

DERIVATIVES SERVICE BUREAU (DSB) LTD

UPI & OTC ISIN Product Derivation

Version I

Change History

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I. Introduction

This document provides the user with the derivation rules where applicable based on the product definition for UPI & OTC ISIN Services.

This document covers the derivation of attribute values within the UPI & OTC ISIN Services.

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
Product Definition Documents	Provides the user with the detailed description of the UPI and OTC ISIN Product Definition content such as attribute enumerations, validation, normalization, and derivation where applicable	Rates, Credit, Equity, Foreign Exchange, Commodities, Non-Standard sections
Enumerations Document	Lists all fixed values used for a product	Enumerations section
Product Definition Validations and Normalizations Document	Specifies details on validation and normalization rules	Other Documents section
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	

Product Derivation			
OTC ISIN	UPI	Asset Class(es)	Description
Attribute Name			
N/A	Underlier Characteristic	CO	Classification Derivation
	Underlier ID / Underlying Instrument ISIN	RT, CR, EQ	ID Derivation
	Underlier Name	RT, CR, EQ, CO, FX	Name Derivation
Commodity Derivative Indicator	N/A	CO	Classification Derivation
Issuer or operator of the trading venue Identifier		RT, CR, EQ, CO, FX	ID Derivation

2. UPI Product Specific Derivation

2.1 Introduction

The DSB will derive the data submitted by the user to ensure that the same UPI is returned for a given set of attributes.

2.2 Underlier Characteristic Derivation

This section specifies the derivation based on the selected underlying structure that applies to the following UPI products.

Asset Class	Instrument Type	Product
Commodities	Forward	Multi_Exotic_Forward
Commodities	Option	Multi_Exotic_Option
Commodities	Swap	Multi_Exotic_Swap

UPI		Derivation	UPI	
REQUEST (Input)	Example Value		RECORD (Output)	Example Value
N/A		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.	Example (Classification Derivation applied)	
N/A	N/A		Underlier Characteristic	Basket

2.3 Underlier ID / Underlying Instrument ISIN Derivation

This section specifies the derivation based on the selected Asset Class and Underlier Type that applies to the UPI following products.

Asset Class	Instrument Type	Product	Underlying Asset Class	Underlying Asset Type	Underlier Type
RT	Forward	Debt	Rates		
	Forward	FRA Other	Rates		
	Option	Debt Option	Rates		
CR	Swap	Corporate	Credit		Fixed Income Security
	Swap	Municipal	Credit		Fixed Income Security
	Swap	Sovereign	Credit		Fixed Income Security
	Swap	Loan	Credit		Fixed Income Security
	Swap	ABS	Credit		Fixed Income Security
	Swap	Total Return Swap	Credit		Fixed Income Security
	Swap	Non-Standard Swap	Credit	Single Name	Fixed Income Security
				Other	Fixed Income Security
	Option	Non-Standard Option	Credit	CDS on Single Name	Fixed Income Security
				Swaps	Fixed Income Security
				Other	Fixed Income Security
	Forward	Non-Standard Forward	Credit		Fixed Income Security

Asset Class	Instrument Type	Product	Underlying Asset Class	Underlying Asset Type	Underlier Type
EQ	Swap	Price Return Basic Performance Single Name	Equity		
	Swap	Parameter Return Dividend Single Name	Equity		
	Swap	Parameter Return Variance Single Name	Equity		
	Swap	Parameter Return Volatility Single Name	Equity		
	Swap	Price Return Basic Performance Single Name CFD	Equity		

Asset Class	Instrument Type	Product	Underlying Asset Class	Underlying Asset Type	Underlier Type
EQ	Forward	Price Return Basic Performance Single Name CFD	Equity		
	Option	Single Name	Equity		
	Forward	Price Return Basic Performance Single Name	Equity		
	Swap	Portfolio Swap Other	Equity		
	Swap	Portfolio Swap Single Name	Equity		
	Swap	Non_Standard Swap	Equity	Single Stock	
				Other	
	Option	Non_Standard Option	Equity	Single Stock	
				Other	
				Options	
	Forward	Non_Standard Forward	Equity	Forwards	
				Futures	
				Single Stock	
				Options	
				Futures	
OT	Swap	Non_Standard Swap	Credit		Fixed Income Security
			Equity		Equity Identifier

Asset Class	Instrument Type	Product	Underlying Asset Class	Underlying Asset Type	Underlier Type
	Option	Non_Standard Option	Credit		Fixed Income Security
			Equity		Equity Identifier
	Other	Non_Standard (Miscellaneous)	Credit		Fixed Income Security
			Equity		Equity Identifier
	Forward	Non_Standard Forward	Credit		Fixed Income Security
			Equity		Equity Identifier
			Rates		Fixed Income Security

REQUEST (Input)		Example Value		RECORD (Output)		Example Value
Example 1 (ID Derivation not required)			<ul style="list-style-type: none">• If the Underlier ID Source selected is the Primary ID Source [ISIN]; then the RECORD template must return the Primary Underlier ID as part of the UPI Record.• If the Underlier ID Source selected is one of the following Alternative Underlier ID Source values, i.e., [FIGI; CUSIP; SEDOL]; then the RECORD template must return the Primary Underlier ID mapped from the input Alternative Underlier ID as part of the UPI Record.	Example 1 (ID Derivation not applied)		
Underlier ID Source	ISIN			Underlying Instrument ISIN	US677520XZ65	
Underlier ID	US677520XZ65					
Example 2 (ID Derivation required)				Example 2 (ID Derivation applied)		
Underlier ID Source	CUSIP			Underlying Instrument ISIN	US0378331005	
Underlier ID	037833100					

2.4 Underlier Name Derivation

This section contains the list of underlying derivation rules based on the selected underlying asset(s).

The Underlier Name (for Underlying ISIN and Underlying LEI) is derived from third-party reference data sources at the time of UPI creation. The value is stored against the UPI at that time and subsequent updates to the name of the underlier will not be reflected in the UPI record.

Asset Class	Underlying Asset	Underlier Name	Underlier Name Source Attribute	Example value of Underlier Name
RT	Reference Rate	UPI record	Reference Rate	EUR-EuroSTR-COMPOUND
	Pair of Reference Rates	UPI record	Reference Rate vs Other Leg Reference Rate	EUR-EURIBOR-Reuters vs EUR-EuroSTR-COMPOUND
	Basket	Constant	N/A	Basket
	Underlying 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 UPI	Underlying UPI Record	FISN of Underlying Instrument UPI	NA/Swap Flt Flt EUR
	No Underlying	Constant	N/A	"N/A"
CR	Underlying ISIN	ISIN Reference Data	longName of Underlying Instrument ISIN	
			• ISIN is found in ISIN Reference Data.	GOTD 5.750 12/07/28

Asset Class	Underlying Asset	Underlier Name	Underlier Name Source Attribute	Example value of Underlier Name
			<ul style="list-style-type: none"> • ISIN is found in ISIN Reference Data, but its description is missing. 	No name available
			<ul style="list-style-type: none"> • ISIN is not found in ISIN Reference Data. 	No name obtainable
	Underlying LEI	LEI Reference Data	The name of the legal entity	
			<ul style="list-style-type: none"> • LEI is found in LEI Reference Data. 	MICROSOFT CORPORATION
			<ul style="list-style-type: none"> • LEI is found in LEI Reference Data, but its legal name is missing. 	No name available
			<ul style="list-style-type: none"> • LEI is not found in LEI Reference Data. 	No name obtainable
	Underlying UPI	Underlying UPI Record	FISN of Underlying Instrument UPI	NA/CDS Corp SN Sr
	Underlying Index	UPI record	Underlying Instrument Index	ITRAXX EUROPE
	Underlying Index Prop	UPI record	Underlying Instrument Index Prop	I 339-MLSREISU
	Basket	Constant	N/A	Basket
FX	Currency Pair	UPI record	Notional Currency/ Other Notional Currency	GBP USD
CO	Reference Rate	UPI record	Reference Rate	ALUMINIUM-LME CASH
	Underlying Index	UPI record	Underlying Instrument Index	OTHER
	Underlying Index Prop	UPI record	Underlying Instrument Index Prop	I 339-BABXSG0I
	Underlying UPI	UPI record	FISN of Underlying Instrument UPI	NA/Swap METL COPR USD 20221219

Asset Class	Underlying Asset	Underlier Name	Underlier Name Source Attribute	Example value of Underlier Name
	Pair of Reference Rates	UPI record	Reference Rate vs Other Reference Rate	OIL-JCC-DETAILED vs BRENT/BFOEOIL-BRENT/BFOE-ICE
	Basket	Constant	N/A	Basket
EQ	Underlying ISIN	ISIN Reference Data	longName of Underlying Instrument ISIN	
			• ISIN is found in ISIN Reference Data.	International Business Machines Ord Shs
			• 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 Index	UPI record	Underlying Instrument Index	MSCI EM USD*
	Underlying Index	UPI record	Underlying Instrument ISIN	FTSE 100 INDEX**
	Underlying Index Prop	UPI record	Underlying Instrument Index Prop	34810-JPCFNAMR
	Basket	Constant	N/A	Basket

*Where user enters an Equity Index Name not mapped to the Index ISIN, the system will define Underlier Name as the Underlying Instrument Index, e.g., 'MSCI EM USD'.

**Where use enters an Equity Index Name mapped to the Index ISIN, the system will define Underlier Name as Underlying Equity Index Name instead of looking up longName of the associated ISIN in the ISIN Reference Data, e.g., 'FTSE 100 INDEX'.

Asset Class	Underlying Asset Class	Underlying Structure	Other Leg Underlying Structure	Underlying Asset	Underlier Name Source	Underlier Name Source Attribute	Example value of Underlier Name
OT	RT	Single Underlier	Single Underlier	Reference Rate / Other Leg Reference Rate	UPI record	Reference Rate / Other Leg Reference Rate	EUR-EURIBOR-Reuters vs EUR-EuroSTR-COMPOUND
		Basket	Basket	N/A	Constant	N/A	Basket vs Basket
		Single Underlier	Basket	Reference Rate	UPI record vs Constant	Reference Rate	EUR-EURIBOR-Reuters vs Basket
		Basket	Single Underlier	Other Leg Reference Rate	Constant vs UPI record	Other Leg Reference Rate	Basket vs EUR-EURIBOR-Reuters
		Single Underlier	-	Reference Rate	UPI record	Reference Rate	EUR-EURIBOR-Reuters
		Single Underlier	-	Underlying 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
		Basket	-	N/A	Constant	N/A	Basket
	EQ	Single Underlier	-	Underlying ISIN	ISIN Reference Data	longName of Underlying Instrument ISIN	

Asset Class	Underlying Asset Class	Underlying Structure	Other Leg Underlying Structure	Underlying Asset	Underlier Name Source	Underlier Name Source Attribute	Example value of Underlier Name
						• ISIN is found in ISIN Reference Data.	MICROSOFT CORPORATION
						• 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 Index	UPI record	Underlying Instrument Index	MSCI EM USD
				Underlying Index Prop	UPI record	Underlying Instrument Index Prop	I1339-19100188998
		Basket	-	N/A	Constant	N/A	Basket
	CR	Single Underlier	-	Underlying 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 Index	UPI record	Underlying Instrument Index	CMBX.NA.AA

Asset Class	Underlying Asset Class	Underlying Structure	Other Leg Underlying Structure	Underlying Asset	Underlier Name Source	Underlier Name Source Attribute	Example value of Underlier Name
				Underlying Index Prop	UPI record	Underlying Instrument Index Prop	I 1339-19100280752
				Underlying 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
		Basket	-	N/A	Constant	N/A	Basket
	FX	-	-	Notional Currency / Other Notional Currency	UPI record	Notional Currency / Other Notional Currency	GBP USD
	CO	Single Underlier	Single Underlier	Reference Rate / Other Reference Rate	UPI record	Reference Rate vs Other Reference Rate	OIL-JCC-DETAILED vs BRENT/BFOEOIL-BRENT/BFOE-ICE
		Basket	Basket	N/A	Constant	N/A	Basket vs Basket
		Single Underlier	Basket	Reference Rate	UPI record vs Constant	Reference Rate vs Basket	OIL-JCC-DETAILED vs Basket

Asset Class	Underlying Asset Class	Underlying Structure	Other Leg Underlying Structure	Underlying Asset	Underlier Name Source	Underlier Name Source Attribute	Example value of Underlier Name
		Basket	Single Underlier	N/A / Other Reference Rate	Constant vs UPI record	Other Reference Rate	Basket vs BRENT/BFOEOIL- BRENT/BFOE-ICE

3. OTC ISIN Product Specific Derivation

3.1 Introduction

The DSB will derive the data submitted by the user to ensure that the same OTC ISIN is returned for a given set of attributes.

3.2 Commodity Derivative Indicator

Attribute	Commodity Derivative Indicator	
Asset Class	Derivation Method	Result
Commodities	Mapped to =>	TRUE
Rates	Mapped to =>	FALSE
Equity		
Credit		
Foreign Exchange		

3.3 ISO 20022 Reference Rate Mapping

The DSB requires the entry of underlying Reference Rates based on entries in the current version of the FpML Coding Scheme (eg: “USD-SOFR-COMPOUND”). In order to support conformance to ISO20022, the DSB also maps each FpML Reference Rate to an equivalent ISO Reference Rate value that is determined in the following way:

- 1. Set ISO Reference Rate to the appropriate code (if present) found in the ISO20022 BenchmarkCurveName2Code codeset.
- 2. Else, set ISO Reference Rate to the appropriate code (if present) found in the ISO20022 BenchmarkCurveNameCodecodeset.
- 3. Else, construct the ISO Reference Rate value by removing any currency prefix from the FpML Reference Rate and truncating the resultant text to max. 25 chars.

It is assumed that within the ISO20022 standard, BenchmarkCurveName2Code is, and will remain, a subset of BenchmarkCurveNameCode. However, the two code sets have been listed separately in the above methodology in order to recognize their different capacities within the relevant regulations.

This approach is intended to allow for the reference rates currently published by FpML and any additional reference rates that may be added in due course.

3.4 Issuer or Operator of the Trading Venue Identifier

Attribute	Issuer or Operator of the Trading Venue Identifier	
Source Attribute	Derivation Method	Result
Issuer or Operator of the Trading Venue Identifier	Fixed Mapping	NA