

The Derivatives Service Bureau (DSB)

Dynamic Enumerations User Guide

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2 Change History

Date	Version	Revision Details
11 May 2022	1	Initial Version
15 May 2023	1.1	Updated date at section 5.2 to reflect the agreed changes from TAC Meeting. See slide 11 from reference link: https://www.anna-dsb.com/download/20230329-dsb-tac-report-member-final/

3 Document Purpose

The following document aims to provide a detailed breakdown of the technical design and approach for the dynamic support of enumerated Values in the DSB.

Users may contact technical.support@ANNA-DSB.com for issues and or concerns relating to Dynamic Enumeration.

4 Introduction

As approved by industry during the 2018 consultation process, the Derivatives Service Bureau (DSB) has undertaken work on the Dynamic Enumerations project and following guidance from the Product Committee has focused on delivering the three most volatile enumerations, those of **Currency, Reference Rates and Underlying Indices**.

The rationale for this initiative was to reduce the number of product template changes that had to be made to support the addition of enumerated values. The effort to adopt these changes across a large number of product templates was being multiplied by the number of organisations that use the DSB service.

Working with the Product Committee and the Technology Advisory Committee (TAC), the DSB has delivered an alternative version of Product Templates. This version has separated out the enumerated lists for the in-scope enumerations. The details of the enumerations now reside in separate files, referenced by the product templates which themselves no longer need to be released when additional enumerations are added.

This provides clarity to the users as to exactly what changes the DSB has made with respect to product template releases. This was important as some users use the product templates as a Rules of Engagement to determine what changes have been made. In addition, the DSB aims to reduce the amount of time spent on governance, testing, implementation and adoption thus leading to a more responsive turnaround from request to implementation.

This document shows the users how the product templates have been structured including the command used to link the product templates to the enumeration files.

5 Definition of Terms

5.1 Normalised Schema

Normalised schemas are now the current format of the DSB JSON schema of the product templates where the enumerated values are extracted to separated files and referenced in JSON using the keyword "\$ref".

5.2 De-normalised Schema

De-normalised schemas are the legacy format of the DSB JSON schema. Each file contains the entire definition of a product template (or a request for a product template).

The TAC has recommended supporting the legacy templates for a period of 12 months after implementation.

Users are advised to migrate to the new normalised templates as soon as possible.

The de-normalised templates will no longer be supported from the 1st July 2023.

6 Scope

The DSB provides the normalised versions of the JSON schemas which includes:

- A normalised JSON schema that defines the enumerated attributes of:
 - Notional currency
 - Reference Rate
 - Underlying Index
- A normalised JSON schema of request for ISIN for each of the product schema (one schema per each request).
- A normalised JSON schema of a record for each version of each of the product schema (a schema for each version of product schema).

7 Details

7.1 Normalised Templates

In the normalized schema, enumerations are extracted to separate files. The schema contains the keyword \$ref to reference the Currency, Reference Rates and Underlying Indices enumerations. The \$ref command is also used to make an internal reference within the same schema file. The templates are available in GitHub, File Download and ReST API:

- Affecting 13 enumerations – refer to Appendix 1 for the list of enumerations names for the Currency, Reference Rates and Underlying Instrument Indices.
- Affecting 13 attributes – refer to Appendix 2 for the list of attributes affected.

Each of the enumeration files in Appendix 1 has a single JSON schema document. The document name is the 'Name' in the table of Appendix 1 followed by: '.json' with an example being **ISOCurrencyCode.json**. The following are attributes within a template:

- **title:** with value as written in the 'Name' in the table of appendix 1
- **description:** with value as written in the 'Description' in the table of appendix 1

- **type:** string
- **enum:** list of the enumeration (as in the non-normalised version)
- **elaboration:** the elaborations for each enumeration (as in the de-normalised version)

For example, the content of **ISOCurrencyCode.json** contains:

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "copyright": "Copyright © 2020 The Derivatives Service Bureau
(DSB) Limited. All Rights Reserved.",
  "LastModifyDateTime": "2020-04-02T10:16:58",
  "title": "ISOCurrencyCode",
  "type": "string",
  "description": "ISO 4217 Currency codes",
  "enum": [
    "EUR",
    ...
    "ZWL"
  ],
  "elaboration": {
    "EUR": "Euro",
    ...
    "ZWL": "Zimbabwe Dollar"
  }
}
```

7.2 Normalised Requests and Records

For each enumeration listed in the table in the Appendix 1 the attribute contains:

```
"$ref": "../codesets/<Name>.json"
```

Where the <name> is taken from the table in Appendix I.

For example, the normalised schema becomes:

```
"NotionalCurrency": {
  "title": "Notional Currency",
  "description": "Currency in which the notional is denominated.
Usage: Within MiFIR, in the case of an interest rate or currency
derivative contract, this will be the notional currency of leg 1 or
the currency 1 of the pair. Within MiFIR, in the case of swaptions
where the underlying swap is single-currency, this will be the
notional currency of the underlying swap. For swaptions where the
underlying is multi-currency, this will be the notional currency of
leg 1 of the swap",
  "$ref": "../codesets/CurrencyCodeSet.json"
}
```

7.3 Version Control

The version control for dynamic enumerations will be managed via the use of the **LastModifyDateTime**. This method is already being used by the DSB on the product definition templates.

7.4 Location of the Templates

The templates are available in GitHub, File Download and the ReST API.

The locations of the templates are as follows:

7.4.1 GitHub

Users that wish to analyse the entire historical changes to the product templates are advised to use Github as it is the source that contains the entire history of the product templates as well as having a capability to compare versions.

UAT

<https://github.com/ANNA-DSB/Product-Definitions/tree/master/UAT/Normalized%20JSON>

Production

<https://github.com/ANNA-DSB/Product-Definitions/tree/master/PROD/Normalized%20JSON>

7.4.2 File Downloads

UAT

Normalised - <https://uat.anna-dsb.com/file-download/json-schema/normalized-isin-product-definitions/>

Production

Normalised - <https://prod.anna-dsb.com/file-download/json-schema/normalized-isin-product-definitions/>

7.4.3 ReST API

Please refer to the DSB's ReST Rules of Engagement document which is located here:

<https://www.anna-dsb.com/download/dsb-rest-api/>

8 Appendices

8.1 Appendix 1 - Dynamic Enumeration Names

Enumeration Type	Enumeration File Name	New Dynamic Enumeration Names
Currency	CurrencyCodeSet	ISOCurrencyCode
Reference Rate	CommoditiesFpmlReferenceRateCodeSet	FpmlCommoditiesReferenceRate
Reference Rate	RatesNonStandardFpmlReferenceRateCodeSet	FpmlRatesReferenceAndInflationRate
Reference Rate	RatesFpmlReferenceRateCodeSet	FpmlRatesReferenceRate
Reference Rate	RatesISOReferenceRateCodeSet	ISORatesReferenceRate
Reference Rate	RatesNonStandardISOReferenceRateCodeSet	ISORatesReferenceAndInflationRate
Reference Rate	CPIFpmlReferenceRateCodeSet	FpmlRatesInflationRate
Reference Rate	CPIISOReferenceRateCodeSet	ISORatesInflationRate
Underlying Instrument Index	CommodityUnderlyingIndexCodeSet	CommoditiesIndex
Underlying Instrument Index	CreditFpmlReferenceRateCodeSet	FpmlCreditIndex
Underlying Instrument Index	CreditTrancheFpmlReferenceRateCodeSet	FpmlCreditIndex
Underlying Instrument Index	EquityFpmlReferenceRateCodeSet	FpmlEquityIndex
Underlying Instrument Index	OtherFpmlReferenceRateCodeSet	FpmlCreditAndEquityIndex

8.2 Appendix 2 – List of Attributes Impacted

Enumeration Type	Attribute
Currency	<ul style="list-style-type: none"> NotionalCurrency OtherNotional Currency Settlement Currency Strike Price Currency
Reference Rate	<ul style="list-style-type: none"> Reference Rate Other Reference Rate ISO Reference Rate Other Leg Reference Rate ISO Other Leg Reference Rate Reference Rate Commodities Other Reference Rate Commodities
Underlying Instrument Index	<ul style="list-style-type: none"> Underlying Instrument Index ISO Underlying Instrument Index