EIOPA Solvency II DPM and XBRL Taxonomy Framework Architecture

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About this document

This document presents the data modelling approach and XBRL taxonomy design employed to capture the information requirements defined by Solvency II.

In particular, it presents in detail the Data Point Model (DPM) methodology applied to modelling the Solvency II metadata and architectural principles and rules which guide the translation of the DPM into the Solvency II XBRL Taxonomy.

Version 1.5 is the final major release of the Preparatory taxonomy. Future development will be focused on the full version of the taxonomy (the target taxonomy). Consequently, the principles, rules and design approaches described in this document continues to be subject to review and should therefore not be treated as the final decisions for the target taxonomy.

This document falls in the category of early information sharing, containing non-binding information, and is subject to substantial further changes

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I Related Documents

The following material is referenced throughout this document:

1. Solvency II Framework Directive (2009/138/EC)[1]
2. EIOPA (and CEIOPS) Final Level II Advice documents[2]
3. EIOPA July 2012 Final Report on Public Consultations No. 11/009 and 11/011 on the Proposal for the Reporting and Disclosure Requirements[3]
4. Consultation on Guidelines on preparing for Solvency II (published 27 September 2013)[4]
5. Guidelines On Submission Of Information To National Competent Authorities[5]
6. Data Checks Annex [6]
7. Quantitative Reporting Templates[7] including Errata[8]
8. Business Logs[9] including Errata[8]
9. ITDC note on justification of data to be provided to EIOPA during the Preparatory Phase March 2014[10]
10. Annotated Templates and Dictionary[11]
11. Taxonomy[11]

II Introduction

II.1 About EIOPA

The European Insurance and Occupational Pensions Authority (EIOPA) was established in 2011 as a consequence of the reforms to the structure of supervision of the financial sector in the European Union.

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[1] Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) - http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0138:EN:NOT
[2] https://eiopa.europa.eu/publications/sii-final-l2-advice/index.html
[3] https://eiopa.europa.eu/?id=1962 including errata document.
[4] https://eiopa.europa.eu/consultations/consultation-papers/2013-closed-consultations/march-2013/guidelines-on-preparing-for-solvency-ii/index.html
[5] https://eiopa.europa.eu/publications/eiopa-guidelines-new/guidelines-on-submission-of-information-to-national-competent-authorities/index.html
[6] Annex VI of Guidelines On Submission Of Information To National Competent Authorities
[7] Appendix I of the Consultation on Guidelines on preparing for Solvency II
[8] Errata included in EN language version of the Guidelines On Submission Of Information To National Competent Authorities.
[9] Annex II of the Guidelines On Submission Of Information To National Competent Authorities (and also Appendix II of the Consultation on Guidelines on preparing for Solvency II)
[10] https://eiopa.europa.eu/about-eiopa/organisation/management/board-of-supervisors/minutes-of-the-board-of-supervisors/index.html (March 2014)
[11] https://eiopa.europa.eu/en/publications/eu-wide-reporting-formats/index.html

EIOPA is part of the European System of Financial Supervisors that comprises three European Supervisory Authorities, one for the banking sector, one for the securities sector and one for the insurance and occupational pensions sector, as well as the European Systemic Risk Board.

EIOPA's core responsibilities are to support the stability of the financial system, transparency of markets and financial products as well as the protection of policyholders, pension scheme members and beneficiaries. EIOPA is commissioned to monitor and identify trends, potential risks and vulnerabilities stemming from the micro-prudential level, across borders and across sectors.

EIOPA is an independent advisory body to the European Parliament, the Council of the European Union and the European Commission.

Consultation and transparency are essential elements of EIOPA's functioning and are attained either through formalised consultation on draft documents, or even earlier in the process of attaining a given deliverable through informal discussions and exchanges with interested parties to inform them about the work under preparation.

II.2 About Solvency II

Upon completion, the Solvency II supervisory review process will enact a new supervisory system in insurance. The preparatory phase of the new system will be applicable from 1st January 2014, with the full phase due in 2016. Both phases lay down:

- Quantitative requirements on insurance and reinsurance undertakings (undertakings) and how to calculate them;
- Qualitative requirements (system of governance);
- Requirements for supervisory reporting and public disclosure of information;
- The supervisory review process.

Completing the Solvency II revision process implies adopting different levels of rules, of which the highest level (Level I), the Solvency II Framework Directive (2009/138/EC), was adopted in 2009.

This Framework Directive had to be adapted in response to:

- New architecture for its implementing measures introduced in the Lisbon Treaty (2009),
- New financial supervision measures introduced in Regulation 1094/2010 establishing the European Insurance and Occupational Pensions Authority.

These changes will be implemented through the "Omnibus II directive", currently under negotiation between European Parliament, European Commission and European Council.

Figure 1. EC levels of rules

The Solvency II Framework Directive[12] is principles-based, and the detailed rules of the Solvency II regime will be contained in Implementing Measures (Level II) which will be proposed by the European Commission, and technical standards which will be drafted by EIOPA and endorsed by the European Commission after the Omnibus II directive enters into force. See EIOPA (and CEIOPS) Final Level II Advice documents. This corresponds to a deeper level of implementation whose successful completion will be needed for an effective operational application of the new system. The technical standard should enable an efficient sharing of the supervisory data that will be required by Solvency II. Until the higher levels of requirements (Omnibus II and Implementing Measures) on which this relies are fully completed, the technical content on which this document elaborates cannot be considered final.

II.3 History of the Taxonomy architecture

II.3.1 Underlying assumptions and overview

In order to contribute to the development of Solvency II, EIOPA has provided various inputs to the policy makers, including the reporting requirements, and among them:

- EIOPA (and CEIOPS) Final Level II Advice documents
- EIOPA July 2012 Final Report on Public Consultations No. 11/009 and 11/011 on the Proposal for the Reporting and Disclosure Requirements
- Quantitative Reporting Templates including Errata
- Business Logs including Errata

In parallel, EIOPA initiated work aiming to select a common IT standard to support the exchange of information implied by the proposals made on reporting requirements. This

[12] Solvency II and level of rules
http://ec.europa.eu/internal_market/insurance/solvency/future/index_en.htm

led to the selection of XBRL as the language to underpin the description of the Solvency II quantitative requirements in a common, computer-readable manner.

In July 2011 EIOPA published a pre-consultation on the Solvency II XBRL Taxonomy development. Following the feedback received, and taking into account the XBRL approach of the European Banking Authority (EBA), EIOPA decided to apply the Data Point Modelling (DPM) methodology for modelling the Solvency II metadata. Application of DPM to the Solvency II reporting requirements allows for the provision of high quality input material for the Solvency II XBRL Taxonomy development process.

II.3.2 Purpose

The Solvency II DPM and XBRL Preparatory Taxonomy, together with the supporting materials (including this document), are published in order to achieve several objectives:

1. Inform the market, the EU regulatory environment and the software vendor community about the considered design approaches to the future Solvency II electronic reporting requirements using DPM and XBRL,

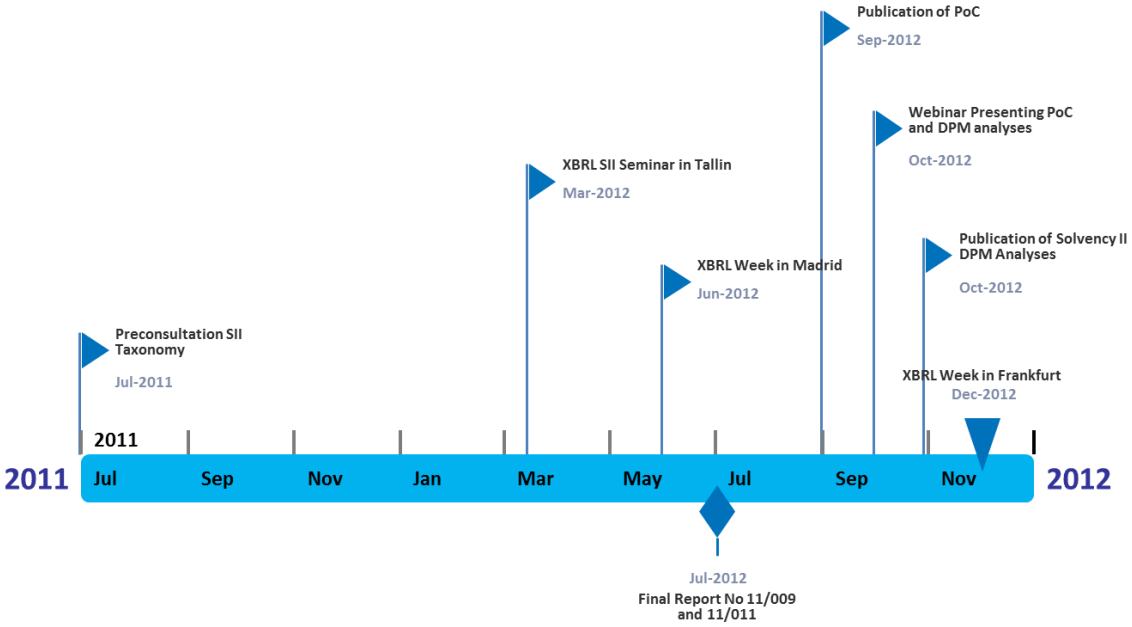
2. Enable reporting entities to consider embarking on educational, informational and preparatory activities for the upcoming full phase Solvency II reporting requirements,

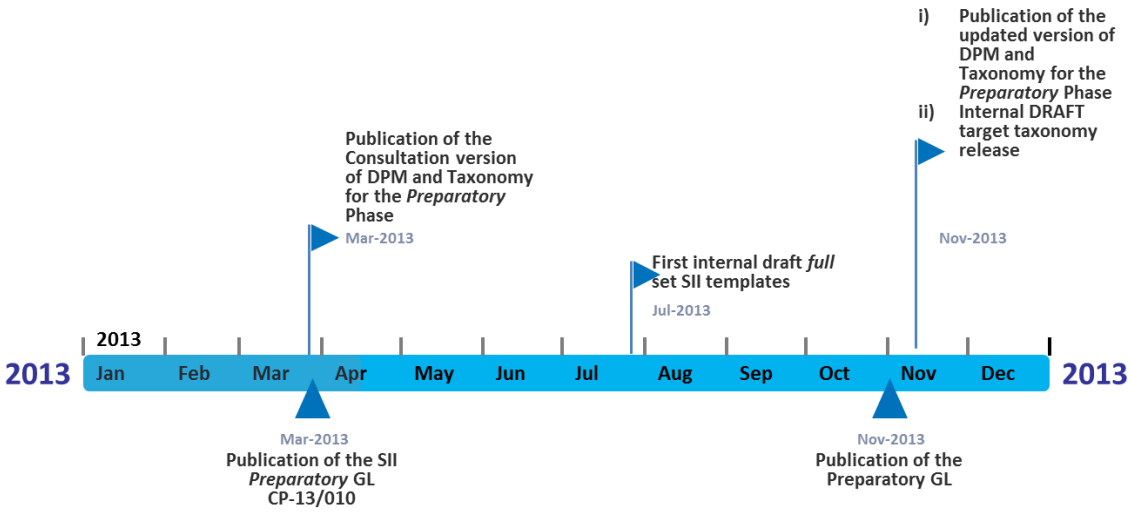
3. Enable stakeholders involved in the future Solvency II reporting to assess, design and plan implementation approaches and consider potential benefits and challenges of using the DPM and XBRL standard,

4. Enable stakeholders planning to implement XBRL reporting to carry out a testing phase for their acceptance of XBRL from undertakings using a taxonomy which covers all preparatory phase data (a smaller number of reportable data points compared with the Full Taxonomy that will apply on the 1st January 2016).

II.4 About deliveries, timelines and related developments

The timeline and deliverables related to the Solvency II DPM and XBRL Preparatory Taxonomy project are presented below.


Publication of PoC
Sep-2012
Webinar Presenting PoC and DPM analyses
Oct-2012
XBRL SII Seminar in Tallin
Mar-2012
Publication of Solvency II DPM Analyses
Oct-2012
XBRL Week in Madrid
Jun-2012
Preconsultation SII Taxonomy
Jul-2011
XBRL Week in Frankfurt
Dec-2012
2011
2011
Jul
Sep
Nov
Jan
Mar
May
Jul
Sep
Nov
2012
Jul-2012
Final Report No 11/009 and 11/011


i) Publication of the updated version of DPM and Taxonomy for the *Preparatory* Phase
ii) Internal DRAFT target taxonomy release
Publication of the Consultation version of DPM and Taxonomy for the *Preparatory* Phase
Mar-2013
Nov-2013
First internal draft *full* set SII templates
Jul-2013
2013
2013
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2013
Mar-2013
Publication of the SII *Preparatory* GL CP-13/010
Nov-2013
Publication of the Preparatory GL

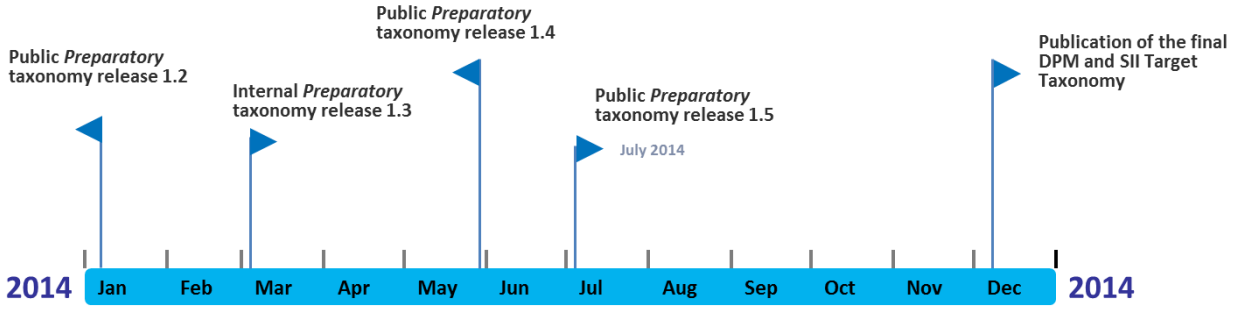


Figure 2. Timeline and deliverables related to the Solvency II DPM and Preparatory XBRL Taxonomy.

Legend

- *Taxonomy delivery or event.*
- *External input to/dependency of the Taxonomy Project. Note that all dates may change subject to the Omnibus Directive timeline[13].*

Pre-consultation on Solvency II Taxonomy (July 2011)[14]

In July 2011 EIOPA published a pre-consultation on the Solvency II XBRL Taxonomy. One of the outcomes of this pre-consultation was the decision to implement the Data Point Modelling methodology for the Solvency II information requirements and subsequently represent this model in the format of an XBRL taxonomy.

EIOPA and XBRL Europe Seminar in Tallinn 11 April 2012[15]

The objective of this seminar was to promote the development of the common EU supervisory culture through providing a forum for learning, discussion and exchange of information about supervisory practices.

Cross Sector seminar in Madrid 29-30 May 2012[16]

In collaboration with the European Banking Authority EIOPA gave a presentation on the "Insurance and Solvency II approach in XBRL".

Final Report No. 11/009 and 11/011 (July 2012) [17]

EIOPA Quantitative Reporting Templates and other consultation material were published together with the EIOPA Final Report on Public Consultations No. 11/009 and 11/011 on the Proposal for the Reporting and Disclosure Requirements.

Publication of the PoC taxonomy (September 2012)

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[13] http://ec.europa.eu/internal_market/insurance/solvency/future/index_en.htm
[14] https://eiopa.europa.eu/consultations/consultation-papers/2011-closed-consultations/index.html
[15] More information available in Eurofiling http://www.eurofiling.info/events.shtml
[16] More information available in Eurofiling http://www.eurofiling.info/events.shtml
[17] https://eiopa.europa.eu/?id=1962

The proof-of-concept Solvency II taxonomy. See point I.3.

Publication of Solvency II DPM Analyses (September 2012)

The publication of the first Data Point Model covering all Solvency II templates for Quarterly, Annual, Solo and Group reporting.

First draft of Solvency II Taxonomy covering the set of templates applicable for the preparatory phase (March 2013)

Publication of the first draft of the Solvency II XBRL Taxonomy, covering the Solvency II templates for the preparatory phase. From this version, no major technical modifications to the taxonomy architecture are expected. However, content may be impacted by the potential changes in the underlying information requirements until the final approval of the Implementing Technical Standard (ITS). Between the first draft and the final version of the taxonomy several updates can be expected.

Second draft of the Solvency II Taxonomy covering the set of templates applicable for the preparatory phase (June 2013)

Update to the publication of the Solvency II XBRL Taxonomy, covering the Solvency II templates for the preparatory phase.

Re-packaged release of Solvency II Taxonomy covering the set of templates applicable for the preparatory phase (September 2013)

Documentation updates only.

Publications of the Solvency II Preparatory Taxonomy package

An updated version of the XBRL taxonomy for the preparatory phase. The changes in the taxonomy will be mainly introduced to include changes to the reporting requirements.

- public v1.2 (November 2013)
- internal v1.3 (March 2014)
- public v1.4 (May 2014)
- public v1.5 (July 2014)

Internal release of a draft version of the target Solvency II Taxonomy package (January 2014)

Coinciding with releases of the Perparatory Taxonomy package are internal releases of the target SII XBRL taxonomy.

First Solvency II report for the Preparatory Phase (Q1 2015)

The first submission of Solvency II Preparatory Phase XBRL reports, including data for Q1 of 2014.

III Taxonomy Release Structure

The taxonomy is published as two .zip files: one containing the taxonomy and all the associated documentation (Section III.1), and the other containing XBRL instances that test assertions and associated behaviour (Section III.2). The reason for separating the release into two parts is the large number of the test instances which result in a large distribution size. Hence, the two published files are

1. SII-Preparatory-{date}-{version_number}.zip
2. SII-Preparatory-{date}-{version_number}-testCases.zip

where {version_number} will be replaced the release version (such as "v1.5.2") and date is the formal date of the taxonomy (such as 2014-07-23).

III.1 Main release package

The main part of the release will contain the taxonomy and its associated documentation. The sample directory structure is presented below, with "instances" and "subsets" directories only containing one file of a kind for demonstration purposes.

```
SII-{version}-{date}-{version_number}
├──docs
│   documentation associated with the taxonomy
│       ├──EIOPA Solvency II DPM and XBRL Preparatory Taxonomy Framework Architecture.pdf
│       │       a document describing the DPM methodology and architectural principles and rules that guide the
│       │       translation of the DPM into the taxonomy
│       ├──EIOPA Solvency II Preparatory Taxonomy Key Information document.pdf
│       │       a document presenting the key entry point information regading the taxonomy
│       ├──MDMetricDetails
│       │       └──MDMetricDetails.xml
│       │               a mapping of each MD metric to the associated HD metric (see V.2.3.3.1)
│       └──SII-Preparatory-{date}-{version_number}-documentationTemplates.xlsx
│               a document that is intended to present all information about a data point in one place (see V.2.4.3)
├──instances
│       └──coverage
│               autogenerated test instances that are designed to cover all data points (see V.3.10.6)
│               └──solvency
│                       └──solvency2
│                               └──s2md
│                                       the owner the test instance was generated for
│                                       ├──arg.xbrl
│                                       │       an instance with every data point
│                                       └──arg_level2.xbrl
│                                               an instance with every level 2 data point
├──localization
│       └──SII-Localized-Extension-xx.zip.
│               example extension providing localised labels
├──RELEASE-NOTES.txt
│               a document covering the release notes from all the taxonomy releases
```

```
├──requirements
│        ├──SII-Preparatory-{date}-{version_number}-validation.xlsx
│        │        a workbook specifying the list of assertion rules that will be implemented
│        ├──SOL2 annotated_templates.xlsx
│        │        a workbook providing a mapping between the technical model and the business reporting
│        │        templates (see V.2.4.2)
│        └──SOL2 DPM Dictionary.xlsx
│                 a workbook defining the concepts that make up the taxonomy (see V.2.4.1)
├──subsets
│        XII formulae that only keep the facts that are present in the corresponding level 2 entry points
│        └──s2md
│                 ├──subsets_arg-subset.xml
│                 │        XII formula document
│                 └──subsets_arg.xsd
│                          schema that will be referenced from  instances
└──taxonomy
         ├──eurofiling.info.solvencyII.zip
         │        the taxonomy package for the common Eurofiling part of the taxonomy
         ├──SII-Preparatory-Dictionary-{date}-{version_number}-.zip
         │        the taxonomy package for the dictionary part of the taxonomy
         └──SII-Preparatory-Frameworks-{date}-{version_number}.zip
                  the taxonomy package for the frameworks part of the taxonomy
```

III.2 Test instance release package

The secondary part of the release contains a large number of small test instances which are ran against assertion rules (see V.3.10.6). A sample structure of the zip directory can be found below, with only one test instance shown for each of the "assertions" and "autoassertions" folders.

```
SII-Preparatory-{date}-{version}-testCases
├──assertions
│        test instances generated from manually written test cases
│        ├──behaviour.xml
│        │        a file documenting the expected behaviour of all test instances in the directory
│        └──cas1
│                 name of validation rule the test instance is designed to test
│                 └──_00_PASS
│                          ID and expected behaviour (pass/fail)
│                          └──solvency
│                                   └──solvency2
│                                            └──s2md
│                                                     the owner the test instance was generated for
│                                                     └──ars.xbrl
│                                                              the test instance, named after its entry point
└──autoAssertions
         test instances generated from autogenerated test cases
         ├──behaviour.xml
         │        a file documenting the expected behaviour of all test instances in the directory
         └──cas1/_00_PASS/solvency/solvency2/s2md/ars.xbrl
                  the test instance, following the same naming convention as instances in the "assertions" directory
```

IV General framework requirements

In order to define a comprehensive EIOPA XBRL reporting framework, a set of business, technical and legal requirements was set up to guide the overall development process and the content and structure of deliverables.

IV.1 Business requirements

IV.1.1 Accuracy and precision

The Solvency II Data Point Model (DPM) and XBRL Taxonomy should accurately and precisely describe metadata associated with the information requirements defined in the Quantitative Reporting Templates and other base materials as required under the Solvency II Directive.

Accuracy and precision shall be understood as the exact representation (naming, structuring and definition) of metadata attributes. These attributes can be subsequently used for describing information requirements resulting from templates. For the DPM, accuracy and precision shall apply to the definition and naming of metrics (primary characteristic) and breakdowns (dimensional properties of metrics). Concerning the XBRL Taxonomy, accuracy and precision shall apply to the representation of primary items, dimensions and domain members in the form of XBRL elements (including their data types and other attributes), relationships in linkbases and the association to resources such as labels and references.

IV.1.2 Completeness

The Solvency II DPM and XBRL Taxonomy shall completely cover the scope of information requested through the Quantitative Reporting Templates and other base materials as required under the Solvency II Directive.

IV.1.3 Uniqueness

Each individual data point described according to the breakdowns defined in the DPM shall be unique and distinctive (from other data points representing semantically different pieces of information). Similarly, each representation of data points in the XBRL Taxonomy shall be unique.

If the same piece of information is reflected in different templates, it should result in the same data point in the DPM and the XBRL taxonomy.

IV.1.4 Unambiguity

Metadata definitions in the DPM shall not lead to overlapping or unclear data points. Each data point must be defined explicitly, conveying all characteristics necessary to represent the semantics carried by the piece of information described (by this data point).

IV.2 Technical requirements

IV.2.1 Specification compliance

Following the XBRL standard requirements, the Solvency II XBRL Taxonomy and any assisting XBRL reports (instance documents) must be compliant with:

- XBRL 2.1 specification as of December 31, 2003 with Errata Corrections up to January 25, 2012,
- Dimensions 1.0 specification as of September 18, 2006 with errata corrections up to January 25, 2012.

The business rules layer in the form of linkbase files must be compliant with Formula Specification 1.0 - 2009 – 2011 and supporting specifications (Registry – 2009-2011, Generic Links – June 22, 2009).

The table linkbase definition is created according to the Recommendation of the Table Linkbase specification published on March 18, 2014.

The taxonomy also makes use of the March 26, 2014 PR of the extensible enumerations specification.

IV.2.2 Common practices compliance

While no official best practices documentation for metadata design and taxonomy development appears to be commonly applied in the insurance sector, several reference materials exist and were taken into account during the development process of the Solvency II DPM and XBRL Taxonomy. The practices considered as reference models included:

- Data Point Modelling methodology as developed and applied by the Eurofiling Group[18],
- The Eurofiling Taxonomy Architecture as of 2010-12-31[19] with subsequent proposed amendments[20,21,22].

Practices related to the DPM and DPM-based XBRL Taxonomies architecture are in the development phase, subject to improvements and amendments arising from the European Banking Authority XBRL Project and several other implementations by banking sector supervisors across the globe.

To minimise the scope for divergent IT developments, EIOPA and EBA have enabled participation of representatives from each authority in the steering body (for DPM and XBRL efforts) of its counterparty. Consequently, compliance with the aforementioned common

[18] http://www.eurofiling.info/dpm/index.shtml
[19] http://www.eurofiling.info/finrepTaxonomy/taxonomy/EFTA_20100712.pdf
[20] http://www.eurofiling.info/finrepTaxonomy/EurofilingProofOfConcept.pptx
[21] http://www.eurofiling.info/corepTaxonomy/Draft_metamodel.pdf
[22] http://www.wikixbrl.com/index.php?title=European_XBRL_Taxonomy_Architecture_V2.0

practices should be understood as supportive and intermediate until the final version of the EIOPA DPM and XBRL Taxonomies are published.

This document constitutes certain rules and principles derived from the applicable common practices.

IV.3 Legal requirements

IV.3.1 Binding representation

The metadata structures reflected in the Data Point Model and the XBRL Taxonomy shall only and comprehensively represent the legal regulations and information requirements[23].

IV.3.2 Non-interpretation

The metadata definitions and structures described in the DPM and XBRL taxonomy shall not in any manner attempt to interpret, alter or impose any meaning of reporting requirements other than expressed in the official Solvency II documentation published by the European Commission and EIOPA.

Interpretations and meaning of reporting requirements included in other documents or explicitly expressed by the European Commission shall take precedence over information included in the DPM, the XBRL Taxonomy or this document.

[23] Refer to documents 1-8 in Related Documents.

V Development framework

V.1 Overall process of DPM and XBRL taxonomies development

The diagram (Figure 3) presents an overview of the Solvency II Data Point Model and XBRL Taxonomy creation process (including the input materials, output products and participants involved), divided into phases of:

1. Analysis,
2. Metadata modelling,
3. Taxonomy development,
4. Quality assurance.

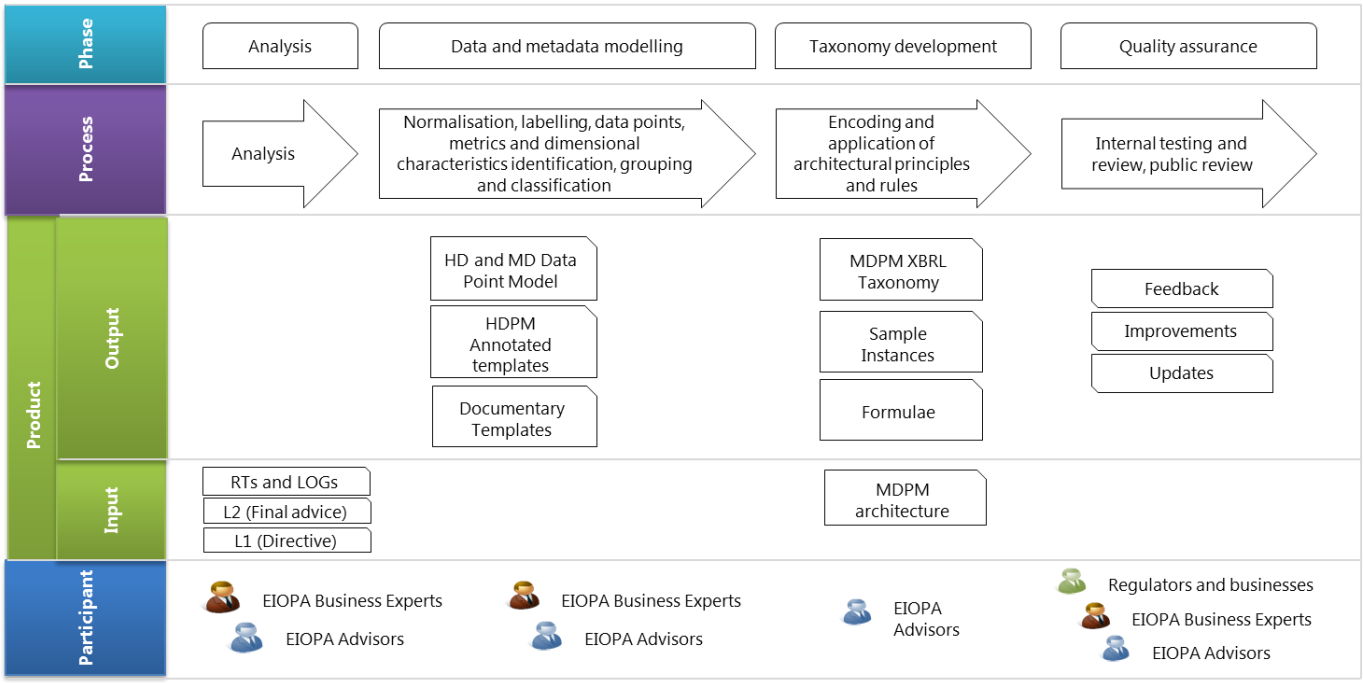

Figure 3. Overall framework of the DPM and XBRL taxonomies development

V.1.1 Analysis

The analysis phase consists of collection and a brief review of the base materials defining the information requirements. Participants involved in this phase include EIOPA Business Experts (authors or contributors to the Reporting Templates and Business Logs) and external advisors. No specific outcome product is expected at this stage, except for an organised list of input materials. In some cases, however, the base materials can be reorganised to better support the further stages of the development process.

V.1.2 Metadata modelling

Metadata modelling consists of several iterative cycles of thorough analysis of the Reporting Templates and Business Logs. The result of each iteration is the DPM Dictionary and the Annotated Templates, which are more precise requirements-capture documents (see section V.2.4 for more details).

In order to meet both business and legal criteria, the EIOPA Business Experts are consulted extensively in this phase, while external advisors suggest potential changes to the templates (such as normalisation) and support the DPM creation tasks.

V.1.3 Taxonomy development

This phase is coordinated by the EIOPA XBRL taxonomy project managers and developed in close collaboration with external advisors.

Metadata defined in the DPM results in a dictionary declaring primary items, dimensions, domains and domain members. Dictionary concepts are subsequently used to express valid combinations and visualisations (rendering) as specified by the Annotated Templates.

The taxonomy development phase involves fully automatic generation (using dedicated software[24]) of a set of XBRL-compliant files (schemas and linkbases) from the Dictionary and Annotated Templates.

V.1.3.1 Continuous integration

A system of continuous integration is used to ensure that when changes are made to the Dictionary or Annotated Templates as part of the metadata modelling activity, a taxonomy is generated automatically and immediately. This then undergoes a number of automated QA activities, which allows any errors in modelling to be detected as quickly as possible when the corrective action is still easy to perform.

V.1.4 Quality assurance

This phase consists of several internal cycles of testing. The tests are mainly focused on completeness (review of the taxonomy scope and content against the model), compliance (validation against specifications, common practices and other agreed rules or principles) and usage (creation of sample and real reports, evaluating the usability of a taxonomy). Quality assurance shall include public exposure for review, where stakeholders or other interested parties are invited to provide comments and feedback (although the focus is on key users of the taxonomy, i.e. national regulators and undertakings).

V.2 Data model components

V.2.1 Overview

The main underlying materials for the data modelling process are the Reporting Templates and supporting Business Logs (see section V.2.2).

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[24] See point V.5 Software solutions applied in development process

The result of this process is a structured description of the DPM, namely the Dictionary (listing and naming all breakdowns and their components identified in the process of analysing the input materials) and the Annotated Templates (see section V.2.4 for details of both). These documents are subsequently the inputs into the generation of the XBRL taxonomy (as described in section V.1.3).

These DPM documents shall aim to fulfil the following set of requirements:

- remove redundancy of metadata definitions (no duplicated data points),
- increase consistency of metadata definitions (clarity and explicitness of definitions),
- increase efficiency of data tagging and mapping (accuracy and clarity of assigning tags to data points, generation to/from existing systems),
- advance metadata maintenance procedures (change introduction, management and communication),
- facilitate non-IT technical experts' involvement (business users input),
- support data mapping procedures (manual and automatic data mapping).

V.2.2 Reporting Templates and Business Logs

Reporting Templates reflect Solvency II information requirements arranged in the form of tabular views while the Business Logs specify in more detail the content of the Reporting Templates usually by giving the meaning of information requested in particular cells in the templates. From a data modelling perspective, they allow for the identification of general breakdowns describing the requested data (defined in the DPM), current reporting requirements (in the form of a set of data points) as well as constraints on values to be reported (content of data cells from templates or cross-cell checks)[25].

Input materials used for the development of the taxonomy can be found on the EIOPA website:

- Quantitative Reporting Templates including Errata
- Business Logs including Errata
- Annotated Templates and Dictionary
- Data Checks Annex

V.2.3 Data Point Model

The Data Point Model defines business properties that are used to describe each and every piece of the information requirements (hereinafter referred to individually as a data point).

[25] The Data Checks annex also documents these constraints.

V.2.3.1 General building blocks and terminology

A metric is the minimum description of each data point. A metric can also include other semantics (business properties) depending on the decision of the model's author. Each data point in the model must include in its definition one, and only one, metric.

Other business properties describing or detailing the data point and not included in the definition of a metric are defined in the form of dimension members. Members are gathered in sets called domains, can be arranged in hierarchical relationships (subdomains), and are contextualised by dimensions. Certain rules and examples presented in the next paragraphs have been added to facilitate the comprehension of these terms.

A domain is a cohesive set of members i.e. all members from a domain share a certain common nature defined subjectively but applied consistently by the model's author. A typical example of a domain is "Geographical areas". Members of this domain could be different areas of the Earth, classified according to the physical geography ("Europe", "Pacific Ocean", "Himalayas", …) and/or human geography ("France", "EU", "G-20 major economies", …). Combining physical and human geography into one domain is already the author's subjective view of the classification.

Members of a domain can be defined by explicit enumeration of each member, or by imposing a constraint on the expected value for each enumeration. A domain of the first kind is called explicit domain, and an example could be the "Geographical areas" presented above. The latter is called a typed domain (the name comes from the data type restriction on its content). An example of a typed domain could be the ISBN identifier (used for uniquely identifying books and similar publications) which is restricted to a certain number of digits.

The number of members in explicit domains varies from two (for Boolean choices) to hundreds (in case of countries or currencies).

All members of explicit domains should participate in hierarchical relationships. Whenever possible, these relationships reflect arithmetical dependencies. An example is presented in
Table 1.

Member	Comparison operator	Sign (weight if applicable)
Calculated as a sum of best estimate and risk margin	=	
Best estimate	=	+1
Best estimate [before adjustment for expected losses due to counterparty default]		+1
Adjustment for expected losses due to counterparty default		-1
Risk margin		+1

Table 1. Example of arithmetical dependencies between domain members expressed in the DPM as a hierarchy (subdomain).

If not possible, a hierarchy (subdomain) is defined as a flat list of members to be used in a certain scenario (e.g. applied to a particular dimension or driven by information requirements of a template).

Not every hierarchy must include all members of a domain (especially when there could be alternative classifications, e.g. "Poland"/"Other than Poland" and "EU"/"Other than EU" would never form a single hierarchy as "EU" includes "Poland" plus some other countries while "Other than EU" includes "Other than Poland" minus some countries). Therefore hierarchies are called subdomains (even though in some cases they can define relationships including all members of a domain).

In case of business data, these relationships would typically reflect basic arithmetic operations where lower level elements aggregate to an upper level element with a certain weight. Comparison operators used to express the relationship between the upper level element and contributing lower level elements could be one of the following "=", "≥" or "≤", and the multiplication factors (weights) are typically "+1" or "-1". In other cases when there are no arithmetic relationships, hierarchies are also created to define subgroups of members for other purposes (e.g. hierarchies shared by a large subset of information requirements). Whatever the kind of relationship, hierarchies are an important part of the model as they help to maintain coherence within a domain.

Each domain must be associated with one or more dimensions. Theoretically, one dimension could refer to members of multiple domains. However, this is prohibited in the DPM.

Dimensions contextualise domain members when applied to a data point (they contribute to the semantics of a member which, without a dimension, may be insufficient to represent the full meaning of a property). For instance, in the example above, "Spain" is a geographical area which could represent "Location of an issuer" of a financial instrument, "Location of a stock exchange" where this instrument is traded, "Location of a broker" who participated as a middleman in the transaction or finally "Location of a buyer" who purchased this instrument. The same domain member "Spain" was contextualised in this example by four different dimensions. A similar situation may appear in case of a typed domain whose restriction could be different based on the dimension contextualising its value (e.g. code = 123-345-567-890 could be the "Identification number for tax purposes" or "Company registration number", where the kind/type of the number is given by the dimension). Dimensions referring to explicit domains may have default members, which are implicitly applied to every data point that is not explicitly characterised by a particular dimension. For example, a dimension "Original currency" may be associated with a default member "All currencies". This means that when a data point does not explicitly mention the "Original currency" dimension, it is assumed that it takes the "All currencies" member for this dimension.

Default members are very useful when defining the model, as otherwise every data point would have to explicitly mention each dimension and the applicable member. With default members it is enough for a data point to name only the properties that are important and distinguish this data point from other data points. Although "default" is a property of a member with respect to a dimension, the DPM assumes that all dimensions referring to a certain domain would have the same default member. This means that only one member in a domain can be assigned as a default and shall apply to all dimensions referring to this domain. There could be dimensions in the model that do not apply to some data points. For example, a data point representing "Equity instruments" is unlikely to be linked to the "Original maturity" dimension (shares and other ownership rights usually do not have maturity). Therefore, the default member is usually named "Total/Not-applicable".

- Each dimension and member pair (either explicit or typed) is a single business property of a data point.
- A data point can have none, one or more such business properties.
- Each dimension must not be associated with a data point more than once.

Metrics typically have a simple type such as String or Monetary but can also take their value from the closed list provided by a domain hierarchy.

V.2.3.2 Highly Dimensional modelling approach

Business requirements in the DPM are defined using a highly dimensional (HD) modelling approach. This provides the full amount of detail to describe a data point.

The Pros and Cons of this approach are as follows.

Pros

- Full amount of detail
- Facilitates analysis
- High quality of the model
- Explicit dependencies between concepts
- Change management with stable Metrics
- Use of breakdowns for internal purposes (databases, BI…)
- Potential bridge with other reporting frameworks
- No need for arbitrary decisions (Metrics vs. Dimensions)
- Data centric model (template independent)

Cons

- Less readability of taxonomies
- Larger instances and lower performances (more breakdowns used)
- More complex formulas / assertions with requirement to use dimension filters

A moderately dimensional (MD) layer was introduced that is more compact. Consequently the problem of performance (size of filings and their processing time) caused by the complexity of the HD version should be reduced in the MD version, where many dimensional properties are included in the definitions of the metrics, resulting in fewer dimensions at the cost of additional metrics.

V.2.3.3 Distinction between MD and HD data point models

Each data point consists of an identification of a metric plus any additional business properties (in the form of dimension-member pairs) that are required to explicitly define the piece of information. This includes information requirements expressed by this data point and which are NOT included in the definition of a metric.

The distinction between a moderately-dimensional and highly-dimensional data point model is made mainly on the level of semantics (represented by the number of business properties) included in the definition of a metric.

In HD, the metrics convey only the expected type of value (data type). In MD they also include one or more business properties and are closely aligned with the template view of the required data set.

The HD definition of an individual data point is more complex (it consists of more properties that need to be combined to get the full meaning of the data point), but at the same time it is more explicit, supports mapping and extraction to/from backend systems and can be used in analysis by simplifying data querying (for instance, filter all facts by "Debt securities" rather than select certain records one by one e.g. "Treasury bills", "Debt securities issues by credit institutions", …).

Even though the definitions of metrics in MD include business properties, they are not always enough to explicitly describe all of the semantics of a data point. Therefore the MD data point model also applies dimension members to complement the definition of a data point where necessary (which is the case when it is used on a different axis to the metric in any table). These dimensional properties are a subset of those applied in HD.

This means that MD and HD apply the same model, but MD includes some of the business properties in the definition of a metric while the HD approach keeps all business semantics as dimension-member pairs.

The relation between MD and HD data points is schematically presented in Figure 4.

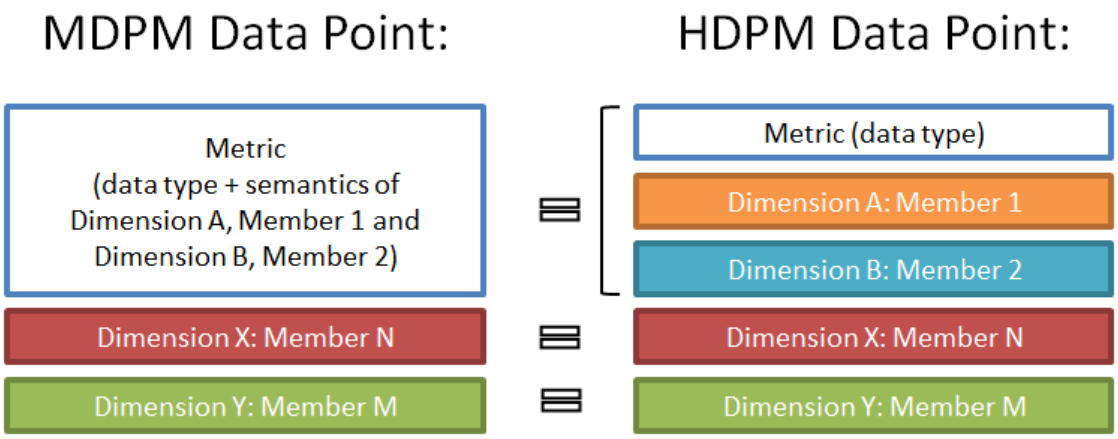

Figure 4. Schematic relation between MD and HD data points

The description of all data points using metrics and dimension members is given in the Annotated Templates (see section V.2.4).

The dictionary contains definitions of components for both highly-dimensional and moderately-dimensional. The annotated templates contain references to the highly-dimensional components with enough additional information to allow the equivalent moderately-dimensional references to be derived. Only a moderately-dimensional taxonomy is published; the highly-dimensional annotations are for reference only.

V.2.3.3.1 Deriving the MD from HD model

The process of deriving the MD model from HD is as follows.

Open Tables

For open tables, the derivation process considers each column in turn. There are two cases - (i) columns which are part of the key that identifies the row and (ii) columns which have an associated metric in HD (and thus cannot be part of the key):

Columns which are part of the key are modelled in the same way in MD as they are in HD.

Columns which have an associated metric in HD use an MD metric whose label is the concatenation of the existing annotations (in the canonical order) joined with "|". Note that all dimensions on the same axis are included in this metric.

In some cases, particularly when multiple columns contribute to a key (resulting in a so-called composite key), the DPM may include an additional property that should serve solely as a unique key (also known as an artificial key). This property is represented by a typed dimension, whose domain is a set of identifiers for rows defined by each filer in the submitted report.

Closed Tables

For closed tables, the derivation process considers each row, column, and Z-axis separately in turn. These are referred to as divisions.

In a similar way to open tables, the derivation process concerns creating appropriate MD metric annotations from the HD annotations. For all divisions which contain the HD metric, some of the annotations in that division are combined together into the MD metric. Which annotations are combined is controlled by whether they are marked as a "Dimension in MD Closed" in the Dictionary. If so, they remain as a dimension in both MD and HD. If not, they are included in the MD metric and only HD has that dimension. Note that this selection is not performed for open tables as it is very important for file size and processing performance that all facts in a row have the same dimensions.

Dimensions may be marked as "Dimension in MD closed" for various reasons. The most significant is when the dimension is used on a different axis to the metric in at least one table. Because the dimension cannot be merged with the metric in this table, it cannot be merged with the metric in any other tables. This avoids the same data point in HD occurring twice with different derived MD metrics.

Annotations which state that a dimension has the default member are never included in an MD metric; these annotations are omitted when concatenating annotations together to decide which MD metric applies.

Labels

Although MD metrics often correspond directly to template rows or columns, in order to ensure that a consistent approach to modelling is applied throughout all templates for both the HD and MD models, it is insufficient to use template row and column headings exclusively to define the MD metrics. Instead, the MD metric labels are derived from the

HD model by concatenating the HD metrics and "Dimension in MD closed" dimension-member pairs which define the data point (or set of data points) in question.

These dimension-member pairs are ordered according to an algorithm (sorted alphabetically by domain code, dimension code and member label) to ensure consistency, and are separated by pipe characters ("|"). As a result, labels of MD metrics follow the general pattern:

Metric: {label of HD metric}|{dimension code}/{label of domain member}|{dimension code}/{label of domain member}|…

For example:

Metric: Monetary|TA/Maximum value|VG/Solvency II|BC/Loss|CC/Facultative

is a label of MD metric with code *mi1104* (see section 0 of this document for more details on metric codes and local names).

Codes of MD metrics follow the naming convention of HD version metrics.

As described in section V.2.3.3 above (and represented in Figure 4), the MD metric for a given data point is derived from a subset of the HD dimension-member pairs describing it.

Mapping

There are scenarios where it is useful to reconstruct the HD information for data points from MD instance, this requires knowledge of which HD dimensions have been incorporated into the MD metric. This information is available in the labels, as described above, however relying on this format to communicate this is undesirable. For this reason, the release contains an "MDMappingDetails.xml" file which provides a mapping of each MD metric to the associated HD metric and incorporated HD dimensions and domain members all identified by QName. The labels are also included provided to aid human readability.

V.2.4 Structure of the modelling outcome

V.2.4.1 DPM Dictionary

A DPM is defined in the form of workbooks as this format is known to the business experts developing the model and open source or commercial tools allowing editing and review are commonly available.

The Dictionary workbook consists of numerous worksheets:

- worksheet listing all domains together with their codes and types (explicit/typed),
- worksheet listing all dimensions together with their codes and reference to domains,
- two worksheets for metrics (one for MD and one for HD) and one for each explicit domain, defining items (metrics or members) and arranging them in relationships (e.g. aggregation hierarchies). It is possible to identify the hierarchies used as potential values of metrics based on "Applicable sheets for dropdowns" information,
- worksheet listing all owners together with their codes,

- worksheet listing all changes made to the dictionary.

V.2.4.2 Annotated templates

Annotated Templates provide a mapping between the technical model (i.e. the DPM and XBRL taxonomy), and the business Reporting Templates.

The annotated templates contain the HD model only and enough information to derive the MD from it. This means that the annotated template does not have duplicated information which must be kept in sync causing a maintenance burden and a risk of errors.

Annotated Templates are in the form of a spreadsheet (workbook) containing a number of worksheets. One sheet describes one business template; however more than one table may be annotated in one worksheet.

In some cases, the Annotated templates differ from the original business Reporting Templates. This is often because they have been normalised (i.e. split) into smaller tables for technical reasons, while leaving the content unchanged. Differences between the reporting Templates and the Annotated Templates are explained in Annex 5. Differences between Reporting Templates and Annotated Templates.

These qualifiers represent the labels used by the model provide human-readable descriptions of the reportable data points, whilst providing the metadata necessary to enable applications to map these data points to the relevant XBRL concepts.

DPM qualifiers can be associated with each row, column and entire table if applicable.

V.2.4.2.1 Annotation process

The process of "annotating" templates aims to associate the Reporting Templates with comprehensive, precise and explicit descriptions of business characteristics describing all data cells.

The characteristics (breakdowns and their components) used to annotate the cells are documented in a comprehensive manner in the Dictionary.

The annotation process consists of the following steps:

1. Business experts analyse a template row by row, column by column, including header information (e.g. title of a template) and related documentation (in particular Business Logs),

2. A metric (primary characteristic) must be assigned to every data cell, either as a property of a table and hence applying to the entire content of a table (all cells in a table), or certain row(s)/column(s),

3. Remaining applicable business properties (pairs of dimension-members) are assigned to data cells similarly as in case of metrics, as a table header or for one or more rows/columns,

4. Consistency of characteristics is verified and (optionally) DPM is updated for required but missing metrics or remaining business properties (dimensions, domains and members).

V.2.4.2.2 Annotation convention

Annotation of business templates is conducted through assignment of metrics and other business properties (dimension-member pairs) to each identifiable data cell. For each data cell it is therefore possible to apply multiple sets of characteristics and some of the characteristics may apply to the entire table or entire row/column in a table rather than a specific cell.

Characteristics applicable to data cells are arranged in either subsequent vertical columns (below each column of an annotated template) or horizontal rows (on the right-hand side of each row of an annotated template). Characteristics applicable to the entire template (or table) are described in a separate location on the sheet (as a "Z Axis" below and to the left of the table).

Figure 5 represents an extract from the annotated templates.

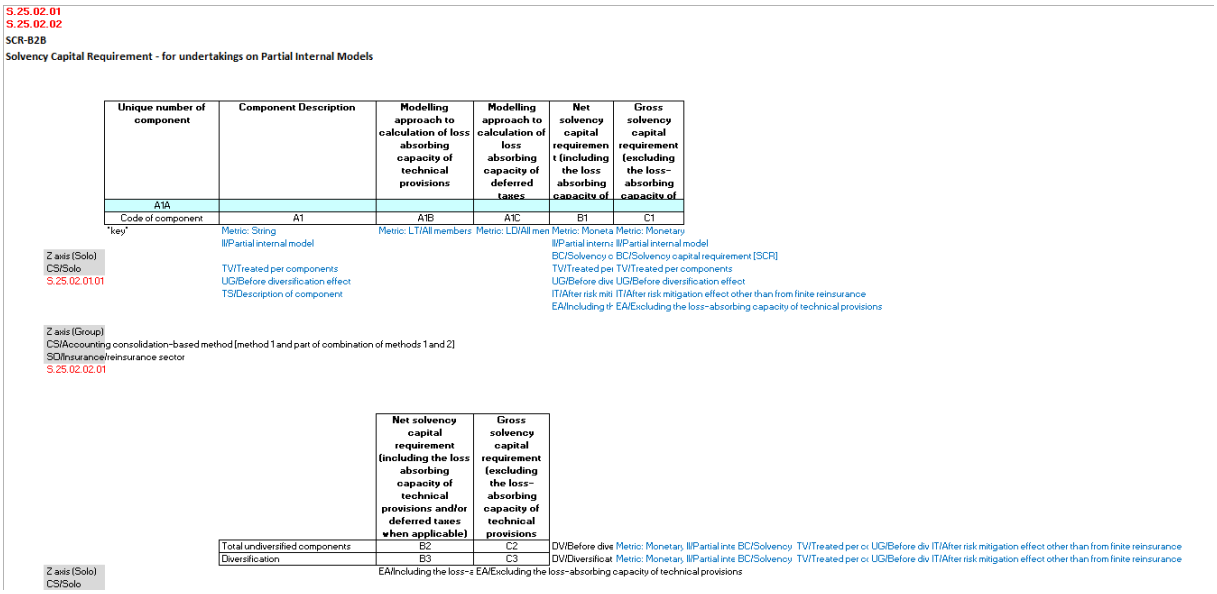

Figure 5. Example of an Annotated Template

Figure 5 is a typical example illustrating how annotations have been applied to the templates. As described above, annotations have been applied to columns, rows, and whole tables ("Z axis").

Annotations representing metrics are the metric labels prefixed with "Metric:". Annotations representing dimension-member pairs are typically of the form:

{dimension code}/{label of domain member}

for example:

II/Partial internal model

A documentary template is supplied with the taxonomy which documents the model more explicitly. This is described in section V.2.4.3.

Note that when there are multiple variants of a template which differ by only the Z Axis, they can be combined onto 1 sheet using multiple "Z Axis" sections

For open tables, the columns which uniquely identify the row are annotated with "*key*". The remaining dimension columns have annotations describing their allowable members. The first table in Figure 5 includes examples of this; the annotations "LT/All members" and "LD/All members" indicate that the cell values must be members of dimensions "LT" and "LD" respectively. When there is no annotation for a dimension, it is considered to take the default value for that domain. In some cases, to aid readability, annotations may explicitely reference the default member.

V.2.4.3 Documentary templates

The documentary template is generated along with the taxonomy but is intended to give a view of the model which presents all information about a data point in one place. This document therefore has a lot of duplication however because it is generated from the DPM dictionary and the annotated templates which are concise, it is guaranteed to be internally consistent.

The documentary templates include a number of differences from the annotated templates. Firstly, any annotation of the form "…/All members…" (which means the filer may use one of many possible members here) includes details of which members are allowed by this annotation. This is information which would otherwise have to be looked up by cross-referencing the dimension, domain and then hierarchy with the dictionary.

Secondly, the derived MD annotations are present (green applies to MD, blue applies to HD, black applies to both, as per previous versions of the annotated templates). This enables consumers of the taxonomy to easily see which metrics and dimension must be used on facts for a particular data point easily.

	Solvency II value				
Assets					
Goodwill		Metric: Monetary|BC/Assets|AS/Goodwill|IO/Other than inves	Metric: Monetary	BC/Assets	
Deferred acquisition costs		Metric: Monetary|BC/Assets|AS/Deferred acquisition costs|IO/	Metric: Monetary	BC/Assets	
Intangible assets	A2	Metric: Monetary|BC/Assets|AS/Intangible other than goodwil	Metric: Monetary	BC/Assets	
Deferred tax assets	A26	Metric: Monetary|BC/Assets|AS/Deferred tax|IO/Other than ir	Metric: Monetary	BC/Assets	
Pension benefit surplus	A25B	Metric: Monetary|BC/Assets|AS/Pension benefit|IO/Other tha	Metric: Monetary	BC/Assets	
Property, plant & equipment held for own use	A3	Metric: Monetary|BC/Assets|AS/Property, plant and equipmer	Metric: Monetary	BC/Assets	
Investments (other than assets held for index-linked	A4	Metric: Monetary|BC/Assets|AS/Prope	BL/Neither unit-linked	Metric: Monetary	BC/Assets
Property (other than for own use)	A5	Metric: Monetary|BC/Assets|AS/Prope	BL/Neither unit-linked	Metric: Monetary	BC/Assets
Participations	A6	Metric: Monetary|BC/Assets|AS/Finan	BL/Neither unit-linked	Metric: Monetary	BC/Assets
Equities	A7B	Metric: Monetary|BC/Assets|AS/Equity	BL/Neither unit-linked	Metric: Monetary	BC/Assets
Equities - listed	A7	Metric: Monetary|BC/Assets|AS/Equity	BL/Neither unit-linked	Metric: Monetary	BC/Assets
Equities - unlisted	A7A	Metric: Monetary|BC/Assets|AS/Equity	BL/Neither unit-linked	Metric: Monetary	BC/Assets
Bonds	A8E	Metric: Monetary|BC/Assets|AS/Bonds	BL/Neither unit-linked	Metric: Monetary	BC/Assets
Government Bonds	A8	Metric: Monetary|BC/Assets|AS/Bonds	BL/Neither unit-linked	Metric: Monetary	BC/Assets
Corporate Bonds	A8A	Metric: Monetary|BC/Assets|AS/Bonds	BL/Neither unit-linked	Metric: Monetary	BC/Assets
Structured notes	A8C	Metric: Monetary|BC/Assets|AS/Struct	BL/Neither unit-linked	Metric: Monetary	BC/Assets
Collateralised securities	A8D	Metric: Monetary|BC/Assets|AS/Collat	BL/Neither unit-linked	Metric: Monetary	BC/Assets
Investment funds	A9	Metric: Monetary|BC/Assets|AS/Equity	BL/Neither unit-linked	Metric: Monetary	BC/Assets
Derivatives	A10A	Metric: Monetary|BC/Assets|AS/Deriva	BL/Neither unit-linked	Metric: Monetary	BC/Assets
Deposits other than cash equivalents	A10B	Metric: Monetary|BC/Assets|AS/Depos	BL/Neither unit-linked	Metric: Monetary	BC/Assets

Figure 6 Documentary Template

Documentary Templates are automatically generated; when changes are made to the Dictionary or Annotated Templates as part of the metadata modelling activity, the documentary template spreadsheet is generated immediately.

V.3 XBRL taxonomy components

V.3.1 Overview

The following sections extend upon the respective sections of the following documentation although in some cases, the approach has evolved away from this document:

http://www.eurofiling.info/finrepTaxonomy/EBA-DPM-XBRL-Mapping.pdf[27].

V.3.2 Model supporting schema

The XBRL representation of the model makes use of some schema definitions in the namespace *http://www.eurofiling.info/xbrl/ext/model*. The official location of this schema file is *http://www.eurofiling.info/eu/fr/xbrl/ext/model.xsd.* Throughout this section of the document, the prefix *model* will be used to refer to this schema namespace.

V.3.3 Taxonomy packages

The Solvency II Preparatory Taxonomy is distributed as a number of taxonomy packages, as specified by XII[28]. Publishing as a taxonomy package allows business users to quickly identify relevant entry points and allows software to automatically configure the necessary remappings.

The distribution is split into the Dictionary, the Solvency II framework and the Eurofiling components, which should all be deployed together. Multiple frameworks may be deployed together as long as the latest version of the dictionary and Eurofiling components is used. The Solvency II taxonomy can be deployed alongside other Eurofiling taxonomies as long as care is taken to avoid multiple copies of the Eurofiling components being supplied.

V.3.4 Other XBRL technical files

For clarity of this document, XBRL technical constructs are referenced by their qualified names [QNames][29]. Prefixes applied in this QNames to abbreviate the namespaces are listed in Table 2.

Prefix	Namespace
xs	http://www.w3.org/2001/XMLSchema
xbrli	http://www.xbrl.org/2003/instance
xbrldt	http://xbrl.org/2005/xbrldt
iso4217	http://www.xbrl.org/2003/iso4217
nonnum	http://www.xbrl.org/dtr/type/non-numeric
link	http://www.xbrl.org/2003/linkbase
label	http://xbrl.org/2008/label

Table 2. Prefixes and namespaces of the XBRL technical files referenced in this document

[27] Readers are advised to familiarize themselves with the indicated document prior to exploring the next sections.
[28] http://specifications.xbrl.org/work-product-index-taxonomy-packages-taxonomy-packages-1.0.html
[29] http://en.wikipedia.org/wiki/QName

V.3.5 Public elements

Public elements are all concepts of the model that are identified by a code in a certain scope and may include some additional information such as readable labels, definitions and legal references in different languages.

Public elements include two attributes to reflect their creation date (*model:creationDate*) and the date when they were last modified (*model:modificationDate*). All public elements in the Preparatory Taxonomy have creation date set to the same date.

Language specific information of public elements is represented using the following label resources:

- XBRL 2.1 labels (*link:label*) for *xbrli:item*s (or derived) public elements,
- generic labels (*label:label*) for public elements represented as XLink resources or other construct (e.g. *link:roleType*s).

The default (standard) role (*http://www.xbrl.org/2003/role/link*) is used for the extended links containing the label resources.

The role types used as roles for generic and standard label resources are presented in Table 3.

Property	Generic label role	Standard label role
Name	http://www.xbrl.org/2008/role/label	http://www.xbrl.org/2003/role/label
Definition	http://www.xbrl.org/2008/role/verboseLabel	http://www.xbrl.org/2003/role/verboseLabel

Table 3. Role types used as roles for generic and standard label resources

The Preparatory Taxonomy currently only uses the standard role for names however it is expected that the next releases will include other labels if needed.

The labels for the concepts of a schema or a linkbase file are placed in a separate label linkbase file for each distinct language, located in the same folder as its corresponding schema or linkbase file. The naming convention for these label linkbase files is:

{main-file}-lab-{lang}.xml

where *{main-file}* is the name of the schema or linkbase file where the concept is defined (without extension) and the *{lang}* component is the ISO 639-1 code of the language (lowercase). The primary and only language for the Preparatory Taxonomy is English (ISO 639-1 code "en"). Refer to X.1 Taxonomy extension for localised labels, which describes extending the Solvency II taxonomy to provide localised labels.

V.3.5.1 Codes

In addition, some concepts of the dictionary may contain a special linkbase to represent codes needed for different purposes. In particular, the codes to use as filing indicators are represented using this mechanism. The names of these linkbase files are constructed as follows:

{main-file}-lab-{lang}-codes.xml or *{main-file}-lab-codes.xml*

The labels for these codes are represented as resources with a custom role.

- The role defined in the *model.xsd* schema for resources representing codes for filing indicators is *http://www.eurofiling.info/xbrl/role/filing-indicator-code*.
- The role defined in the *model.xsd* schema for resources representing table-row-column-codes (rc-codes) is *http://www.eurofiling.info/xbrl/role/rc-code*.

  For the Preparatory taxonomy rc-codes have not been provided, but they will be available in the target (full scope) taxonomy.

V.3.6 Logical taxonomy architecture

This section describes in detail the components and content of the Preparatory Taxonomy. The diagram provided in Annex 3. EIOPA Solvency II Preparatory XBRL Taxonomy: Owners, Folders, Files, Namespaces and Prefixes may be helpful for the comprehension of this document.

V.3.7 Taxonomy owners

The Preparatory Taxonomy concepts owners are grouped into:

1. Cross-sector concepts and breakdowns (to be shared between different institutions e.g. banking, insurance and securities supervision),
2. EIOPA concepts:

   A. Solvency II concepts common to HD and MD

      During modelling there are concepts that are identified as common between the HD and MD DPM. To avoid duplication (leading to possible inconsistencies) these concepts are represented once in the DPM dictionary and rendered as common concepts in the Annotated templates (shown in black).

      As a function of the automated taxonomy generation process, the MD and common concepts continue to be represented separately.

   B. Solvency II concepts specific to MD

      This group references (imports) all Solvency II common concepts. Moreover, at this level the specific information requirements are defined by dimensional combinations using the XBRL definition linkbase and by views using the Table Linkbase.

   C. Extension concepts

Additionally, a third level could be added to the hierarchy to include any extension concepts that have been defined, or additional information requirements requested by national supervisors. Annex 6. Taxonomy extensions gives an example of an extension taxonomy.

The idea of groups for concept definition has been addressed in the XBRL taxonomy model by introducing the notion of the owner.

The owner represents an institution that defines concepts of the model or their specific purpose. The owner is closely related to the idea of extensibility in XBRL. The main properties of the owner are:

- owner's namespace *{ons}*,
- owner's prefix *{opre}*, and
- official location *{oloc}*.

The owner's namespace *{ons}* is a URI used to establish the namespace of the concepts defined by that owner. This URI is generally built by adding *xbrl* to the internet domain of the institution that the owner represents. In the case of the EIOPA, the domain is extended by *s2c* and *s2md* components to distinguish between concepts common to HD and MD versions (Group A), and MD version specific (Group B) respectively.

The prefix *{opre}* is used as the basis to establish namespace prefixes in taxonomy files and for some short representations of the concepts by QNames using shorter prefixes (instead of long namespaces) plus the local name[30].

Official location *{oloc}* is a URL used to specify the location where taxonomy files associated with that owner are to be published. Different owners must have different official locations, even if owners have identical internet domains. The official location of the Preparatory Taxonomy is built by adding three parts to the internet domain of the institution:

- representation of the geographical area covered by the institution (e.g. *eu* in case of the cross sector or the EIOPA concepts, *fr* for the supervisor specific concepts applied in France),
- fixed *xbrl* component identifying the type of standard used to express information requirements,
- indication of the scope of information requirement (e.g. *s2md* for MD).

Table 4 presents examples of owners and applied namespaces, prefixes and official locations of Preparatory Taxonomy files.

Owner	Namespace	Prefix	Official location
Eurofiling (cross-sector)	http://www.eurofiling.info/xbrl	eu	http://www.eurofiling.info/eu/fr/xbrl
EIOPA Solvency II HD and MD common	http://eiopa.europa.eu/xbrl/s2c	s2c	http://eiopa.europa.eu/eu/xbrl/s2c
EIOPA MD version	http://eiopa.europa.eu/xbrl/s2md	s2md	http://eiopa.europa.eu/eu/xbrl/s2md

Table 4. Examples of namespaces, prefixes and official locations of taxonomy files for different owners

[30] Namespace prefixes do not impose any constraints on instance files. Namespace prefixes are local to XML documents and XML elements. Instance files and taxonomy consumers should therefore never presume any particular use of prefixes; XML document consumption must be based on namespaces.

Table 5 presents namespaces, prefixes and official locations of Preparatory Taxonomy files in case of taxonomy extension by national supervisors, in this case exemplified by Autorité de Contrôle Prudentiel of the Banque de France.

Owner	Namespace	Prefix	Official location
ACP BdF extension	http://www.acp.banque-france.fr/xbrl/s2	acp	http://www.acp.banque-france.fr/fr/xbrl/s2

Table 5. Namespaces, prefixes and official locations of taxonomy files extended by national supervisors.

Other properties of the owner are the copyright (text used as a header in every taxonomy file) and the list of supported languages.

V.3.8 Dictionary layer

This level contains the definition of business properties identified in the DPM dictionary. The properties can subsequently be used in identification of currently requested information requirements.

V.3.8.1 Core concepts

The core concepts of the dictionary are metrics, dimensions, domains and domain members. Secondary concepts are families and perspectives (auxiliary concepts meant to group dimensions for presentation purposes). All of the concepts in the dictionary are public elements.

To cope with changes in the reporting, properties or language specific information of public elements, dictionary elements include two optional attributes that establish the currency period: the starting date of the period interval (*model:fromDate* attribute); and the end date (*model:toDate* attribute). If the *model:fromDate* attribute is not included, then the concept is assumed to be valid for any period prior to the *model:toDate* attribute. If the *model:toDate* attribute is not included, then the concept is assumed to be valid for any period after the *model:fromDate* attribute. If neither *model:fromDate* nor *model:toDate* attributes are included, then the concept is assumed to be current for any period of time. The first versions of the dictionary as defined by the Preparatory Taxonomy will not include these attributes. As new versions are released and some concepts become obsolete and replaced by others, these attributes will be updated. These attributes do not have any impact on the reporting process itself; they are meant to simplify the management of the concepts of the dictionary.

The core concepts can never be deleted. As a result the dictionary will grow in time as the new concepts are added and the obsolete are disabled using the attribute defined in the previous paragraph.

All files in the dictionary of concepts are placed under the folder *dict* in the official location of its owner (see Annex 3. EIOPA Solvency II Preparatory XBRL Taxonomy: Owners, Folders, Files, Namespaces and Prefixes). Its namespace is obtained by adding a suffix that depends on the type of element to the namespace of the owner. The prefix to represent that namespace is obtained by adding a predefined suffix to the prefix of its owner (as presented in Table 6) where *{oloc}* represents the official location of taxonomy files of the owner of the concepts, *{ons}* its base namespace, *{opre}* the prefix of its base namespace, and *{dc}/{DC}* the code of a domain in lower and capital case.

Dictionary concept	Official location	Target namespace	Namespace prefix
Metrics	{oloc}/dict/met/met.xsd	{ons}/dict/met	{opre}_met
Dimensions	{oloc}/dict/dim/dim.xsd	{ons}/dict/dim	{opre}_dim
Explicit domains	{oloc}/dict/dom/exp.xsd	{ons}/dict/exp	{opre}_exp
Typed domains	{oloc}/dict/dom/typ.xsd	{ons}/dict/typ	{opre}_typ
Explicit domain members	{oloc}/dict/dom/{dc}/mem.xsd	{ons}/dict/dom/{DC}	{opre}_{DC}

Table 6. Pattern for location, target namespace and its prefix for dictionary concepts

Examples of location, target namespace and its prefix for dictionary concepts of the Preparatory Taxonomy are presented in Table 7.

Dictionary concept	Prefix	Target namespace	Official location
Solvency II HD and MD common dimensions	s2c_dim	http://eiopa.europa.eu/xbrl/s2c/dict/dim	http://eiopa.europa.eu/eu/xbrl/s2c/dict/dim/dim.xsd
Solvency II HD and MD common explicit domains	s2c_exp	http://eiopa.europa.eu/xbrl/s2c/dict//exp	http://eiopa.europa.eu/eu/xbrl/s2c/dict/dom/exp.xsd
Solvency II HD and MD common typed domains	s2c_typ	http://eiopa.europa.eu/xbrl/s2c/dict/typ	http://eiopa.europa.eu/eu/xbrl/s2c/dict/dom/typ.xsd
Solvency II HD and MD common explicit domain members example (domain CG)	s2c_CP	http://eiopa.europa.eu/xbrl/s2c/dict/dom/CG	http://eiopa.europa.eu/eu/xbrl/s2c/dict/dom/cg/mem.xsd
Solvency II MD version metrics	s2md_met	http://eiopa.europa.eu/xbrl/s2md/dict/met	http://eiopa.europa.eu/eu/xbrl/s2md/dict/met/met.xsd

Table 7. Examples of location, target namespace and its prefix for dictionary concepts of Preparatory Taxonomy

V.3.8.2 Metrics

In general, metrics define the nature of the measure to be performed by doing the following:

1. indicating the data type, i.e. expected type of value that should be reported for a data point,
2. determining the period type, i.e. whether a fact corresponding to a data point is reported for a single date (instant) or period of time (duration),
3. expressing certain semantics.

There is a different treatment of metrics between HD and MD. For more information, see V.2.3.3 Distinction between MD and HD data point models. Neither version applies period type differentiation of metrics; in both versions, period type is set to instant. The duration of a data point is expressed using certain dimensional properties as explained in Annex 4. Using dimensions for temporal characteristics.

Technically, metrics are represented in XBRL as primary items and defined in schema files named *met.xsd* that reference label linkbase files.

The code (local name) for each metric is composed of three components:

1. a letter that represents the data type in lower case (for available options, see Table 8 below),
2. a letter that represents the period type characteristics (*i* for instant and *d* for duration, which as explained above will always be *i* in the Preparatory Taxonomy),
3. a number that corresponds to the numeric code in the model (no zero padding or predetermined length).

Model data type	XBRL data type	Local name codification letter	Reporting unit
Monetary (currency)	xbrli:monetaryItemType	m	Adequate currency using ISO 4217 codification (e.g.: iso4217:EUR)
Percent	num:percentItemType	p	xbrli:pure
Decimal	xbrli:decimalItemType	p	xbrli:pure
Integer	xbrli:integerItemType	i	xbrli:pure
Date	xbrli:dateItemType	d	not applicable
Boolean	xbrli:booleanItemType	b	not applicable
Text	xbrli:stringItemType	s	not applicable
Explicit domain	xbrli:qnameItemType	e	not applicable
Typed domain	typed domain corresponding data type, e.g. xbrli:stringItemType if a typed domain is xs:string	e	depending on typed domain, usually xbli:pure

Table 8. Model and XBRL data type, local name codification letter and reporting unit.

For domain based data types, an additional attribute (*model:domain*) is included to identify the qualified name of the explicit domain (e.g. *model:domain="s2c:GA"*). The extensible enumeration spec is also used to indicate the allowable memebrs for such metrics.

The id of the element (necessary for XLink locators) is composed as:

{opre}_{metric code (local name)}

where *{opre}* represents the prefix of the base namespace of the owner of the base item and *{name}* represents the name described above. Table 9 contains a few examples of metrics declared in the taxonomy.

Owner	Data type	Code	Name	Id	Namespace	Prefix
MD version	Date	1028	di1028	s2hd_di1028	http://eiopa.europa.eu/xbrl/s2md/dict/met	s2md_met

Table 9. Examples of metrics in the Preparatory Taxonomy.

Labels of metrics in the HD version reflect the data type conveyed by the metric. These include: Monetary, String, Date, Integer, Decimal, Percentage, Boolean, Link, URI, Pure and a number of enumeration metrics. The allowable members for the latter are defined by a dimension with a specific hierarchy reference (see section V.3.8.4) and their labels are business meaningful.

Construction of labels for MD version metrics is explained in section V.2.3.3.1.

Metrics (similarly to domain members, as explained in the next section) can be arranged in hierarchies. The model used for the preparatory version did not contain such hierarchies and so neither does the taxonomy.

V.3.8.3 Domains

Explicit domains are represented using XBRL abstract items of domain type *model:explicitDomainType* in the schema file *exp.xsd*.

Typed domains are represented as XML elements that are *not* in the substitution group of *xbrli:item*. These elements are defined in the schema file *typ.xsd*[31].

The code (local name) of each domain corresponds to its code in the model: *{dom-code}*, which is a short sequence of capital case letters (usually two, but may be more).

Value of the *id* attribute of a domain (necessary for XLink locators) is composed according to the following pattern:

{opre}_{domain code (local name)}

where *{opre}* represents the prefix of the base namespace of the owner of the domain and *{name}* represents the name described above.

All explicit and typed dimension in the Preparatory Taxonomy are defined as Solvency II HD and MD common concepts. Some examples of domain items defined in the Preparatory Taxonomy are presented in Table 10.

Owner	Code	Element Name	Type	Id	Namespace	Prefix
Solvency II HD and MD common	BC	BC	Explicit	s2c_BC	http://eiopa.europa.eu/xbrl/s2c/dict/exp	s2c_exp
Solvency II HD and MD common	ID	ID	Typed	s2c_ID	http://eiopa.europa.eu/xbrl/s2c/dict/typ	s2c_typ

Table 10. Examples of domain items defined in the Preparatory Taxonomy

Although the namespace of explicit and typed domains is different, different local names have also been used to avoid confusion.

V.3.8.4 Explicit domain members and hierarchies

[31] Explicit domains are *xbrli:items* whereas typed domains are not (they are XML elements). Because of this, labels for the former are defined using standard label links and labels of XBRL 2.1 specification while for the latter using generic label links. As some tools in the market do not support a single file with two different extended links, these items have been split into two different schemas.

Explicit domain members are represented using XBRL abstract items of domain item type, as defined in the non-numeric set of types of the XBRL International type registry: *nonnum:domainItemType*.

The code (local name) of each explicit domain member corresponds to its numeric code in the model preceded by a lower case *x*[32]. If the concept represented already has a widely accepted standard codification, like ISO codes or UN code lists, the local name will match the existing codification. More specifically, the following ISO codes are used:

ISO 4217: standard currency codes composed of three alphabetical characters,

ISO 3166-1 alpha-2: standard country codes composed of two alphabetical characters.

The Preparatory Taxonomy does not use the values defined in the documentation supporting templates (LOGs) as codes (local names) of members. Additionally, all domains (explicit and typed) and their members/type restrictions are defined as Solvency II HD and MD common items.

The value of the *id* attribute of explicit domain members follows the general rule:

{opre}_{member code (local name)}

The default domain member of a domain (usually, but not necessarily, the one with numeric code component of its name set to *0*) is marked with an attribute: *model:isDefaultMember="true"*.

The schema file that represents explicit members is placed in a folder with the name of its corresponding domain. The schema file for explicit domain members is called *mem.xsd*. Examples of schema files defining explicit domain members in the Preparatory Taxonomy are presented Table 11.

[32] Local names are XML schema tokens and thus are not allowed to start with a numeric character.

Owner	Domain code	Domain members schema	Namespace	Prefix
Solvency II HD and MD common	CM	http://eiopa.europa.eu/eu/xbrl/s2c/dict/dom/cm/mem.xsd	http://eiopa.europa.eu/xbrl/s2c/dict/dom/CM	s2c_CM
Solvency II HD and MD common	GA	http://eiopa.europa.eu/eu/xbrl/s2c/dict/dom/eu_ga/mem.xsd	http://eiopa.europa.eu/xbrl/s2c/dict/dom/eu_GA	s2c_eu_GA

Table 11. Examples of schema files defining explicit domain members in Preparatory Taxonomy

This schema file references linkbases defining labels (*mem-lab-{lang}.xml*) for domain members (according to the DPM dictionary) and a definition linkbase file (*mem-def.*xml) where all members are connected to the domain item using *domain-member* arcrole.

Hierarchies of domain members defined in the DPM dictionary are represented using XBRL extended link roles whose role type URI is built according to the following pattern:

{ons}/role/dict/dom/{dom-code}/{hierarchy-code}

where *{ons}* represents the namespace of the owner, *{dom-code}* represents the code of the domain and *{hierarchy-code}* the numeric code of the hierarchy. The value of the *id* attribute of these roles is composed following the pattern:

{opre}_{hierarchy-code}

Examples of extended link roles used for hierarchies of domain members in the Preparatory Taxonomy are presented in Table 12.

Owner	Domain code	Hierarchy code	Role URI	Role id
Solvency II HD and MD common	CM	1	http://eiopa.europa.eu/xbrl/s2c/role/dict/dom/CM/1	s2c_1
Solvency II HD and MD common	GA	4	http://eiopa.europa.eu/xbrl/s2c/role/dict/dom/GA/4	s2c_4

Table 12. Extended link roles used for hierarchies in the Preparatory Taxonomy

The schema file that represents hierarchies (defining role types and referring to linkbases) is placed in the same folder as members and it is named *hier.xsd*. Examples of such schema files in the Preparatory Taxonomy, their namespaces and prefixes are presented in Table 13.

Owner	Domain code	Hierarchy schema	Namespace	Prefix
Solvency II HD and MD common	CM	http://eiopa.europa.eu/eu/xbrl/s2c/dict/dom/cm/hier.xsd	http://eiopa.europa.eu/xbrl/s2c/dict/dom/CM/hier	s2c_CM_h
Solvency II HD and MD common	GA	http://eiopa.europa.eu/eu/xbrl/s2c/dict/dom/ga/hier.xsd	http://eiopa.europa.eu/xbrl/s2c/dict/dom/GA/hier	s2c_eu_GA_h

Table 13. Examples of schema files in the Preparatory Taxonomy defining hierarchies for domain members

In addition to labels, these schemas refer to three additional linkbases with information about hierarchies:

- a presentation linkbase (*hier-pre.xml*), which represents the hierarchical disposition of members using *parent-child* relationships,
- a definition linkbase (*hier-def.xml*), which enables the inclusion of the members of a hierarchy in dimensional combinations using *domain-member* relationships,
- a calculation linkbase (*hier-cal.xml*), which establishes some basic arithmetical relationships between a member of the hierarchy and its children:
    - a member is equal to the addition of its child members in the hierarchy: *complete-breakdown* relationships,
    - a member is greater than or equal to the addition of its child members in the hierarchy: *partial-breakdown* relationships,
    - a member is less than or equal to the addition of its child members in the hierarchy: *superset-breakdown* relationships.

These calculation arcs include a *weight* attribute to indicate whether the child member contributes to the aggregation positively (*+1*) or negatively (*-1*). The roles representing these calculation relationships are defined in the *model.xsd* schema that supports the model and are presented in Table 14.

Arc role id	Arc role URI
complete-breakdown	http://www.eurofiling.info/xbrl/arcrole/complete-breakdown
partial-breakdown	http://www.eurofiling.info/xbrl/arcrole/partial-breakdown
superset-breakdown	http://www.eurofiling.info/xbrl/arcrole/superset-breakdown

Table 14. Arc roles defined in the model.xsd schema, reflecting different forms of aggregations of members.

The root member of the definition and presentation relationship networks is the domain item, as defined in the *exp.xsd* schema associated with the owner.

V.3.8.5 Typed domains

Members of typed domains are neither listed as XBRL items with labels nor arranged in hierarchies. The content of typed domains is restricted by XML data type constraints, as these domains (according to the XBRL Dimension specification) are XML elements.

In most cases, a typed domain would be represented by an XML element with a simple data type (e.g. *xs:string* or *xs:decimal*), though further restrictions are technically possible.

V.3.8.6 Dimension items

The representation of dimension items in XBRL is defined in the XBRL Dimensions 1.0 specification.

The local name of each dimension corresponds to its code in the model: a short sequence of capital case letters (usually two).

The value of the *id* attribute of the element representing a dimension item (necessary for XLink locators) is composed according to the following pattern:

{opre}_{dimension code (local name)}

where *{opre}* represents the prefix of the base namespace of the owner of the dimension and *{dimension code (local name)}* is the local name described above. A few examples of dimension items defined in the Preparatory Taxonomy are presented in Table 15.

Owner	Code	Name	Id	Namespace	Prefix
Solvency II common to HD and MD	DB	DB	s2c_BC	http://eiopa.europa.eu/xbrl/s2c/dict/dim	s2c_dim
Solvency II common to HD and MD	IA	IA	s2c_IA	http://eiopa.europa.eu/xbrl/s2c/dict/dim	s2c_dim

Table 15. Examples of dimension items in the Preparatory Taxonomy

All dimension items in the Preparatory Taxonomy are Solvency II concepts common to both the HD and MD versions.

The schema files defining dimension items are named *dim.xsd,* and includes references to label linkbase files and a definition linkbase named *dim-def.xml. These linkbases* are placed within the same folder as the schema file.

This definition linkbase includes the following information about explicit dimensions:

- reference to the domain associated to the dimension by means of a *dimension-domain* relationship (with an *xbrldt:usable* attribute equal to false) pointing to a domain item defined in either the *exp.xsd* or *typ.xsd* schema file of any referenced or defined owner,
- reference to the default member of that dimension by means of a *dimension-default* relationship (note that although the model defines default members at the domain level, the XBRL Dimensions specification establishes this relationship at dimension level; thus, each dimension using a domain with a default member must include this relationship).

These relationships associating a dimension with a domain and its default members are defined in the standard extended link role[33].

V.3.8.7 Families and perspectives

Neither families nor perspectives are used in the Preparatory Taxonomy.

V.3.9 Reporting requirements layer

Frameworks, taxonomies, tables, modules and other concepts constitute the layer of the model where actual reporting requirements are specified with the support of the financial concepts defined in the dictionary.

All of the files that correspond to this layer are placed under the folder *fws* in the official location of its owner. Its namespace is obtained by adding the suffix *fws* to the base namespace of the owner plus some additional suffixes that depend on the type of the concept represented.

[33] http://www.xbrl.org/2003/role/link

For the Preparatory Taxonomy, frameworks are defined for the MD versions.

V.3.9.1 Frameworks

Frameworks are public elements represented using XBRL abstract items of the framework type (*model:frameworkType*) in the schema file *fws.xsd*. General framework properties are presented in Table 16.

Schema property	Value
Official location	{oloc}/fws/fws.xsd
Target namespace	{ons}/fws
Target namespace prefix[34]	{opre}_fws
Element local name	{framework}
Element id	{opre}_{framework}

Table 16. Framework properties

The local name of each framework element corresponds to its code in the model and its *id* follows a general pattern.

Examples of frameworks defined by the Preparatory Taxonomy are presented in Table 17.

Owner	Schema property	Value
Solvency II MD version	Official location	http://eiopa.europa.eu/eu/xbrl/s2md/fws/fws.xsd
	Target namespace	http://eiopa.europa.eu/xbrl/s2md/fws
	Target namespace prefix	s2md_fws
	Local name example	solvency
	Element id example	s2md_solvency
	Element label (English)	Solvency II MD version

Table 17. Examples of frameworks

Each framework has a folder in which the taxonomies are placed. Example of which is presented in Table 18.

Description	Framework folder
Solvency II MD version	http://eiopa.europa.eu/eu/xbrl/s2md/fws/solvency/

Table 18. Examples of framework folders

V.3.9.2 Taxonomies

Taxonomies are public elements represented using XBRL abstract items of the taxonomy type (*model:taxonomyType*). These elements are stored in the schema file *tax.xsd* under the folder of its framework, a subfolder that corresponds to its normative code or legislation publication date and another subfolder with the publication date[35] of this version of the taxonomy.

[34] Target namespace prefixes are not strictly necessary. Moreover, schemas like frameworks define names that are not used in the exchange of information between supervisors and supervised entities. However, as some XBRL tools raise warnings whenever they find a schema with no prefix defined, prefixes have been included to avoid misleading the users of these tools.
[35] using the ISO 8601 codification

Thus, the file *tax.xsd* includes a single element. Its local name corresponds to its code in the model, and the value of its *id* attribute is constructed according to the general pattern (*{opre}_{taxonomy code}*). General taxonomy properties are presented in Table 19.

Schema property	Value
Official location	{oloc}/fws/{framework}/{normative code }/{taxonomy publication date}/tax.xsd
Target namespace	{ons}/fws/{framework}/{normative code}/{{taxonomy publication date}
Target namespace prefix	{opre}_tax
Element local name	{taxonomy}
Element id	{opre}_{taxonomy}

Table 19. Taxonomy properties

To facilitate the specification of additional taxonomy resources in this document, the following abbreviations will be applied from here onwards:

- ***{taxonomy-loc}*** represents the URL *{oloc}/fws/{framework}/{normative code}/{taxonomy publication date}*,
- ***{taxonomy-ns}*** represents the URI *{ons}/fws/{framework}/{normative code}/{taxonomy publication date}*.

Examples of taxonomy folders in the Preparatory Taxonomy are presented in Table 20.

Description	Framework folder
Solvency II MD version	http://eiopa.europa.eu/eu/xbrl/s2md/fws/solvency/finalreport_cp09_cp11/2013-03-01

Table 20. Examples of taxonomy folders in the Preparatory Taxonomy

The taxonomy folder may include subfolders for:

- tables (*tab*),
- modules (*mod*) and
- validations (*val*).

V.3.9.3 Tables

The table folder includes a schema file (*tab.xsd*) that references a label linkbase for table groups (*tab-lab-en.xml*). The schema includes the definitions of table groups, which are represented using XBRL abstract items of the table group type (*model:tableGroupType*). The name of a table group item is the code of a table group, for example "S.01.01.01". General properties of a table group are presented in Table 21.

Schema property	Value
Official location	{taxonomy-loc}/tab/tab.xsd
Target namespace	{taxonomy-ns}/tab
Target namespace prefix	{opre}_tab
Element local name	tg{table-group-code}
Element id	{opre}_{local-name}

Table 21. Table group properties

Table groups are used to group tables together, according to the templates that define them. A single template may contain several tables, either because of the way the original reporting template was constructed, or as a result of the normalisation process.

The files that define the content of each table are placed in a folder whose name corresponds to the code of the table in the model (*{table code}*). General properties of a table are presented in Table 22.

Schema property	Value
Official location	{taxonomy-loc}/tab/{table code}/{table code}.xsd
Target namespace	{taxonomy-ns}/tab/{table code}
Target namespace prefix	{opre}_tab_{table code}
Element local name	N/A (elements defined as resources in linkbases)
Element id	{opre}_{table code} (element defined as a resource in the table linkbase)

Table 22. General properties of a table.

A schema file for a table refers to a table linkbase (*{table}-rend.xml*), a definition linkbase (*{table}-def.xml*) and a label linkbase (*{table}-lab-{lang}.xml*).

The table linkbase includes the definition of the table according to the Table Linkbase specification. The relationships of each table are placed in an extended link whose role is built according to the following pattern:

{ons}/role/fws/{framework}/{normative code}/{taxonomy publication date}/tab/{table code}

In this linkbase, the different components of the tables are represented using resources. The value of the *id* attribute of these resources is based on the code or sequential number plus a prefix to obtain a unique code in the context of the linkbase.

The definition linkbase includes dimensional relationships valid in the context of the table. Valid combinations are defined using only positive (*all*) closed hypercubes obtained from the set of valid cells of the table following an optimization algorithm[36].

Each extended link role contains one or more primary items and a single hypercube[37]. Where there are multiple primary items, the first one will be used to group the rest and reduce the number of *all* arcs. The domain element will be used as the target of *dimension-domain* arcs to avoid cycles. The *@xbrldt:targetRole* attribute might be necessary in the case of hypercubes with dimensions which share the same domain.

The roles of the extended links necessary to express these combinations are built by adding numeric suffixes to the role previously defined for the table. For example:

- *{ons}/role/fws/{framework}/{normative code}/{taxonomy publication date}/tab/{table code}/1*
- *{ons}/role/fws/{framework}/{normative code}/tab/{table code}/2*

[36] It is important to remark that XBRL hypercubes in the definition linkbase of tables are validation artefacts and should not be used by external systems for the automatic creation of database structures. The hypercubes produced by the algorithm do not obey to any kind of business criteria. These hypercubes might be modified with the addition of new information to tables with the only purpose of reducing the final set of hypercubes and performing more efficiently with XBRL market tools.

[37] The model schema includes a hypercube element to be used. There is no need to define hypercube elements in each table or taxonomy.

The label linkbase file for a table contains labels for Table Linkbase nodes. In addition to the standard label, a *table:table* node also contains a documentation label which defines a code to be used on filing indicators (see next section of this document).

The link between table groups and individual tables is established in the linkbase files of modules (as described below).

V.3.9.4 Modules

Modules are represented using XBRL abstract items of the module type (*model:moduleType*). Each module is stored in a different schema file whose name is the same as the code of the module in the model plus the extension *.xsd*. These schema files import the schemas of all the tables required by that module and additionally header taxonomy and filing indicators. General properties of a module are presented in Table 23.

Schema property	Value
Official location	{taxonomy-loc}/mod/{module}.xsd
Target namespace	{taxonomy-bns}/mod/{module}
Target namespace prefix	{opre}_mod_{module}
Element local name	mod_{module}
Element id	{opre}_mod_{module}

Table 23. Properties of modules

In addition to label linkbases, each module includes a presentation linkbase (*{module}-pre.xml*) where the relationships between modules, table groups and tables are expressed using both the legacy *group-table* arcs (defined in the *model.xsd* schema file) and the standard *parent-child* arcs.

Modules of the Preparatory Taxonomy serve as entry points to subsets of information requirements depending on the reporting frequency (annual or quarterly) and whether reporting solo or group. As a result there are four modules in the Preparatory Taxonomy:

- Annual Reporting Solo (ars),
- Quarterly Reporting Solo (qrs),
- Annual Reporting Group (arg),
- Quarterly Reporting Group (qrg).

Apart from determining the subset of information requirements (in terms of templates, represented by table groups), entry points also refer to a schema file defining the filing indicator concept and validation linkbases.

V.3.9.5 Filing indicators

Filing indicators serve the purpose of communicating the scope of the reported data based on templates.

The main purposes of filing indicators are:

- to provide hints to applications handling instance documents as to which templates are included in the filing and, for example, shall be displayed to users,
- to trigger the execution of business rules (XBRL assertions) to be run on a filing to check its correctness depending on the reported scope of data.

The elements and attributes used to communicate filing information are defined in the namespace *http://www.eurofiling.info/xbrl/ext/filing-indicators*. The official location of this schema file is *http://www.eurofiling.info/eu/fr/xbrl/ext/filing-indicators.xsd*. This schema file is imported by each taxonomy module. Throughout this document, the prefix *find* will be used to make reference to this schema namespace.

For more information about how to use filing indicators in an instance document see Annex 2. Filing indicators.

V.3.9.1 Rules to sub-set instances

The term sub-setting describes processing an XBRL instance to remove facts that are irrelevant based on identified business requirements. For the preparatory taxonomy the requirements originate from ITDC:

- ITDC note on justification of data to be provided to EIOPA during the Preparatory Phase[38].

In summary, EIOPA does not require data related to Ring Fenced Funds (RFF), but National Competent Authorities (NCAs) are required to collect this data from their undertakings. Consequently, XBRL instances submitted by undertakings will include facts that are not required by EIOPA. These can be removed by sub-setting.

As part of the modelling process sub-set requirements have been incorporated into the Annotated templates which contains the following information in the table list sheet:

- *Level 1 Preparatory* – the scope of template requirements for Undertakings filing to NCAs (Level 1 Reporting).
- *Level 2 Preparatory* – the scope of template requirements for NCAs filing to EIOPA (Level 2 Reporting).
- *In Level 2 Preparatory?* – Flag (x) that indicates if a template is required for all filings.
- *Removed for Level 2 Preparatory?* – Flag (x) that indicates if a template is not required for NCA filing to EIOPA. Mutually exclusive with the *In Level 2 Preparatory?* column.

Sub-setting rules are written in XII Formula. This granular approach enables sub-setting to be achieved at the fact level. It is possible, therefore, to reduce an XBRL instance by removing specific facts and/or templates.

The sub-setting rules can be found in the subsets folder of the Main release package.

[38] https://eiopa.europa.eu/about-eiopa/organisation/management/board-of-supervisors/minutes-of-the-board-of-supervisors/index.html

V.3.10 XBRL Assertions

V.3.10.1 Requirements document

The business requirements for the assertions originate from a range of sources including:

- The Data Checks Annex VI of Guidelines On Submission Of Information To National Competent Authorities
- Business Logs
- Implicit validation required by certain modelling decisions
- The requirement to match the content templates against the filing indicators

These various sources of requirements are all collected in the validation spreadsheet[39] which defines the requirements in a consistent manner.

This validation spreadsheet contains the following information:

- *ID template* – The ID of the validation rule. This may contain '*' or '?' characters which will be replaced in a repeating rule.
- *Required Table Groups* – These table groups must be submitted for this validation rule to be executed. This is implemented by declaring the filing indicators for these table groups as a pre-condition for the rule and by restricting the entry points these assertions are included in.
- *Dimensional Restriction* – This provides an extra restriction on which data points these rules apply to. This is particularly useful where the data point id is not sufficient to identify the values concerned.
- *Expression* – This is the expression which is converted into XII formulae.
- *Success and Failure Messages* – These are a custom message which is applied to the assertion if present
- *Reference* – This indicates the origin of the business requirement.

There are also some internal columns used to track comments on the rules and to allow suppression of generation of particular rules which are not required or not ready for publishing. It should be noted that if a rule is suppressed, it will not be included in the taxonomy.

Assertions found to be incorrect are added to a 'formula to be ignored/disabled' list published to the EIOPA website. Filers validating XBRL are expected to ignore incorrect rules as per EIOPA Filing Rule 1.10 – Valid according to the defined business rules.

V.3.10.2 Data checks and assertion sets

Data checks are expressed using XBRL formula assertions and are compliant with the XBRL Formula Specification 1.0[40].

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[39] Validation spreadsheet is located in the requirements folder of Preparatory SII taxonomy release

[40] http://specifications.xbrl.org/work-product-index-formula-formula-1.0.html

Assertions are grouped into assertion sets that correspond to the templates[41] to which they are to be applied.

Assertions are identified by a unique code, which allows errors to be associated with the corresponding definition in a validation process[42]. Assertions might include a description and custom error messages, as defined by business experts.

Existence assertions shall only be used to detect errors in the case of mandatory data that must be reported. Whenever possible, value assertions shall be used instead of existence assertions, as the former enable more comprehensive error messages.

The resources and links which define assertions and assertion sets are grouped into files depending on their scope. These files are placed in the *val* folder of the corresponding taxonomy, together with a file to define preconditions[43] of common use shared by different assertions in the taxonomy. Examples of location and names of linkbase files containing value assertions and shared parameters, filters and preconditions are presented in Table 24.

Resource description	File location
Assertions and assertion sets location that apply to a single table	{taxonomy-loc}/val/val-{tab1}.xml
Assertions and assertions sets location that cross information in a set of tables	{taxonomy-loc}/val/val-{tab1}_{tab2}.xml
Parameters	{taxonomy-loc}/val/find-params.xml

Table 24. Examples of location and names of linkbase files containing value assertions and shared parameters

Any of these linkbases can have its corresponding set of label linkbases, following the convention defined in this document. In the case of assertions, an additional set of linkbases might be included for error messages. The name of this file is created according to the following pattern:

{assertions-file}-err-{lang}.xml

where *{assertions-file}* corresponds to the name of the file with the assertions whose error message are described, without the extension and *{lang}* is the ISO 639-1 code of the language (lowercase).

These files will be included by the modules defined in the taxonomy.

In order to handle the error margin caused by the imprecision of input data, assertions make use of a set of functions implemented according to the Custom Functions Implementation specification. These functions use the same name as the ones defined in the XPath 2.0 Functions specifications, but are defined in the namespace *http://www.eurofiling.info/xbrl/func/interval-arithmetics* and placed in the following official location: *-http://www.eurofiling.info/eu/fr/xbrl/func/interval-arithmetics.xml.* An entry

[41] In the EBA documentation, the term table is used. However, the unit of filing is the template, not the table. Filing indicators refer to templates.
[42] It must be noted that an XBRL assertion might produce several evaluations covering different sets of data points.
[43] These preconditions should be independent of the assertion they apply to, and thus, should not depend on the variables defined by specific assertions.

point for these and any additional functions that could be provided in the future is the following schema file: *http://www.eurofiling.info/eu/fr/xbrl/func/functions.xsd*.

V.3.10.3 Assertions and patterns

The v1.5 preparatory taxonomy has 2 types of rules: content template checks and cross template data checks.

V.3.10.4 Cross template data checks

The cross template checks originate from the published data checks annex and concern numeric checks of values between templates. All involved templates have to be submitted for the validations to be evaluated.

Example: cas15

For example, the rule with id cas15 has required table groups of "S.02.01.03; S.02.02.01". As these are Annual Solo variants, this rule will only be included in the annual solo entry point. The rule will also only evaluate if there is a filing indicator for S.02.01 and S.02.02.

This rule also has a dimensional restriction of "VG=Solvency II". This indicates that we should only consider the data points which use a Solvency II valuation basis (and not the Statutory accounting ones which also feature on S.02.01).

The Expression for this rule is "[S.02.01.03:L18] + [S.02.01.03:L22] + [S.02.01.03:L17] + [S.02.01.03:L15C] + [S.02.01.03:L25] + [S.02.01.03:L26] + [S.02.01.03:L15D] = sum([S.02.02.01:A14]) + [S.02.02.01:|column=Other|row=Any other liabilities]". This is comparing a number of data points added together. "[S.02.01.03:L18]" is simply a reference to the L18 data point on S.02.01.03, similarly "sum([S.02.02.01:A14])" indicates that all of the A14 datapoints on S.02.02.01 should be added together (this data point can repeat). The most complicated data point reference is "[S.02.02.01:|column=Other|row=Any other liabilities]" which is used to refer to a data point which doesn't have an id in the annotated templates. As such, we have to refer to it using its row and column labels. As this is difficult to read and maintain, this approach is only used when there is no data point id.

V.3.10.5 Content template checks

The solvency II taxonomy has 2 complementary approaches to describing the content of a submission. The technical Eurofiling filing indicators mechanism (see V.3.9.5) and the business-driven content templates. The content template checks exist to ensure that these 2 mechanisms are consistent.

Example: content11

The rule with id "content11" is ensuring that the content templates and filing indicators are consistent.

The required table groups of "not(S.08.01.01)" means that this rule will only evaluate if there is *not* a filing indicator for S.08.01.

The expression of "[S.01.01.01:A5] in {x2, x3}" ensures that one of the two unreported options are chosen in the appropriate data point in the content table.

Note that there is a rule (content 10) which ensures that the correct reported option is chosen in the content table if the filing indicator is present.

V.3.10.6 Repeating rules

It is possible to formulate rules which validate more than a single set of data points. If this is the case, multiple XII formula assertions are generated from a single rule specification. The wildcards in the template for the ID is then replaced with different values for each XII formula assertion. For example, for a rule which applies to data points on both S.17.01.01 and S.17.01.02, an ID template of '*_Q25' will lead to 2 XII formula assertions with IDs of S.17.01.01_Q25 and S.17.01.02_Q25 respectively.

V.3.10.7 Test cases

In order to assure that the assertions behave according to the business requirements, a large number of test cases have been generated. These are very small XBRL instances which only include facts relevant to the rule under test. They include both pass cases and fail cases which test the correct behaviour of various failure modes. These test cases can be found in the Test instance release package of the distribution.

Coverage instances

These are intended to demonstrate the coverage of the taxonomy and as such, have 1 instance of every data point. This means that they only have 1 asset in S.06.02 which would typically repeat many times and they have both S.25.02 and S.25.03 where typically only 1 would be submitted.

These are contained in the Test instance release package of the distribution and are named by entry point.

Assertion instances

These are very small instances which are designed to prove the behaviour of a single assertion in a particular scenario. This means that they will often be invalid against other assertions and will not contains a typical number of data points.

These are contained in the Test instance release package of the distribution and are grouped into "casesets", each of which tests a single assertion. The names of the sets are taken form the "ID template" column of the validation specification document (see V.3.10.3). Each caseset contains multiple "cases" which contain the instances grouped into MD and HD and named after the entry point they are generated for. The instances within a single case are equivalent so should all pass or fail in the same manner.

The expected behaviour of the assertion instances is indicated by "PASS" or "FAIL" in the directory name and comment at the top of the file. More details about the cases are provided in the *"behaviour.xml"* files.

V.4 Solvency II XBRL Taxonomy Framework change management

It is expected that the information requirements will change over time.

Changes to requirements e.g. in Reporting Templates; Business Logs and Data Checks, are released separately from the DPM and taxonomy. This allows for public consultation before agreed changes are incorporated into the DPM and taxonomy.

As a consequence of having a diferent release cycle for requirements and taxonomies, it may be the case that the latest requirements differ from those used during taxonomy development. In this case, section I identifies the requirements version that the taxonomy has been developed against. Additionally, the requirements version is included in the release notes of the taxonomy package (refer to section III.1 for the package structure).

The Main release package includes the Annotated templates, DPM and XBRL Assertions were generated during the taxonomy development.

V.5 Software solutions applied in development process

Throughout the development phases of the DPM and XBRL taxonomy, a selection of products are used in order to support specific tasks:

- spreadsheet editors and word processors (for analysis of Business Logs and Reporting Templates, during development of DPM and Annotated Templates),
- bespoke software for reading the DPM spreadsheets and generating the taxonomy and supporting documentation.
- commercial off-the-shelf XBRL validators (for quality assurance, creation of specific instance documents and testing).

VI Annex 1. The normalisation process

VI.1 Introduction

The normalisation process is a supporting internal stage of the annotated template analysis and development.

The normalisation of the templates and in some cases their division (split) into different tables is conducted for the following reasons:

- to avoid redundant data (reducing the size of reports and reducing the amount of validation required by removing unnecessary checks between data when normalisation is applied),
- to improve clarity and efficiency of the reporting templates and increase the performance of data processing,
- to assure functional dependencies between data cells (removing unnecessary DPM qualifiers when not needed),
- to introduce semantic consistency of tables (organisation of rows and columns, taking into account the DPM breakdowns).

The assumed outcome of the process is a set of tables normalised at first (1NF), second (2NF) or third (3NF) normal form. While the attempt to achieve the highest formal level of normalisation is the overall objective, it is recognised that performance, simplicity requirements or target technology standard limitations, as well as the independent process of Reporting Templates (RT) definition, may render such an approach ineffective. Consequently, an intermediary stage of normalisation is suggested as a workable and efficient solution for the Data Point Model and the XBRL taxonomies.

Normalisation of templates concerns primarily open templates, with unknown numbers of either rows, columns or sheets. In certain cases, however, closed templates are also undergoing reorganisation in order to improve overall efficiency and consistency for data processing. In every case where the normalisation of a template is proposed, the draft normalised template is validated by EIOPA Business Experts in order to assure consistency with the business requirements.

The overall process of normalisation of reporting templates in different tables is presented in the following diagram:

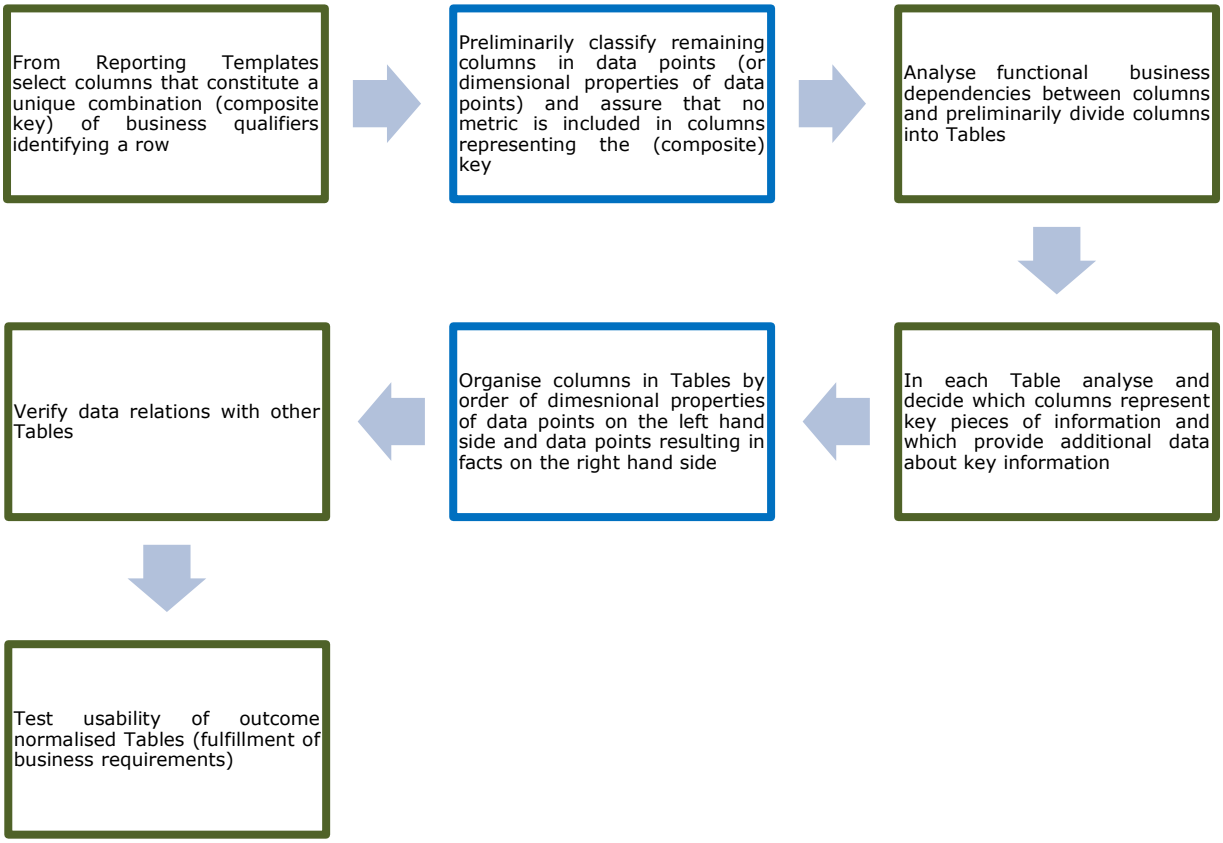


Diagram 1: Overview of the normalisation process

VI.2 Example of normalisation

An example of the normalisation process is illustrated below. The template subject to normalisation is the original Reporting Template AS-D1-S.06.02. The simplified and shortened version of the original template is presented in Table 25.

	Identification section	Categorisation section	Risk section	Data section
Cell number				
	12 columns	3 columns	3 columns	7 columns
	Portfolio	Currency (ISO code)	External rating	Quantity
	Fund number	CIC	Rating agency	Unit SII price
	Asset held in unit linked and index linked funds (Y/N)	Participation	Duration	Valuation method SII
	ID Code			Acquisition price
	ID Code type			Total SII amount
	Asset pledged as collateral			Maturity date
	Item Title			Accrued interest
	Issuer Name			
	Issuer Sector			
	Issuer Group (Code)			
	Issuer Country			
	Country of custody			

Table 25: AS-D1-S.06.02 [simplified view]

The organisation of the template as presented in Table 25, while reasonable from a business perspective, may cause challenges for metadata definition and data processing:

- The original Reporting Template requires filers to repeat the data they enter about issuers, external ratings and rating agencies for the same instrument (ID code) multiple times as this instrument can be partially included in multiple portfolios or different funds at the same time.

- In some cases the data type for cells is not strictly predefined. For example, according to the Business Logs "Unit SII price" can be reflected in monetary values for shares or percentages for bonds.

- Filers are, at present, required to report multiple repetitions of data about rating agencies and external ratings while reporting multiple rows related to combinations of Portfolio, Fund number etc.

While this template does not contain any repeating groups (columns) of information, indicating that it may already be in the first normal form, such arrangement of information may cause redundancies, errors and unnecessary volumes of information to be processed, and therefore further normalisation may be beneficial. The proposed normalisation applies the following steps:

1. Expected values (required data types) must be analysed for every column. If one column (e.g. Unit SII price) could be assigned two or more different expected values (data types), then such a column should be considered for splitting.

2. Reporting Templates and Business Logs for the Assets D1 template are analysed in terms of detailed information represented by rows and columns, exemplary data and preliminary structures. It may be observed that the entire table presents two (or more) overall views on investment data:

a. Information about the instruments that the reporting entity invests in. This information is directly related to the instrument itself, like its CIC code or external rating, and does not change depending on other columns' values (for example the type of portfolio, or whether or not an asset is held in unit linked and index linked funds).

b. Information about the manner in which the investment was made in the specific entity's case (e.g. portfolio, fund, country of custody, quantities, interest or SII amount). For the same instrument those characteristics could differ across the report, as for example the same share (with a specific ID code) could be part of an investment using different funds, and in each case the quantity could be different.

While various business experts may propose different groupings or overall purposes for the tables, all proposals should be validated against the general criteria of normalisation. In the case of the Assets D1 template business experts agreed that it should be sufficient to split the template into two normalised tables.

3. Columns that constitute a key (either a simple composite natural key or an artificial key) are selected and grouped together. For the table presenting how the investment was made (part 1 of normalised template Assets-D1) the composite key is complicated and so a single artificial key was introduced. For the table presenting the instrument itself, a natural key of the ID code is used (or a simple composite natural key of the ID code and the legal name of the undertaking for the group variant).

ID Code	ID Code type	Fund number	Portfolio	Asset held in unit linked and index linked funds (Y/N)	Asset pledged as collateral	Country of custody	Quantity	Acquisition price	Total SII amount	Accrued interest
A4	A5	A2	A1	A3	A6	A12	A22	A25	26=A22*A23 +A3	A30

Figure 7. Part 1 of normalised template Assets D1.

4. Functional dependencies between columns in templates are analysed and grouped and the table is preliminarily split into normalised tables if necessary. It is possible to apply further normalisation and split the second sub-table into a table about issuer and a table about instruments. However, following the general criteria for normalisation such a split was not viewed as required and therefore the division into two tables was agreed to be acceptable.

As a result the first table now contains logical information about the destination of investments (see Figure 7) whereas the second table describes the instrument itself (see Figure 8).

ID Code	ID Code type	External rating	Rating agency	CIC	Issuer Country	Currency (ISO code)	Participation	Valuation method SII	Item Title	Issuer Name	Issuer Sector	Issuer Group (Code)	Unit SII price	Duration	Maturity date
A4	A5	A17	A18	A15	A11	A13	A16	A24	A7	A8	A9	A10	A23	A20	A28

Figure 8. Part 2 of normalised template Assets D1.

5. Columns in normalised tables are ordered (data point properties on the left, data points to the right).

6. Data relations with other tables are verified.

7. A usability test on normalised tables (completeness, redundancy reduction and business requirements fulfilment) is performed.

VI.3 Table rendering after normalisation

The progress of the XBRL Rendering working Group is being monitored as the rendering specification (which will describe how tables from the table linkbase should be rendered and formatted) may allow the specification of a view using the original, de-normalised table. Until then however, the taxonomy will only be able to specify a normalised view of the data.

VII Annex 2. Filing indicators

VII.1 Introduction

This annex introduces the concept of "filing indicator" to ease the implementation of the proportionality principle in XBRL filings.

VII.2 Proportionality and multiple entry points

The principle of proportionality stipulates that an entity's reporting burden should be proportional to its size. It allows a filer to report less information if it satisfies certain criteria. For example, this principle allows a smaller organisation to file less information if it is not active in some domains or if some figures are under a given threshold.

The simplest technical solution to this business requirement is to define an entry point for each reporting scenario. Each entry point exposes only the subset of the model and validation checks specific to the reporting scenario in question.

However, if several characteristics and/or thresholds are defined to cope with the proportionality principle, a different entry point must be defined for each and every valid combination of characteristics.

This complicates:

- The filing process - the filer must choose an appropriate entry point from a potentially large selection which differ in subtle ways
- The taxonomy - several entry points must be defined, tested and assured with added complexity if some assertions are shared between entry points and some are not (which is typically the case).
- The submission handling process - the received instances must be processed against one of many different taxonomies.
- The maintenance of the taxonomy - every time a new characteristic or threshold is introduced for proportionality, the number of entry points could be as much as doubled.

VII.3 The idea of a filing indicator

The idea of a "filing indicator" allows a single entry point to be shared between different similar reporting scenarios.

The content of each entry point is notionally split into several components and every component (typically this will correspond to a template) which is reported in an instance is accompanied by an explicit indication that the component has been filed.

In technical terms, filing indicators are facts included as part of an instance document. Each reported template is accompanied in an instance by a fact of the item find:fIndicator under the find:fIndicators tuple. If there is no filing indicator for a template included in a module, it is assumed that a filing contains no information on this template. In some case however, it may be necessary for filers to explicitly identify unreported templates, usually

with an explanation of this situation/choice. In this case, a find:fIndicator fact whose value corresponds to the template identification should also include a find:filed attribute set to boolean “false”.

The following instance excerpt represents a filing with information about template with code S.02.01 and no information (explicitly stated) on template S.03.02:

```
<find:fIndicators>
   <find:fIndicator contextRef=”ctx” >S.02.01</find:fIndicator>
   <find:fIndicator contextRef=”ctx” find:filed=”false”>S.03.02</find:fIndicator>
</find:fIndicators>
```

Contexts to which find:fIndicator facts refer must identify the reporting entity and use the end date of the reporting period as the instant date.

Identification of templates in find:fIndicator facts uses codes. These codes can be found as a label resource associated with the table:table element in an extended link using the standard role; the label resource uses the role "http://www.eurofiling.info/xbrl/role/filing-indicator-code" (as defined in http://www.eurofiling.info/eu/fr/xbrl/ext/model.xsd).

Note that multiple tables have the same filing indicator code but the filing indicator does not need to be repeated if multiple such tables are submitted.

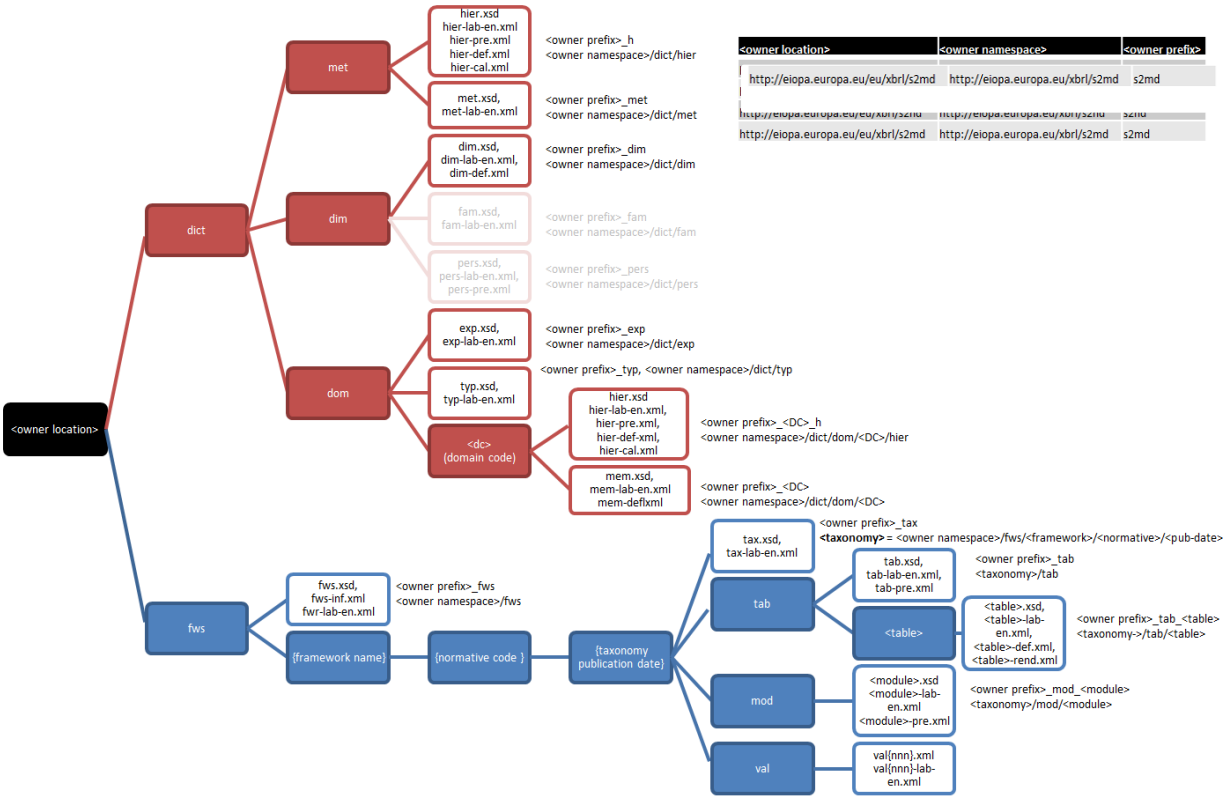
For more information about filing indicators in the taxonomy, please see section V.3.9.5.

VII.4 Filing Indicators and Content Templates

Content templates are the first templates in a Solvency II report and detail which templates have been included and if a template has been omitted, why.

Filing indicators may appear to serve the same purpose as the content templates but filing indicators are a technical mechanism which has been used to align with the EBA and the content templates satisfy a business requirement for reasoning behind the inclusion (or not) of templates in a report. There are a series of assertions which ensure these are consistent.

VIII Annex 3. EIOPA Solvency II Preparatory XBRL Taxonomy: Owners, Folders, Files, Namespaces and Prefixes



<owner location>	<owner namespace>	<owner prefix>
http://eiopa.europa.eu/eu/xbrl/s2md	http://eiopa.europa.eu/xbrl/s2md	s2md
http://eiopa.europa.eu/eu/xbrl/s2md	http://eiopa.europa.eu/xbrl/s2md	s2md

Annex 4. Using dimensions for temporal characteristics

VIII.1 Temporal characteristics as defined by XBRL 2.1

Some information, such as assets, has values corresponding to a particular point in time: "assets as of 31 December 2011". Other information, such as revenue, has values corresponding to a period of time: "revenue between 1 January and 31 December 2011".

In the XBRL 2.1, this is typically captured by the standard period mechanism:

- In the schema file of a taxonomy, each primary item is specified as applying to an instant or a duration using the "periodType" attribute.
- In the instance documents, elements of the context are used to specify the period of each fact:
    - "instant" for facts having values corresponding to an instant; and
    - "startDate" and "endDate" for facts having values corresponding to a duration.

This way of capturing this information is accurate but complex, particularly if several periods are considered. The startDate and endDate has to be populated by filers and checked by regulators, which may be complex if the trading year does not correspond to a calendar year.

VIII.2 Using dimensions to express temporal characteristics

Dimensions, already used heavily in other aspects of the taxonomy, are a way to simplify the expression of temporal characteristics. With this solution, all primary items have an instant periodType and have one or more "Temporal characteristics" dimensions.

For example, for a balance sheet template, the value of an asset would be associated to the "End of period" member; for a profit and loss template, the value of a revenue would be associated to the "Last period" member.

Members such as "Start of period" (instant), "Previous period" (duration), or similar may be introduced as needed and because these are abstract definitions (i.e. they don't specify what the actual date range is, only what it means), they are easier to populate and interpret.

The Solvency II taxonomy uses the 'DI dimension' which includes members such as 'Beginning' (instant) and 'Year to Date' (duration). We expect to add members to this domain as they are needed.

IX Annex 5. Differences between Reporting Templates and Annotated Templates

The annotated templates are intended to capture the business requirements in a format which is as close to the Reporting Templates as possible. Unfortunately, in order to be concise and unambiguous, some differences must be introduced.

IX.1 Template and Table group codes

The codes for the reporting templates are of the form "S.01.02.a" where the "S.01.02" part identifies the template and the ".a" part identifies the business variant. The mapping is as follows:

Solo, Quarterly	a
Solo, Annual	b
Group, Quarterly	f
Group, Annual	g
Solo, Annual, RFF	l
Group, Annual, RFF	n

The codes for the table groups in the annotated templates take the form S.01.02.01 where the "S.01.02" part identifies the template (matching the reporting templates) and the final ".01" part identifies the technical variant.Because some business variants do not differ from each other at the technical level and because some business variants have multiple technical variants, there is a many-to-many relationship between Business Template codes and Table Group codes. This mapping is detailed on the Table list sheet of the annotated templates, an extract of which is shown in Figure 9.

		Preparatory			
		Solo		Groups	
Table group code	Business Template Code	Annual	Quarterly	Annual	Quar
S.01.01.01	S.01.01.b	x			
S.01.01.02	S.01.01.a		x		
S.01.01.03	S.01.01.g			x	
S.01.01.04	S.01.01.f				x
S.01.02.01	S.01.02.b S.01.02.a	x	x		
S.01.02.02	S.01.02.g S.01.02.f			x	x
S.02.01.01					

Figure 9 Annotated template table list

IX.1.1 RFF variants

For templates which can be submitted for individual Ring Fenced Funds (RFF), there are up to 3 technical variants. The first covers the whole entity and corresponds to the ".b" or ".g" business variants. The second is for a single RFF and the third is for the remaining part, both of these correspond to the ".l" or ".n" business variants.

For example, Table 26 shows the 3 technical variants for SCR-B2A (solo and group).

Reporting Solo/Group	Business Template	Annotated Template table group code
Solo Annual	S.25.01.b (entity)	S.25.01.03
	S.25.01.l (remaining)	S.25.01.09
	S.25.01.l (RFF)	S.25.01.07
Group Annual	S.25.01.g (entity)	S.25.01.05
	S.25.01.n (remaining)	S.25.01.10
	S.25.01.n (RFF)	S.25.01.08

Table 26 Technical variants for RFF

IX.2 Normalisation

The process described in Annex 1. The normalisation process introduces the most significant changes between the reporting templates and the annotated templates.

This can be seen in Assets-D1 (S.06.02) where the single table in the reporting templates has become two tables in the annotated templates. The second table details the assets without regard to their ownership by an undertaking; the first details the assets a fund owns, referencing the second.

IX.1 Split reporting template tables (non-normalisation)

In addition to normalisation discussed above, a single table in the reporting templates may be split into one or more tables when a table is capturing data with multiple business contexts.

This can be seen in G03 (G03-S.33.01.g) where the single table shown in Figure 10 has been split into two tables in the annotated template (S.33.01.01) shown in Figure 11.

EEA entities and non EEA entities (using SII rules) included only via D&A						(Re)insurance Solo requirements for non EEA entities [both using SII rules and not using SII rules] regardless of the method used		
SCR Market Risk	SCR Counterparty Default Risk	SCR Life Underwriting Risk	SCR Health Underwriting Risk	SCR Non-life Underwriting Risk	...	Local capital requirement	Local minimum capital requirement	Eligible own funds in accordance with local rules
B1	B2	B3	B4	B5	B6	N1	O1	P1

Figure 10. Reporting template (G03-S.33.01.g) [simplified view]

EEA entities and non EEA entities (using SII rules) included only via D&A					
SCR Market Risk	SCR Counterparty Default Risk	SCR Life Underwriting Risk	SCR Health Underwriting Risk	SCR Non-life Underwriting Risk	...
B1	B2	B3	B4	B5	B6

(Re)insurance Solo requirements for non EEA entities [both using SII rules and not using SII rules] regardless of the method used		
Local capital requirement	Local minimum capital requirement	Eligible own funds in accordance with local rules
N1	O1	P1

Figure 11. Annotated template (S.33.01.01)

IX.2 ID codes

In multiple places in the reporting templates, there is a pair of "Code" and "Type of Code". In order to capture this as a URI at the taxonomy level, these two columns are combined into one in the annotated template e.g. S.01.02.01 Identification code (A11/A1).

The URIs are required to have a specific format, which is defined below.

IX.2.1 Format of URI ID codes

There are three types of ID, each of which requires a slightly different URI format. All URIs have two parts:

a primary part - e.g.http://example.org/codes
a code - e.g. 123

These are concatenated with a '/' to form a URI which need not lead to a real web page but will uniquely identify the item required. In the above case, the URI would be:http://example.org/codes/123

IX.2.1.1 ISO Standard IDs

IDs defined by ISO standards should use the URL scheme defined by RFC 5141[44], followed by the ID code itself.

Examples:

ISIN: http://standard.iso.org/iso/6166/{ISINcode}, where {ISINcode} is replaced by the actual ISIN code.

[44] http://tools.ietf.org/pdf/rfc5141.pdf

LEI: http://standard.iso.org/iso/17442/{LEIcode}, where {LEIcode} is replaced by the actual LEI code.

IX.2.1.2 Eurofiling standard IDs

Codes which are not defined by an ISO standard should use a URL on the Eurofiling domain, followed by the code type, followed by the code. More information can be found on the Eurofiling Codes site [45].

Example:http://codes.eurofiling.info/{*codeType*}/{*code*}, where {*code*} and {*codeType*} are to be replaced by a specific code and its type respectively.

IX.2.1.3 Proprietary IDs

If an undertaking prefers not to use the Eurofiling or ISO domains, they should define URIs using their own domain.

Example:http://codes.nca.gov.test/{*codeType*}/{*code*}, where {*code*} and {*codeType*} are to be replaced by a specific code and its type respectively.

Note that when either an ISO standard or a proprietary ID is used, the Eurofiling URL may still be used for documentation.

IX.3 Column ordering in open tables

In order to model open tables, columns modelled as dimensions must be grouped together on the left of the table in the Annotated Templates. In the 1.5 release of the preparatory taxonomy, the only such columns are those which are part of the key; all other columns are modelled as facts.

IX.4 Split columns/rows with different annotations

An annotation on a column applies to every data point on that column. When the business requirement is such that an annotation should apply to only some data points in a column (and the annotation cannot be moved onto another axis), that column has to be split. Data points which require the annotation are placed in one column with the annotation and the remaining data points are placed in a column without the annotation. Typically these columns will have the same label. This can also occur for rows, but this is less common.

IX.5 Merged Columns

Sometimes in the Reporting Templates a cell ID is merged across multiple columns. In the Annotated Templates it would be impossible to unambiguously annotate such a cell, and

[45] http://codes.eurofiling.info

so a new column is added with its own annotations. For example, this affects both of the 'Index-linked and unit-linked insurance' columns in the S.12.01 templates.

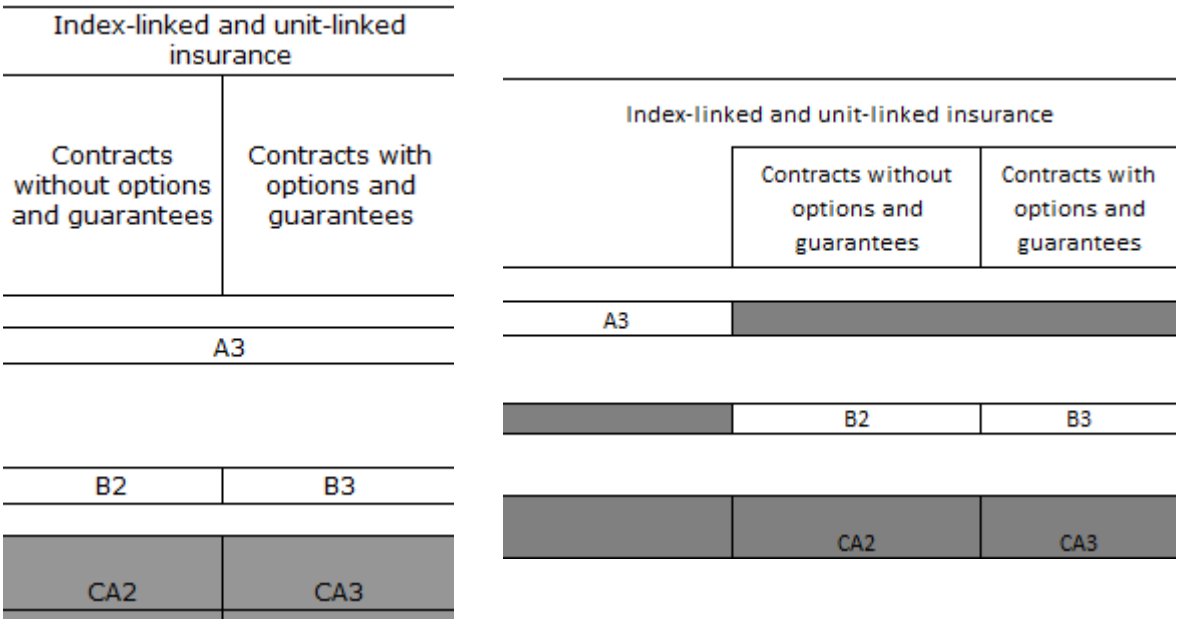


Figure 12. Index-linked and unit-linked insurance columns in Reporting Templates (left) and Annotated Templates (right).

IX.6 Data points which qualify an entire template

When a template can repeat, certain data points differentiate between the individual repetitions. For example, in template S.26.01.03 (S.26.01.l), the 'Fund Number' data point distinguishes the data for one fund from the data for another. As this applies to every other data point in the template, it must be modelled as a dimension and does not need its own fact in the Annotated Templates.

This also occurs in S.02.01 and S.25.01 and throughout S.26 and S.27.

	Simplifications used
Simplifications - spread risk - bonds and loans ? (Y/N)	A00
Captives simplifications - interest rate risk ?(Y/N)	AA01
Captives simplifications -spread risk ?(Y/N)	AA02
Captives simplifications - market concentration risk ?(Y/N)	AA03
Ring fenced fund? (Y/N)	A30
Fund number	A0

Figure 13. Fund Number in Reporting Templates.

	Simplification Used
Simplifications - spread risk - bonds and loans ? (Y/N)	A00
Captives simplifications - interest rate risk ?(Y/N)	AA01
Captives simplifications - spread risk ?(Y/N)	AA02
Captives simplifications - market concentration risk ?(Y/N)	AA03

Z axis (Solo):
CS/Solo
PO/Ring fenced funds
Number of fund
AO/All members
S.26.01.03.03

Figure 14. Fund Number in Annotated Templates.

Similarly, 'Ring fenced fund? (Y/N)' and 'Article 112? (Y/N)' also move to the Z axis in the Annotated Templates in the same templates as 'Fund Number'.

IX.7 Updated Requirements

Table 27 and Table 28 lists data point differences between the annotated templates and the business reporting templates (published 27 September 2013). These changes were approved during the preparatory taxonomy development phase[46] and are expected to be included in the next public release of the reporting templates.

Business Template Code	Annotated Template Table Group Code	Data points added
S.01.02.a S.01.02.b	S.01.02.01	Home Country (A12) Name (A13)
S.01.02.g S.01.02.f	S.01.02.02	Name (A13) Reporting country (A14)
S.06.02.a S.06.02.b	S.06.02.01	Total par amount (A22A) [47] Percentage of par SII value (A23A) [47]

Table 27 Added data points

[46] Approved by Internal Governance, Supervisory Review and Reporting Committee Sub-Group 3 (SG3)

[47] Concept exists in business reporting template but to represent concept unambiguously in the annotated template a new data point was required.

Business Template Code	Annotated Template Table Group Code	Business Template label	Annotated Template label
S.01.02.a S.01.02.b	S.01.02.01	Type of internal model	Model used (A6)
S.01.02.g S.01.02.f	S.01.02.02	Type of internal model	Model used (A6)

Table 28 Amended data points

X Annex 6. Taxonomy extensions

X.1 Taxonomy extension for localised labels

The only language for the Preparatory Taxonomy is English (ISO 639-1 code "en"). To support additional languages the taxonomy will need to be extended to provide label linkbase files for each language required.

A label linkbase file contains the labels for concepts (dimensions, metrics, explicit and typed domains) and are located with the concept schema file. The naming convention for a label linkbase file is:

{main-file}-lab-{lang}.xml

where *{main-file}* is the name of the concept schema file and the *{lang}* component is the ISO 639-1 code of the language (lowercase).

Figure 15 shows an extract of the Preparatory taxonomy structure compared to an example extension[48]. The *{main-file}-lab-xx.xml* files represent the label linkbase files.

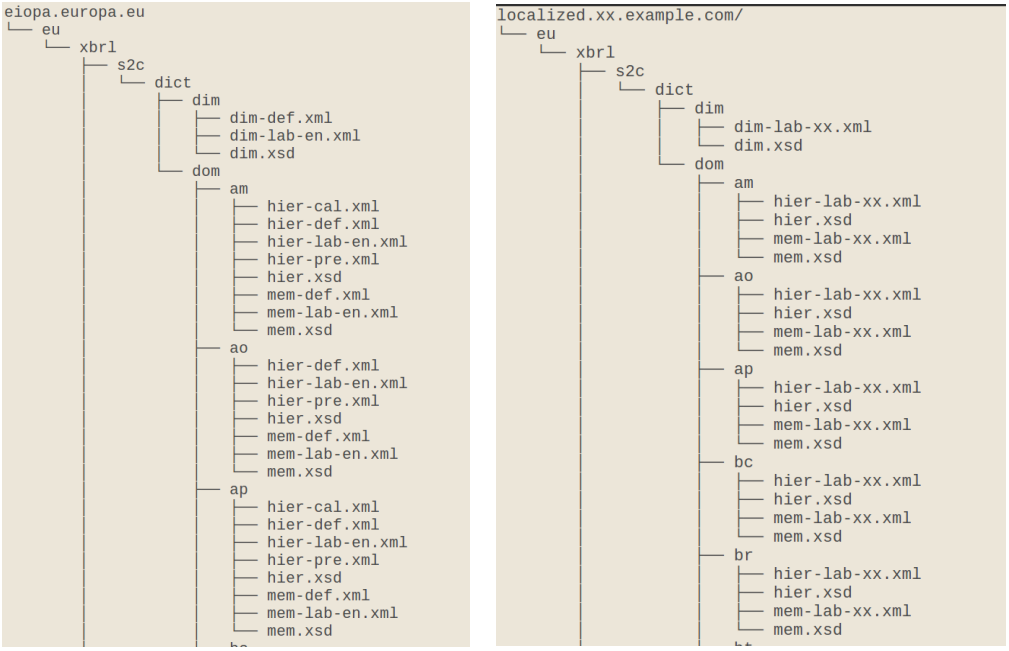


Figure 15 Solvency II Taxonomy (left) and Extension Example (right)

Focusing on one label linkbase update, Figure 16 shows that two files; a schema and label linkbase file, are required in the extension taxonomy in order for the extension labels to be used.

[48] Example localization extension is included in v1.5 of the Preparatory taxonomy (example labels are in English).

```
└── dom
    ├── am
    │   ├── hier-cal.xml
    │   ├── hier-def.xml
    │   ├── hier-lab-en.xml
    │   ├── hier-pre.xml
    │   ├── hier.xsd
```

```
└── dom
    ├── am
    │   ├── hier-lab-xx.xml
    │   ├── hier.xsd
```

Figure 16 Example domain hierarchy file structure for Solvency II Taxonomy (left) and Extension Example (right)

The schema file in the extension taxonomy (*hier.xsd* in the example) identifies which label linkbase file to use, here it is the localised (*hier-lab-xx.xml*) label linkbase as highlighted in Figure 17.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<schema xmlns="http://www.w3.org/2001/XMLSchema" targetNamespace="http://localized.xx.example.com/xbrl/s2c/dict/dom/AM/hier">
    <import namespace="http://eiopa.europa.eu/xbrl/s2c/dict/dom/AM/hier" schemaLocation="http://eiopa.europa.eu/eu/xbrl/s2c/dict/dom/am/hier.xsd"/>
    <import
        namespace="http://localized.xx.example.com/xbrl/s2c/dict/exp" schemaLocation="../exp.xsd"/>
    <import
        namespace="http://localized.xx.example.com/xbrl/s2c/dict/dom/AM" schemaLocation="mem.xsd"/>
    <annotation>
        <appinfo>
            <link:linkbaseRef
                xmlns:link="http://www.xbrl.org/2003/linkbase"
                xmlns:xlink="http://www.w3.org/1999/xlink"
                xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase"
                xlink:href="hier-lab-xx.xml" xlink:type="simple"/>
        </appinfo>
    </annotation>
</schema>
```

Figure 17 hier.xsd in the example extension

As the example shows, extending the Solvency II Taxonomy for providing additional languages, does not require the extension taxonomy to include files for the presentation (*hier-def.xml*), calculation (*hier-cal.xml*) and definition (*hier-def.xml*) linkbases. The extension taxonomy can simply inherit these files from the Solvency II Taxonomy by importing the Solvency II Taxonomy schema file which has these relationships defined.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<schema xmlns="http://www.w3.org/2001/XMLSchema" targetNamespace="http://localized.xx.example.com/xbrl/s2c/dict/dom/AM/hier">
    <import namespace="http://eiopa.europa.eu/xbrl/s2c/dict/dom/AM/hier" schemaLocation="http://eiopa.europa.eu/eu/xbrl/s2c/dict/dom/am/hier.xsd"/>
    <import
        namespace="http://localized.xx.example.com/xbrl/s2c/dict/exp" schemaLocation="../exp.xsd"/>
    <import
        namespace="http://localized.xx.example.com/xbrl/s2c/dict/dom/AM" schemaLocation="mem.xsd"/>
    <annotation>
        <appinfo>
            <link:linkbaseRef
                xmlns:link="http://www.xbrl.org/2003/linkbase"
                xmlns:xlink="http://www.w3.org/1999/xlink"
                xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase"
                xlink:href="hier-lab-xx.xml" xlink:type="simple"/>
        </appinfo>
    </annotation>
</schema>
```

Figure 18 importing the Solvency II hier.xsd in the example extension

X.2 Advanced Taxonomy extensions

More sophisticated extension taxonomies can be written which arbitrarily add to or remove from the taxonomy. When adding datapoints via an extension taxonomy, it is expected that extension authors will add a member to the DO domain and require that all extension facts supply this value for the DO dimension. This ensures that any formula which has been written against the unextended Solvency II taxonomy is impacted as little as possible.

XI Annex 7. FAQ

XI.1 How do I know what needs to be populated in a cell?

XI.1.1 Closed Table example

To illustrate how a cell is represented in a closed table across various templates and finally in an XBRL instance, cell A2 in template S.02.01 will be used.

Why is it important to qualify 'A2' by identifying the template?

The same data cell ID can be used in multiple templates, for example A2 is used in both S.02.01 and S.06.02 but define very different concepts. Hence, a cell should be fully represented as S.02.01:A2.

Business Logs

Business Logs presents a human-readable description of what a cell should contain.

Technical Annex II: List of quantitative reporting items
S.02.01
Balance sheet

	ITEM	INSTRUCTIONS
	ASSETS	
AS1	Goodwill	Intangible asset that represents the economic value of assets that cannot be individually identified and separately recognised in a business combination.
AS24	Deferred acquisition costs	The part of acquisition costs allocated to future reporting periods
A2	Intangible assets	Intangible assets other than goodwill. An identifiable nonmonetary asset without physical substance. See cross-templates checks tab CAS 8

Figure 19 - representation of S.02.01 A2 in the Business Logs

Annotated templates

Annotated templates document provides further information about a cell, namely the metric and the appropriate dimension-member pairs. Note that the ordering of the pairs is not significant in converting it to XBRL.

Why are there multiple pairs of dimension-members for 'A2'?

A cell can have multiple dimensions associated with it. For 'A2' there are 4 dimension members e.g. BC (basic concepts) takes the value "Assets".

Dimension-member pairs are independent of each other, and hence all of these need to be specified in order to correctly identify all of the relevant dimensional information about the cell.

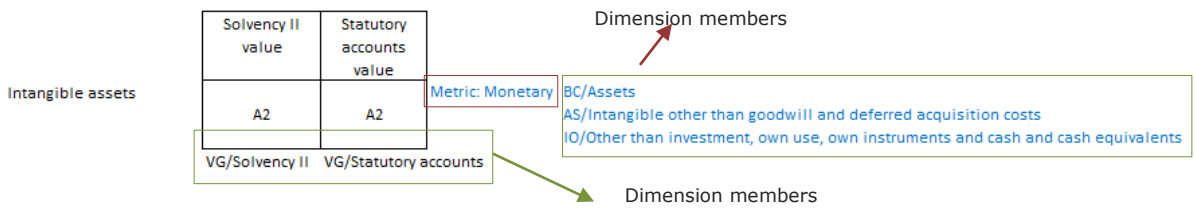


Figure 20 - representation of A2 in Annotated Templates

Documentation template

The documentation templates spreadsheet provides the same information as an annotated template, along with the derived MD metrics[49] and the allowed values for different dimensions.

	Solvency II value	Statutory accounts value		
Assets				
Intangible assets	A2	A2	Metric: Monetary	BC/Assets
				AS/Intangible other than goodwill and deferred acquisition costs
				IO/Other than investment, own use, own instruments and cash and cash equivalents
	VG/Solvency II	VG/Statutory accounts		

Figure 21 - representation of S.02.01 A2 in Documentation Template

XBRL instance

A cell, as such, no longer exists in an XBRL instance, but the relevant information about it is presented as a fact, as shown below.

```
<s2md_met:mi251 contextRef="context" decimals="7" unitRef="unit">1.0</s2md_met:mi251>
```

As is evident from the snippet above, no dimensional information is explicitly shown. This, along with other information such as the entity or period, is retreived from the referenced "context", which is shown below.

```
<xbrli:context id="context">
  <xbrli:entity>
    <xbrli:identifier scheme="http://www.example.com">someone</xbrli:identifier>
  </xbrli:entity>
  <xbrli:period>
    <xbrli:instant>2014-02-28</xbrli:instant>
  </xbrli:period>
  <xbrli:scenario>
    <xbrldi:explicitMember dimension="s2c_dim:CS">s2c_CS:x26</xbrldi:explicitMember>
    <xbrldi:explicitMember dimension="s2c_dim:VG">s2c_AM:x80</xbrldi:explicitMember>
  </xbrli:scenario>
 </xbrli:context>
```

XI.1.2 Open Table example

To illustrate how a cell is represented in an open table across various templates and finally in an XBRL instance, cells A5/A4, A1 and A22A in template S.06.02.a will be used.

A5/A4 are two cells captured as a single URI. Two cells are combined because the URI can capture the type of code and the code itself in a single URI (see IX.2). This is a typed dimension that can be given a value which applies to the rest of the facts in the row.

A1 represents a cell with a drop down list for domain member selection.

A22A is a typical cell, represented similarly to those in closed tables.

[49] Colour legend - MD annotations (Green), HD annotations (Blue) and both MD and HD (Black)

Business Logs

Business Logs presents a human-readable description of what a cell should contain, with an identical representation to what a closed table would contain. Here A4 and A5 are presented as two separate cells.

Technical Annex II: List of quantitative reporting items
S.06.02
List of assets

	ITEM	INSTRUCTIONS
A4	ID Code	One of the options in the following list shall be used, by order of preference: ISO 6166 ISIN when available Other "recognized" codes (e.g.: CUSIP, Bloomberg Ticker, Reuters RIC) Code attibuted by the undertaking, when the options above are not available, and must be consistent over time
A5	ID Code Type	Type of ID Code used for the "ID Code" item. One of the options in the following closed list shall be used: ISO 6166 ISIN: ISIN Other "recognized" codes: the designation of the code Code attibuted by the undertaking: Undertaking

Figure 22 – representation of S.06.02.a in Business Logs

Annotated templates

Annotated templates document provides further information about a cell, namely the metric and the appropriate dimension-member pair. Note that the ordering of the pairs is not significant in converting it to XBRL. The figure below has been concatinated to also include examples of a drop down list (A1), where a value can be chosen for acceptable domain members from a number of options; and a typical data point (A22A), which is represented similarly to one in a closed table.

S.06.02.01
D1
Investments Data - Portfolio list (detailed list of investments)

Line identification	ID Code	Fund number	Portfolio	Total par amount
	A5/A4	A2		
S.06.02 line identification	URI	Number of fund	A1	A22A
key	*key*		Metric: PO/All members (Total/NA) [7]	Metric: Monetary TA/Notional amount BC/Assets

Figure 23 - representation of S.06.02 in Annotated Templates

Documentation template

The documentation templates spreadsheet provides the same information as an annotated template, along with the derived MD metrics and the allowed values for different dimensions. Cells A5/A4 are provided with the derived MD metric. As can be seen from the figure below, a significant amount of extra information is provided for cell A1. Not only is

the derived MD metric provided, but also the members it accepts. Note that only the "usable" members are presented here, ie. the hierarchy members which group other members and which were introduced for clarity aren't. The cell A22A is presented in the same way as a typical cell would be represented in a closed table.

ID Code	Portfolio	Total par amount
A5/A4		
URI [s2c_dim:UI using domain s2c_typ:ID]	A1	A22A
key	Metric: PO/All members (Total/NA) [7] [PU#7 using s2md_met:ei1310 which is enum:enumerationItemType] *(which accepts: x10 (Life [split applicable]) x13 (Non-life [split applicable]) x49 (Shareholders' funds) x3 (General [no split]) x40 (Ring fenced funds))*	Metric: Monetary | TA/Notional amount | BC/Assets [using s2md_met:mi1110 which is xbrli:monetaryItemType]
	Metric: PO/All members (Total/NA) [7] [PU#7 using s2hd_met:ei59 which is enum:enumerationItemType] *(which accepts: x10 (Life [split applicable]) x13 (Non-life [split applicable]) x49 (Shareholders' funds) x3 (General [no split]) x40 (Ring fenced funds))*	Metric: Monetary [using s2hd_met:mi1 which is xbrli:monetaryItemType] TA/Notional amount [s2c_AM:x61] BC/Assets [s2c_BC:x3]

Figure 24 - representation of S.06.02 cells in Documentation Template

XBRL instance

A cell, as such, no longer exists in an XBRL instance, but the relevant information about it is presented as a fact, as shown below.

```
<xbrli:context id="context">
   <xbrli:entity>
     <xbrli:identifier scheme="http://www.example.com">someone</xbrli:identifier>
   </xbrli:entity>
   <xbrli:period>
     <xbrli:instant>2014-02-28</xbrli:instant>
   </xbrli:period>
   <xbrli:scenario>
     <xbrldi:explicitMember dimension="s2c_dim:CS">s2c_CS:x26</xbrldi:explicitMember>
     <xbrldi:explicitMember dimension="s2c_dim:SU">s2c_MC:x168</xbrldi:explicitMember>
     <xbrldi:typedMember dimension="s2c_dim:UI">
       <s2c_typ:ID>http://www.example.com/codes/foo/AS123</s2c_typ:ID>
     </xbrldi:typedMember>
     <xbrldi:typedMember dimension="s2c_dim:XA">
       <s2c_typ:NB>1</s2c_typ:NB>
     </xbrldi:typedMember>
   </xbrli:scenario>
 </xbrli:context>

 <s2md_met:ei1310 contextRef="context">s2c_PU:x10</s2md_met:ei1310>
 <s2md_met:mi1110 contextRef="context" decimals="11" unitRef="unit">1.0</s2md_met:mi1110>
```

Figure 25 - extract of an XBRL instance for an open table

A5/A4 is combined, and is submitted as the URI value (highlighted above) for a typed dimension. A1 is submitted as the QName of the appropriate member (s2c_PU:x10) for the appropriate metric. A22A is a monetary value (1.0) using the appropriate metric.

XI.1.3 Open/Closed Table with z-axes example

Z Axis:
CS/Solo
SU/Assets other than derivatives and Assets held as collateral
S.06.02.01.01

The z-axis in the Annotated Templates for this table shows that all data points have a consolidation scope of Solo. This can be seen in Figure 25 where the context contains

```
<xbrldi:explicitMember dimension="s2c_dim:CS">s2c_CS:x26</xbrldi:explicitMember> .
```

XI.2 How can I identify duplicate data points?

Filers can improve the accuracy of their supplied data by ensuring the source data for a fact is the same. This way filers will avoid assertion failures which check for fact consistency i.e. failures when a fact is reported as x in template A but y in template B. It should be noted that there is a filing rule which states that duplicates must not be filed even if they are consistent.

A fact is a duplicate if it has the same Metric and all of the same dimensions-members. This would be very complex to determine manually, so for convenience, the documentation templates have added comments that list all the duplicates across templates.

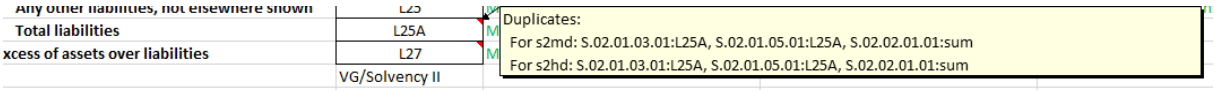


Figure 26 Duplicate facts