

## DERIVATIVES SERVICE BUREAU (DSB) LTD

Rates : Swap : Non\_Standard

UPI Product Definition

Version 3

Date	Status	Version	Revision Details
30 Aug 2022	Draft	1	Initial Version
02 Feb 2023	Draft	2	<ul style="list-style-type: none"> <li>• Update example values in the Request and Record templates layout</li> <li>• Insert Underlier Name attribute and Derivation rules</li> </ul>
01 Sep 2023	Draft	3	<ul style="list-style-type: none"> <li>• Remove “Classified as Confidential” in the Footer section.</li> <li>• Update Associated Documentation to include Best Practice Guidelines and FAQs.</li> <li>• Update Best Practice Guidelines to include the link to Best Practice Guidelines and FAQs.</li> </ul>

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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
<b>Enumerations Document</b>	Lists all fixed values used for a product	Enumerations section
<b>Product Definition Data Dictionary</b>	Defines attributes in the Request and Record templates; and from which they are referenced on	Other Documents section
<b>Product Definition Validations and Normalizations Document</b>	Specifies details on validation and normalization rules	
<b>UPI Underlier Input Method</b>	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.	
<b>Best Practice Guidelines and FAQs</b>	Lists answers to queries raised by users and provides guidance on the use of the templates	
<b>GitHub Environment Section</b>	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
	<b>Instrument (Category)</b>	<b>S</b>	Swap	
	<b>Asset Class (Group)</b>	<b>R</b>	Rates	
<b>Attr #1</b>	<b>Underlying Assets</b>	<b>M</b>	Others	Others (miscellaneous)
<b>Attr #2</b>	<b>Notional Schedule</b>	<b>C</b>	Constant	The notional amount is constant through the life of the contract
		<b>I</b>	Accreting	The notional amount increases through the life of the contract
		<b>D</b>	Amortizing	The notional amount decreases through the life of the contract
		<b>Y</b>	Custom	Customized notional step schedule
<b>Attr #3</b>	<b>Single or Multi Currency</b>	<b>S</b>	Single Currency	Single Currency
		<b>C</b>	Cross-Currency	Cross-Currency (multi-currency)
<b>Attr #4</b>	<b>Delivery Type</b>	<b>C</b>	Cash	The discharge of an obligation by payment or receipt of a net cash amount instead of payment or delivery by both parties
		<b>P</b>	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

### 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
Rates	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 Rates spreadsheet that contains the layout of all templates. This can be found in the Rates 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.Rates.Swap.Non_Standard.UPI.json	Initial version	Initial

#### 3.1 Underlier Input Method

For products that have an option for 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 must select which underlying structure the product will have. <ul style="list-style-type: none"><li>• Single Underlier</li><li>• Basket</li></ul>	
Select Underlier ID Source	If Single Underlier is chosen, user is able to select a Primary or Alternate Underlier from the available options. <ul style="list-style-type: none"><li>• FPML</li></ul>	
Input Underlier ID	FPML	This is validated against Floating Rate Index and Inflation Rate Index Enumerated List.

## 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 Notional Currency and Other Notional Currency

- User can select Notional Currency only or both Notional/Other Notional Currency.
- Notional Currency is a required field, whilst the Other Notional Currency is an optional field.
- Currency for both legs cannot be identical.
- If the following attributes have the same currency, an error message will apply “Error: Notional Currency and Other Notional Currency cannot be identical”.
- If only Notional Currency is selected, reference rate and other leg reference rate must not be the same, otherwise an error message shall apply “Error: Reference Rate and Other Leg Reference Rate cannot be identical”.

### 3.2.2 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 associated attributes must be present in the REQUEST message and only one value can be selected in the enumeration.  
\*\*Associated attributes: Underlier ID Source; Underlier ID; Reference Rate Term Value; Reference Rate Term Unit
- If Basket is selected, Underlier ID and its associated attributes will not be present in REQUEST and RECORD messages.
- Only “Basket” is allowed value in the REQUEST message for multiple underliers.

### 3.2.3 Other Underlying Structure [oneOf structure]

- Other Underlying Structure (oneOf) for Single Underlier and Basket are optional fields.
- User has the option not to select any Other Leg Underliers (Other Leg Underlier ID or Other Leg Basket).
- Only one can be selected in the REQUEST message, either Other Leg Underlier ID (single value) or Other Leg Basket (multiple value).
- If Other Leg Underlier ID is selected, the associated attributes must be present in the REQUEST message and only one value can be selected in the enumeration.  
\*\*Associated attributes: Other Leg Underlier ID Source; Other Leg Reference Rate Term Value; Other Leg Reference Rate Term Unit
- If Other Leg Basket is selected, Other Leg Underlier ID and its associated attributes will not be present in REQUEST and RECORD messages.
- Only “Basket” is allowed value in the REQUEST message for multiple underliers.

### 3.2.4 Reference Rate Term Value/Other Leg Reference Rate Term Value

- If single underlier is selected, the Reference Rate Term Value and Other Leg Reference Rate Term Value must not be zero, otherwise and error message will apply “Error: Term Value must not be 0”.

## 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 Rates spreadsheet that contains the layout of all templates. This can be found in the Rates 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	Rates.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		
<b>Structure</b>	Instrument Type + Asset Class + Underlying Asset Type + Notional Schedule + Single or Multi Currency + Delivery Type		
<b>Example</b>	SRMCCP		
<b>Source</b>	<a href="#">ISO 10962</a> (CFI) – Third edition 2015-07-15		
Source Attribute	Source Value	Derivation Method	Result
<b>Instrument Type</b>	Swap	Fixed Mapping	S
<b>Asset Class</b>	Rates	Fixed Mapping	R
<b>Underlying Asset Type</b>	Other	Fixed Mapping	M
<b>Notional Schedule</b>	Constant	Mapped to =>	C
	Accreting	Mapped to =>	I
	Amortizing	Mapped to =>	D
	Custom	Mapped to =>	Y



<b>Single or Multi Currency</b>	Single Currency	Mapped to =>	S
	Cross Currency	Mapped to =>	C
<b>Delivery Type</b>	CASH	Mapped to =>	C
	PHYS	Mapped to =>	P

## 4.2.2 Short Name

Attribute	Short Name		
<b>Structure</b>	"NA" + "/" + Asset Class + Instrument Type + Underlying Asset Type + Notional Currency + Other Notional Currency		
<b>Example</b>	NA/Rts Swaps Oth EUR GBP		
<b>Source</b>	<a href="#">ISO 18774</a> (Financial Instrument Short Name) - First edition 2015-11		
Source Attribute	Source Value	Derivation Method	Result
<b>Issuer Name</b>	None	Fixed Value	NA/
<b>Asset Class</b>	Rates	Fixed Abbreviation	Rts
<b>Instrument Type</b>	Swap	Fixed Abbreviation	Swaps
<b>Underlying Asset Type</b>	Other	Fixed Abbreviation	Oth
<b>Notional Currency</b>	Notional Currency	Mapped Enumeration	e.g., USD, EUR, GBP
<b>Other Notional Currency</b>	Other Leg Notional Currency	Mapped Enumeration	e.g., USD, EUR, GBP

### 4.2.3 Underlier Name

Attribute	Underlier Name					
Underlying Structure	Other Leg Underlying Structure	Underlying Asset		Underlier Name Source	Underlier Name Source Attribute	Underlier Name
Single Underlier	-	Reference Rate	UPI record	Reference Rate	EUR-EXT-CPI	
Single Underlier	Single Underlier	Pair of Reference Rates		UPI record	Reference Rate / Other Leg Reference Rate	EUR-EXT-CPI vs GBP-LIBOR-BBA
Single Underlier	Basket	Reference Rate	UPI record vs Constant	Reference Rate	EUR-EXT-CPI vs Basket	
Basket	-	N/A	Constant	N/A	Basket	
Basket	Single Underlier	Other Leg Reference Rate	Constant vs UPI record	Other Leg Reference Rate	Basket vs GBP-LIBOR-BBA	
Basket	Basket	N/A	Constant	N/A	Basket vs Basket	

#### 4.2.4 Single or Multi Currency

Attribute	Single or Multi Currency		
Source Attribute	Source Value	Derivation Method	Result
Single or Multi Currency	If "Notional Currency" only	Mapped to =>	Single Currency
	If "Notional Currency" and "Other Notional Currency"	Mapped to =>	Cross Currency

#### 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

## 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

No Additional comment is provided 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	M	Notional Currency	Notional Currency
		Other Notional Currency	Other Notional Currency
Delivery Type	M	Delivery Type	Delivery Type
			CFI Delivery Type
Notional Schedule	M	Notional Schedule	Notional Schedule
Single or Multiple Currency	M	Not Required	Single or Multi Currency
Underlier ID	C	Underlier ID	Reference Rate
		Other Leg Underlier ID	Other Leg Reference Rate
Underlier ID source	C	Underlier ID Source	Not Required
		Other Leg Underlier ID Source	Not Required
Underlier Type	M	Not Required	Underlying Asset Type
Underlying rate index tenor period	C	Reference Rate Term Unit	Reference Rate Term Unit
		Other Leg Reference Term Unit	Other Leg Reference Term Unit
Underlying rate index tenor period multiplier	C	Reference Rate Term Value	Reference Rate Term Value
		Other Leg Reference Rate Term Value	Other Leg Reference Rate Term Value

## 7. Appendix 2 - OTC ISIN-UPI Mapping

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

One Of	ISIN Input Attributes	Condition	Mapping Logic	UPI Input Attributes	Example UPI Value	Comments	
	Asset Class		Direct Map	Asset Class	Rates		
	Instrument Type		Direct Map	Instrument Type	Swap		
	Use Case		Direct Map	Product	Non_Standard		
	Level		Set to "UPI"	Level	UPI		
A	Term of Contract (By Effective Date)						
	Notional Currency		Direct Map	Notional Currency	EUR		
	Expiry Date		No Mapping				
	Price Multiplier		No Mapping				
	Effective Date		No Mapping				
	Expiry Date Adjusted		No Mapping				
	Tenor Calculator Method		No Mapping				
	Reference Rate	If Reference Rate = I		If Reference Rate = I = "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 > I		If Reference Rate > I = "Basket"	Underlying Structure	Basket	"One Of" Underlying Structure
	Reference Rate Term Value	If Reference Rate = I		Direct Map	Reference Rate Term Value	3	
		If Reference Rate > I		No Mapping			
	Reference Rate Term Unit	If Reference Rate = I		Direct Map	Reference Rate Term Unit	MNTH	
		If Reference Rate > I		No Mapping			
Notional Schedule			Direct Map	Notional Schedule	Constant		
Delivery Type			Direct Map	Delivery Type	PHYS		

	Other Notional Currency		Direct Map	Other Notional Currency	GBP	
	Other Leg Reference Rate	If Reference Rate = I	If Reference Rate = I = "Single Underlier"	Underlying Structure	Single Underlier	"One Of" Underlying Structure
			Map To	Other Leg Underlier ID	GBP-LIBOR-BBA	
			Set to "FPML"	Other Leg Underlier ID Source	FPML	
		If Reference Rate > I	If Reference Rate > I = "Basket"	Underlying Structure	Basket	"One Of" Underlying Structure
	Other Leg Reference Rate Term Value	If Reference Rate = I	Direct Map	Other Leg Reference Rate Term Value	7	
		If Reference Rate > I	No Mapping			
	Other Leg Reference Rate Term Unit	If Reference Rate = I	Direct Map	Other Leg Reference Rate Term Unit	DAYS	
		If Reference Rate > I	No Mapping			
	B	Term of Contract (By Tenor)				
Notional Currency			Direct Map	Notional Currency	EUR	
Expiry Date			No Mapping			
Price Multiplier			No Mapping			
Term of Contract Value			No Mapping			
Term of Contract Unit			No Mapping			
Reference Rate		If Reference Rate = I	If Reference Rate = I = "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 > I	If Reference Rate > I = "Basket"	Underlying Structure	Basket	"One Of" Underlying Structure
Reference Rate Term Value	If Reference Rate = I	Direct Map	Reference Rate Term Value	3		
	If Reference Rate > I	No Mapping				

	Reference Rate Term Unit	If Reference Rate = I	Direct Map	Reference Rate Term Unit	MNTH		
		If Reference Rate > I	No Mapping				
	Notional Schedule		Direct Map	Notional Schedule	Constant		
	Delivery Type		Direct Map	Delivery Type	PHYS		
	Other Notional Currency		Direct Map	Other Notional Currency	GBP		
	Other Leg Reference Rate	If Reference Rate = I	If Reference Rate = I = "Single Underlier"		Underlying Structure	Single Underlier	"One Of" Underlying Structure
			Map To		Other Leg Underlier ID	GBP-LIBOR-BBA	
			Set to "FPML"		Other Leg Underlier ID Source	FPML	
		If Reference Rate > I	If Reference Rate > I = "Basket"		Underlying Structure	Basket	"One Of" Underlying Structure
	Other Leg Reference Rate Term Value	If Reference Rate = I	Direct Map	Other Leg Reference Rate Term Value	7		
		If Reference Rate > I	No Mapping				
	Other Leg Reference Rate Term Unit	If Reference Rate = I	Direct Map	Other Leg Reference Rate Term Unit	DAYS		
		If Reference Rate > I	No Mapping				