

FpML to ISIN JSON Generator

June 12, 2018

FpML Team

Agenda

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- Q&A

Objectives



- Facilitate interoperability between FpML and the ANNA DSB JSON format for ISIN request
- Provide a transformation tool between FpML and ANNA DSB JSON sponsored by ISDA
- Promote consistency across market participants in trade classification and ISIN generation

Generator



1. Takes FpML trade as input
2. Classifies the product using the FpML trade characteristics OR the ISDA Taxonomy code in the FpML <productType> element
 - Both versions of the ISDA Taxonomy (1.0 and 2.0) are supported
3. Generates the appropriate JSON file for DSB ISIN Request
4. Validates the generated JSON file against the ANNA DSB JSON Schema available at com.github.fge (open source)
5. Written in JAVA
6. Uses XML configuration files for the mappings between FpML and the DSB JSON templates
7. Current coverage includes Rates and Credit Derivatives
8. Running on Amazon Web Services (AWS)
9. Open to anyone registered on the fpml.org site
10. [Business logic](#) available to ISDA members

Demo

FpML to ISIN JSON Generator

Information

We are pleased to launch the Beta version of the FpML to ISIN JSON Generator.

The generator takes FpML trades as input, extracts values from relevant FpML data fields and generates the ANNA DSB-compliant JSON format which can be used to create or inquire about ISIN through the ANNA DSB.

The current version covers interest rate and credit derivatives.

Logic available in Excel

The logic underlying the conversion is available to ISDA members only at [fpml-to-isin-json-generator-logic](#).

We value very much your input and feedback on the generator. We are working on expanding the coverage of asset classes.

Contact e-mail: info@fpml.org

The tool:

1. Takes FpML trade as input
2. Classifies the product analyzing the characteristics of the FpML trade or using the ISDA Taxonomy code (version 1 or 2) in the productType element (isda-taxonomy or isda-taxonomy2 scheme)
3. Generates the appropriate JSON file for ANNA ISIN Request
4. Validates the generated JSON file against the ANNA DSB JSON Schema
5. Supports Interest Rate and Credit products
6. Rates samples (.zip) to test the tool
7. Credit samples (.zip) to test the tool

Examples available to test the tool

Tools

FpML Tools

FpML to ISIN JSON Generator

Compatibl FpML Cashflows Generator

FpML Web Validation Service

Vendors

FpML® Tools Vendor List

Vendor Examples

Select an FpML trade

Version: 1.3

Choose the FpML file and Run it:

Choose file No file chosen

Run

Developed in collaboration with [TradeHeader](#).

Choose the FpML file and Run it:

Choose file No file chosen

Run

File name: Rates.Swap.Fixed_Float_OIS.xml | File Size: 8081 Bytes. | File type: text/xml

Choose an FpML trade, for example: Fixed Float OIS

```
<?xml version="1.0" encoding="utf-8"?>
<!--View is confirmation-->
<!--Version is 5-10-->
<!--NS is http://www.fpml.org/FpML-5/confirmation-->
<!--
== Copyright (c) 2014-2017 All rights reserved.
== Financial Products Markup Language is subject to the FpML public license.
== A copy of this license is available at http://www.fpml.org/license/license.html
-->
<dataDocument xmlns="http://www.fpml.org/FpML-5/confirmation"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" fpmVersion="5-10"
xsi:schemaLocation="http://www.fpml.org/FpML-5/confirmation ../fpml-main-5-10.xsd
http://www.w3.org/2000/09/xmldsig# ../xmldsig-core-schema.xsd">
<trade>
<tradeHeader>
<partyTradeIdentifier>
<partyReference href="party1" />
<tradeId tradeIdScheme="http://www.citibank.com/swaps/trade-id">TRN12000</tradeId>
</partyTradeIdentifier>
<partyTradeIdentifier>
<partyReference href="party2" />
<tradeId tradeIdScheme="http://www.mizuhocap.com/swaps/trade-id">TRN13000</tradeId>
</partyTradeIdentifier>
<tradeDate>2001-01-25</tradeDate>
</tradeHeader>
<swap>
<!-- Citibank pays the EUR-EONIA-OIS-COMPOUND stream, on an ACT/360 basis -->
<swapStream>
<payerPartyReference href="party1" />
<receiverPartyReference href="party2" />
<calculationPeriodDates id="floatingCalcPeriodDates">
<effectiveDate>
<unadjustedDate>2001-01-29</unadjustedDate>
<dateAdjustments>
```

Once FpML is loaded, user is able to run the Generator

Resulting Output

Version: 1.3



up Language

Request ID: 1410341682

Message ID: Rates.Swap.Fixed_Float_OIS.xml-1410341682

Taxonomy: InterestRate:IRSwap:FixedFloat:OIS

← Product classification

JSON Schema: Request.Rates.Swap.Fixed_Float_OIS.InstRefDataReporting

← JSON output is validated against the appropriate JSON Schema

Configuration File: InterestRate/IRSwap/FixedFloat/OIS/

JSON Result

```
{
  "Header": {
    "AssetClass": "Rates",
    "InstrumentType": "Swap",
    "UseCase": "Fixed_Float_OIS",
    "Level": "InstRefDataReporting"
  },
  "Attributes": {
    "NotionalCurrency": "EUR",
    "ExpiryDate": "2018-04-29",
    "ReferenceRate": "EUR-EONIA-OIS-COMPOUND",
    "ReferenceRateTermValue": 1,
    "ReferenceRateTermUnit": "DAYS",
    "NotionalSchedule": "Constant"
  }
}
```

Download JSON

← User can download the generated JSON

Classification & Mapping



1. The Generator classifies the product by extracting and analyzing the relevant FpML elements
 - If the taxonomy classification is provided (1.0 or 2.0), the generator will use the given classification
2. It assigns the product to an ISDA Taxonomy 2.0 code
3. Based on the ISDA Taxonomy classification, the Generator picks the appropriate DSB template
4. It fills out the relevant DSB JSON template by extracting the appropriate FpML elements
5. Let's look at an example

```
<creditDefaultSwap>
```

Credit Derivative



Building up the ISDA Taxonomy: **Credit.**

```
<generalTerms>
```

```
<effectiveDate>
```

```
<unadjustedDate>2018-03-26</unadjustedDate>
```

```
</effectiveDate>
```

```
<scheduledTerminationDate>
```

```
<unadjustedDate>2023-06-20</unadjustedDate>
```

```
</scheduledTerminationDate>
```

```
<buyerPartyReference href="party1" />
```

```
<sellerPartyReference href="party2" />
```

```
<referenceInformation>
```

Single Name



Building up the ISDA Taxonomy: **Credit.SingleName.**

```
<referenceEntity id="referenceEntity">
```

```
<entityName>TENET HEALTHCARE CORPORATION</entityName>
```

```
<entityId entityIdScheme="http://www.fpml.org/coding-  
scheme/external/iso17442">0W9AIBT6U6ADJ2I8HK17</entityId>
```

```
</referenceEntity>
```

```
<referenceObligation>
```

```
<bond>
```

```
<instrumentId instrumentIdScheme="http://www.fpml.org/coding-  
scheme/external/instrument-id-ISIN-1-0">US0378331009</instrumentId>
```

```
<seniority creditSeniorityScheme="http://www.fpml.org/coding-scheme/credit-  
seniority">SubLowerTier2</seniority>
```

```
</bond>
```

```
</referenceObligation>
```

```
</referenceInformation>
```

```
</generalTerms>
```

```
<feeLeg>
```

```
<initialPayment>
```

```
<payerPartyReference href="party1" />
```

```
<receiverPartyReference href="party2" />
```

```
<adjustablePaymentDate>2018-03-28</adjustablePaymentDate>
```

```
<adjustedPaymentDate>2018-03-30</adjustedPaymentDate>
```

```
<paymentAmount>
```

```
<currency>USD</currency>
```

Bond Underlyer. Mortgage
or Loan are not present

```

<payerPartyReference href="party1" />
<receiverPartyReference href="party2" />
<adjustablePaymentDate>2018-03-28</adjustablePaymentDate>
<adjustedPaymentDate>2018-03-30</adjustedPaymentDate>
<paymentAmount>
  <currency>USD</currency>
  <amount>1000</amount>
</paymentAmount>
</initialPayment>
<periodicPayment>
  <paymentFrequency>
    <periodMultiplier>3</periodMultiplier>
    <period>M</period>
  </paymentFrequency>
  <firstPeriodStartDate>2018-03-20</firstPeriodStartDate>
  <firstPaymentDate>2018-06-20</firstPaymentDate>
  <rollConvention>20</rollConvention>
  <fixedAmountCalculation>
    <fixedRate>0.01</fixedRate>
  </fixedAmountCalculation>
</periodicPayment>
<marketFixedRate>0.02</marketFixedRate>
</feeLeg>

```

```

<protectionTerms>
  <calculationAmount>
    <currency>USD</currency>
    <amount>5000000</amount>
  </calculationAmount>
</protectionTerms>

```

← obligations/category="ReferenceObligationsOnly" is not present

```

<documentation>
  <contractualMatrix>
    <matrixType>CreditDerivativesPhysicalSettlementMatrix</matrixType>
    <matrixTerm>StandardNorthAmericanCorporate</matrixTerm>
  </contractualMatrix>
</documentation>

```

← Standard North American Corporate

↓ Building up the ISDA Taxonomy:
Credit.SingleName.StandardNorthAmericanCorporate

```

</trade>
<party id="party1">
  <partyId partyIdScheme="http://www.fpml.org/coding-
scheme/external/iso17442">5493000L8KL0WCQ34V31</partyId>
  <partyName>Party A</partyName>
</party>
<party id="party2">
  <partyId partyIdScheme="http://www.fpml.org/coding-
scheme/external/iso17442">54930005MFEP1XJ40B46</partyId>

```

Mapping FpML to JSON



Financial products Markup Language

- Once the product is classified, we can extract the FpML data to fill out the DSB JSON Template

JSON Result

```
{
  "Header": {
    "AssetClass": "Credit",
    "InstrumentType": "Swap",
    "UseCase": "Corporate",
    "Level": "InstRefDataReporting"
  },
  "Attributes": {
    "NotionalCurrency": "USD",
    "ExpiryDate": "2023-06-20",
    "Underlying": {
      "InstrumentISIN": "US0378331009"
    },
    "DebtSeniority": "SBOD"
  }
}
```

FpML	DSB
SeniorLossAbsorbingCapacity	SNBD
SeniorSec	SNBD
SeniorUnSec	SNBD
SubLowerTier2	SBOD
SubTier1	SBOD
SubTier3	SBOD
SubUpperTier2	SBOD

ISDA Taxonomy value from classification to fill out the header:
 Credit.SingleName.Corporate.StandardNorthAmericanCorporate

Level: Default value

```
<calculationAmount>
  <currency>USD</currency>
  <amount>5000000</amount>
</calculationAmount>

<scheduledTerminationDate>
  <unadjustedDate>2023-06-20</unadjustedDate>
</scheduledTerminationDate>

<bond>
  <instrumentId instrumentIdScheme="http://www.fpml.org/coding-
scheme/external/instrument-id-ISIN-1-0">US0378331009</instrumentId>
  <seniority creditSeniorityScheme="http://www.fpml.org/coding-scheme/credit-
seniority">SubLowerTier2</seniority>
</bond>
```

User Community

- To exchange feedback on:
 - The tool from a technical perspective
 - The tool from a functional perspective
 - Does the business logic make sense?
 - Leverage the tool to get consistent ISINs generation
- Contact/feedback information:
 - info@fpml.org
 - <http://www.fpml.org/forums/topic/fpml-to-isin-json-generator/> (FpML Forum)

Next Steps

- Version 1.0 available early July
 - AWS vs downloadable version
 - SLA and support model
 - Feedback on product classification logic
- Expand asset classes to Equity, FX and Commodities
- DSB phase 2 templates
- Impact of CFI revisions on DSB templates

Questions?