Derivatives Service Bureau

UAT Product Definitions

November 2017

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	Update	0.3	Tony Birrell	Reference Rate for Commodities added to enumeration table, dates amended
23/06/2017	Update	0.4	Tony Birrell	Enumerations table updated
13/07/2017	Update	0.5	Tony Birrell	Added Other fields for Commodities
31/07/2017	Update	0.6	Tony Birrell	Added Data type to the enumerations table Added additional normalisation for FX Options & Commods Added array products
08/08/2017	Update	0.7	Tony Birrell	Amended normalisation rules for FX
15/08/2017	Update	0.8	Natalia Kozlovich	Amended normalisation rules for Commodities
16/08/2017	Update	0.9	Tony Birrell	Add Index enumeration explanation & Non-Standard clarification
22/09/2017	Update	1.0	Tony Birrell	Add validations & enrich enumerations table
11/10/2017	Update	1.1	Tony Birrell	Added normalisation & validation for FX Swaps Added additional clarity on Basis normalisation
15/11/2017	Update	1.2	Tony Birrell	Inserted Credit & Commodities Index source
27/11/2017	Update	1.3	Tony Birrell	Amended Cross Currency normalisation rules to include new products & included Equity Index normalisation

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) User Acceptance Testing (UAT) 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 UAT functionality should be directed to secretariat@ANNA-DSB.com

Contents

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 into UAT. 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 UAT Implementation

The new product definitions for all asset classes will be implemented into UAT environment on 25th September 2017.

3.6 Non-Standard Product Definitions

The Product Definition attributes have been the subject of multiple consultations by the Product Committee and various industry bodies and are no longer subject to change.

The DSB Product Committee is further developing Non-Standard Product Definitions to capture instruments not defined by the existing flow products. These will be implemented through the course of Q4 2017.

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 taxonomy[1].
- 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)
Debt Seniority	http://www.fpml.org/spec/coding-scheme/fpml-schemes.html#s5.63	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
Expiry Date	Date YYYY-MM-DD (Expiry Date of the financial instrument) Syntactic validation: - Date format as above - Between 1970 & 2500	ISODate (based on date)
Final price type	https://www2.swift.com/mystandards/#/mx/DRAFT6auth.036.001.01#content%2FFinancialInstrument%2FNewRecord%2FDerivativeInstr	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.

	umentAttributes%2FAssetClassSpecificAttributes%2FCommodity%2FFinalPriceType	
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%2FUnderlyingInstrument%2FSingle%2FIndex%2FName%2FReferenceRate	Max25Text (based on string) minLength: 1 maxLength: 25
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:** http://www.fpml.org/spec/coding-scheme/fpml-schemes.html#s5.91 **Rates CPI:** http://www.fpml.org/spec/coding-scheme/fpml-schemes.html#s5.100	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%2FDerivativeInstrumentAttributes%2FUnderlyingInstrument%2FSingle%2FIndex%2FName%2FTerm%2FUnit	Max35Text (based on string) minLength: 1 maxLength: 35
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 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:** http://www.fpml.org/spec/coding-scheme/fpml-schemes.html#s5.91	Max350Text (based on string) minLength: 1

	Rates CPI: http://www.fpml.org/spec/coding-scheme/fpml-schemes.html#s5.100 **Commodities:** ISDA 2.0 taxonomy	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
Status Reason	Text string	Max350Text (based on string) minLength: 1 maxLength: 350
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	NonNegativeDecimalNumber (based on decimal) - FractionDigits: 17 - TotalDigits: 18
Strike Price Currency (applicable to Non-Standard Product Defintions)	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
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:** http://www.fpml.org/spec/coding-scheme/fpml-schemes.html#s5.91 **Rates CPI:** http://www.fpml.org/spec/coding-scheme/fpml-schemes.html#s5.100 **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	http://www.fpml.org/spec/coding-scheme/fpml-schemes.html#s5.91
Rates - CPI	Reference Rate	FpML	http://www.fpml.org/spec/coding-scheme/fpml-schemes.html#s5.99
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 with 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

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

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
2. 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 FX Option Normalization

This normalization covers the following Product Defintions:

- NDO
- Vanilla_Option
- Barrier_Option
- Digital_Option
- Target_Option
- Forward_Vol_Agreement

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

7.6 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.

8 Appendix II

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 “2500-12-31”.
Notional Currency	Must be different to Other Notional Currency
Other Leg Reference Rate Term Value	Other Leg Reference Rate Term Value cannon be less than -999. Other Leg Reference Rate Term Value cannon be greater than 999. Other Leg Reference Rate Term Value must not be 0 .
Other Notional Currency	Must be different to Notional Currency
Price Multiplier	Price Multiplier must be greater than 0. Price Multiplier cannot be greater 99999999999999999
Reference Rate Term Value	Reference Rate Term Value cannon be less than -999. Reference Rate Term Value cannon be greater than 999. Reference Rate Term Value must not be 0.
Strike Price	Strike Price must be greater than 0. Strike Price cannot be greater 99999999999999999
Underlying Credit Index Series	Underlying Credit Index Series must be a positive integer.
Underlying Credit Index Version	Underlying Credit Index Version must be a positive integer.
Underlying Instrument Index Term Value	Underlying Instrument Index Term Value cannon be less than -999. Underlying Instrument Index Term Value cannon be greater than 999. Underlying Instrument Index Term Value must not be 0.
Underlying Instrument ISIN	Underlying Instrument ISIN is not valid.
Underlying instrument ISIN or LEI	Underlying instrument ISIN or LEI must be a valid ISIN or LEI

8.2 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

8.3 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.