



Derivatives Service Bureau
Product Definitions
November 2021

Preface

Change History

| Date | Change | Version | Author | Revision Details |
|------------|----------|---------|-------------------|--|
| 31/03/2017 | Creation | 0.1 | Tony Birrell | Initial Version |
| 21/04/2017 | Update | 0.2 | Natalia Kozlovich | Added normalization rules for FX |
| 12/06/2017 | Change | 0.3 | Tony Birrell | Reference Rate for Commodities added to enumeration table, dates amended |
| 23/06/2017 | Change | 0.4 | Tony Birrell | Enumerations table updated |
| 13/07/2017 | Change | 0.5 | Tony Birrell | Added Other fields for Commodities |
| 31/07/2017 | Change | 0.6 | Tony Birrell | Added Data type to the enumerations table Added additional normalisation for FX Options & Commods Added array products |
| 08/08/2017 | Change | 0.7 | Tony Birrell | Amended normalisation rules for FX |
| 15/08/2017 | Change | 0.8 | Natalia Kozlovich | Amended normalisation rules for Commodities |
| 16/08/2017 | Change | 0.9 | Tony Birrell | Add Index enumeration explanation & Non-Standard clarification |
| 25/09/2017 | Change | 1.0 | Tony Birrell | Added Validations, amended FX normalisation to include all options and transitioned document to PROD version |
| 26/09/2017 | Change | 1.1 | Tony Birrell | Update enumerations for index sources |
| 10/10/2017 | Change | 1.2 | Tony Birrell | Update normalisation rules for Basis Swaps Add normalisation for FX Swaps Add Validations for FX Swaps |
| 08/11/2017 | Change | 1.3 | Tony Birrell | Amended Data type for Price Multiplier |
| 22/11/2017 | Change | 1.4 | Tony Birrell | Added new templates introduced into Production |
| 01/12/2017 | Change | 1.5 | Tony Birrell | Added Equity Index & Basket to the list of templates implemented into production |
| 18/12/2017 | Change | 1.6 | Tony Birrell | Added new templates introduced into Production / included general validation for Non-Standard templates |
| 02/01/2018 | Change | 1.7 | Tony Birrell | Added Commodity Basis Swap normalisation |
| 09/01/2018 | Change | 1.8 | Tony Birrell | Added additional validations in section 8 |
| 10/01/2018 | Change | 1.9 | Tony Birrell | Added non-standard definitions to the FX normalisation |
| 30/01/2018 | Change | 2.0 | Tony Birrell | Added licensing Annex III |
| 23/04/2018 | Change | 2.1 | Nathan Dagg | Reference Rate – Validation Section 8 – SONIA Rates CapFloor – Validation section 8.15 – SONIA |
| 18/05/2018 | Change | 2.2 | Nathan Dagg | Section 8.14 / 8.15 – SOFR validation |

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|------------|--------|-----|----------------------|---|
| 06/07/2018 | Change | 2.3 | Nathan Dagg | Section 8.16 – Removal of VES Addition of STN and MRU |
| 23/08/2018 | Change | 2.4 | Nathan Dagg | Section 8.16 – Addition of VES |
| 27/08/2018 | Change | 2.5 | Simon Wiltshire | Section 7.8 and Section 8.17 – Commodities – Multi-Exotic Swap, Option or Forward Underlying Assets |
| 15/10/2018 | Change | 2.6 | Simon Wiltshire | Section 7.5 and Section 8.4 – Non- Deliverable FX Swap template |
| 13/12/2018 | Change | 2.7 | Simon Wiltshire | Portfolio Swap, Rates Term of Contract, Production release of Cross-Asset templates |
| 17/6/2019 | Change | 2.8 | Simon Wiltshire | Section 8.19 – Explanation of the integrated tenor calculator for Term of Contract (Field 41). |
| 11/7/2019 | Change | 2.9 | Simon Wiltshire | Update Section 8.19 – Explanation of the integrated Tenor Calculator |
| 4/9/2019 | Change | 3.0 | Simon Wiltshire | Added EUR-EuroSTR-COMPOUND to Section 8.5 |
| 5/9/2019 | Change | 3.1 | Simon Wiltshire | Added two new Rates Swap templates: Inflation Basis YoY and Inflation Fixed Float ZC. |
| 11/12/2019 | Change | 3.2 | Simon Wiltshire | Miscellaneous updates required by Internal Audit. |
| 09/01/2020 | Change | 3.3 | Natalia Kozlovich | Added new Rates Option Inflation CapFloor template |
| 22/07/2020 | Change | 3.4 | Adam Grace | Added ISO 2022 Reference Rate Mapping |
| 16/10/2020 | Change | 3.5 | Natalia Kozlovich | Added Strike Price Type field and validation of Strike Price |
| 28/09/2021 | Change | 3.6 | Marlowe Surop | Added 'Contract Specification' field and validation. |

1 Introduction

- This document and the accompanying annexes are designed to act as a manual for users to interpret and utilize the provisional Product Definitions in the Derivatives Service Bureau (DSB) environment
- This document provides the user with a description of the Product Definition content, product sequencing, attribute enumerations and validation, where applicable
- The accompanying asset class annexes will provide all the Product Definitions within an asset class and the specific attributes that comprise each definition
- The appendix specifies the normalization approach the DSB is employing within the ISIN engine
- Any feedback or queries in relation to Product Definition design or functionality should be directed to secretariat@ANNA-DSB.com

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2 Organization of this report





The document is organized as follows:

- Section 3 outlines the structure and attributes contained within the Product Definitions
- Section 4 outlines the enumerations and validations, where applicable, of each of the attributes contained within the provisional Product Definitions

3 Provisional Product Definitions

A Product Definition is a unique representation of the population of attributes applicable to a specific OTC Derivative product within an asset class.

Each Product Definition has been grouped into four distinct sections:

- Product Definition Selection: Set of fields to identify the product specific schema. This schema defines the full set of attributes for that product 
- Product Definition Input Attributes: User input fields 
- Product Definition Defaulted Input: The set of attributes that contain defaulted values which are valid for ISIN creation however the user can engage and select a different value if required 
- Product Definition Derived Attributes: Attributes that will be inferred by the combination of Product Definition Selection & Product Definition Input Attributes and will be returned to the user as part of the full ISIN record 

The combination of the above 4 sections comprise the record of the ISIN that will be returned to the requester.

3.1 Product Definition Selection

The Product Definition Selection fields will identify the product specific schema. This schema defines the full set of attributes for that product.

Product Definition selection interface is comprised of the below fields:

- Asset Class: ISO 10962 CFI Letter #2
- Instrument Type: ISO 10962 CFI #1
- Product: Unique human readable label that defines the product (this is based on the ISDA 2.0 Taxonomy combination of Sub product and Transaction Type, where applicable)
- Level: Label assigned to the ISIN to describe its level in the hierarchy – the day 1 level will be ‘InstRefDataReporting’ to satisfy the technical requirements articulated by MiFID II / MiFIR RTS 23 Annex 1 while bearing in mind the requirements for future implementation of CPMI-IOSCO’s UPI

3.2 Product Definition Input Attributes

Product Definition Input Attributes are the population of attributes that require user input when requesting an ISIN.

Attributes can be populated by either selecting a value from an enumerated list e.g FpML Floating Rate Index List or entering text in a specific format e.g. Expiry date YYYYMMDD. The full list of attributes and their enumerations can be found in section 4 below.

3.3 Product Definition Derived Attributes

Product Definition Derived Attributes are those which are inferred by the combination of Product Definition Selection & Product Definition Input Attributes. These will be auto populated by the DSB ISIN engine and returned to the user as part of the ISIN record.

3.4 Asset Class Product Definition Annexes

A Product Definition annex is available for each asset class containing the population of products implemented. These will be made available to users per the schedule below:

| Order | Asset Class Annex | Date of Annex publication |
|-------|-------------------|---------------------------|
| 1 | Rates | 25-09-2017 |
| 2 | Credit | 25-09-2017 |
| 3 | FX | 25-09-2017 |
| 4 | Equity | 25-09-2017 |
| 5 | Commodities | 25-09-2017 |

3.5 Implementation

The following product definitions for all asset classes have been implemented into DSB environment at the date of this revision.

Rates:

Rates.Swap.Basis.InstRefDataReporting.V3.json
 Rates.Swap.Basis_OIS.InstRefDataReporting.V3.json
 Rates.Swap.Cross_Currency_Basis.InstRefDataReporting.V3.json
 Rates.Swap.Cross_Currency_Fixed_Fixed.InstRefDataReporting.V3.json
 Rates.Swap.Cross_Currency_Fixed_Float.InstRefDataReporting.V3.json
 Rates.Swap.Cross_Currency_Fixed_Float_NDS.InstRefDataReporting.V3.json
 Rates.Swap.Cross_Currency_Inflation_Swap.InstRefDataReporting.V2.json
 Rates.Swap.Cross_Currency_Zero_Coupon.InstRefDataReporting.V3.json
 Rates.Swap.Fixed_Fixed.InstRefDataReporting.V2.json
 Rates.Swap.Fixed_Float.InstRefDataReporting.V3.json
 Rates.Swap.Fixed_Float_OIS.InstRefDataReporting.V3.json
 Rates.Swap.Fixed_Float_Zero_Coupon.InstRefDataReporting.V3.json
 Rates.Swap.Inflation_Basis_Zero_Coupon.InstRefDataReporting.V2.json
 Rates.Swap.Inflation_Basis_YoY.InstRefDataReporting.V1.json
 Rates.Swap.Inflation_Fixed_Float_YoY.InstRefDataReporting.V2.json
 Rates.Swap.Inflation_Fixed_Float_Zero_Coupon.InstRefDataReporting.V1.json
 Rates.Swap.Inflation_Swap.InstRefDataReporting.V2.json
 Rates.Option.CapFloor.InstRefDataReporting.V3.json
 Rates.Option.Inflation_CapFloor.InstRefDataReporting.V1.json
 Rates.Option.Debt_Option.InstRefDataReporting.V1.json
 Rates.Option.SwapOption.InstRefDataReporting.V1.json
 Rates.Forward.FRA_Index.InstRefDataReporting.V3.json

Rates.Forward.FRA_Other.InstRefDataReporting.V2.json

Credit:

Credit.Swap.ABS.InstRefDataReporting.V1.json
Credit.Swap.Corporate.InstRefDataReporting.V2.json
Credit.Swap.Loan.InstRefDataReporting.V1.json
Credit.Swap.Municipal.InstRefDataReporting.V2.json
Credit.Swap.Sovereign.InstRefDataReporting.V2.json
Credit.Swap.Index.InstRefDataReporting.V1.json
Credit.Swap.Index_Tranche.InstRefDataReporting.V1.json
Credit.Swap.Total_Return_Swap.InstRefDataReporting.V1.json
Credit.Option.Index_Swaption.InstRefDataReporting.V1.json
Credit.Option.Single_Name_Swaption.InstRefDataReporting.V1.json

FX:

Foreign_Exchange.Swap.FX_Swap.InstRefDataReporting.V1.json
Foreign_Exchange.Option.Barrier_Option.InstRefDataReporting.V1.json
Foreign_Exchange.Option.Digital_Option.InstRefDataReporting.V1.json
Foreign_Exchange.Option.Forward_Vol_Agreement.InstRefDataReporting.V1.json
Foreign_Exchange.Option.NDO.InstRefDataReporting.V1.json
Foreign_Exchange.Option.Target_Option.InstRefDataReporting.V1.json
Foreign_Exchange.Option.Vanilla_Option.InstRefDataReporting.V1.json
Foreign_Exchange.Forward.Contract_For_Difference.InstRefDataReporting.V1.json
Foreign_Exchange.Forward.Forward.InstRefDataReporting.V1.json
Foreign_Exchange.Forward.NDF.InstRefDataReporting.V1.json
Foreign_Exchange.Forward.Rolling_Spot.InstRefDataReporting.V1.json
Foreign_Exchange.Forward.Spreadbet.InstRefDataReporting.V1.json
Foreign_Exchange.Forward.Vol_Var.InstRefDataReporting.V1.json
Foreign_Exchange.Swap.NDS.InstRefDataReporting.V1.json

Equities:

Equity.Swap.Price_Return_Basic_Performance_Single_Name.InstRefDataReporting.V1.json
Equity.Swap.Price_Return_Basic_Performance_Single_Index.InstRefDataReporting.V1.json
Equity.Swap.Price_Return_Basic_Performance_Basket.InstRefDataReporting.V1.json
Equity.Swap.Parameter_Return_Dividend_Single_Name.InstRefDataReporting.V1.json
Equity.Swap.Parameter_Return_Dividend_Single_Index.InstRefDataReporting.V1.json
Equity.Swap.Parameter_Return_Dividend_Basket.InstRefDataReporting.V1.json
Equity.Swap.Parameter_Return_Variance_Single_Name.InstRefDataReporting.V1.json
Equity.Swap.Parameter_Return_Variance_Single_Index.InstRefDataReporting.V1.json
Equity.Swap.Parameter_Return_Variance_Basket.InstRefDataReporting.V1.json
Equity.Swap.Parameter_Return_Volatility_Single_Name.InstRefDataReporting.V1.json
Equity.Swap.Parameter_Return_Volatility_Single_Index.InstRefDataReporting.V1.json
Equity.Swap.Parameter_Return_Volatility_Basket.InstRefDataReporting.V1.json
Equity.Swap.Price_Return_Basic_Performance_Single_Name_CFD.InstRefDataReporting.V1.json
Equity.Swap.Price_Return_Basic_Performance_Single_Index_CFD.InstRefDataReporting.V1.json
Equity.Swap.Price_Return_Basic_Performance_Basket_CFD.InstRefDataReporting.V1.json
Equity.Portfolio_Swap.InstRefDataReporting.V1.json
Equity.Portfolio_Swap_Single_Name.InstRefDataReporting.V1.json
Equity.Portfolio_Swap_Single_Index.InstRefDataReporting.V1.json
Equity.Portfolio_Swap_Other.InstRefDataReporting.V1.json
Equity.Option.Single_Name.InstRefDataReporting.V1.json
Equity.Option.Single_Index.InstRefDataReporting.V1.json

Equity.Option.Basket.InstRefDataReporting.V1.json
Equity.Forward.Price_Return_Basic_Performance_Single_Name.InstRefDataReporting.V1.json
Equity.Forward.Price_Return_Basic_Performance_Single_Name_CFD.InstRefDataReporting.V1.json
Equity.Forward.Price_Return_Basic_Performance_Single_Index.InstRefDataReporting.V1.json
Equity.Forward.Price_Return_Basic_Performance_Single_Index_CFD.InstRefDataReporting.V1.json
Equity.Forward.Price_Return_Basic_Performance_Basket.InstRefDataReporting.V1.json
Equity.Forward.Price_Return_Basic_Performance_Basket_CFD.InstRefDataReporting.V1.json

Commodities:

Commodities.Swap.Swap.InstRefDataReporting.V1.json
Commodities.Swap.Basis_Swap.InstRefDataReporting.V1.json
Commodities.Option.Option.InstRefDataReporting.V1.json
Commodities.Option.Swaption.InstRefDataReporting.V1.json
Commodities.Forward.Forward.InstRefDataReporting.V1.json
Commodities.Swap.Multi_Exotic_Swap.InstRefDataReporting.V1.json
Commodities.Option.Multi_Exotic_Option.InstRefDataReporting.V1.json
Commodities.Forward.Multi_Exotic_Forward.InstRefDataReporting.V1.json

Non-Standard:

Rates.Swap.Non_Standard.InstRefDataReporting.V3.json
Rates.Option.Non_Standard.InstRefDataReporting.V3.json
Credit.Swap.Non_Standard.InstRefDataReporting.V2.json
Credit.Option.Non_Standard.InstRefDataReporting.V1.json
Foreign_Exchange.Option.Non_Standard.InstRefDataReporting.V1.json
Foreign_Exchange.Forward.Non_Standard.InstRefDataReporting.V1.json
Equity.Swap.Non_Standard.InstRefDataReporting.V1.json
Equity.Option.Non_Standard.InstRefDataReporting.V1.json
Equity.Forward.Non_Standard.InstRefDataReporting.V1.json
Other.Non_Standard_Swap.InstRefDataReporting.V3.json
Other.Non_Standard_Option.InstRefDataReporting.V3.json
Other.Non_Standard_Other.InstRefDataReporting.V3.json

4 Attribute Data Dictionary

- Alongside each attribute in the table below, the Source has been assigned which specifies the exact reference (where applicable) of that attribute within the respective taxonomy¹.
- The Data type specific to that attribute is also provided and aligns with the ISO standard
- These attributes will be presented in UAT as enumerated lists where applicable.
- It should be noted that the JSON messaging schema the DSB is employing will contain all attributes listed below and their associated enumerations.

| Full Name | Source | Type (ISO 20022 Standard) |
|--------------------------------|---|---|
| Additional sub product | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FfinancialInstrument%2FnewRecord%2FderivativeInstrumentAttributes%2FassetClassSpecificAttributes%2Fcommodity%2Fproduct%2Fagricultural%2FgrainOilSeed%2FadditionalSubProduct | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Asset Class | CFI Code (ISO 10962: 2015) Text associated with Character #2 | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Base product | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstrumentAttributes%2FAssetClassSpecificAttributes%2FCommodity%2FProduct%2FAgricultural%2FGrainOilSeed%2FBaseProduct | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Classification Type | CFI Code (ISO 10962: 2015) Full Code | CFIOct2015Identifier (based on string) pattern: [A-Z]{6,6} |
| Commodity Derivative Indicator | Boolean | TrueFalseIndicator (based on boolean) |
| Contract Specification | https://www.fpml.org/spec/coding-scheme/ (FpML Scheme Definition: matrixTermScheme) <i>Note: Enumerated values are filtered to support entries for Single Name CDS product selected.</i> | matrixTermScheme (based on string) |
| Debt Seniority | ISO 20022 FinancialInstrumentReportingReferenceDataReportV01 (ISO 20022 Standard Repository: DebtInstrumentSeniorityTypeCode) | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Delivery type | CFI Code (ISO 10962: 2015) Character #6 | Max35Text (based on string) minLength: 1 maxLength: 35 |

¹ To access the relevant reference links below to the ISO20022 messages within swift/mystandards, users are required to create a free account by following the link below and clicking 'Login to MyStandards' in the top right of the homepage: <https://mystandards.swift.com/>
Once an account has been created and login is successful, the links below will direct users to the correct reference.

| | | |
|---|---|---|
| Effective Date | Date YYYY-MM-DD (Undjusted Effective Date of the financial instrument) Syntactic validation: <ul style="list-style-type: none"> - Date format as above - Greater than 1970 | ISODate (based on date) |
| Expiry Date | Date YYYY-MM-DD (Expiry Date of the financial instrument) Syntactic validation: <ul style="list-style-type: none"> - Date format as above - Between 1970 & 9999 - Expected to be UNADJUSTED DATE | ISODate (based on date) |
| Expiry Date Adjusted | Boolean: FALSE only | TrueFalseIndicator (based on boolean) |
| Final price type | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstrumentAttributes%2FAssetClassSpecificAttributes%2FCommodity%2FFinalPriceType | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Full Name | Full name of the instrument defined by DSB | Max350Text (based on string) minLength: 1 maxLength: 350 |
| FX Type | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstrumentAttributes%2FAssetClassSpecificAttributes%2FForeignExchange%2FFXType | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Identification (ISIN) | ISO 6166: 2013 | Max12Text (based on string) Pattern: [A-Z]{2,2}[A-Z0-9]{9,9}[0-9]{1,1} |
| Instrument Type | CFI Code (ISO 10962: 2015) Character #1 | Max35Text (based on string) minLength: 1 maxLength: 35 |
| ISO Reference Rate | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstrumentAttributes%2FUnderlyingInstrument%2FSingle%2FIndex%2FName%2FReferenceRate | Max25Text (based on string) minLength: 1 maxLength: 25 |
| ISO Other Leg Reference Rate | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstrumentAttributes%2FUnderlyingInstrument%2FSingle%2FIndex%2FName%2FReferenceRate | Max25Text (based on string) minLength: 1 maxLength: 25 |
| ISO Place of Settlement (applicable to Non-Standard Product Defintions) | ISO 3166 | Max2Text (based on string) minLength: 0 maxLength: 2 |
| ISO Underlying Instrument Index | https://www2.swift.com/mystandards/#/mp/mx/LHnxgEdkEeam3NbiLvWnrw/ ju17AYy7Eea01uQ-eS5IPQ#content%2FReferenceData%2FDerivativeInstrumentAttributes%2FUnderlyingInstru | Max25Text (based on string) minLength: 1 maxLength: 25 |

| | | |
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| | ment%2FSingle%2FIndex%2FName%2FRefere nceRate | |
| Issuer or operator of the trading venue identifier | “NA” | Max2Text (based on string) minLength: 1 maxLength: 2 |
| Last Update DateTime | https://www.iso.org/iso-8601-date-and-time-format.html | Date YYYY-MM-DDTHH:MM:SS |
| Level | “InstRefDataReporting” (Label assigned to the ISIN to describe its level in the ISIN hierarchy) | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Notional Currency | ISO 4217: 2015 | Pattern: [A-Z]{3,3} |
| Notional Schedule | CFI Code (ISO 10962: 2015) Character #4 (Swaps: Rates only) | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Option exercise style | CFI Code (ISO 10962: 2015) Character #4 (Options – first part) | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Option type | CFI Code (ISO 10962: 2015) Character #4 (Options – second part) | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Other Base product | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstrumentAttributes%2FAssetClassSpecificAttributes%2FCommodity%2FProduct%2FAgricultural%2FGrainOilSeed%2FBaseProduct | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Other Sub product | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstrumentAttributes%2FAssetClassSpecificAttributes%2FCommodity%2FProduct%2FAgricultural%2FGrainOilSeed%2FSubProduct | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Other Additional sub product | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstrumentAttributes%2FAssetClassSpecificAttributes%2FCommodity%2FProduct%2FAgricultural%2FGrainOilSeed%2FAdditionalSubProduct | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Other Reference Rate | Commodities: ISDA 2.0 taxonomy | Max350Text (based on string) minLength: 1 maxLength: 350 |
| Other Leg Reference Rate | Rates: https://www.fpml.org/spec/coding-scheme/ (FpML Scheme Definition: floatingRateIndexScheme) Rates CPI: https://www.fpml.org/spec/coding-scheme/ (FpML Scheme Definition: inflationIndexDescriptionScheme) | Max350Text (based on string) minLength: 1 maxLength: 350 |
| Other Leg Reference Rate Term Unit | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstr | Max35Text (based on string) minLength: 1 maxLength: 35 |

| | | |
|--|---|--|
| | umentAttributes%2FUnderlyingInstrument%2FSingle%2FIndex%2FName%2FTerm%2FUnit | |
| Other Leg Reference Rate Term Value | Integer – Positive or negative but not 0 | Max3Number (based on decimal) fractionDigits: 0 totalDigits: 3 |
| Other Notional Currency | ISO 4217: 2015 | Pattern: [A-Z]{3,3} |
| Parent | ISO 6166: 2013 (where relevant, <null> otherwise) | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Place of Settlement (applicable to NDS and Non-Standard Product Definitions) | ISO 3166 | Max100Text (based on string) minLength: 0 maxLength: 100 |
| Price Multiplier | Double (0 or positive) | DECIMAL {15/14} - FractionDigits: 14 - TotalDigits: 15 |
| Product | Unique human readable instrument label, created by the DSB PC and based on ISDA 2.0 taxonomy | Max50Text (based on string) minLength: 1 maxLength: 50 |
| Reference Rate | Rates: https://www.fpml.org/spec/coding-scheme/ ² (FpML Scheme Definition: floatingRateIndexScheme) Rates CPI: https://www.fpml.org/spec/coding-scheme/ (FpML Scheme Definition: inflationIndexDescriptionScheme) Commodities: ISDA 2.0 taxonomy | Max350Text (based on string) minLength: 1 maxLength: 350 |
| Reference Rate Term Unit | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstrumentAttributes%2FUnderlyingInstrument%2FSingle%2FIndex%2FName%2FTerm%2FUnit | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Reference Rate Term Value | Integer – Positive or negative but not 0 | Max3Number (based on decimal) fractionDigits: 0 totalDigits: 3 |
| Return or payout Trigger | CFI Code (ISO 10962: 2015) Character #4 (Swaps); Character #5 (Forwards) | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Short Name | ISO 18774: 2015 | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Settlement Currency | ISO 4217: 2015 | Pattern: [A-Z]{3,3} |
| Single or Multi currency | CFI Code (ISO 10962: 2015) Character #5 (Rates only) | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Status | New, Updated, Deleted, Expired | Max35Text (based on string) minLength: 1 maxLength: 35 |

² Any additional Reference Rates can be added to FpML following the submission to and acceptance by ISDA of a specific legal definition for the rate in question. Submissions are made by ISDA members.

| | | |
|---|---|--|
| Status Reason | Text string | Max350Text (based on string) minLength: 1 maxLength: 350 |
| Strike Price Type | For Equity Option Basket/Single Index/Single Name: <ul style="list-style-type: none"> • Monetary Value • Percentage • Yield • Basis Points For Equity Option Non-Standard, Cross-Asset Option and Cross-Asset Other: <ul style="list-style-type: none"> • Monetary Value • Percentage • Yield • Basis Points • No Price | |
| Strike Price | {DECIMAL-18/13} in case the price is expressed as monetary value {DECIMAL-11/10} in case the price is expressed as percentage or yield {DECIMAL-18/17} in case the price is expressed as basis points 'PNDG' in case the price is not available | - DECIMAL or 'PNDG' |
| Strike Price Currency (applicable to Non-Standard Product Definitions for Monetary Value or PNDG) | ISO 4217: 2015 | Pattern: [A-Z]{3,3} |
| Sub product | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstrumentAttributes%2FAssetClassSpecificAttributes%2FCommodity%2FProduct%2FAgricultural%2FGrainOilSeed%2FSubProduct | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Tenor Calculator Method | Enumerated List: "ESMA" Only. | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Term Of Contract Unit | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstrumentAttributes%2FUnderlyingInstrument%2FSingle%2FIndex%2FName%2FTerm%2FUnit | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Term Of Contract Value | Integer – Positive or negative but not 0 | Max3Number (based on decimal) fractionDigits: 0 totalDigits: 3 |
| Transaction type | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstrumentAttributes%2FAssetClassSpecificAttributes%2FCommodity%2FTransactionType | Max35Text (based on string) minLength: 1 maxLength: 35 |

| | | |
|--|---|---|
| Underlying Asset Type | CFI Code (ISO 10962: 2015) Character #3 | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Underlying credit index series (RTS2 Annex IV Field 35) | Positive Integer – 1 to 999 | Max3Number fractionDigits: 0 totalDigits: 3 |
| Underlying credit index version (RTS2 Annex IV Field 36) | Positive Integer – 1 to 999 | Max3Number fractionDigits: 0 totalDigits: 3 |
| Underlying Instrument Index | Rates: https://www.fpml.org/spec/coding-scheme/ (FpML Scheme Definition: floatingRateIndexScheme) Rates CPI: https://www.fpml.org/spec/coding-scheme/ (FpML Scheme Definition: inflationIndexDescriptionScheme) Credit: Markit Index legal long name Equities: ESMA TTC Dataset Commodities: Standard Market Indices | Max350Text (based on string) minLength: 1 maxLength: 350 |
| Underlying Instrument Index Term Unit | https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstrumentAttributes%2FUnderlyingInstrument%2FSingle%2FIndex%2FName%2FTerm%2FUnit | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Underlying Instrument Index Term Value | Integer – Positive or negative but not 0 | Max3Number (based on decimal) fractionDigits: 0 totalDigits: 3 |
| Underlying instrument ISIN | ISO 6166: 2013 Syntactic validation: - 1st 2 characters = e.g. “EZ” - Next 9 are characters alphanumeric (caps) - Check Sum | Max12Text (based on string) Pattern: [A-Z]{2,2}[A-Z0-9]{9,9}[0-9]{1,1} |
| Underlying instrument LEI | ISO 17442: 2012 Syntactic validation: - Alphanumeric - Check sum | Max20Text (based on string) minLength: 1 maxLength: 20 |
| Underlying Issuer Type | CFI Code (ISO 10962: 2015) Character #5 (Swaps: Credit) | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Valuation Method or Trigger | ISO 10962: 2015. Character #5 (options) | Max35Text (based on string) minLength: 1 maxLength: 35 |
| Version | Positive Integer – 1 to 999 | Max3Number fractionDigits: 0 totalDigits: 3 |

5 Attribute Arrays

The following attributes allow for multiple values to be input when they are part of Product Definitions that require multiple underliers:

- Underlying Instrument ISIN
- Underlying Instrument Index
- Reference Rate

The following Product Definitions allow for an array to be input into the relevant attribute listed above:

| Asset Class | Instrument | Product Definitions |
|-------------|------------|---|
| Equity | Swap | Price_Return_Basic_Performance_Basket |
| Equity | Swap | Parameter_Return_Dividend_Basket |
| Equity | Swap | Parameter_Return_Variance_Basket |
| Equity | Swap | Parameter_Return_Volatility_Basket |
| Equity | Swap | Price_Return_Basic_Performance_Basket_CFD |
| Equity | Swap | Portfolio_Swap |
| Equity | Forward | Price_Return_Basic_Performance_Basket_CFD |
| Equity | Forward | Price_Return_Basic_Performance_Basket |
| Equity | Option | Basket |
| Commodities | Swap | Multi Exotic Swap |
| Commodities | Forward | Multi Exotic Forward |
| Commodities | Option | Multi Exotic Option |

6 Index Enumerations

Underlying Index can be broken down into 2 categories:

- Standard Market Indices
- Proprietary Indices

6.1 Standard Market Indices

| Asset Class | RTS 23 Field | Owner | Source |
|-------------|-----------------------------|--------|--|
| Rates | Reference Rate | FpML | https://www.fpml.org/spec/coding-scheme/ (FpML Scheme Definition: floatingRateIndexScheme) |
| Rates - CPI | Reference Rate | FpML | https://www.fpml.org/spec/coding-scheme/ (FpML Scheme Definition: inflationIndexDescriptionScheme) |
| Commodities | Underlying Instrument Index | | Standard Market Indices |
| Commodities | Reference Rate | FpML | ISDA Taxonomy 2.0 |
| Credit | Underlying Instrument Index | Markit | Markit Index Legal Long name |

| | | | |
|----------|-----------------------------|------|---|
| Equities | Underlying Instrument Index | ESMA | https://www.esma.europa.eu/sites/default/files/equity_derivatives_i.xlsx |
|----------|-----------------------------|------|---|

6.2 Proprietary Indices

The DSB has developed a change workflow for Proprietary Indices that is being published on Wednesday 25th September.

The workflow will allow authorised requesters to submit proprietary indices to the DSB for use as underlying references for ISIN creation.

| Asset Class | RTS 23 Field | Owner | Source |
|-------------|-----------------------------|-------|---|
| Commodities | Underlying Instrument Index | DSB | Proprietary Index list comprised of industry submission & maintained by the DSB |
| Credit | Underlying Instrument Index | DSB | Proprietary Index list comprised of industry submission & maintained by the DSB |
| Equities | Underlying Instrument Index | DSB | Proprietary Index list comprised of industry submission & maintained by the DSB |

7 Appendix 1 - Normalisation

7.1 Common Normalization

This normalization is applicable all instruments.

For both legs:

1. If Reference Rate Term Unit = "DAYS" and Reference Rate Term Value is divisible by 7, record it in weeks:

| | | | |
|---------------------------|------|---|------|
| Reference Rate Term Value | 7 | → | 1 |
| Reference Rate Term Unit | DAYS | | WEEK |

2. If Reference Rate Term Unit = "MNTH" and Reference Rate Term Value is divisible by 12, record it in years:

| | | | |
|---------------------------|------|---|------|
| Reference Rate Term Value | 12 | → | 1 |
| Reference Rate Term Unit | MNTH | | YEAR |

The above normalization does not apply for negative reference rate values/units. The DSB has received a request to enhance this normalization and will revert to industry with relevant timelines. In the interim, users should not expect normalization to occur for negative term value & unit and so should input -7 DAYS as -1 WEEK, -14 DAYS as -2 WEEK etc and -12 MNTH as -1 YEAR, -24 MNTH as -2 YEAR etc.

Please note that this normalization also applies to the Term of Contract Value and Unit attributes found on Rates and Cross-Asset templates (if a Reference Rate is input).

7.2 Basis Swap/Cross Currency Swap normalization

The purpose of this appendix is to specify normalization for Basis Swap, Cross Currency Basis Swap and Cross Currency Fixed Fixed Swap products.

7.2.1 Basis Swap

For a Basis Swap the user provides the following input:

| Attribute | Sample Value |
|-------------------------------------|--------------------------------|
| Notional Currency | USD |
| Expiry date | 20211231 |
| Reference Rate | USD-LIBOR-BBA |
| Reference Rate Term Value | 3 |
| Reference Rate Term Unit | MNTH |
| Other Leg Reference Rate | USD-SIFMA Municipal Swap Index |
| Other Leg Reference Rate Term Value | 9 |
| Other Leg Reference Rate Term Unit | MNTH |
| Notional Schedule | C - Constant |

Regardless of the order in which the reference legs are supplied, the DSB assumes the same ISIN would be allocated to the instrument, i.e. the instrument in the example above is the same as if it were entered as follows:

| Attribute | Sample Value |
|-------------------------------------|--------------------------------|
| Notional Currency | USD |
| Expiry date | 20211231 |
| Reference Rate | USD-SIFMA Municipal Swap Index |
| Reference Rate Term Value | 9 |
| Reference Rate Term Unit | MNTH |
| Other Leg Reference Rate | USD-LIBOR-BBA |
| Other Leg Reference Rate Term Value | 3 |
| Other Leg Reference Rate Term Unit | MNTH |
| Notional Schedule | C - Constant |

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

Normalization rules:

1. Order alphabetically "Reference Rate" and "Other Leg Reference Rate"
2. If "Reference Rate" is first alphabetically, record it as "Reference Rate"
3. If "Reference Rate" is not first alphabetically, then record the following fields as:

| | | |
|-------------------------------------|---|---------------------------|
| Other Leg Reference Rate | → | Reference Rate |
| Other Leg Reference Rate Term Value | | Reference Rate Term Value |
| Other Leg Reference Rate Term Unit | | Reference Rate Term Unit |

And record the following fields as:

| | | |
|---------------------------|---|-------------------------------------|
| Reference Rate | → | Other Leg Reference Rate |
| Reference Rate Term Value | | Other Leg Reference Rate Term Value |
| Reference Rate Term Unit | | Other Leg Reference Rate Term Unit |

Should the Reference Rate and Other Leg Reference rate be identical then the DSB will normalize the term value & unit to ensure a singular ISIN for any given basis combination.

Normalization rules:

1. If the term unit is the same, then order Term Value numerically from lowest to highest
2. If the term unit is different, then retain the respective Term Unit with the Term Value as input by the user and order chronologically by Term unit (ie DAY, WEEK, MNTH, YEAR)

7.2.2 Cross Currency Basis Swap

For a Cross Currency Basis Swap the user is required to provide the following input:

| Attribute | Sample Value |
|-------------------|--------------|
| Notional Currency | GBP |

| | |
|-------------------------------------|---------------|
| Expiry date | 20180211 |
| Reference Rate | GBP-LIBOR-BBA |
| Reference Rate Term Value | 3 |
| Reference Rate Term Unit | MNTH |
| Other Notional Currency | USD |
| Other Leg Reference Rate | USD-LIBOR-BBA |
| Other Leg Reference Rate Term Value | 3 |
| Other Leg Reference Rate Term Unit | MNTH |
| Notional Schedule | C - Constant |

The Notional Currency is always associated with the Reference Rate and Other Currency with the Other Reference Rate.

Regardless of the order in which the notional currencies are supplied, the DSB assumes the same ISIN would be allocated to the instrument, i.e. the instrument in the example above is the same as if it was entered as follows:

| Attribute | Sample Value |
|-------------------------------------|---------------|
| Notional Currency | USD |
| Expiry date | 20180211 |
| Reference Rate | USD-LIBOR-BBA |
| Reference Rate Term Value | 3 |
| Reference Rate Term Unit | MNTH |
| Other Notional Currency | GBP |
| Other Leg Reference Rate | GBP-LIBOR-BBA |
| Other Leg Reference Rate Term Value | 3 |
| Other Leg Reference Rate Term Unit | MNTH |
| Notional Schedule | C - Constant |

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

Normalization rules:

1. Order alphabetically "Notional Currency" and "Other Notional Currency".
2. If "Notional Currency" is first alphabetically, record it as "Notional Currency"
3. If "Notional Currency" is not first alphabetically, then record the following fields as:

| | | |
|-------------------------------------|---|---------------------------|
| Other Notional Currency | → | Notional Currency |
| Other Leg Reference Rate | | Reference Rate |
| Other Leg Reference Rate Term Value | | Reference Rate Term Value |
| Other Leg Reference Rate Term Unit | | Reference Rate Term Unit |

And record the following fields as:

| | | |
|-------------------|---|--------------------------|
| Notional Currency | → | Other Notional Currency |
| Reference Rate | | Other Leg Reference Rate |

| | | |
|---------------------------|--|-------------------------------------|
| Reference Rate Term Value | | Other Leg Reference Rate Term Value |
| Reference Rate Term Unit | | Other Leg Reference Rate Term Unit |

7.2.3 Cross Currency Swaps

For a Cross Currency Fixed Float Swap the user is required to provide the following input:

| Attribute | Sample Value |
|---------------------------|---------------|
| Notional Currency | USD |
| Expiry date | 20211231 |
| Reference Rate | USD-LIBOR-BBA |
| Reference Rate Term Value | 6 |
| Reference Rate Term Unit | MNTH |
| Other Notional Currency | EUR |
| Notional Schedule | C - Constant |

Regardless of the order in which the notional currencies are supplied, the DSB assumes the same ISIN would be allocated to the instrument, i.e. the instrument in the example above is the same as if it were entered as follows:

| Attribute | Sample Value |
|---------------------------|---------------|
| Notional Currency | EUR |
| Expiry date | 20211231 |
| Reference Rate | USD-LIBOR-BBA |
| Reference Rate Term Value | 6 |
| Reference Rate Term Unit | MNTH |
| Other Notional Currency | USD |
| Notional Schedule | C - Constant |

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

Normalization rules:

1. Order alphabetically "Notional Currency" and "Other Notional Currency".
2. If "Notional Currency" is first alphabetically, record it as "Notional Currency"
3. If "Notional Currency" is not first alphabetically, record the following fields as:

| | | |
|-------------------------|----|-------------------------|
| Other Notional Currency | -> | Notional Currency |
| Notional Currency | | Other Notional Currency |

The above currency normalization applies the following templates:

- Cross Currency Zero Coupon
- Cross Currency Fixed Float
- Cross Currency Inflation Swap
- Cross Currency Fixed Float NDS
- Cross Currency Fixed Fixed

7.3 FX normalization

The purpose of this section is to specify normalization for FX Forward products, including:

- NDF
- Forward
- Vol_Var
- Rolling_Spot
- Contract_for_Difference
- Spread-bet
- FX Non-Standard Forward

Regardless of the order in which the reference legs are supplied, the DSB assumes the same ISIN would be allocated to the instrument, i.e. the following user entries will be considered the same instrument:

| Asset Class | Foreign_Exchange | Foreign_Exchange |
|-------------------------|-------------------------|-------------------------|
| Instrument Type | Forward | Forward |
| Product | Contract_for_Difference | Contract_for_Difference |
| Notional Currency | GBP | USD |
| Other Notional Currency | USD | GBP |
| Expiry Date | 20170421 | 20170421 |

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

Normalization rules:

The DSB has adopted an alphabetical normalization approach.

For example, for a EURUSD currency pair

- User submits Notional Currency = EUR, Other Notional Currency = USD.
Action – No change, user receives ISIN record of Notional Currency = EUR, Other Notional Currency = USD
- User submits Notional Currency = USD, Other Notional Currency = EUR.
Action – Reorder alphabetically, amend Notional Currency = EUR, Other Notional currency = USD, user receives ISIN record of Notional Currency = EUR, Other Notional Currency = USD

7.4 FX Swap Normalization

The underlying inputs for an FX Swap have been defined to be two FX Forward Trades that are over the same currency pair. The DSB will reject any FX Swap requests for which this is not true.

Normalization rules:

1. Analyze the two FX Forward ISINs within the DSB to determine the respective expiry dates and if they are different then order the closest date into the 'Underlying Instrument Near Leg' attribute and the furthest date into the 'Underlying Instrument Far Leg' attribute

- Analyze the two FX Forward ISINs within the DSB to determine the respective expiry dates and if they are the same then order the underlying ISINs numerically into 'Underlying Instrument Near Leg' attribute and 'Underlying Instrument Far Leg' attribute respectively.

7.5 Non-Deliverable FX Swap Normalization

The underlying inputs for a Non-Deliverable FX Swap have been defined to be two NDFs or FX Non-Standard Forward Products that are over the same currency pair. The DSB will reject any Non-Deliverable FX Swap requests for which this is not true.

Normalization rules:

- Analyze the two NDF or FX Non-Standard Forward ISINs within the DSB to determine the respective expiry dates and if they are different then order the closest date into the 'Underlying Instrument Near Leg' attribute and the furthest date into the 'Underlying Instrument Far Leg' attribute
- Analyze the two NDF or FX Non-Standard Forward ISINs within the DSB to determine the respective expiry dates and if they are the same then order the underlying ISINs numerically into 'Underlying Instrument Near Leg' attribute and 'Underlying Instrument Far Leg' attribute respectively.

7.6 FX Option Normalization

This normalization covers the following Product Definitions:

- NDO
- Vanilla_Option
- Barrier_Option
- Digital_Option
- Target_Option
- Forward_Vol_Agreement
- FX Non-Standard Option

For an FX Option, the user is required to provide the following input:

| Attribute | Sample Value |
|-------------------------|--------------|
| Notional Currency | EUR |
| Expiry date | 20211231 |
| Option type | Put |
| Option exercise style | European |
| Other Notional Currency | USD |

To ensure only one ISIN can be generated for a put or call option on a common currency pair, the DSB has adopted an alphabetical normalization approach.

Additionally, the option type is always associated with the Notional currency.

For example, for a EURUSD currency pair

- User submits Notional Currency = EUR, Other Notional Currency = USD, Option Type = Put.
Action – No change, user receives ISIN record of EUR put

- User submits Notional Currency = USD, Other Notional Currency = EUR, Option Type = Call.
Action – Reorder alphabetically, amend Notional Currency = EUR AND flip Option Type from Call to Put. Other Notional currency = USD. User receives ISIN record of EUR put

The below two user inputs below are the same instrument and the same ISIN record is returned to the user:

| Attribute | User Input 1 | ISIN Record 1 | User Input 2 | ISIN Record 2 |
|-------------------------|--------------|---------------|--------------|---------------|
| Notional Currency | EUR | EUR | USD | EUR |
| Expiry date | 20211231 | 20211231 | 20211231 | 20211231 |
| Option type | Put | Put | Call | Put |
| Option exercise style | European | European | European | European |
| Other Notional Currency | USD | USD | EUR | USD |

7.7 Commodities Basis Normalization

For a Commodities Basis Swap, the user is required to provide the following input:

| Attribute | Sample Value |
|------------------------------|--|
| Notional Currency | GBP |
| Expiry date | 2017-06-30 |
| Return or Payout Trigger | C - Contract for Difference |
| Base Product | NRGY |
| Sub Product | NGAS |
| Additional Sub Product | GASP |
| Other Base Product | AGRI |
| Other Sub Product | GROS |
| Other Additional Sub Product | FWHT |
| Transaction Type | SWAP |
| Final Price type | OTHR |
| Reference Rate | NATURAL GAS-CHICAGO CITY-GATES-INSIDE FERC |
| Other Reference Rate | WHEAT FEED-NYSE Liffe |

Regardless of the order in which the reference legs are supplied, the DSB assumes the same ISIN would be allocated to the instrument, i.e. the following user entries will be considered the same instrument:

| | | |
|------------------------------|--|--|
| Base Product | NRGY | AGRI |
| Sub Product | NGAS | GROS |
| Additional Sub Product | GASP | FWHT |
| Other Base Product | AGRI | NRGY |
| Other Sub Product | GROS | NGAS |
| Other Additional Sub Product | FWHT | GASP |
| Reference Rate | NATURAL GAS-CHICAGO CITY-GATES-INSIDE FERC | WHEAT FEED-NYSE Liffe |
| Other Reference Rate | WHEAT FEED-NYSE Liffe | NATURAL GAS-CHICAGO CITY-GATES-INSIDE FERC |

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

Normalization rules:

Order alphabetically the combination string of “Base Product + Sub Product + Additional Sub Product + Reference Rate” and “Other Base Product + Other Sub Product + Other Additional Sub Product + Other Reference Rate”:

- If “Base Product” and “Other Base Product” are different – alphabetically order them. The Base Product should be the first alphabetically and Other Base Product the second alphabetically. The associated attributes (Sub Product + Additional Sub Product + Reference Rate) are then moved as part of the normalization.
- Otherwise if Base Product and Other Base Product are the same, and if “Sub product” and “Other Sub product” are different – alphabetically order them. The Sub Product should be the first alphabetically and Other Sub Product the second alphabetically. The associated attributes (Additional Sub Product + Reference Rate) are then moved as part of the normalization.
- Otherwise if Base Product and Sub Product are the same as Other Base Product and Other Sub Product, and if “Additional Sub Product” and “Other Additional Sub product” are different – alphabetically order them. The Additional Sub Product should be the first alphabetically and Other Additional Sub Product the second alphabetically. The associated Reference Rate is then moved as part of the normalization.
- If “Base Product/ Sub Product/ Additional Sub Product” and “Other Base Product/ Other Sub Product/ Other Additional Sub Product” are the same, alphabetically order Reference Rate and Other Reference Rate.

7.8 Equity Index normalization

For any given submission of an Equity Index name, the DSB will validate against the existence of an ISIN and return the Index ISIN as part of the record in place of the Index name. If a valid ISIN is not on record, the Index name will be returned as input by the user. List of Equity Indices and associated ISINs can be found in Annex 7 – Indices on our GitHub.

8 Appendix II - Validations

8.1 General Validations

| Field | Error message |
|--|---|
| Expiry Date | Expiry Date must be in the “YYYY-MM-DD” format. Expiry Date cannot be less than “1970-01-01”. Expiry Date cannot be greater than “9999-12-31”. |
| Notional Currency | Must be different to Other Notional Currency |
| Other Leg Reference Rate Term Value | Other Leg Reference Rate Term Value cannot be less than -999. Other Leg Reference Rate Term Value cannot be greater than 999. Other Leg Reference Rate Term Value must not be 0 (except for non-standard definitions where there is more than 1 underlying rate). |
| Other Notional Currency | Must be different to Notional Currency |
| Price Multiplier | Price Multiplier must be greater than 0. Input values greater than 999999999999999999 may be subject to rounding. |
| Reference Rate Term Value | Reference Rate Term Value cannot be less than -999. Reference Rate Term Value cannot be greater than 999. Reference Rate Term Value must not be 0 0 (except for non-standard definitions where there is more than 1 underlying rate). |
| Strike Price | Input values accept both positive and negative numbers. Values are rounded-off and not truncated. If input value exceeds maximum: StrikePrice: numeric instance is greater than the required maximum |
| Underlying Credit Index Series | Underlying Credit Index Series must be a positive integer (except for non-standard definitions where there is more than 1 underlying index) |
| Underlying Credit Index Version | Underlying Credit Index Version must be a positive integer (except for non-standard definitions where there is more than 1 underlying index) |
| Underlying Instrument Index Term Value | Underlying Instrument Index Term Value cannot be less than -999. Underlying Instrument Index Term Value cannot be greater than 999. Underlying Instrument Index Term Value must not be 0 (except for non-standard definitions where there is more than 1 underlying index). |
| Underlying Instrument ISIN | Underlying Instrument ISIN is not valid. (Syntactic validation only is performed by the DSB) |
| Underlying instrument ISIN or LEI | Underlying instrument ISIN or LEI must be a valid ISIN or LEI (Syntactic validation only is performed by the DSB) |
| Term of Contract Value | Term of Contract Value cannot be less than -999. Term of Contract Value cannot be greater than 999. Term of Contract Value must not be 0 |

| | |
|------------------------|---|
| Contract Specification | Contract Specification must be a valid entry in the filtered FpML Matrix Term Scheme (<i>see Section 8.8</i>) |
|------------------------|---|

8.2 Notional/Other Notional Currency

Notional Currency and Other Notional Currency cannot be identical.

8.3 FX Swap Validations

- The Underlying ISINs must be for FX Forward products generated by the DSB using the following template: Foreign_Exchange.Forward.Forward
- The underlying Forward products must be over the same currency pair
- The underlying forward ISINs must be unique

8.4 Non-Deliverable FX Swap Validations

- The Underlying ISINs must be for FX Forward products generated by the DSB using the following templates: Foreign_Exchange.Forward.NDF or Foreign_Exchange.Forward.Non_Standard
- The Underlying ISINs must be based on identical templates
- The underlying Forward products must be over the same currency pair, settlement currency, delivery type and (if applicable) place of settlement
- The underlying forward ISINs must be unique

8.5 FX Non-Deliverable Validations

For both NDO & NDF Product Definitions, the only acceptable delivery type will be 'CASH' given that the cash flows themselves are non-deliverable.

8.6 Underlying Instrument Index Prop

User input is validated against a list of Proprietary indices that must have been pre-submitted to the DSB in line with the DSB Proprietary Index workflow published [here](#)

Index submissions are made per asset class and are only relevant for product definitions within that asset class. The exception is asset class 'Other' which is acceptable in all asset classes.

8.7 Debt Seniority – Credit Product Definitions

- Debt Seniority must be one of (SNDB, MZZD, SBOD, JUND) if Underlying Instrument ISIN/LEI is selected.
- Debt Seniority cannot be one of (SNDB, MZZD, SBOD, JUND) if Underlying Instrument index is selected.

8.8 Credit Swaps – Contract Specification

- Contract Specification enumerated values are based on the FpML Matrix Term Scheme and are filtered to support the appropriate entries for the selected Single Name CDS product. For example: Credit.Swap.Corporate will allow only Corporate Contract Specifications.

The table below shows the example enumerated value of Contract Specification for each Single Name CDS Product selected.

| Single Name CDS Product | Attribute | Example Value |
|-------------------------|------------------------|---|
| Credit.Swap.Corporate | Contract Specification | NorthAmericanCorporate StandardNorthAmericanCorporate StandardNorthAmericanFinancialCorporate |
| Credit.Swap.Sovereign | | WesternEuropeanSovereign StandardWesternEuropeanSovereign |
| Credit.Swap.Municipal | | USMunicipalRevenue StandardUSMunicipalRevenue |

- For Credit.Swap.Non_Standard, the supported enumerated values for Contract Specification are dependent on the Underlying Issue Type selected (Corporate, Sovereign, or Local).
- The selection of the Underlying Issuer Type will determine the valid input values for the Contract Specification attribute in the following way:

| Single Name CDS Product | Attribute | Underlying Issuer Type | Example Value |
|--------------------------|------------------------|------------------------|---|
| Credit.Swap.Non_Standard | Contract Specification | Corporate | NorthAmericanCorporate StandardNorthAmericanCorporate StandardNorthAmericanFinancialCorporate |
| | | Sovereign | WesternEuropeanSovereign StandardWesternEuropeanSovereign |
| | | Local | USMunicipalRevenue StandardUSMunicipalRevenue |

- Please note that Contract Specification is not supported in the specifications of the following Credit products i.e., Index, Index Tranche, Loan, ABS, Total Return Swap.

8.9 Credit Index Term Value, Series & Version

Term Value, Index Series and Index Version can only be zero if there are more than 1 Underlying Instrument Indices or at least 1 Index Prop.

8.10 Credit Non-Standard SWAP Validations

Scenario 1 - single ISIN ONLY

- Underlying Asset Type can only be 'Single name' or 'Other' (CFI 3rd character: U & M respectively)

Scenario 2 - single LEI ONLY

- Underlying Asset Type only 'Single name' or 'Other' (CFI 3rd character: U & M respectively)

Scenario 3 - single Index ONLY

- Underlying Asset Type only 'Index', 'Index Tranche' or 'Other' (CFI 3rd character: I/V & M respectively)

Scenario 4 - single Index Prop ONLY

- Underlying Asset Type only 'Index', 'Index Tranche' or 'Other' (CFI 3rd character: I/V & M respectively)

Scenario 5 - multiple ISIN ONLY

- Underlying Asset Type can only be 'Basket' or 'Other' (CFI 3rd character: B & M respectively)

Scenario 6 - multiple LEI ONLY

- Underlying Asset Type can only be 'Basket' or 'Other' (CFI 3rd character: B & M respectively)

Scenario 7 - multiple Index ONLY

- Underlying Asset Type can only be 'Basket' or 'Other' (CFI 3rd character: B & M respectively)

Scenario 8 - multiple Index Prop ONLY

- Underlying Asset Type can only be 'Basket' or 'Other' (CFI 3rd character: B & M respectively)

Scenario 9 - multiple ISIN and LEI ONLY

- Underlying Asset Type can only be 'Basket' or 'Other' (CFI 3rd character: B & M respectively)

Scenario 10 - multiple Index and Index Prop ONLY

- Underlying Asset Type can only be 'Basket' or 'Other' (CFI 3rd character: B & M respectively)

Scenario 11 - Any combination of ISIN/LEI and Index/Index Prop above

- Underlying Asset Type can only be 'Basket' or 'Other' (CFI 3rd character: B & M respectively)

8.11 Credit Non-Standard OPTION Validations

Scenario 1 - single ISIN ONLY

- Underlying Asset Type can only be 'CDS on Single name', 'Swaps' or 'Other' (CFI 3rd character: U/W & M respectively)

Scenario 2 - single LEI ONLY

- Underlying Asset Type only 'CDS on Single name' or 'Other' (CFI 3rd character: U & M respectively)

Scenario 3 - single Index ONLY

- Underlying Asset Type only 'CDS on Index', 'CDS on Index Tranche' or 'Other' (CFI 3rd character: I/V & M respectively)

Scenario 4 - single Index Prop ONLY

- Underlying Asset Type only 'CDS on Index', 'CDS on Index Tranche' or 'Other' (CFI 3rd character: I/V & M respectively)

Scenario 5 - multiple ISIN ONLY

- Underlying Asset Type can only be 'Swaps' or 'Other' (CFI 3rd character: W & M respectively)

Scenario 6 - multiple LEI ONLY

- Underlying Asset Type can only be 'Swaps' or 'Other' (CFI 3rd character: W & M respectively)

Scenario 7 - multiple Index ONLY

- Underlying Asset Type can only be 'Other' (CFI 3rd character: M)

Scenario 8 - multiple Index Prop ONLY

- Underlying Asset Type can only be 'Other' (CFI 3rd character: M)

Scenario 9 - multiple ISIN and LEI ONLY

- Underlying Asset Type can only be 'Other' (CFI 3rd character: M)

Scenario 10 - multiple Index and Index Prop ONLY

- Underlying Asset Type can only be 'Other' (CFI 3rd character: M)

Scenario 11 - Any combination of ISIN/LEI and Index/Index Prop above

- Underlying Asset Type can only be 'Other' (CFI 3rd character: M)

8.12 Equity Non-Standard SWAP Validations

Scenario 1 - Single Index ONLY

- Underlying Asset Type can only be 'Index' (CFI 3rd character: I)

Scenario 2 - Single Index Prop ONLY

- Underlying Asset Type can only be 'Index' (CFI 3rd character: I)

Scenario 3 - Single ISIN ONLY

- Underlying Asset Type only be 'Single Stock', 'Index' or 'Other' (CFI 3rd character: S/I/M respectively)

Scenario 4 - multiple Index ONLY

- Underlying Asset Type only 'Basket' (CFI 3rd character: B respectively)

Scenario 5 - multiple Index Prop ONLY

- Underlying Asset Type only 'Basket' (CFI 3rd character: B only)

Scenario 6 - multiple ISIN ONLY

- Underlying Asset Type only be 'Basket' (CFI 3rd character: B only)

Scenario 7 - Any combination of ISIN and Index/Index Prop above

- Underlying Asset Type can only be 'Basket' (CFI 3rd character: B only)

8.13 Equity Non-Standard OPTION Validations

Scenario 1 - Single Index ONLY

- Underlying Asset Type can only be 'Index' (CFI 3rd character: I only)

Scenario 2 - Single Index Prop ONLY

- Underlying Asset Type can only be 'Index' (CFI 3rd character: I only)

Scenario 3 - Single ISIN ONLY

- Underlying Asset Type only be 'Single Stock', 'Index', 'Options', 'Forwards', 'Futures' or 'Other' (CFI 3rd character: S/I/O/R/F/M respectively)

Scenario 4 - multiple Index ONLY

- Underlying Asset Type only 'Basket' (CFI 3rd character: B only)

Scenario 5 - multiple Index Prop ONLY

- Underlying Asset Type only 'Basket' (CFI 3rd character: B only)

Scenario 6 - multiple ISIN ONLY

- Underlying Asset Type only be 'Basket', 'Options', 'Forwards', 'Futures' or 'Other' (CFI 3rd character: B/O/R/F/M respectively)

Scenario 7 - Any combination of ISIN and Index/Index Prop above

- Underlying Asset Type can only be 'Basket' (CFI 3rd character: B only)

8.14 Equity Non-Standard FORWARD Validations

Scenario 1 - Single Index ONLY

- Underlying Asset Type can only be 'Index' (CFI 3rd character: I)

Scenario 2 - Single Index Prop ONLY

- Underlying Asset Type can only be 'Index' (CFI 3rd character: I)

Scenario 3 - Single ISIN ONLY

- Underlying Asset Type only be 'Single Stock', 'Index', 'Options' or 'Futures' (CFI 3rd character: S/I/O/F respectively)

Scenario 4 - multiple Index ONLY

- Underlying Asset Type only 'Basket' (CFI 3rd character: B respectively)

Scenario 5 - multiple Index Prop ONLY

- Underlying Asset Type only 'Basket' (CFI 3rd character: B respectively)

Scenario 6 - multiple ISIN ONLY

- Underlying Asset Type only be 'Basket', 'Options' or 'Futures' (CFI 3rd character: B/O/F respectively)

Scenario 7 - Any combination of ISIN and Index/Index Prop above

- Underlying Asset Type can only be 'Basket' (CFI 3rd character: B only)

8.15 Rates - Reference Rate or Other Leg Reference Rate Validations

The below table represents a list of reference rates where a minimum acceptable expiry date will be applied for newly created reference rates. The minimum expiry date will typically match the first date on which the reference rate is made available.

| Rate | Available Date | Minimum Expiry Date | Error Message |
|------|----------------|---------------------|---------------|
|------|----------------|---------------------|---------------|

| | | | |
|----------------------|---------------------------------|------------------------------|--|
| GBP-SONIA-COMPOUND | 23 rd April 2018 | 23 rd April 2018 | Error: This reference rate is invalid for the given expiry date |
| USD-SOFR-COMPOUND | 3 rd April 2018 | 3 rd April 2018 | Error: This reference rate is invalid for the given expiry date |
| EUR-EuroSTR-COMPOUND | 29 th September 2019 | Expiry Date | Error: This reference rate is invalid for the given expiry date |
| | | 2 nd October 2019 | |
| | | Effective Date | Error: This reference rate is invalid for the given effective date |
| | | 1 st October 2019 | |

8.16 Rates CapFloor – Underlying Instrument Index

For the Rates CapFloor template, Underlying Instrument Index references the same list of enumerations as 'Reference Rate' and 'Other Leg Reference Rate'.

The below table represents a list of Underlying Instrument Index values used in the Rates CapFloor template, where a minimum acceptable expiry date will be applied for newly created reference rates. The minimum expiry date will typically match the first date on which the reference rate is made available.

| Rate | Available Date | Minimum Expiry Date | Error Message |
|--------------------|-----------------------------|-----------------------------|---|
| GBP-SONIA-COMPOUND | 23 rd April 2018 | 23 rd April 2018 | Error: This reference rate is invalid for the given expiry date |
| USD-SOFR-COMPOUND | 3 rd April 2018 | 3 rd April 2018 | Error: This reference rate is invalid for the given expiry date |

8.17 New ISO 4217 Currency code validation

The below table represents a list of currency codes where a minimum acceptable expiry date will be applied for a newly introduced currency code to the ISO 4217 currency code list. The minimum expiry date will typically match the first date on which the currency code is made available.

The validations in the below table impact the following fields in the DSB product definition templates:

- Notional Currency
- Other Notional Currency
- Settlement Currency
- Strike Price Currency

| Currency Code | Available Date | Minimum Expiry Date | Error Message |
|---------------|----------------|---------------------|---------------|
|---------------|----------------|---------------------|---------------|

| | | | |
|-----|------------------------------|------------------------------|--|
| STN | 30 th June 2018 | 30 th June 2018 | Error: The given currency 'STN' is only available for instruments with Expiry Date of 2018-06-30 and onwards |
| MRU | 30 th June 2018 | 30 th June 2018 | Error: The given currency 'MRU' is only available for instruments with Expiry Date of 2018-06-30 and onwards |
| VES | 20 th August 2018 | 20 th August 2018 | Error: The given currency 'VES' is only available for instruments with Expiry Date of 2018-08-20 and onwards |

8.18 Equity Options: Strike Price validation

For Equity Option Basket/Single Index/Single Name:

Strike Price value is validated depending on the Strike Price Type:

- DECIMAL - 18,13 if the price is expressed as monetary value.
- DECIMAL - 11,10 if the price is expressed as percentage.
- DECIMAL - 11,10 if the price is expressed as yield.
- DECIMAL - 18,17 if the price is expressed as basis points.

Strike Price Currency is derived when Strike Price Type is set to 'Monetary Value'. For other price types, Strike Price Currency must not be present on the ISIN record.

For Equity Option Non-Standard, Cross-Asset Option and Cross-Asset Other:

Strike Price value is validated depending on the Strike Price Type:

- DECIMAL - 18,13 if the price is expressed as monetary value.
- DECIMAL - 11,10 if the price is expressed as percentage.
- DECIMAL - 11,10 if the price is expressed as yield.
- DECIMAL - 18,17 if the price is expressed as basis points.
- For 'No Price' - 'Strike Price' must be 'PNDG'.

Strike Price Currency is available for an input when Strike Price Type is set to 'Monetary Value' OR 'PNDG' and is not be available for an input when Strike Price Type is set to 'Percentage', 'Yield' OR 'Basis Points'.

For Equity Option Non-Standard: If Strike Price Currency is not provided by the user and Strike Price Type is set to 'Monetary Value', 'Strike Price Currency' is derived from 'Notional Currency'.

For Cross-Asset Option and Cross-Asset Other: 'Strike Price Currency' is a mandatory user input if Strike Price Type is set to 'Monetary Value'.

8.19 Commodities: Multi-Exotic Swap, Option or Forward Underlying Assets

For these Commodity templates, the Base Product is a mandatory attribute and it will accept a single value. Its valid values are based on the standard set of enumerations used in other Commodity templates (inc. Other (OTHR) and Multi Commodity Exotic (MCEX)). However, in the Multi-Exotic templates, this attribute will not be used in conjunction with the Sub-Product and Additional Sub-Product attributes.

The underlying asset attributes are to be validated in the following way:

- **Underlying Instrument Index** This attribute is optional and can only be set to a value of “OTHER”.
- **Underlying Instrument Index Prop** This attribute is optional and it is to be validated against a list of Commodity Proprietary Indices that must have been pre-submitted to the DSB.
- **Reference Rate** This attribute is optional and its valid values are based on the standard set of enumerations used in other Commodity templates based on the ISDA 2.0 taxonomy for Commodity Reference Rates (eg: OIL-BRENT/BFOE-ARGUS CRUDE, OIL-BRENT/BFOE-PLATTS MARKETWIRE).

At least one of Underlying Instrument Index, Underlying Instrument Index Prop and/or Reference Rate must be input.

If a single value is input in Reference Rate, at least one value must be entered in either Underlying Instrument Index or Underlying Instrument Index Prop.

If two or more values are input in Reference Rate, then Underlying Instrument Index and Underlying Instrument Index Prop can be blank.

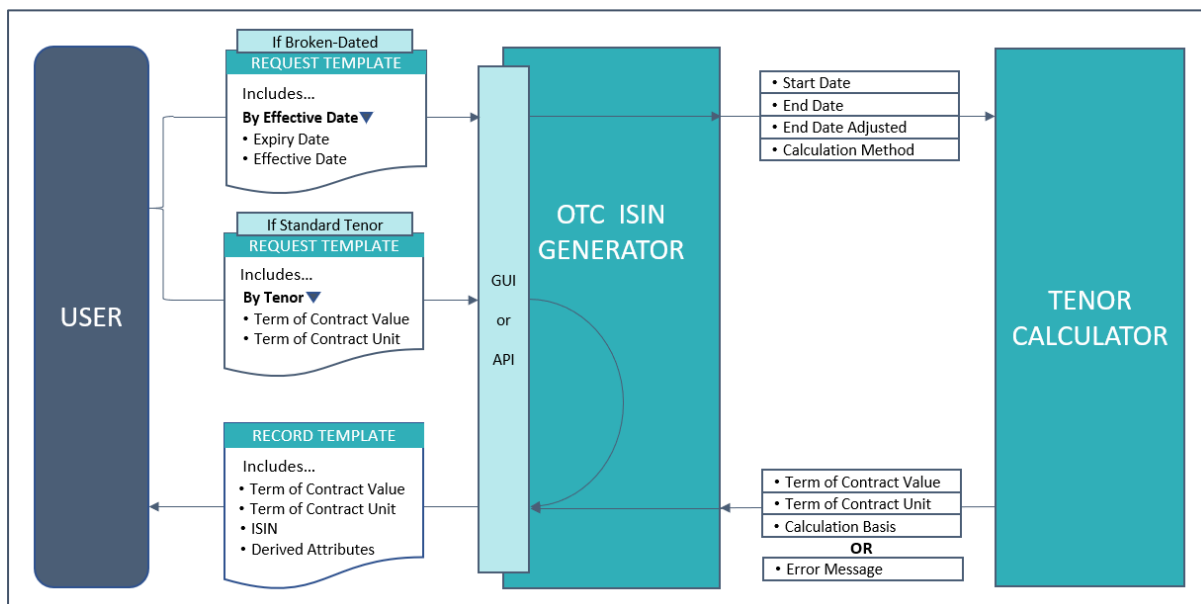
Underlying Instrument Index, Underlying Instrument Index Prop and Reference Rate are optional attributes (within the conditions given above) and should, therefore, be excluded from the message payload if not required in the product definition.

8.20 Term of Contract Value & Unit

All OTC Derivative Products that have an Interest Rate as an underlying are required to include a Term Of Contract within their definition. In order to support this, the relevant Rates and Cross-Asset templates have an integrated Tenor Calculator that is used when a Standard Tenor is not available. In this case, the user is able to supply an Effective Date and Expiry Date and the system will then calculate the Term of Contract Value and Unit which are then used in the definition of the ISIN.

Details of the calculation method used can be found in the [DSB Tenor Calculation Specification](#) document.

The following diagram summarizes the two ways in which the Rates templates can be accessed and the expected response from the DSB. It should be noted that a “Non-Rates” option is available on Cross-Asset templates (where there is no underlying Interest Rate) that is not shown on the diagram. It should be noted that the Tenor Calculator is integrated with the ISIN generator and can not be accessed directly by the user.



The following section describes the way in which the JSON components are to be used with each request template. Please see the detailed specification contained in the relevant Product Definition Annex for further information on specific templates.

- **By Tenor**

The user supplies the product’s Term Of Contract Value and Unit. These values will be used in the definition of the ISIN and will be returned in the Record message.

| By Tenor ▼ | | |
|-----------------------|---------------|----------------|
| Expiry Date | 2021-12-31 | Input & Output |
| Term Of Contact Value | 4 | Input & Output |
| Term Of Contract Unit | YEAR | Input & Output |
| Reference Rate | USD-LIBOR-BBA | Input & Output |

**Relevant attributes only.*

- **By Effective Date**

The user supplies the product’s Effective Date (along with the mandatory Expiry Date and defaulted values for Expiry Date Adjusted and Tenor Calculator Method). The DSB uses these attributes in a call to an Integrated Tenor Calculator that returns the Term Of Contract Value and Unit.

| By Effective Date ▼ | | |
|-------------------------|---------------|----------------|
| Expiry Date | 2021-12-31 | Input & Output |
| Effective Date | 2022-12-31 | Input Only |
| Expiry Date Adjusted | FALSE | Input Only |
| Tenor Calculator Method | ESMA | Input Only |
| Term of Contract Value | 5 | Output Only |
| Term of Contract Unit | YEAR | Output Only |
| Reference Rate | USD-LIBOR-BBA | Input & Output |

**Relevant attributes only.*

These returned values are then used in the definition of the ISIN and will be returned in the Record message. It should be noted that

the Effective Date, Expiry Date Adjusted and Tenor Calculator Method attributes are not returned in the Record message.

- **Non Rates**

For Cross-Asset products that do not include a Rates Reference Rate as an underlying, the choice of this option in the JSON template means that the Term Of Contract Value and Unit are not used in the definition of the ISIN and so the fields from the above two options will not be supplied.

| By Non Rates ▼ | | |
|----------------|---------------|----------------|
| Expiry Date | 2021-12-31 | Input & Output |
| Reference Rate | USD-LIBOR-BBA | Input & Output |

**Relevant attributes only.*

Please note that the “No Rates” option is only available on Cross Asset templates.

Details on the background to this requirement can be found in the following FAQ document from the DSB website: <https://www.anna-dsb.com/download/dsb-term-of-contract-faq/>

8.19 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.

9 Appendix III: Licensing

9.1 FpML Exhibit A

- The FpML Specifications of this document are subject to the FpML Public License (the “License”); you may not use the FpML Specifications except in compliance with the License. You may obtain a copy of the License at <http://www.FpML.org>.
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