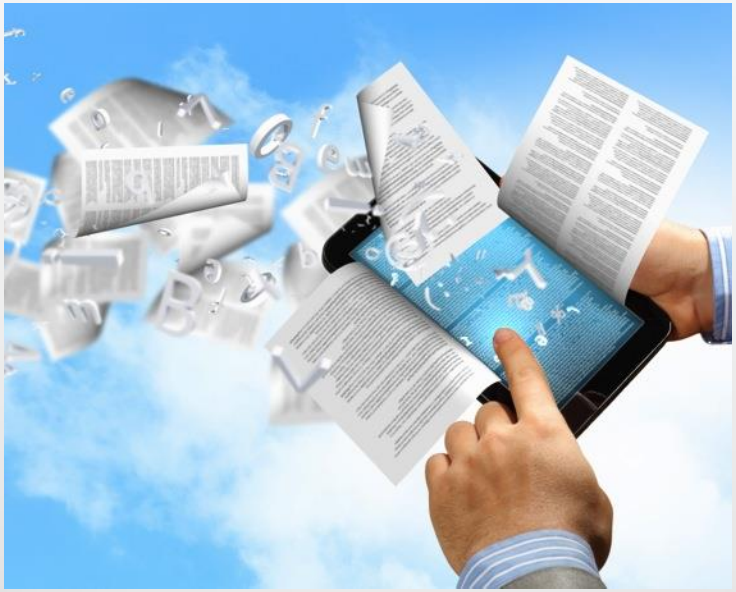
OIM, one step beyond or
OIM++ or
How to use taxonomy information to facilitate XBRL report analysis

Jean-Paul Daisomont
Denis Robinet

Agenda

1. Acsone, our expectations
2. OIM, start point
   – Illustrations
3. RC-code considerations
   – Illustrations
4. Dimensions in function of axis
   – Illustration
5. Practical data model proposition



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XBRL historical path

- Since 2014, we try to improve Arelle for EBA taxonomies, first, Solvency II taxonomy, later, IFRS & SBR now.
- We have acquired a lot of skills for table and formula linkbases.
- How to use these skills outside the edition and the validation contexts?
- At the same time, we receive a lot of questions/interests related to the diffusion aspects from the business.

Motivation: business expectations

- A lot of organizations have to manage more and more taxonomies, more and more versions of taxonomies, more and more XBRL reports
  - High interest for
    - Automatization new versions of taxonomies to load reports into database, data warehouse or BI solutions
    - RC-code + Row Column labels coverage
    - Dimensional information over X-Y-Z axis information
  - More and more complex
    - Multi-lingual consideration
    - Requirement to manage extensions of taxonomies

➔ Special focus on pedagogical aspects

➔ Excel presentation

Start point: OIM working group results

- OIM anchor
  - OIM is a crystal clear presentation of an XBRL instance;
  - OIM is defined as alternative to XML for the exchange of reports;
  - Our focus is the diffusion; this means that we will take distance from the OIM target.
- Light improvement (learning)
  - Adding labels to XBRL codes for dimensions, etc.
  - Illustration for table S.05.01.01.01 on Eiopa reports RC-codes + labels.xlsx
  - See fact 297 on facts sheet OIM++ facts description.xlsx

High expectations over RC-Code and column-row label

TOC	Z Axis:							
S.05.01.01.01 Non-Life & Accepted non-proportional reinsurance								
				Line of Business for: accepted non-proportional reinsurance				Total
				Health	Casualty	Marine, aviation, transport	Property	
				C0130	C0140	C0150	C0160	C0200
Premiums written	Gross - Direct Business		R0110					179.492.878,00
	Gross - Proportional reinsurance accepted		R0120					4.700.585,00
	Gross - Non-proportional reinsurance accepted		R0130	0,00	0,00	0,00	24.107.919,00	24.107.919,00
	Reinsurers' share		R0140	0,00	0,00	0,00	0,00	67.952.608,00
	Net		R0200	0,00	0,00	0,00	24.107.919,00	140.348.774,00
Premiums earned	Gross - Direct Business							
	Gross - Proportional reinsurance							
	Gross - Non-proportional reinsu							
	Reinsurers' share							
	Net							

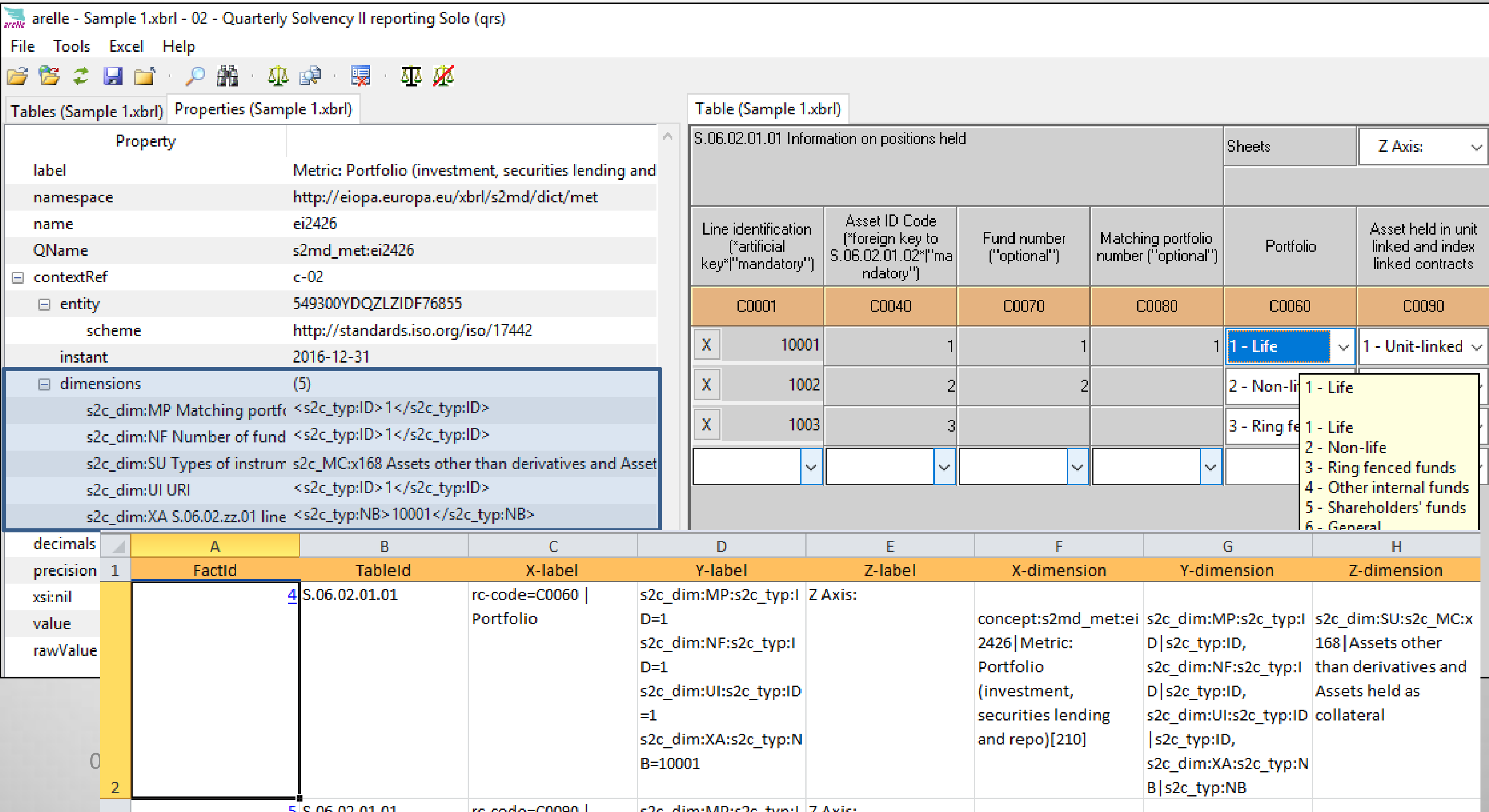
<table>
<tr><th></th><th>FactId</th><th>TableId</th><th>X-axis</th><th>Y-axis</th><th>Z-axis</th></tr>
<tr><td>280</td><td>296</td><td>S.05.01.01.01</td><td>rc-code=C0150 | Marine, aviation, transport</td><td>rc-code=R0130 | Gross - Non-proportional reinsurance accepted</td><td>| Z Axis:</td></tr>
<tr><td>281</td><td>297</td><td>S.05.01.01.01</td><td>rc-code=C0160 | Property</td><td>rc-code=R0130 | Gross - Non-proportional reinsurance accepted</td><td>| Z Axis:</td></tr>
<tr><td></td><td>298</td><td>S.05.01.01.01</td><td>rc-code=C0200 | Total</td><td>rc-code=R0130 | Gross - Non-</td><td>| Z Axis:</td></tr>
</table>

facts prefixes dtsReferences metadata presentation

Ready 100%

Next step: add axial information over the dimension

In case of table linkbase taxonomy, table specifications explain the way dimensions are distributed over the axis



Case of embedded structural nodes

– See Taxo EBA COREP, table C 01.00

Tables (presentationCorep.xbrl) | Properties (presentationCorep.xbrl)

Property	
label	Carrying amount
namespace	http://www.eba.europa.eu/xbrl/crr/dict/met
name	mi53
QName	eba_met:mi53
contextRef	c-11
entity	979870140
scheme	SC
instant	2016-12-31
dimensions	(5)
eba_dim:BAS Base	eba_BA:x11 Own funds
eba_dim:CNO Controlling and non	eba_BT:x4 Owners of the parent
eba_dim:MCU Main category of the	eba_MC:x273 Own equity instruments issued
eba_dim:MCY Main category	eba_MC:x365 Direct holdings
eba_dim:OFS Own funds	eba_OF:x2 CET1 Capital
unitRef	u-02 (€)
measure	iso4217:EUR
decimals	0
precision	
xsi:nil	false
value	100

Table (presentationCorep.xbrl)

C_01.00 C 01.00 (CA 1)

Child structural node overwrites one member of a dimension of the parent structure node

			Amount
			33845
			010
OWN FUNDS	33846	010	
TIER 1 CAPITAL	33847	015	
COMMON EQUITY TIER 1 CAPITAL	33848	020	
Capital instruments eligible as CET1 Capital	33849	030	
Paid up capital instruments	33850	040	
subscribed by public authorities in emergency	33851	045	
Memorandum item: Capital instruments not eligible	33852	050	
Share premium	33853	060	
(-) Own CET1 instruments	33854	070	200
(-) Direct holdings of CET1 instruments	33855	080	100
(-) Indirect holdings of CET1	[illegible]	[illegible]	

Case of 3 closed axis

– See Taxo EBA COREP, table C 07.00.a

Tables (presentationCorep.xbrl) | Properties (presentationCorep.xbrl)

Property	
label	Original exposure pre conversion factors
namespace	http://www.eba.europa.eu/xbrl/crr/dict/met
name	mi180
QName	eba_met:mi180
contextRef	c-05
entity	979870140
scheme	SC
instant	2016-12-31
dimensions	(7)
eba_dim:APR Approach for pruden	eba_AP:x42 Standardised Approach
eba_dim:BAS Base	eba_BA:x9 Exposures
eba_dim:CPS Counterparty sector	eba_CT:x2 Central governments or central banks
eba_dim:EXC Exposure class	eba_EC:x16 Exposures to central governments or c
eba_dim:MCY Main category	eba_MC:x195 Instruments subject to credit risk exc
eba_dim:PRP Prudential portfolio	eba_PL:x10 Banking and trading book
eba_dim:TRI Type of risk	eba_TR:x4 Credit risk, counterparty credit risk and
unitRef	u-02 (€)
measure	iso4217:EUR
decimals	0
precision	
xsi:nil	false
value	2

Table (presentationCorep.xbrl)

C_07.00.a C 07.00.a (CR SA)

Sheets | -> Regional

					Original exposure pre conversion factors	(-) Value adjustments and provision associated with the original exposure
					42371	42372
					010	030
Banking and trading book	TOTAL EXPOSURES		42400	010	100	
		of which: Defaulted exposures	42401	015		
		of which: SME	42402	020		
		of which: exposures subject to SME-supporting factor	42403	030		
		of which: Secured by mortgages on immovable property - Residential property	42404	040		
		of which: Exposures under the permanent partial use of the standardised approach	42405	050		
		of which: Exposures under the standardised approach with prior supervisory permission to carry out a sequential IRB implementation	42406	060		
	BREAKDOWN OF TOTAL EXPOSURES BY	On balance sheet exposures subject to credit risk	42408	070		
		Off balance sheet exposures subject to credit risk	42409	080		

Case of 3 closed axis

- See Taxo EBA COREP, table C 07.00.a
- What is a closed axis?
  - It is when the taxonomy (ie structural nodes within table linkbase) specified the dimension(s) and its dimension members
- Why Z axis is closed?
  - For each item of Z-axis of C 07.00.a, the structural node defines dimension members and dimension members are fixed;
  - See [presentationCorep.xlsx]()
- For axis Z, rc-code=003 | Regional governments or local authorities
  - eba_dim:EXC:eba_EC:x23|Exposures to regional governments or local authorities,
    eba_dim:CPS:eba_CT:x16|Regional governments or local authorities,
    eba_dim:APR:eba_AP:x42|Standardised Approach
- For axis Z, rc-code=001 | Total
  - eba_dim:APR:eba_AP:x42|Standardised Approach

Case of 1 « open » axis (but bordered)

- See Taxo EBA COREP, table C 09.00.a (Geographical breakdown)

Tables (presentationCorep.xbrl) | Properties (presentationCorep.xbrl)

Property	
label	Original exposure pre conversion factors
namespace	http://www.eba.europa.eu/xbrl/crr/dict/met
name	mi180
QName	eba_met:mi180
contextRef	c-17
entity	979870140
scheme	SC
instant	2016-12-31
dimensions	(8)
eba_dim:APR Approach for prudentia	eba_AP:x42 Standardised Approach
eba_dim:BAS Base	eba_BA:x9 Exposures
eba_dim:CEG Country where the expo	eba_GA:AF AFGHANISTAN
eba_dim:CPS Counterparty sector	eba_CT:x2 Central governments or central bank
eba_dim:EXC Exposure class	eba_EC:x16 Exposures to central governments o
eba_dim:MCY Main category	eba_MC:x195 Instruments subject to credit risk
eba_dim:PRP Prudential portfolio	eba_PL:x10 Banking and trading book
eba_dim:TRI Type of risk	eba_TR:x4 Credit risk, counterparty credit risk ar
unitRef	u-02 (€)
measure	iso4217:EUR
decimals	0
precision	
xsi:nil	false
value	3

Table (presentationCorep.xbrl)

C_09.01.a C 09.01.a (CR GB 1)				Country	->AFGHANIST
				ORIGINAL EXPOSURE PRE CONVERSION FACTORS	General credit risk adjustments
				42500	42501
				010	050
Central governments or central banks		42507	010	3	
Regional governments or local authorities		42508	020		
Public sector entities		42509	030		
Multilateral Development Banks		42510	040		
International Organisations		42511	050		
Institutions		42512	060		
Corporates		42513	070		
	Of which: SME	42514	075		
Retail		42515	080		
	Of which: SME	42516	085		
Secured by mortgages on immovable property		42517	090		

Case of 1 « open » axis (but bordered)

- It is open because the taxonomy specifies the list of possible values for a dimension, but not the dimension member it will take.
  - See presentationCorep.xlsx
- For axis Z, no RC-code is available
  - eba_dim:CEG:eba_GA:AF|AFGHANISTAN

Case of 1 fully « open » axis

– See Taxo EBA COREP, table C 10.02 (Obligor grade)

Tables (presentationCorep.xbrl) | Properties (presentationCorep.xbrl)

Property	
label	PD assigned to the obligor grade or pool
namespace	http://www.eba.europa.eu/xbrl/crr/dict/met
name	pi187
QName	eba_met:pi187
⊟ contextRef	c-19
⊟ entity	979870140
scheme	SC
instant	2016-12-31
⊟ dimensions	(7)
eba_dim:APR Approach for prudentia	eba_AP:x27 IRB Approach
eba_dim:BAS Base	eba_BA:x17 Memorandum items
eba_dim:EXC Exposure class	eba_EC:x1 Equity exposures
eba_dim:MCY Main category	eba_MC:x193 Instruments subject to credit risk
eba_dim:MRW Methods to determine	eba_AP:x34 PD/LGD approach
eba_dim:OGR Obligor grade	<eba_typ:ID>1</eba_typ:ID>
eba_dim:TRI Type of risk	eba_TR:x32 Equity risk treated as credit risk
⊟ unitRef	u-06 (pure)
measure	pure
decimals	4
precision	

Table (presentationCorep.xbrl)

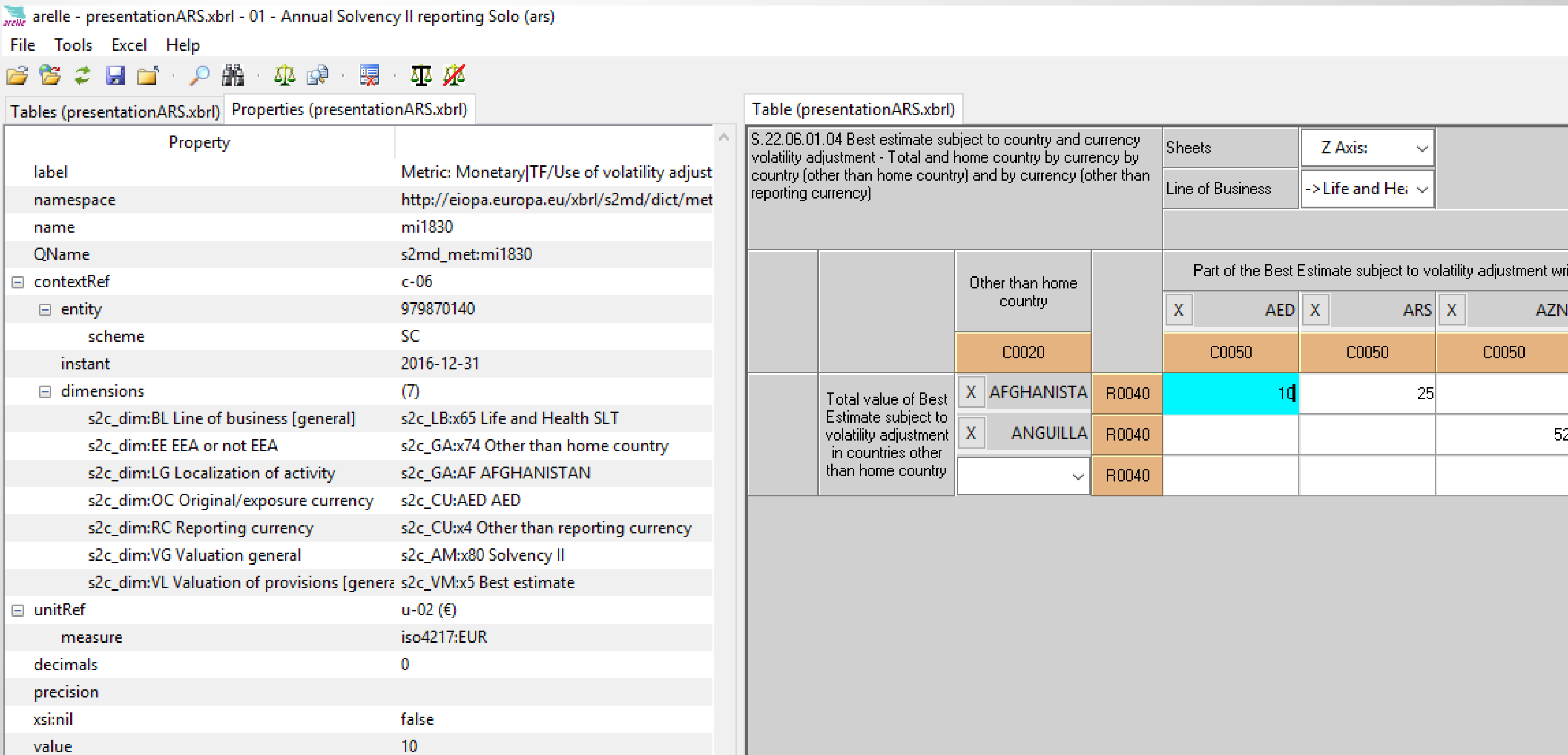
C_10.02 C 10.02 (CR EQU IRB 2)	Internal rating system	
	PD assigned to the obligor grade or pool (%)	Original exposure pre conversion factors
Obligor Grade (20130)	20132	20133
005	010	020
X 1	0,5000	6
X 2		

Case of 1 fully « open » axis

- It is fully open because the taxonomy specifies only the dimension (OGR) and the domain (ID), but the dimension member has to be given by the user.
  - See presentationCorep.xlsx
- For axis Y, no RC-code is available
  - eba_dim:OGR:eba_typ:ID=1

Case of 2 « open » axis (but bordered)

– See Taxo EIOPA Solvency II, table S 22.06.01.04



Case of 2 « open » axis (but bordered)

- In terms of RC-code:
  - *AED* , rc-code=C0050 | Part of the Best Estimate subject to volatility adjustment written in currencies
  - *AFGHANISTAN* , rc-code=R0040 | Total value of Best Estimate subject to volatility adjustment in countries other than home country
  - Life and Health SLT , Z Axis:

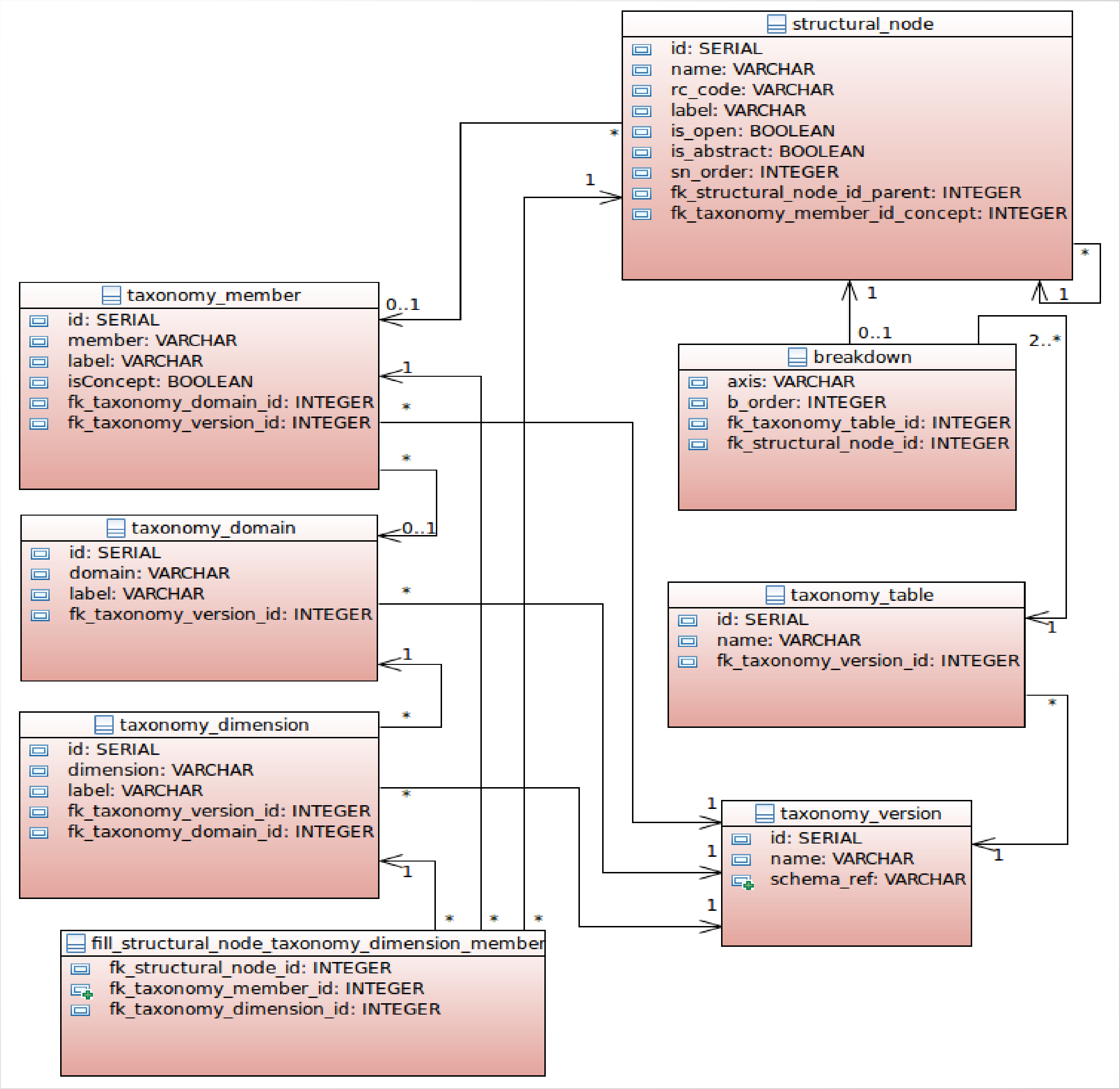
Case of 2 « open » axis (but bordered)

- In terms of dimensions:
  - *s2c_dim:OC:s2c_CU:AED|AED,*
  - *s2c_dim:LG:s2c_GA:AF|AFGHANISTAN, concept:s2md_met:mi1830|Metric: Monetary|TF/Use of volatility adjustment|BC/Liability|LB/Gross technical provisions [other than local GAAP specific]*
  - *s2c_dim:BL:s2c_LB:x65|Life and Health SLT, s2c_dim:RC:s2c_CU:x4|Other than reporting currency, s2c_dim:VG:s2c_AM:x80|Solvency II, s2c_dim:VL:s2c_VM:x5|Best estimate, s2c_dim:EE:s2c_GA:x74|Other than home country*

Practical data model

- Two embedded data models
  - One for taxonomy
  - One for report
- In practice, we build the taxonomy data model when the first report corresponding a new taxonomy (version) arrives.

Database description (taxonomy)



Database description (report)