward Oth Nstd		
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	Forward	Fixed Abbreviation	Forward
Asset Class	Other assets	Fixed Abbreviation	Oth
Product Type	Non-Standard	Fixed Abbreviation	Nstd

4.2.3 Underlier Name

Attribute	Underlier Name				
Underlying Asset Class	Underlying Structure	Underlying Asset	Underlier Name Source	Underlier Name Source Attribute	Underlier Name
Rates	Single Underlier	Reference Rate	UPI record	Reference Rate	EUR-EXT-CPI
	Single Underlier	Underlying ISIN	ISIN Reference Data	longName of Underlying Instrument ISIN	Vodafone Group PLC
	Basket	N/A	Constant	N/A	Basket
Credit	Single Underlier	Underlying ISIN	ISIN Reference Data	longName of Underlying Instrument ISIN	Vodafone Group PLC
	Basket	N/A	Constant	N/A	Basket
Equity	Single Underlier	Underlying ISIN	ISIN Reference Data	longName of Underlying Instrument ISIN	Vodafone Group PLC
	Single Underlier	Underlying Index	UPI record	Underlying Instrument Index	FTSE 200 Index
	Single Underlier	Underlying Index Prop	UPI record	Underlying Instrument Index Prop	34810-JPCFNAMR
	Basket	N/A	Constant	N/A	Basket
Foreign Exchange	-	Notional Currency / Other Notional Currency	UPI record	Notional Currency vs Other Notional Currency	EUR USD
Commodities	Single Underlier	Reference Rate	UPI record	Reference Rate	SILVER-FIX
	Single Underlier	Underlying Index	UPI record	Underlying Instrument Index	OTHER
	Single Underlier	Underlying Index Prop	UPI record	Underlying Instrument Index Prop	I1339-BABXSG01
	Basket	N/A	Constant	N/A	Basket

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

- Delivery type enumerated values [Cash; Physical; Auction; Elect at Exercise, Elect at Settlement, Non-Deliverable] are the superset of values from CFI 2015 specification. Thus, CFI Delivery Type is no longer required as a derived value in the RECORD template. It is not included as an attribute in the CFI code (MMSXXX) but it is being added on the basis of the CDIDE requirement.
- Delivery type enumerated value “Non-Deliverable” is included in the CFI 2015 specification but is not supported in the OTC ISIN for Other.Option.Non-Standard product template. In order to maintain UPI/OTC ISIN hierarchy, such enumerated value will be supported for this product.

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
Currency associated with an underlying reference rate	C	Notional Currency	Notional Currency
Delivery type	M	Delivery Type	Delivery Type
Return, pricing method or payout trigger	M	Return or Payout Trigger	Return or Payout Trigger
Seniority*	C	Debt Seniority	Debt Seniority
Settlement currency	C	Settlement Currency	Settlement Currency
Standard contract specification**	C	Not Required	Not Required
Underlier ID	C	Underlier ID	Reference Rate
			Underlying Instrument ISIN
			Underlying Instrument Index
			Notional Currency
			Other Notional Currency
Underlier ID source	C	Underlier ID Source	Not Required
Underlier type	M	Not Required	Further Grouping
Underlier sub-type (first level)	C	Base Product	Base Product
Underlier sub-type (second level)	C	Sub Product	Sub Product
Underlying credit index series	C	Not Required	
Underlying credit index version	C	Not Required	
Underlying rate index tenor period	C	Reference Rate Term Unit	Reference Rate Term Unit
Underlying rate index tenor period multiplier	C	Reference Rate Term Value	Reference Rate Term Value

*Seniority whilst mandatory for Credit Forwards in the ISO 4914 standards has not been included as an attribute for this product. The underlier for this Credit Forward is the ISIN of a bond and seniority is not applicable to bonds. **Standard contract specification attributes are not included in the OTC ISIN and are Conditional attributes in ISO 4914 (UPI) specification.

7. Appendix 2 - OTC ISIN-UPI Mapping

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

AnyOf	ISIN Input Attributes	Condition	Mapping Logic	UPI Input Attributes	Sample UPI Value	Comments
	Asset Class		Direct Map	Asset Class	Other	
	Instrument Type		Direct Map	Instrument Type	Forward	
	Use Case		Direct Map	Product	Non_Standard	
	Level		Set to "UPI"	Level	UPI	
	Expiry Date		No Mapping			
	Price Multiplier		No Mapping			
	Delivery Type		Direct Map	Delivery Type	CASH	
Underlying Asset Class.Rates						
	By Tenor					
	Term of Contract Value		No Mapping			
	Term of Contract Unit		No Mapping			
	By Effective Date					
	Effective Date		No Mapping			
	Expiry Date Adjusted		No Mapping			
	Tenor Calculator Method		No Mapping			
	Notional Currency		Direct Map	Notional Currency	EUR	
	Reference Rate	If Reference Rate = 1 & Underlying Instrument ISIN = 0	If Reference Rate = 1 & Underlying Instrument ISIN = 0 = "Single Underlier"	Underlying Structure	Single Underlier	"One Of" Underlying Structure
Map To			Underlier ID	EUR-EXT-CPI		
Set to "FPML"			Underlier ID Source	FPML		
If Reference Rate > 1 & Underlying Instrument ISIN ≥ 1		If Reference Rate > 1 = "Basket"	Underlying Structure	Basket	"One Of" Underlying Structure	
	Reference Rate Term Value	If Reference Rate = 1	Direct Map	Reference Rate Term Value	3	

AnyOf	ISIN Input Attributes	Condition	Mapping Logic	UPI Input Attributes	Sample UPI Value	Comments
		If Reference Rate > 1	No Mapping			
	Reference Rate Term Unit	If Reference Rate = 1	Direct Map	Reference Rate Term Unit	MNTH	
		If Reference Rate > 1	No Mapping			
	By Non-Rates					
	Underlying Instrument ISIN	If Underlying Instrument ISIN = 1 & Reference Rate = 0	If Underlying Instrument ISIN = 1 & Reference Rate = 0 = "Single Underlier"	Underlying Structure	Single Underlier	
			Map To	Underlier ID	US92857WBQ24	
			Set to "ISIN; FIGI; CUSIP; SEDOL"	Underlier ID Source	ISIN	
		If Underlying Instrument ISIN > 1 and Reference Rate is ≥ 1	If Reference Rate > 1 = "Basket"	Underlying Structure	Basket	"One Of" Underlying Structure
Underlying Asset Class.Foreign_Exchange						
	Notional Currency		Map To	Underlier ID	EUR	
			Set to "CCY"	Underlier ID Source	CCY	
	Other Notional Currency		Map To	Other Underlier ID	USD	
			Set to "CCY"	Other Underlier ID Source	CCY	
	Return or Payout Trigger		Direct Map	Return or Payout Trigger	Forward price of underlying instrument	
	Settlement Currency		Direct Map	Settlement Currency	EUR	
	Place of Settlement		Direct Map	Place of Settlement	Hong Kong	
Underlying Asset Class.Credit						
	Return or Payout Trigger		Direct Map	Return or Payout Trigger	Forward price of underlying instrument	

AnyOf	ISIN Input Attributes	Condition	Mapping Logic	UPI Input Attributes	Sample UPI Value	Comments
	Underlying Instrument ISIN	If Underlying Instrument ISIN = I	If Underlying Instrument ISIN = I = "Single Underlier"	Underlying Structure	Single Underlier	"One Of" Underlying Structure
			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 Instrument ISIN > I	If Underlying Instrument ISIN > I = "Basket"	Underlying Structure	Basket	"One Of" Underlying Structure
Underlying Asset Class.Equity						
	Return or Payout Trigger		Direct Map	Return or Payout Trigger	Forward price of underlying instrument	
	Underlying Instrument ISIN	If Underlying Instrument ISIN = I	If Underlying Instrument ISIN = I = "Single Underlier"	Underlying Structure	Single Underlier	"One Of" Underlying Structure
			Set to "Equity Identifier"	Underlier Type	Equity Identifier	"One Of" Underlier Type
			Map to	Underlier ID	GB0001383545	
			Set to "ISIN; FIGI; CUSIP; SEDOL"	Underlier ID Source	ISIN	
		If Underlying Instrument ISIN > I	If Underlying Instrument ISIN > I = "Basket"	Underlying Structure	Basket	"One Of" Underlying Structure
	Underlying Instrument Index	If Underlying Instrument Index = I	If Underlying Instrument Index = I = "Single Underlier"	Underlying Structure	Single Underlier	"One Of" Underlying Structure
			Set to "Equity Index Name"	Underlier Type	Equity Index Name	"One Of" Underlier Type
			Map to	Underlier ID	FTSE 200 Index	
			Set to "EQIDX"	Underlier ID Source	EQIDX	
		If Underlying Instrument Index > I	If Underlying Instrument Index > I = "Basket"	Underlying Structure	Basket	"One Of" Underlying Structure
	Underlying Instrument Index Prop	If Underlying Instrument Index Prop = I	If Underlying Instrument Index Prop = I = "Single Underlier"	Underlying Structure	Single Underlier	"One Of" Underlying Structure

AnyOf	ISIN Input Attributes	Condition	Mapping Logic	UPI Input Attributes	Sample UPI Value	Comments
			Set to "Proprietary Index"	Underlier Type	Proprietary Index	"One Of" Underlier Type
			Map to	Underlier ID	34810-JPCFNAMR	
			Set to "PROP"	Underlier ID Source	PROP	
		If Underlying Instrument Index Prop > 1	If Underlying Instrument Index Prop > 1 = "Basket"	Underlying Structure	Basket	"One Of" Underlying Structure
Underlying Asset Class.Commodities						
	Notional Currency		Direct Map	Notional Currency	USD	
	Return or Payout Trigger		Direct Map	Return or Payout Trigger	Forward price of underlying instrument	
	Underlying Instrument Index	If Underlying Instrument Index = 1	If Underlying Instrument Index = 1 = "Single Underlier"	Underlying Structure	Single Underlier	"One Of" Underlying Structure
			Set to "Commodity Index"	Underlier Type	Commodity Index	"One Of" Underlier Type
			Map to	Underlier ID	OTHER	
			Set to "COIDX"	Underlier ID Source	COIDX	
		If Underlying Instrument Index > 1	If Underlying Instrument Index > 1 = "Basket"	Underlying Structure	Basket	"One Of" Underlying Structure
	Underlying Instrument Index Prop	If Underlying Instrument Index Prop = 1	If Underlying Instrument Index Prop = 1 = "Single Underlier"	Underlying Structure	Single Underlier	"One Of" Underlying Structure
			Set to "Proprietary Index"	Underlier Type	Proprietary Index	"One Of" Underlier Type
			Map to	Underlier ID	11339-BABXSG01	
			Set to "PROP"	Underlier ID Source	PROP	
		If Underlying Instrument Index Prop > 1	If Underlying Instrument Index Prop > 1 = "Basket"	Underlying Structure	Basket	"One Of" Underlying Structure
	Reference Rate	If Reference Rate = 1	If Reference Rate = 1 = "Single Underlier"	Underlying Structure	Single Underlier	"One Of" Underlying Structure

AnyOf	ISIN Input Attributes	Condition	Mapping Logic	UPI Input Attributes	Sample UPI Value	Comments
			Set to "Commodity Ref Price"	Underlier Type	Commodity Ref Price	"One Of" Underlier Type
			Map to	Underlier ID	SILVER-FIX	
			Set to "COMM"	Underlier ID Source	COMM	
		If Reference Rate > 1	If Reference Rate > 1 = "Basket"	Underlying Structure	Basket	"One Of" Underlying Structure
	Base Product		Direct Map	Base Product	METL	
	Sub Product		Direct Map	Sub Product	PRME	
	Additional Sub Product		Direct Map	Additional Sub Product	SLVR	
	Transaction Type		No Mapping			
	Final Price Type		No Mapping			