

xBRL EUROPE

xBRL IT

## 22<sup>nd</sup> XBRL EUROPE DAY in Rome

7-8<sup>th</sup> FEBRUARY 2019

Hosted by



UNIONCAMERE



# Open Information Model

---

Mark Goodhand

[mrg@corefiling.com](mailto:mrg@corefiling.com)

OIM Working Group

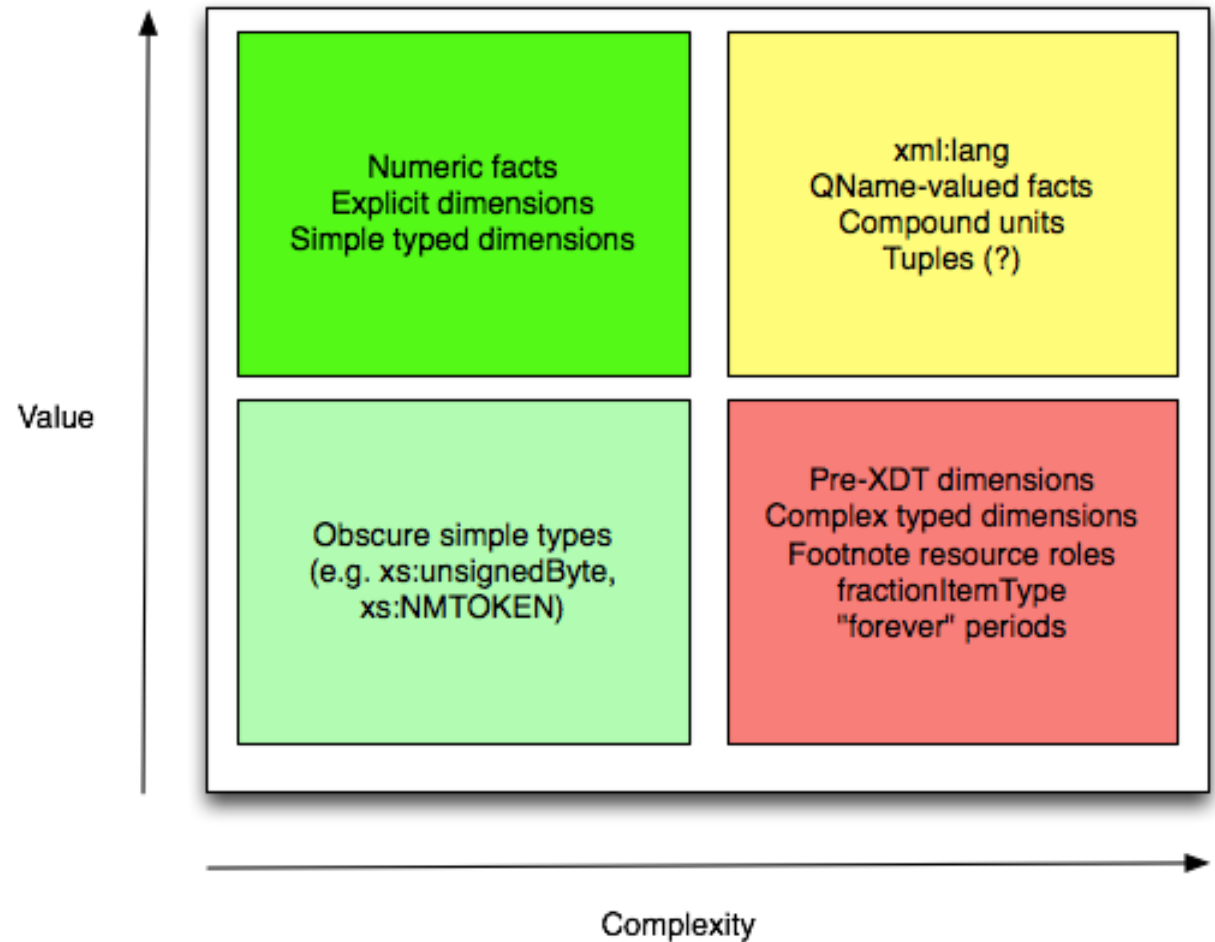
[oim@xbrl.org](mailto:oim@xbrl.org)

# Why OIM?

- Many details of the original XML representation are not semantically significant
    - context & unit ids
    - segment vs scenario
    - precision vs decimals
    - ordering of facts and dimensions
  - XML is not always the most convenient syntax
    - JSON better for web; CSV better for bulk
-

# OIM simplifies

- XBRL is 15 years old
- Some features are more trouble than they're worth



# XBRL XML fact

```
<dei:EntityCommonStockSharesOutstanding
id="Fact-B90BB051582C5EE9E2AD8C6C79A5CE80"
contextRef="context_2"
decimals="INF"
unitRef="unit">348952225
</dei:EntityCommonStockSharesOutstanding>
```

```
<xbrli:unit id="unit">
<xbrli:measure>xbrli:shares
</xbrli:measure>
</xbrli:unit>
```

```
<xbrli:context id="context_2">
  <xbrli:entity>
    <xbrli:identifier scheme="http://www.sec.gov/CIK">0001652044</xbrli:identifier>
    <xbrli:segment>
      <xbrldi:explicitMember dimension="us-
gaap:StatementClassOfStockAxis">goog:CapitalClassCMember</xbrldi:explicitMember>
    </xbrli:segment>
  </xbrli:entity>
  <xbrli:period>
    <xbrli:instant>2018-04-18</xbrli:instant>
  </xbrli:period>
</xbrli:context>
```

# OIM JSON

- *Simplest, clearest expression of the OIM model*
- Trivial deserialisation
- Flat structure
- All aspects represented consistently
- Context and unit information is immediately available
- 1:1 namespace-prefix bindings, at the top of the document
- Fixed names for built-in aspects

# OIM JSON fact (CR-2017-05-02)

```
{
  "id": "Fact-B90BB051582C5EE9E2AD8C6C79A5CE80",
  "value": "348952225",
  "aspects": {
    "xbrl:concept": "dei:EntityCommonStockSharesOutstanding",
    "xbrl:entity":
    "cik:0001652044",
    "xbrl:periodStart": "2018-04-19T00:00:00",
    "xbrl:periodEnd": "2018-04-19T00:00:00",
    "xbrl:unit": "xbrli:shares",
    "us-gaap:StatementClassOfStockAxis": "goog:CapitalClassCMember"
  }
}
```

# OIM JSON fact (CR-2018-12-12)

```
“Fact-B90BB051582C5EE9E2AD8C6C79A5CE80”: {  
  "value": "348952225",  
  "aspects": {  
    "concept": "dei:EntityCommonStockSharesOutstanding",      "entity": "cik:0001652044",  
    "period": "2018-04-19T00:00:00/2018-04-19T00:00:00",  
    "unit": "xbrli:shares",  
    "us-gaap:StatementClassOfStockAxis": "goog:CapitalClassCMember"  
  }  
}
```

# Notable changes

- Facts appear in an object rather than a list
  - Reinforces the semantic reality that facts are unordered
- Every fact must have an id
  - Generated deterministically when absent
- ‘xbrl’ prefix no longer used for built-in dimensions
- Single field for period information
  - Duration: “2018-04-19T00:00:00/2018-04-19T00:00:00”
  - Instant: “2018-04-19T00:00:00”
- entity and unit are optional
  - Missing entity maps to entities:NA
  - Missing unit maps to xbrli:pure



# OIM JSON document info (CR-2017-05-02)

```
"documentType": "http://www.xbrl.org/WGWD/YYYY-MM-DD/xbrl-json",  
"prefixes": {  
  "id": "http://xbrl.org/oim/conformance/firm-loans",  
  "iso4217": "http://www.xbrl.org/2003/iso4217",  
  "scheme": "http://xbrl.org/entity/identification/scheme",  
  "xbrl": "http://www.xbrl.org/WGWD/YYYY-MM-DD/oim",  
  "xbrli": "http://www.xbrl.org/2003/instance"  
},  
"dtsReferences": [  
  {  
    "type": "schema",  
    "href": "../base/loan-data.xsd"  
  }  
],
```

# OIM JSON document info (CR-2018-12-12)

```
"documentInfo": {  
  "documentType": "http://www.xbrl.org/WGWD/YYYY-MM-DD/xbrl-json",  
  "features": {  
    "xbrl:canonicalValues": true  
  },  
  "prefixes": {  
    "Id": "http://xbrl.org/oim/conformance/firm-loans",  
    "iso4217": "http://www.xbrl.org/2003/iso4217",  
    "scheme": "http://xbrl.org/entity/identification/scheme",  
    "xbrl": "http://www.xbrl.org/WGWD/YYYY-MM-DD",  
    "xbrli": "http://www.xbrl.org/2003/instance"  
  },  
  "taxonomy": [  
    "../base/loan-data.xsd"  
  ]  
},
```

# Notable changes

- No more dtsReferences
  - schemaRef, linkbaseRef, arcroleRef, roleRef distinction
  - Just taxonomy, which points to a schema
  - Roles and arcroles from the LRR are handled automatically
  - linkbaseRef is no longer allowed in instances
- documentInfo section groups prefixes and taxonomy URLs
- features section captures helpful assumptions
  - e.g. canonical values

# OIM JSON footnotes (CR-2017-05-02)

```
{
  "id": "f42",
  "value": "1234",
  "aspects": {
    "xbrl:concept": "tax:NumericConcept",
    "xbrl:entity": "cid:123456789",
    "xbrl:periodStart": "2015-01-01T00:00:00",
    "xbrl:periodEnd": "2016-01-01T00:00:00",
    "xbrl:unit": "iso4217:GBP",
  },
  "footnotes": [
    {
      "group": "http://example.com/role/link1",
      "footnoteType": "http://www.xbrl.org/2003/arcrole/fact-footnote",
      "footnote": "Footnote text",
      "language": "en"
    },
    {
      "group": "http://example.com/role/link1",
      "footnoteType": "http://www.xbrl.org/2009/arcrole/fact-explanatoryFact",
      "factRef": "f242"
    }
  ]
}
```

```
{
  "id": "f924",
  "value": "Some text explaining the other fact",
  "aspects": {
    "xbrl:concept": "tax:StringConcept",
    "xbrl:entity": "cid:123456789",
    "xbrl:periodStart": "2014-01-01T00:00:00",
    "xbrl:periodEnd": "2015-01-01T00:00:00",
  }
}
```

# OIM JSON footnotes (CR-2018-12-12)

```
"f42": {
  "value": "1234",
  "aspects": {
    "concept": "tax:NumericConcept",
    "entity": "cid:123456789",
    "period": "2015-01-01T00:00:00/2016-01-01T00:00:00",
    "unit": "iso4217:GBP",
  },
  "links": {
    "footnotes": {
      "defaultGroup": [ "f142" ]
    },
    "explanatoryFacts": {
      "defaultGroup": [ "f242" ]
    }
  }
},
```

```
"f142": {
  "value": "This is an <b>important</b> footnote",
  "aspects": {
    "concept": "xbrl:note",
    "noteId": "f123",
    "language": "en"
  },
},
"f242": {
  "value": "Some text explaining the other fact",
  "aspects": {
    "concept": "tax:StringConcept",
    "entity": "cid:123456789",
    "period": "2014-01-01T00:00:00",
  }
}
```

# Notable changes

- Footnotes are now represented by facts
  - Harmonises representation of *fact-footnote* and *fact-explanatoryFact*
- Cleaner syntax for links between facts
  - anticipates additional acroles for Calc2



# OIM CSV

- Ideal for large volumes of data
  - DPM-style data (EBA / EIOPA)
  - Transactional / audit data
- Easily produced from relational databases
- Friendly format for data science & machine learning
  - Easily accessed from Pandas, Spark, etc

# OIM CSV

- Based on W3C's [Model for Tabular Data and Metadata on the Web](#)

W3C Recommendation



## Model for Tabular Data and Metadata on the Web

W3C Recommendation 17 December 2015

**This version:**

<http://www.w3.org/TR/2015/REC-tabular-data-model-20151217/>

**Latest published version:**

<http://www.w3.org/TR/tabular-data-model/>



# Unsupported features

- 2.1.1 [Non-dimensional segment/scenario content](#)
- 2.1.2 [Mixing segment and scenario elements](#)
- 2.1.3 [Complex-typed dimensions](#)
- 2.1.4 [Tuples](#)
- 2.1.5 [Unsupported concept data types](#)
- 2.1.6 [Unsupported dimension data types](#)
- 2.1.7 [Use of non-standard footnote resource roles](#)
- 2.1.8 [Use of zero-precision numeric facts](#)
- 2.1.9 [Direct references to linkbase documents](#)
- 2.1.10 [Use of non-standard role types and arcrole types](#)
- 2.1.11 [Unlinked footnotes](#)

See [\*OIM CR-2018-12-12 §2.1: Constraints\*](#)

# Filing indicators

- Custom attributes on facts (e.g. @find:filed) are omitted

```
<xs:element name="filingIndicator" id="find_filingIndicator"  
            type="xbrli:stringItemType" substitutionGroup="xbrli:item"  
            nillable="true" xbrli:periodType="instant"/>  
<xs:attribute default="true" name="filed" type="xs:boolean"/>
```

- Eurofiling-2016-05-11/[www.eurofiling.info/eu/fr/xbrl/ext/filing-indicators.xsd](http://www.eurofiling.info/eu/fr/xbrl/ext/filing-indicators.xsd)
- Existing Eurofiling documents must be transformed to use a new dimensional representation when published in OIM form
- A separate document specifies this process
  - <https://specifications.xbrl.org/work-product-index-open-information-model-filing-indicators.html>

# Tuples

- Have generally fallen out of favour
  - Nested XML sits uncomfortably with XBRL's dimensional model
  - Not fully supported in all tools & specs (e.g. Table Linkbase)
- Still used in Germany and the Netherlands
- Will *NOT* be supported in OIM
- ... but we will define a transformation mechanism

# Unsupported data types

- Latest CR (2018-12-12) bans concepts with these types:
  - xbrli:fractionItemType
  - xbrli:doubleItemType
  - xbrli:floatItemType
- Also forbids typed dimensions of type xs:double & xs:float
- Restrictions on float/double will be removed in the next draft
- fractionItemType will remain forbidden

# Upcoming changes

- Agreed
  - 'aspects' renamed to 'dimensions'
  - 'accuracy' renamed to 'decimals'
  - removal of float/double restrictions
- Under discussion
  - QNames (instead of URIs) for roles & arcroles
  - No prefix for UTR units

# Next steps

- Core spec + JSON
  - 2019 Q1: Final Candidate Recommendation
  - 2019 Q2: Proposed Recommendation
  - 2019 Q3: Recommendation
- CSV
  - 2019 Q2: Candidate Recommendation
  - 2019 Q3: Proposed Recommendation
  - 2019 Q4: Recommendation
- Taxonomy Model
  - 2019 Q4: Requirements & Public Working Draft