The Structure of the COREP Template Taxonomies

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Aims of the presentation

- Understand the structure of a template taxonomy
- Get a basic understanding of Dimensions in XBRL
  - get to know terms and principles
  - basis for further studies
- Be able to create own Template Taxonomies
  - exercises and sample solutions contained on the CD
  - this presentation wants to be some kind of a „helping guide“

Roadmap of the presentation

- Purpose and Structure of a Template Taxonomy
- Excursus: Dimensions in XBRL
- Example I: Creation of a taxonomy of a simple template (MKR SA EQU)
- Example II: Creation of a taxonomy of a more complex template (CR EQU IRB)

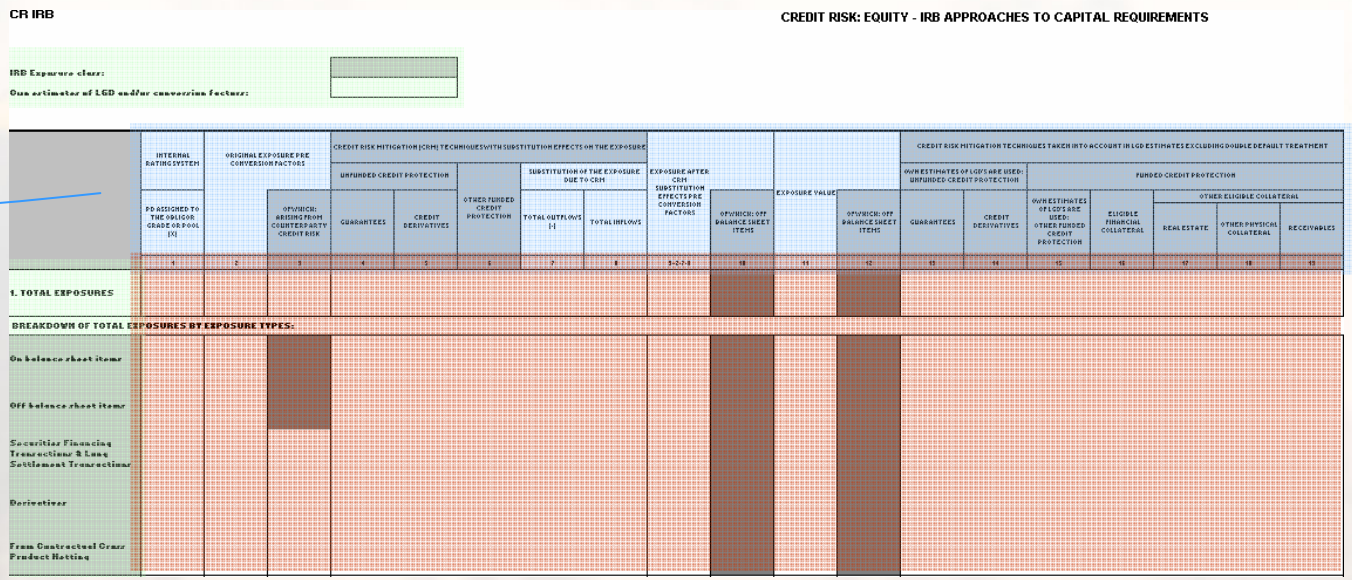
Roadmap of the presentation

- **Purpose and Structure of a Template Taxonomy**
- Excursus: Dimensions in XBRL
- Example I: Creation of a taxonomy of a simple template (MKR SA EQU)
- Example II: Creation of a taxonomy of a more complex template (CR EQU IRB)

Purpose and Structure of a Template Taxonomy

primary elements

– represented in **one** primary taxonomy



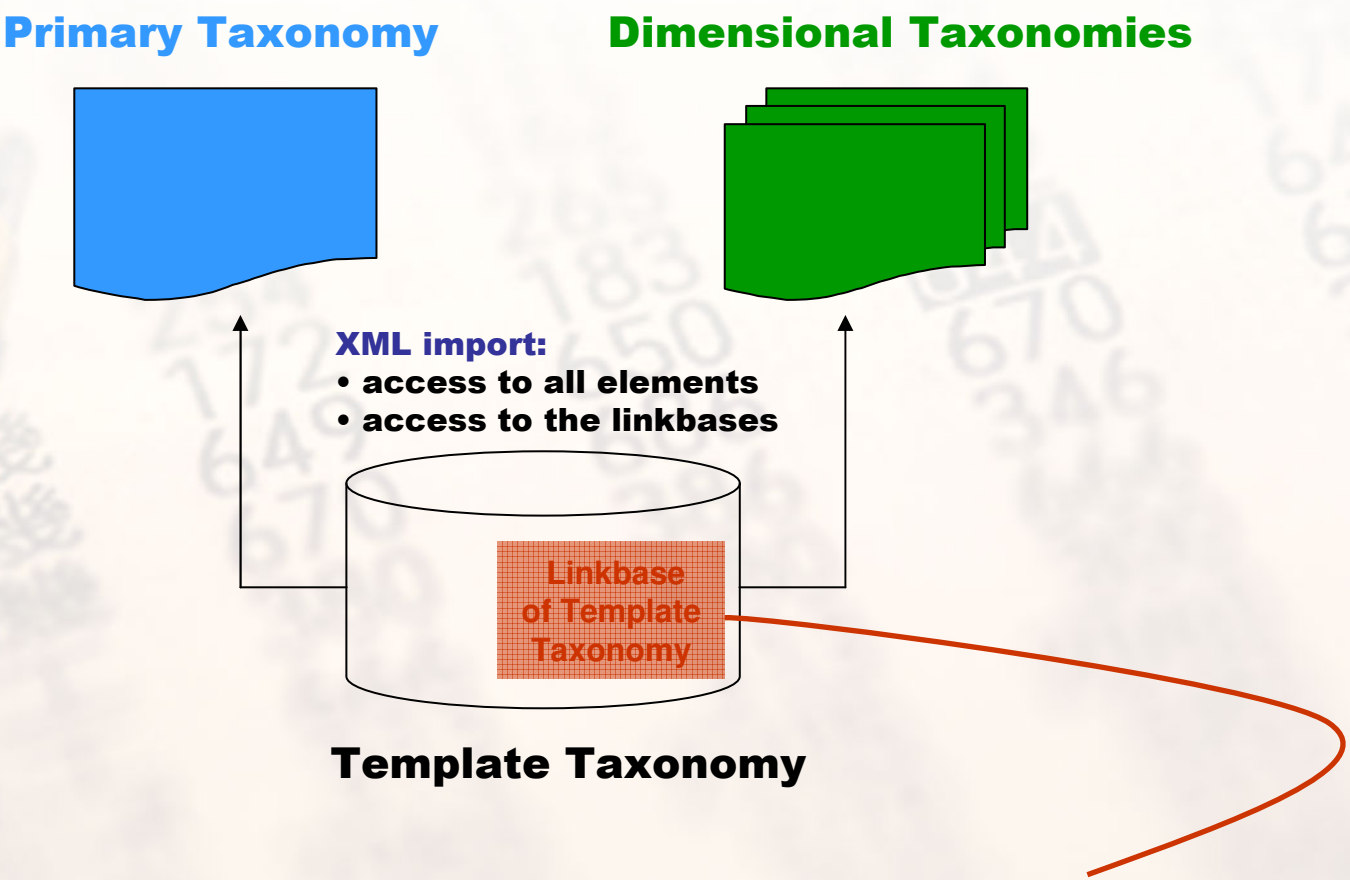
CR IRB Template

dimensional elements

– represented in **four** dimensional taxonomies

Template = Primary Elements + Dimensional Elements + Additional Information

Purpose and Structure of a Template Taxonomy



Template Taxonomy = Primary Taxonomy + Dimensional Taxonomy + Additional Information

Purpose and Structure of a Template Taxonomy

- A template taxonomy imports all necessary primary and dimensional taxonomies, depending on the according template
- Therefore it can „access“ all the information contained in the imported taxonomies
- It adds additional information related to the template, namely the information which cells are white (allowed) and which are grey (not allowed)

Naming Conventions of the COREP Template Taxonomies

- **Name of the taxonomy:**

  t-xx-2005-12-31.xsd (xx abbreviation of the template)
- **Target namespace:**

  http://www.c-ebs.org/eu/fr/esrs/corep/2005-12-31/t-xx-2005-12-31
- **IDs of the elements:**

  t-xx_<elementName>
- **All elements in the template taxonomy are abstract (explanation later)**

Purpose and Structure of a Template Taxonomy

„Additional information“

- what excactly does that mean?

Combination of

primary item:
„Of Which: Arising from counterparty credit risk“
and
dimensional item from Exposures dimension:
„Total Exposures“

VALID

Combination of

primary item:
„Of Which: Arising from counterparty credit risk“
and
dimensional item from Exposures dimension:
„Total Exposures“
and
dimensional item from Exposure Type dimension:
„On Balance Sheet Items“

INVALID

A Exposure class / IRB Exposure class:

	ORIGINAL EXPOSURE PRE CONVERSION FACTORS	OF WHICH: ARISING FROM COUNTERPARTY CREDIT RISK	VALUE ADJUSTMENTS AND PROVISIONS ASSOCIATED WITH THE ORIGINAL EXPOSURE	EXPOSURE NET OF VALUE ADJUSTMENTS AND PROVISIONS	CR / UNFU A / GUAR
	1	2	3	4-1+3	
TOTAL EXPOSURES		✓			
BREAKDOWN OF TOTAL EXPOSURES BY EXPOSURE TYPES:					
On balance sheet items		✗			
Off balance sheet items					
Securities Financing Transactions & Long Settlement Transactions					

COREP Project

Roadmap of the presentation

- Purpose and Structure of a Template Taxonomy
- **Excursus: Dimensions in XBRL**
- Example I: Creation of a taxonomy of a simple template (MKR SA EQU)
- Example II: Creation of a taxonomy of a more complex template (CR EQU IRB)

XBRL eXtensible Business Reporting Language

CEBS

Dimensions in XBRL

History and Progression

- Until July 2005, no formal support of Dimensions in XBRL
- July 2005: XBRL Int. released first Public Working Draft (PWD) about Dimensions, implemented by COREP taxonomies 0.6.1
- November 2005: XBRL Int. released second PWD titled „Dimensions 1.0“, implemented by COREP taxonomies 1.0
- January 2006: „Dimensions 1.0“ became a Candidate Recommendation (CR), implemented by COREP taxonomies 1.0
- See http://www.xbrl.org/SpecRecommendations/ and http://www.xbrl.org/Specification/dimensionaltaxospecsFAQ.pdf for more information

Dimensions in XBRL

Basic terms (1)

- Each dimension consists of domain member. In the definition linkbase, these form a domain member network.
- Examples:

Dimension

Exposures
d-ex-2005-12-31.xsd

- Total Exposures
- Originator: Total Exposures
- Investor: Total Exposures
- Sponsor: Total Exposures
- ...

Several domain member.
The domain member network is expressed in the definition linkbase of the dimensional taxonomies (arcrole http://xbrl.org/int/dim/arcrole/domain-member)

Dimension

Exposure Type
d-et-2005-12-31.xsd

- On Balance Sheet Items
- Off Balance Sheet Items
- Derivatives
- From Contracutal Cross Product Netting
- ...

Dimensions in XBRL

Basic terms (2)

- Each domain member is a special characteristic of a dimension.
- As a whole, the domain member are called the domain of a dimension.

Dimension

Exposures
d-ex-2005-12-31.xsd

- Total Exposures
- Originator: Total Exposures
- Investor: Total Exposures
- Sponsor: Total Exposures
- ...

domain of Exposures Dimension

domain of Exposure Type Dimension

Dimension

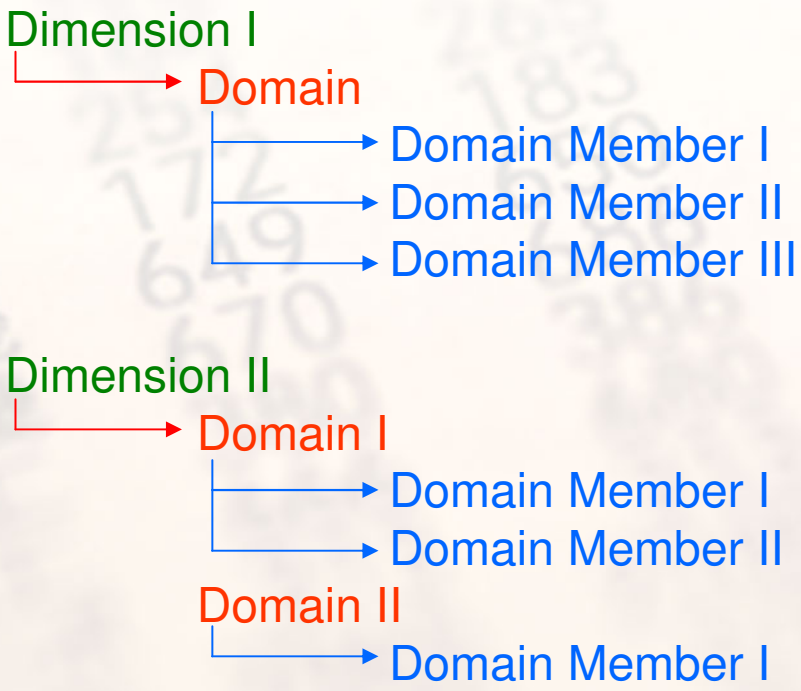
Exposure Type
d-et-2005-12-31.xsd

- On Balance Sheet Items
- Off Balance Sheet Items
- Derivatives
- From Contracutal Cross Product Netting
- ...

Dimensions in XBRL – what do we know by now?

- Each dimension always has one domain.
- The domain consists of all the elements („characteristics“) of this dimension. The elements themselves are called domain member.

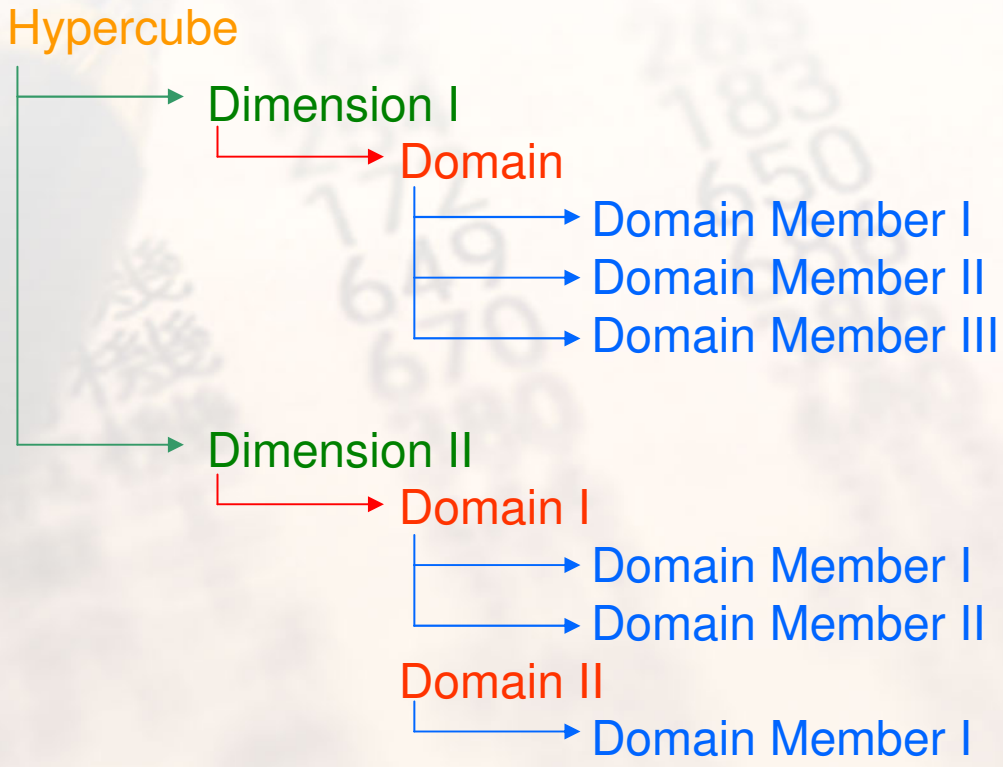
Model of Dimensions in XBRL (1)



Basic terms (3)

- Necessity of a term to combine multiple dimensions.
- This is called a hypercube. A hypercube always consists of one or multiple dimensions.
- A hypercube is a possibility to express combinations of arbitrary dimensions.

Model of Dimensions in XBRL (2)



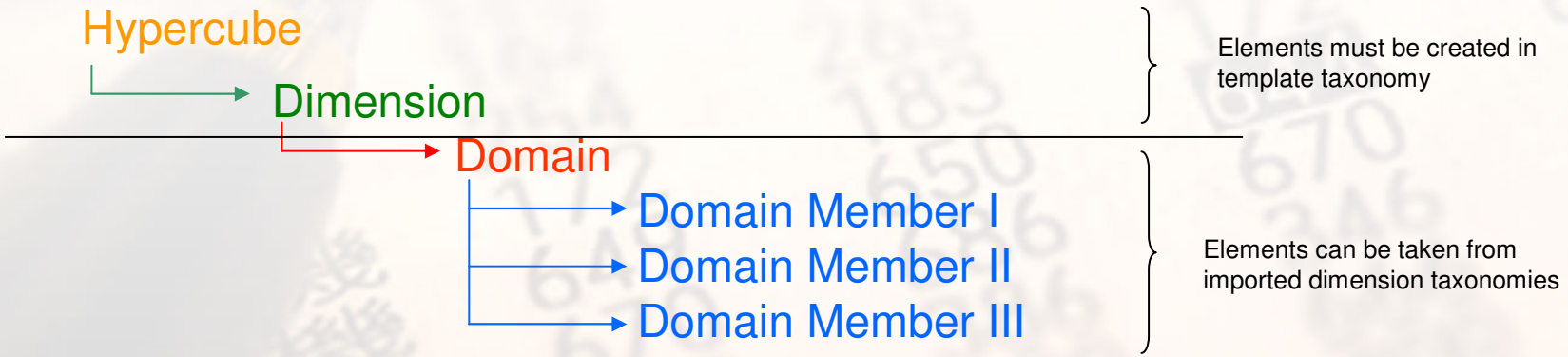
Dimensions in XBRL

How is this model implemented in XBRL?

- The model lets us think:
  - „A hypercube is linked to one or more dimensions.“
  - „A dimension is linked to one or more domains.“
  - „A domain is linked to one or more domain member.“
- → Dimensional relationships are expressed in a linkbase, namely in the definition linkbase of the template taxonomy.
- To link everything together, we need elements representing a hypercube, a dimension, a domain and domain member.

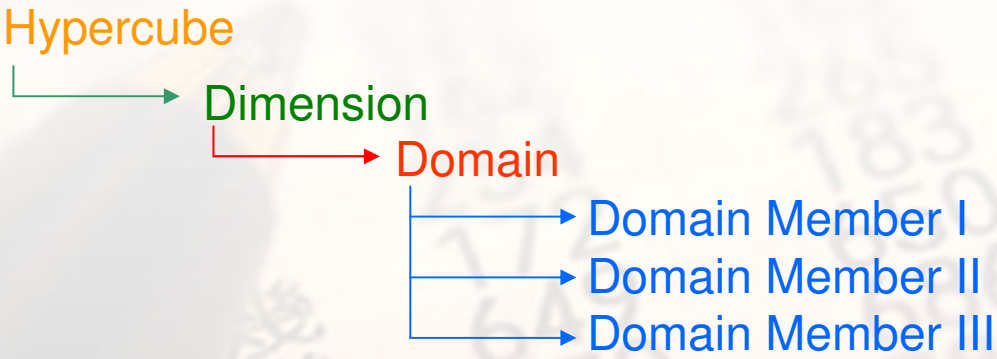
Dimensions in XBRL

Necessary elements



- **The element representing the hypercube must be created (abstract element of the template taxonomy)**
- **The element representing the dimension must be created (abstract element of the template taxonomy)**
- **The element representing the domain can be taken from the imported dimensional taxonomy**
- **The element representing the domain member can be taken from the imported dimensional taxonomy**

Necessary arcroles in the definition linkbase



- Link from hypercube element to dimension element:
  http://xbrl.org/int/dim/arcrole/hypercube-dimension
- Link from dimension element to domain element:
  http://xbrl.org/int/dim/arcrole/dimension-domain
- Link from domain element to domain member element and between domain member elements:
  http://xbrl.org/int/dim/arcrole/domain-member

Summary

- In the template taxonomy, abstract elements for hypercubes and dimensions must be created.
- Elements representing the domain and the domain member are taken from the imported dimensional taxonomies.
- The necessary links are then created in the definition linkbase.
- Is this everything?

Hypercubes and primary items (1)

- Remember: A template defines which combination of dimensions is allowed and which is not allowed for a primary item.
- To express this in XBRL, the created hypercubes must be linked to the according primary items. This is also done in the definition linkbase of a template taxonomy.
- The primary items are taken from the imported primary taxonomy.

Hypercubes and primary items (2)

Specific primary item (element from imported primary taxonomy)

→ Hypercube (abstract element in template taxonomy)

→ Dimension (abstract element in template taxonomy)

→ Domain (element from imported dimension taxonomy)

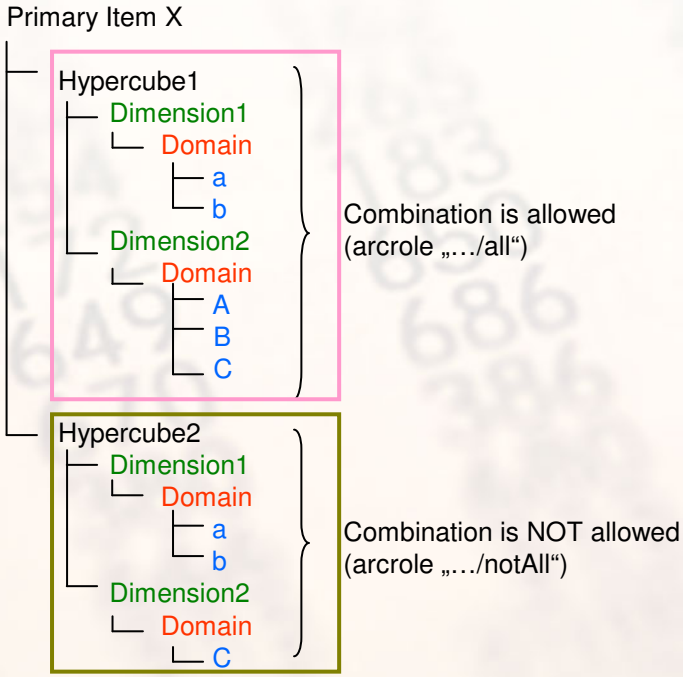
→ Domain Member I (element from imported dimension taxonomy)

→ Domain Member II

→ Domain Member III

- Now there is a relationship between a primary item and a hypercube (= combination of dimensions)
- The arcrole of this link defines the nature of the relationship:
  - http://xbrl.org/int/dim/arcrole/all means the combination of dimensions is allowed for this primary item
  - http://xbrl.org/int/dim/arcrole/notAll means the combination of dimensions is not allowed for this primary item
- Multiple hypercubes assigned to the same primary item are always combined using a logical AND

Hypercubes and primary items (3)



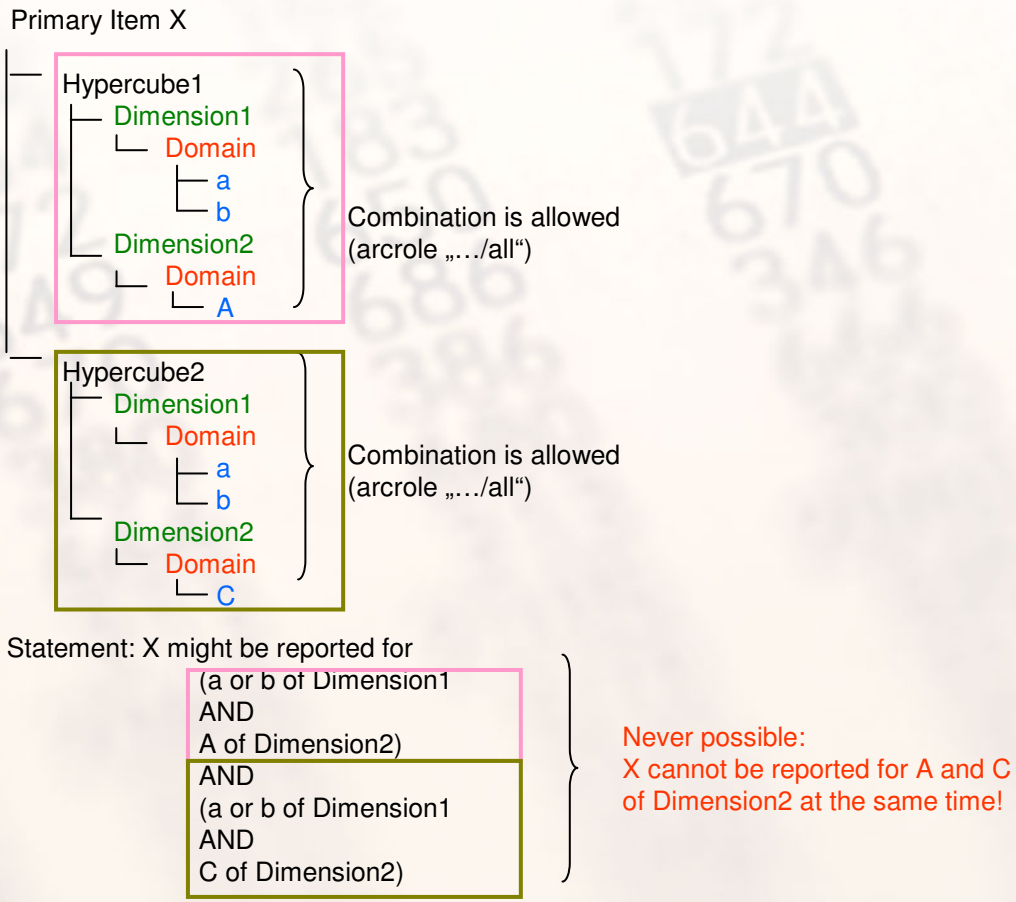
Statement: X might be reported for

(a or b of Dimension1
AND
A or B or C of Dimension2)
AND NOT
(a or b of Dimension1
AND
C of Dimension2)

possible is:
- a of Dimension1 and B of Dimension2
- b of Dimension1 and A of Dimension2
- …

NOT possible is:
- a of Dimension1 and C of Dimension2
- b of Dimension1 and C of Dimension2

Hypercubes and primary items (4)

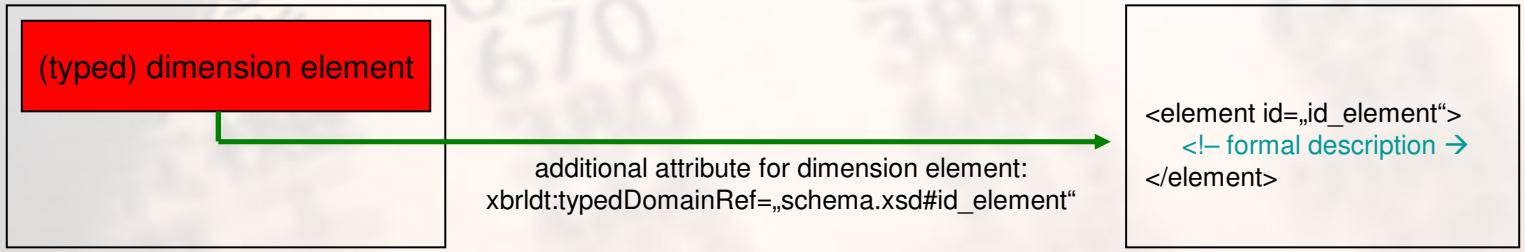


Typed dimensions (1)

- Until now, all dimensions had a discrete, countable number of elements (the domain, consisting of domain member).
- These dimensions are called **explicit dimensions**.
- Dimensions with an unknown or infinite domain are called **typed dimensions**.
- How can they be modelled in XBRL?

Typed dimensions (2)

- Like with explicit dimensions, there must be an abstract element in the template taxonomy representing the typed dimension
- Describe the form of the possible characteristics of the dimension in a formal way: in an XML Schema



- Hypercube is formed in exactly the same way: Link from hypercube element to (typed) dimension element, but now there is no link from the dimension element to a domain element

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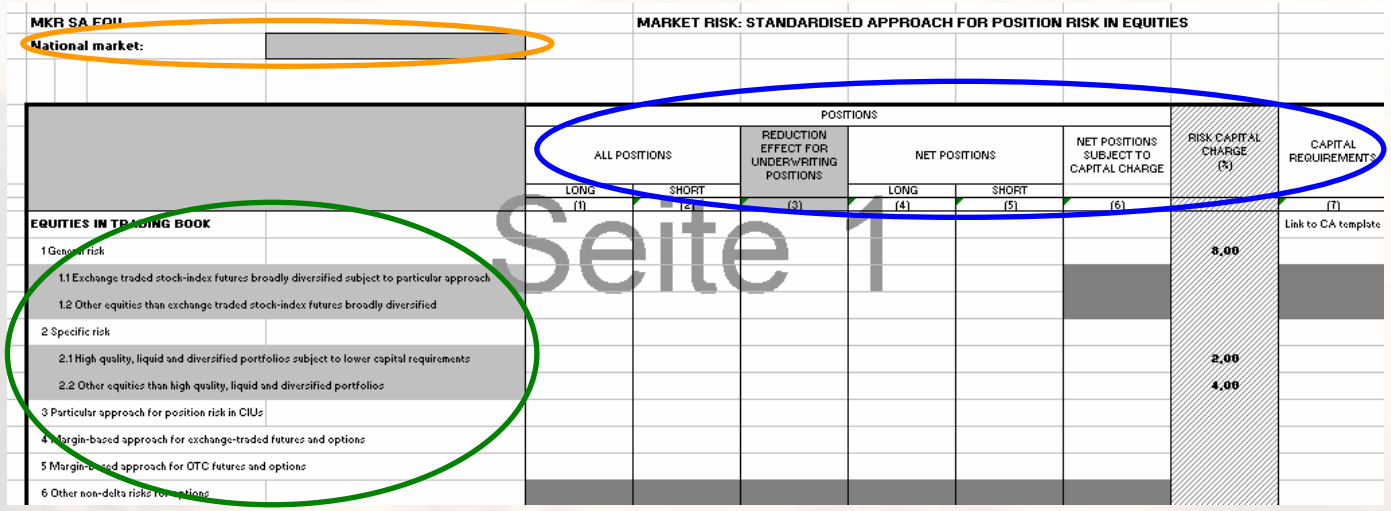
Example I

MKR SA EQU Template



MKR SA EQU

National market:

MARKET RISK: STANDARDISED APPROACH FOR POSITION RISK IN EQUITIES

	POSITIONS						RISK CAPITAL CHARGE (%)	CAPITAL REQUIREMENTS
	ALL POSITIONS		REDUCTION EFFECT FOR UNDERWRITING POSITIONS	NET POSITIONS		NET POSITIONS SUBJECT TO CAPITAL CHARGE		
	LONG	SHORT		LONG	SHORT			
	(1)	(2)	(3)	(4)	(5)	(6)		(7)
EQUITIES IN TRADING BOOK								Link to CA template
1 General risk							8,00	
1.1 Exchange traded stock-index futures broadly diversified subject to particular approach								
1.2 Other equities than exchange traded stock-index futures broadly diversified								
2 Specific risk								
2.1 High quality, liquid and diversified portfolios subject to lower capital requirements							2,00	
2.2 Other equities than high quality, liquid and diversified portfolios							4,00	
3 Particular approach for position risk in CIUs								
4 Margin-based approach for exchange-traded futures and options								
5 Margin-based approach for OTC futures and options								
6 Other non-delta risks for options								

- primary taxonomy: p-me-2005-12-31.xsd
- explicit dimension taxonomy: d-ri-2005-12-31.xsd
- typed dimension: National Market (has no dimensional taxonomy)

Example I

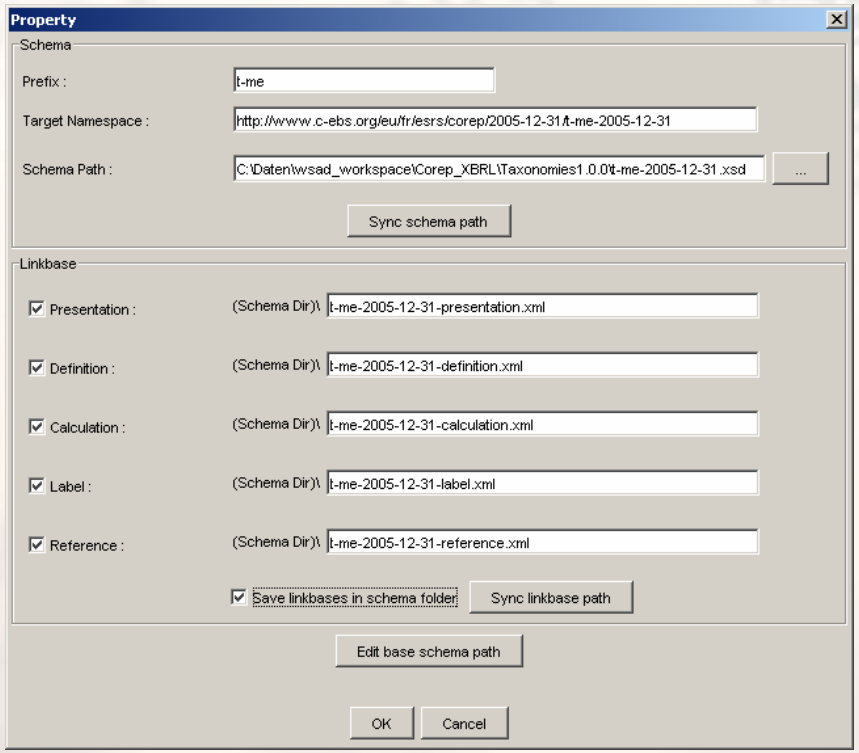
How to create a Template Taxonomy Step By Step

- Create a new taxonomy
  - Exercise in directory 01
- Import all necessary primary and dimensional taxonomies.
  - Exercise in directory 02
- Create the abstract elements for the dimensions.
  - Exercise in directory 03 and 04
- Identify the necessary hypercubes and create the abstract elements for them.
  - Exercise in directory 05
- Build the links between the hypercubes and the according dimensions in the definition linkbase.
  - Exercise in directory 06
- Link the hypercubes to the according primary items.
  - Exercise in directory 07

Example I

Step I: Create a new taxonomy

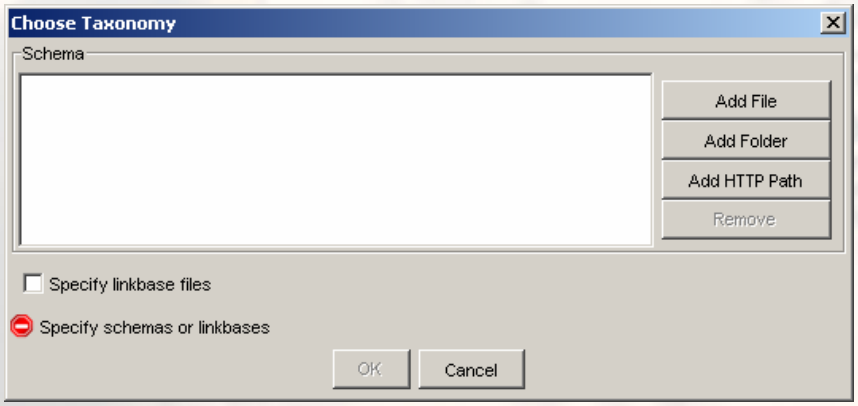
- **File → New Taxonomy; File → Save As**



Example I

Step II: Import all necessary primary and dimensional taxonomies

- **File → Import Taxonomy**



- **Choose the taxonomies you wish to import**

Exercise I

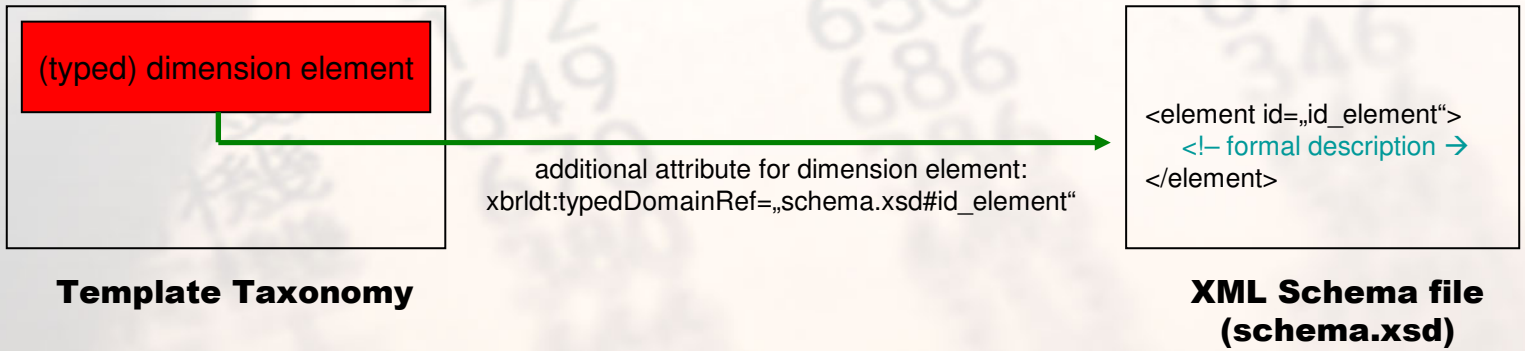
Step III: Create the abstract elements for the dimensions (1)

- **There are two dimensions:**
  - **Explicit dimension Equities in Trading Book**
  - **Typed dimension National Markets**
- **So two different abstract elements are needed:**
  - t-me_EquitiesTradingBookDimension
  - t-me_NationalMarketDimension
  - prefix of the template, name of the dimension
  - type: xbrli:stringItemType
  - substitutionGroup: xbrldt:dimensionItem
  - periodType: instant
  - abstract and nillable: true
  - English label always ends with „(dimension)“

Exercise I

Step III: Create the abstract elements for the dimensions (2)

- **Remember: Typed dimension needs a formal description of its characteristics**

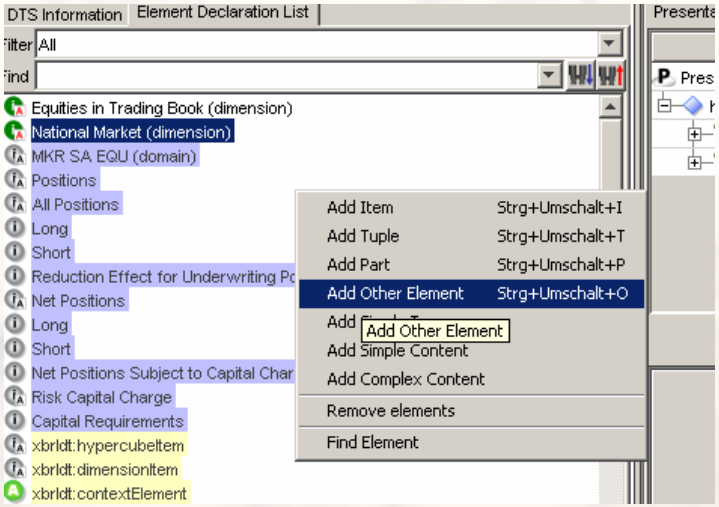


- **Since a taxonomy IS an XML schema file, the formal description is done in the taxonomy itself**

Exercise I

Step III: Create the abstract elements for the dimensions (3)

- **Create a schema element which describes characteristics of National Market dimension**

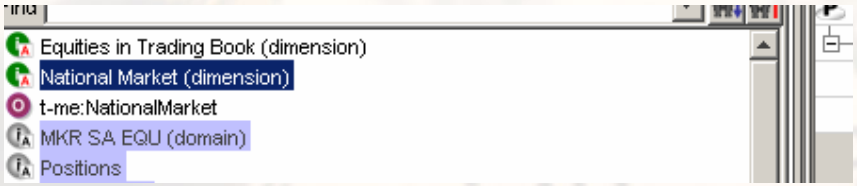


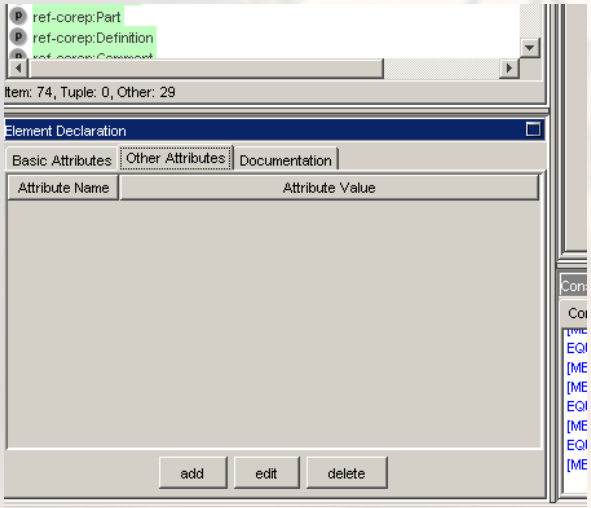
- id: t-me_NationalMarket
- type: xsd:string

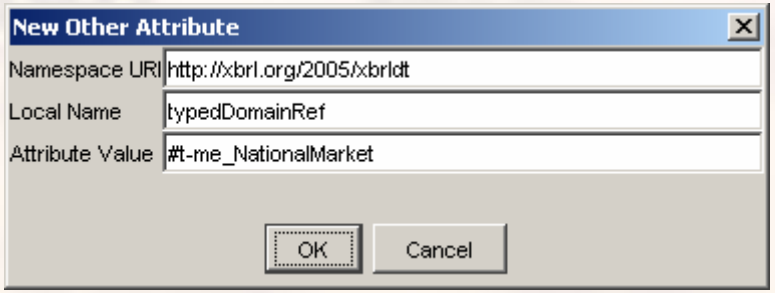
Exercise I

Step III: Create the abstract elements for the dimensions (4)

Select National Market (dimension) and choose tab „Other Attributes“ …







… then add a new attribute!

Exercise I

Step IV: Identify the necessary hypercubes and create the abstract elements for them (1)

Three Steps How To Identify Hypercubes:

- **Identify all cells within a template which refer to the same dimensions (NOT depending on the specific domain member)**
- **Within this choice, identify blocks which refer to the same domain of each dimension (depends on position of white and grey cells)**
- **Every block found is a hypercube!**

Exercise I

Step IV: Identify the necessary hypercubes and create the abstract elements for them (2)

- Identify all cells within a template which refer to the same dimensions (NOT depending on the specific domain member)

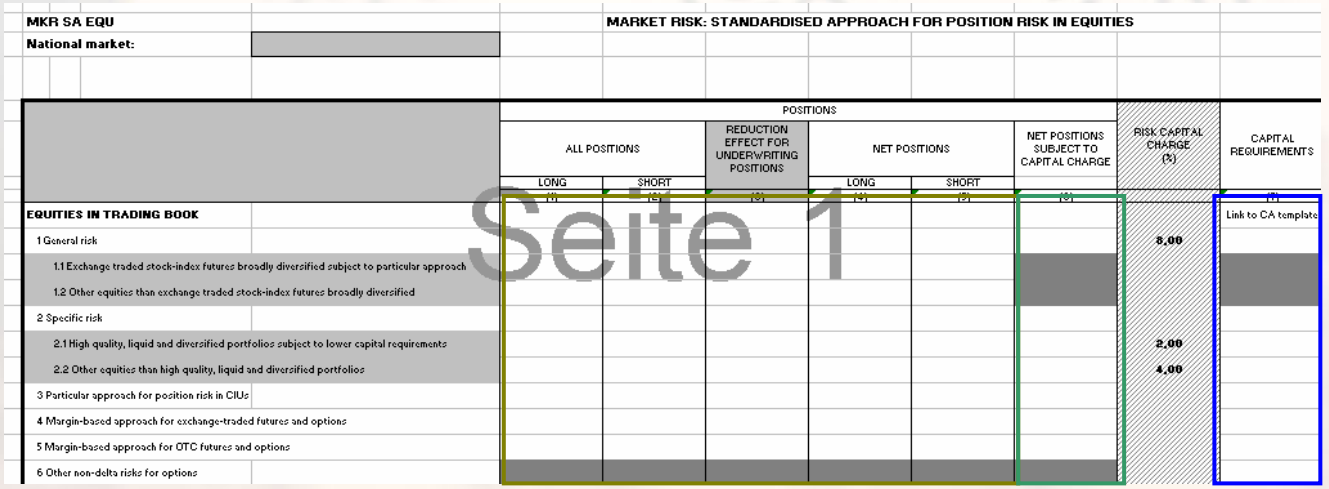
MKR SA EQU	MARKET RISK: STANDARDISED APPROACH FOR POSITION RISK IN EQUITIES							
National market:								
	POSITIONS						RISK CAPITAL CHARGE (%)	CAPITAL REQUIREMENTS
	ALL POSITIONS		REDUCTION EFFECT FOR UNDERWRITING POSITIONS	NET POSITIONS		NET POSITIONS SUBJECT TO CAPITAL CHARGE		
	LONG	SHORT		LONG	SHORT			
	(1)	(2)	(3)	(4)	(5)	(6)		(7)
EQUITIES IN TRADING BOOK								Link to CA template
1 General risk							8,00	
1.1 Exchange traded stock-index futures broadly diversified subject to particular approach								
1.2 Other equities than exchange traded stock-index futures broadly diversified								
2 Specific risk								
2.1 High quality, liquid and diversified portfolios subject to lower capital requirements							2,00	
2.2 Other equities than high quality, liquid and diversified portfolios							4,00	
3 Particular approach for position risk in CIUs								
4 Margin-based approach for exchange-traded futures and options								
5 Margin-based approach for OTC futures and options								
6 Other non-delta risks for options								

- EVERY cell in this template refers to the same dimensions. EVERY cell ALWAYS refers both to the Equities in Trading Book dimension AND to the National Market dimension!

Exercise I

Step IV: Identify the necessary hypercubes and create the abstract elements for them (3)

- Within this choice, identify blocks which refer to the same domain of each dimension (depends on position of white and grey cells)



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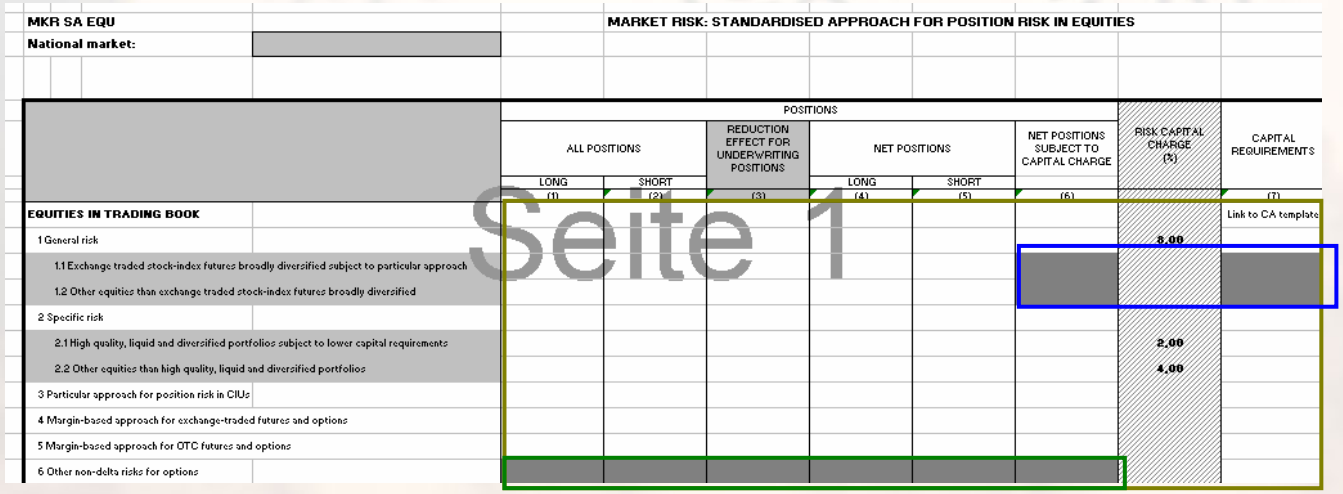
6 Other non-delta risks for options								

- Possibility 1 (three hypercubes)
- All the cells within one hypercube belong to the same domain!

Exercise I

Step IV: Identify the necessary hypercubes and create the abstract elements for them (4)

•Within this choice, identify blocks which refer to the same domain of each dimension (depends on position of white and grey cells)



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National market:								
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	ALL POSITIONS		REDUCTION EFFECT FOR UNDERWRITING POSITIONS	NET POSITIONS		NET POSITIONS SUBJECT TO CAPITAL CHARGE		
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•Possibility 2 (three hypercubes)
•One cube spans over the whole template, and only the grey cells are excluded. This is possible since multiple hypercubes can be assigned to one primary item!
• ➔ This is the COREP solution within the t-me taxonomy!

Exercise I

Step IV: Identify the necessary hypercubes and create the abstract elements for them (5)

- **Create three abstract elements for the hypercubes:**
  - t-me_hcSectionAll
  - t-me_hcExcludedStockIndexFutures
  - t-me_hcExcludedOtherNonDeltaRisksOptions
  - the name of a hypercube in COREP taxonomies always starts with „hc“
  - type: xbrli:stringItemType
  - substitutionGroup: xbrldt:hypercubeItem
  - periodType: instant
  - Abstract and nillable: true
  - English label always ends with „(hypercube)“

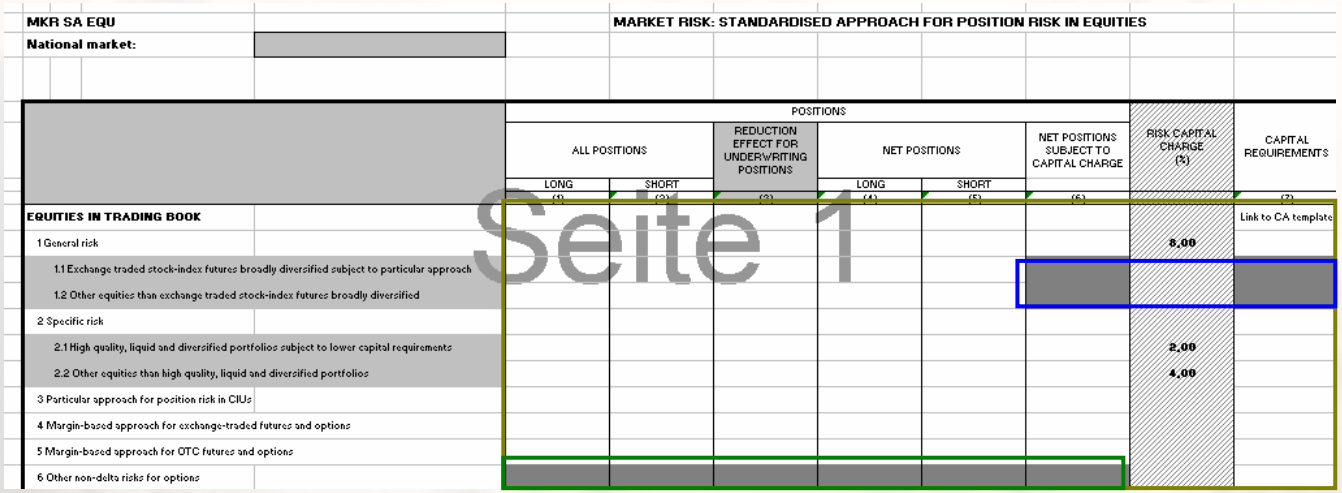
Exercise I

Step V: Build the links between the hypercubes and the according dimensions in the definition linkbase (2)

- Each hypercube is modelled within its own extended link role.
- Naming convention of the extended link roles:
  - http://www.c-ebs.org/2006/corep/eu/t-xx/<hypercube>
  - xx is the abbreviation of the template
  - <hypercube> is the name of the hypercube defined in this extended link role
- Any element of the dimensional taxonomy can represent the domain.

Exercise I

Step V: Build the links between the hypercubes and the according dimensions in the definition linkbase (1)



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National market:								
	POSITIONS							
	ALL POSITIONS		REDUCTION EFFECT FOR UNDERWRITING POSITIONS	NET POSITIONS		NET POSITIONS SUBJECT TO CAPITAL CHARGE	RISK CAPITAL CHARGE (%)	CAPITAL REQUIREMENTS
	LONG	SHORT		LONG	SHORT			
	(1)	(2)	(3)	(4)	(5)	(6)		(7)
EQUITIES IN TRADING BOOK								Link to CA template
1 General risk							8,00	
1.1 Exchange traded stock-index futures broadly diversified subject to particular approach								
1.2 Other equities than exchange traded stock-index futures broadly diversified								
2 Specific risk								
2.1 High quality, liquid and diversified portfolios subject to lower capital requirements							2,00	
2.2 Other equities than high quality, liquid and diversified portfolios							4,00	
3 Particular approach for position risk in CIUs								
4 Margin-based approach for exchange-traded futures and options								
5 Margin-based approach for OTC futures and options								
6 Other non-delta risks for options								

Hypercube t-me_hcSectionAll:

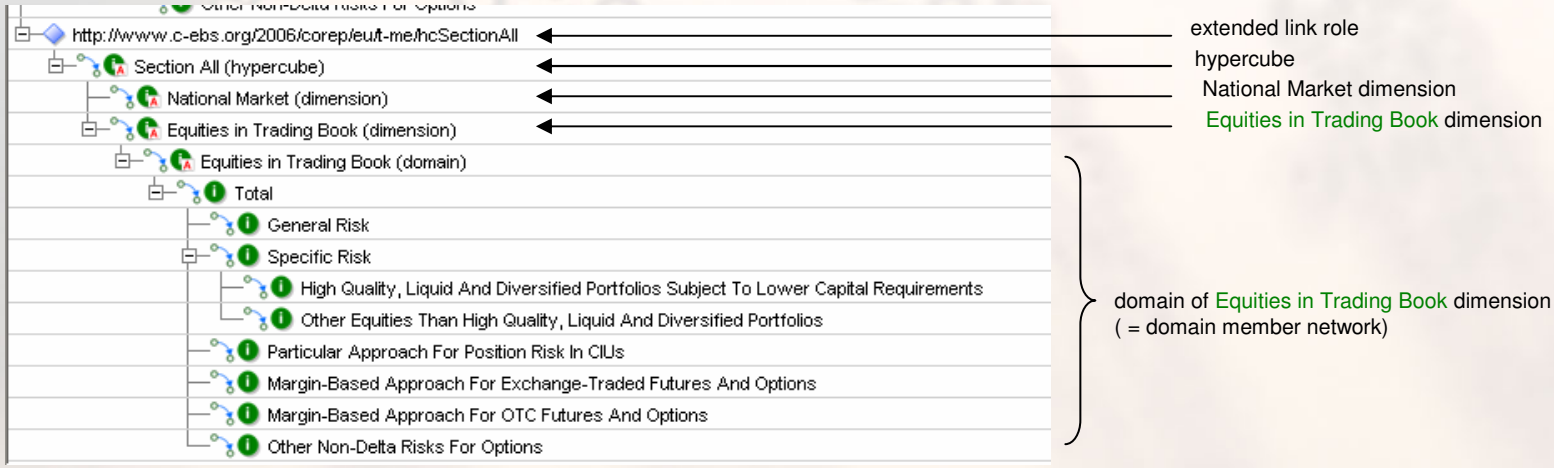
- refers to two dimensions:
  - Equities in Trading Book
    - Domain are all the elements in the first column of the template
  - National Market Dimension
    - Has no domain since this is a typed dimension

Exercise I

Step V: Build the links between the hypercubes and the according dimensions in the definition linkbase (3)

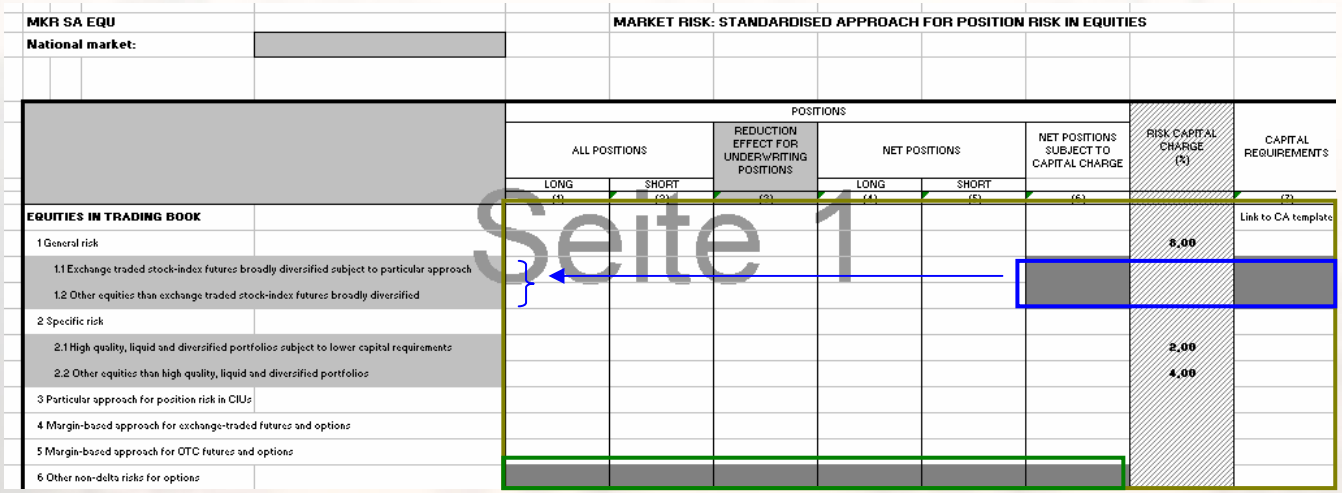
Hypercube t-me_hcSectionAll:

- refers to two dimensions:
  - Equities in Trading Book
    - Domain are all the elements in the first column of the template
  - National Market Dimension
    - Has no domain since this is a typed dimension



Exercise I

Step V: Build the links between the hypercubes and the according dimensions in the definition linkbase (4)



MKR SA EQU

MARKET RISK: STANDARDISED APPROACH FOR POSITION RISK IN EQUITIES

National market:

	POSITIONS							
	ALL POSITIONS		REDUCTION EFFECT FOR UNDERWRITING POSITIONS	NET POSITIONS		NET POSITIONS SUBJECT TO CAPITAL CHARGE	RISK CAPITAL CHARGE (%)	CAPITAL REQUIREMENTS
	LONG	SHORT		LONG	SHORT			
	(1)	(2)	(3)	(4)	(5)	(6)		(7)
EQUITIES IN TRADING BOOK								Link to CA template
1 General risk							8,00	
1.1 Exchange traded stock-index futures broadly diversified subject to particular approach								
1.2 Other equities than exchange traded stock-index futures broadly diversified								
2 Specific risk								
2.1 High quality, liquid and diversified portfolios subject to lower capital requirements							2,00	
2.2 Other equities than high quality, liquid and diversified portfolios							4,00	
3 Particular approach for position risk in CIUs								
4 Margin-based approach for exchange-traded futures and options								
5 Margin-based approach for OTC futures and options								
6 Other non-delta risks for options								

Hypercube t-me_hcExcludedStockIndexFutures:

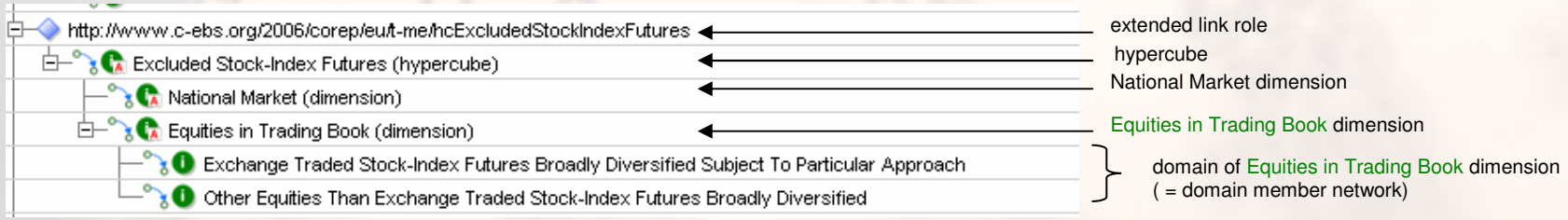
- refers to two dimensions:
  - Equities in Trading Book
    - Domain are two elements in the first column of the template
  - National Market Dimension
    - Has no domain since this is a typed dimension

Exercise I

Step V: Build the links between the hypercubes and the according dimensions in the definition linkbase (5)

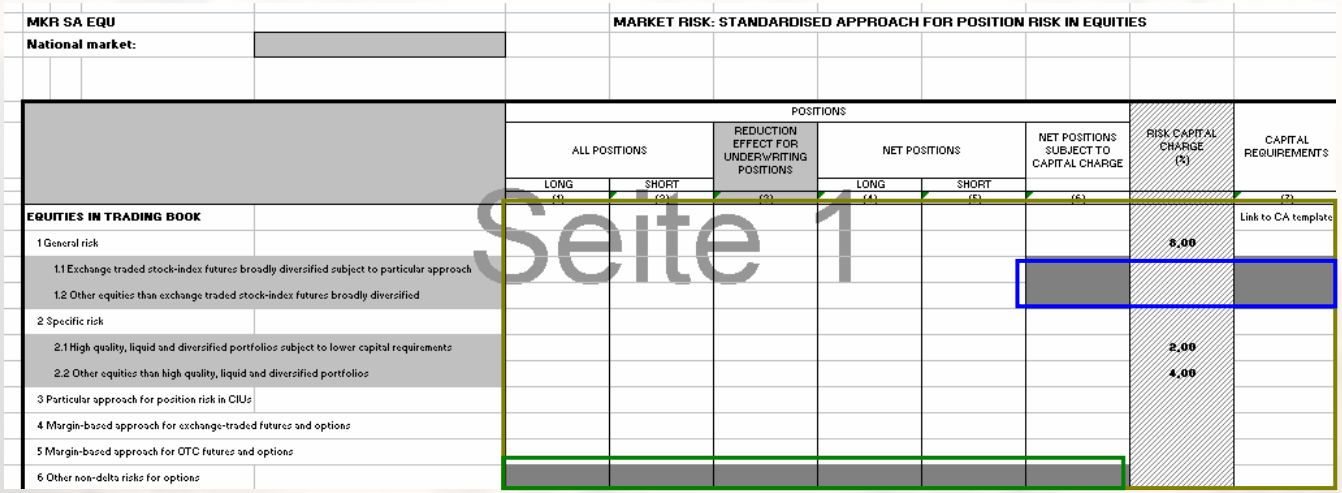
Hypercube hcExcludedStockIndexFutures:

- refers to two dimensions:
  - Equities in Trading Book
    - Domain are two elements in the first column of the template
  - National Market Dimension
    - Has no domain since this is a typed dimension



Exercise I

Step V: Build the links between the hypercubes and the according dimensions in the definition linkbase (6)



MKR SA EQU	MARKET RISK: STANDARDISED APPROACH FOR POSITION RISK IN EQUITIES							
National market:								
	POSITIONS							
	ALL POSITIONS		REDUCTION EFFECT FOR UNDERWRITING POSITIONS	NET POSITIONS		NET POSITIONS SUBJECT TO CAPITAL CHARGE	RISK CAPITAL CHARGE (%)	CAPITAL REQUIREMENTS
	LONG	SHORT		LONG	SHORT			
	(1)	(2)	(3)	(4)	(5)	(6)		(7)
EQUITIES IN TRADING BOOK								Link to CA template
1 General risk							8,00	
1.1 Exchange traded stock-index futures broadly diversified subject to particular approach								
1.2 Other equities than exchange traded stock-index futures broadly diversified								
2 Specific risk								
2.1 High quality, liquid and diversified portfolios subject to lower capital requirements							2,00	
2.2 Other equities than high quality, liquid and diversified portfolios							4,00	
3 Particular approach for position risk in CIUs								
4 Margin-based approach for exchange-traded futures and options								
5 Margin-based approach for OTC futures and options								
6 Other non-delta risks for options								

Hypercube t-me_hcExcludedOtherNonDeltaRisksOptions:

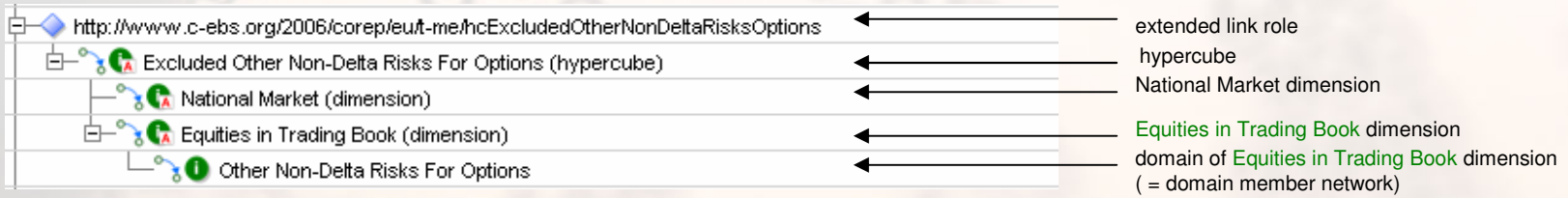
- refers to two dimensions:
  - Equities in Trading Book
    - Domain is one element in the first column of the template
  - National Market Dimension
    - Has no domain since this is a typed dimension

Exercise I

Step V: Build the links between the hypercubes and the according dimensions in the definition linkbase (7)

Hypercube hcExcludedOtherNonDeltaRisksOptions:

- refers to two dimensions:
  - Equities in Trading Book
    - Domain is one element in the first column of the template
  - National Market Dimension
    - Has no domain since this is a typed dimension



Exercise I

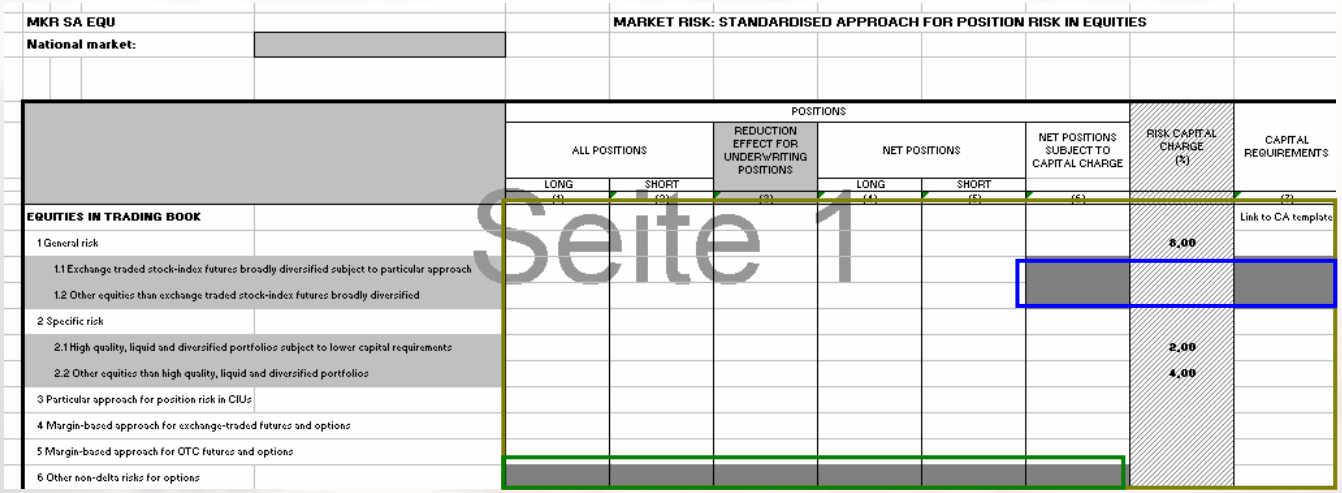
Step VI: Link the hypercubes to the according primary items (1)

Important things to consider when linking hypercubes to primary items:

- As in dimension taxonomies, there is also a domain member network of primary items in primary taxonomies (built in the definition linkbase).
- This domain member network is available in the default link role of the template taxonomy (since the template taxonomy imports the primary taxonomy).
- A hypercube assigned to one primary item is inherited to all child elements in the domain member network of the primary items.
- An individual extended link role with a separate primary domain member network and the according hypercubes is called a section in the template.

Exercise I

Step VI: Link the hypercubes to the according primary items (2)



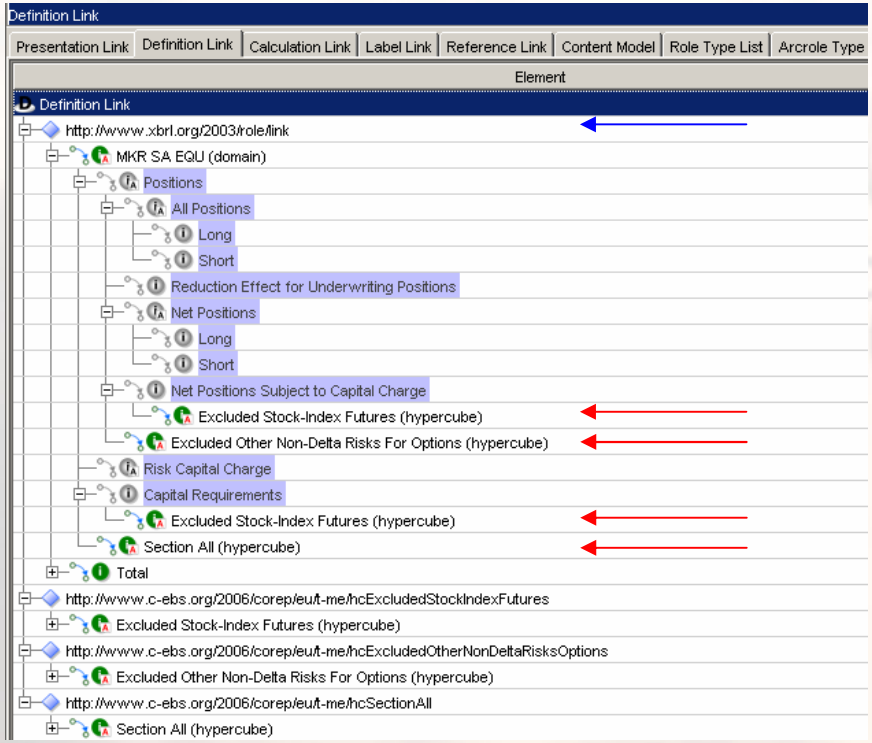
MKR SA EQU	MARKET RISK: STANDARDISED APPROACH FOR POSITION RISK IN EQUITIES							
National market:								
	POSITIONS						RISK CAPITAL CHARGE (%)	CAPITAL REQUIREMENTS
	ALL POSITIONS		REDUCTION EFFECT FOR UNDERWRITING POSITIONS	NET POSITIONS		NET POSITIONS SUBJECT TO CAPITAL CHARGE		
	LONG	SHORT		LONG	SHORT			
	(1)	(2)	(3)	(4)	(5)	(6)		(7)
EQUITIES IN TRADING BOOK								Link to CA template
1 General risk							8,00	
1.1 Exchange traded stock-index futures broadly diversified subject to particular approach								
1.2 Other equities than exchange traded stock-index futures broadly diversified								
2 Specific risk								
2.1 High quality, liquid and diversified portfolios subject to lower capital requirements							2,00	
2.2 Other equities than high quality, liquid and diversified portfolios							4,00	
3 Particular approach for position risk in CIUs								
4 Margin-based approach for exchange-traded futures and options								
5 Margin-based approach for OTC futures and options								
6 Other non-delta risks for options								

- Hypercube hcSectionAll is linked to all primary items (using the „…/all“ arcrole).
- Hypercube hcExcludedStockIndexFutures is linked to two primary items (using the „…/notAll“ arcrole).
- Hypercube hcExcludedOtherNonDeltaRisksOptions is linked to six primary items (using the „…/notAll“ arcrole).

➔ This must all be done within the same extended link role. In this case, use the default link role.

Exercise I

Step VI: Link the hypercubes to the according primary items (3)



Hypercubes

Default Link Role

http://www.xbrl.org/2003/role/link

domain member network of primary items

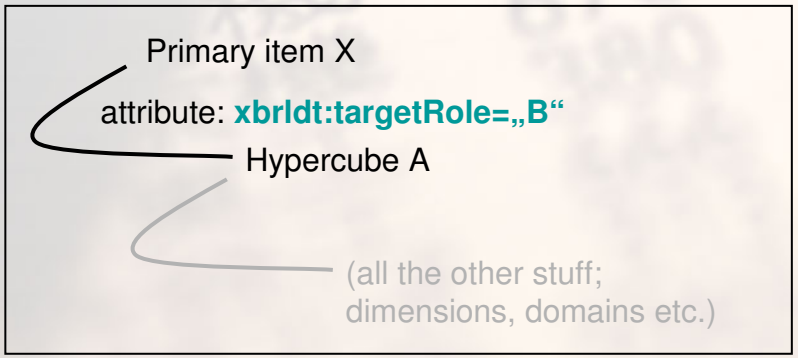
Where are all the links of the hypercubes in the default link role?

Exercise I

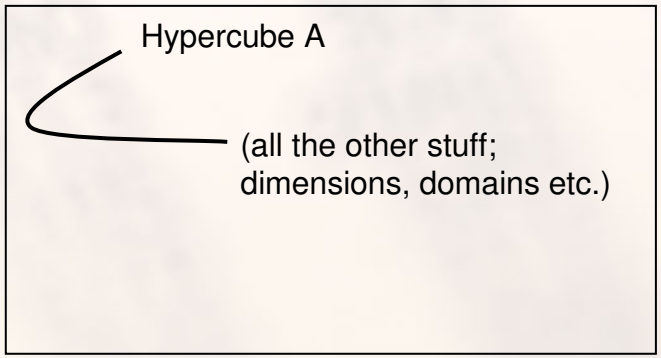
Step VI: Link the hypercubes to the according primary items (4)

- The links of the hypercubes already exist in the other extended link roles (we built them in step V).
- Existing links in the definition linkbase do not have to be rebuilt in different extended link roles.
- Instead, link from one extended link role to the one which already contains the necessary links.
  - ➔ Links can be reused!
- This is done by the **xbrldt:targetRole** attribute of the arc.

Extended Link Role: A



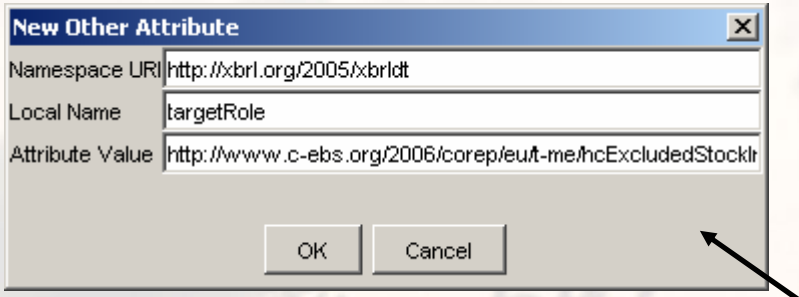
Extended Link Role: B

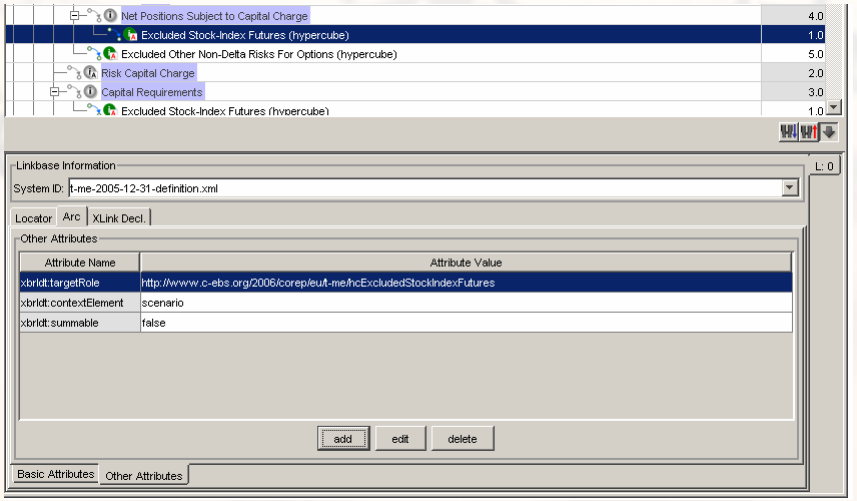


In the COREP taxonomies, this technique is used for hypercubes and domain member networks

Exercise I

Step VI: Link the hypercubes to the according primary items (5)





Additional attributes of the arc:
•**xbrldt:targetRole**: link to other extended link role
•**xbrldt:contextElement**: **scenario** if dimensional information is in the **<scenario>** element of an instance, **segment** if dimensional information is in the **** element of an instance

Roadmap of the presentation

- Purpose and Structure of a Template Taxonomy
- Excursus: Dimensions in XBRL
- Example I: Creation of a taxonomy of a simple template (MKR SA EQU)
- **Example II: Creation of a taxonomy of a more complex template (CR EQU IRB)**

Exercise II

Part of CR IRB template used in this example

IRB Exposure Class Dimension

Own estimates of LGD/Conversion factors Dimension

Exposure Dimension

Primary Items

Exposure Type Dimension

CR IRB

IRB Exposure class:

Own estimates of LGD and/or conversion factors:

	INTERNAL RATING SYSTEM	ORIGINAL EXPOSURE PRE CONVERSION FACTORS		CREDIT RISK MITIGATION (CRM) TECHNIQUES WITH SUBSTITUTION EFFECTS ON THE EXPOSURE				
				UNFUNDED CREDIT PROTECTION			SUBSTITUTION OF THE EXPOSURE DUE TO CRM	
	PD ASSIGNED TO THE OBLIGOR GRADE OR POOL (%)		OF WHICH: ARISING FROM COUNTERPARTY CREDIT RISK	GUARANTEES	CREDIT DERIVATIVES	OTHER FUNDED CREDIT PROTECTION	TOTAL OUTFLOWS (-)	TOTAL INFLOWS
	1	2	3	4	5	6	7	8
1. TOTAL EXPOSURES								
BREAKDOWN OF TOTAL EXPOSURES BY EXPOSURE TYPES:								
On balance sheet items								
Off balance sheet items								
Securities Financing Transactions & Long Settlement Transactions								
Derivatives								
From Contractual Cross Product Netting								

Exercise II

Step I: Create a new taxonomy

- t-ci-2005-21-31.xsd

Step II: Import all necessary primary and dimensional taxonomies

- Import one primary taxonomy
- Import four dimensional taxonomies

Step III: Create the abstract elements for the dimensions

- Create four abstract elements
- t-ci_ExposureDimension
- t-ci_ExposureTypeDimension
- t-ci_ExposureClassDimension
- t-ci_OwnEstimatesLGDConversionFactorsDimension

Exercise II

Step IV: Identify the necessary hypercubes and create the abstract elements for them

- Identify all cells within a template which refer to the same dimensions (NOT depending on the specific domain member)

CR IRB

IRB Exposure class:

Own estimates of LGD and/or conversion factors:

	INTERNAL RATING SYSTEM	ORIGINAL EXPOSURE PRE CONVERSION FACTORS		CREDIT RISK MITIGATION (CRM) TECHNIQUES WITH SUBSTITUTION EFFECTS ON THE EXPOSURE				
				UNFUNDED CREDIT PROTECTION			SUBSTITUTION OF THE EXPOSURE DUE TO CRM	
	PD ASSIGNED TO THE OBLIGOR GRADE OR POOL (%)		OF WHICH: ARISING FROM COUNTERPARTY CREDIT RISK	GUARANTEES	CREDIT DERIVATIVES	OTHER FUNDED CREDIT PROTECTION	TOTAL OUTFLOWS (-)	TOTAL INFLOWS
1. TOTAL EXPOSURES								
BREAKDOWN OF TOTAL EXPOSURES BY EXPOSURE TYPES:								
On balance sheet items								
Off balance sheet items								
Securities Financing Transactions & Long Settlement Transactions								
Derivatives								
From Contractual Cross Product Netting								

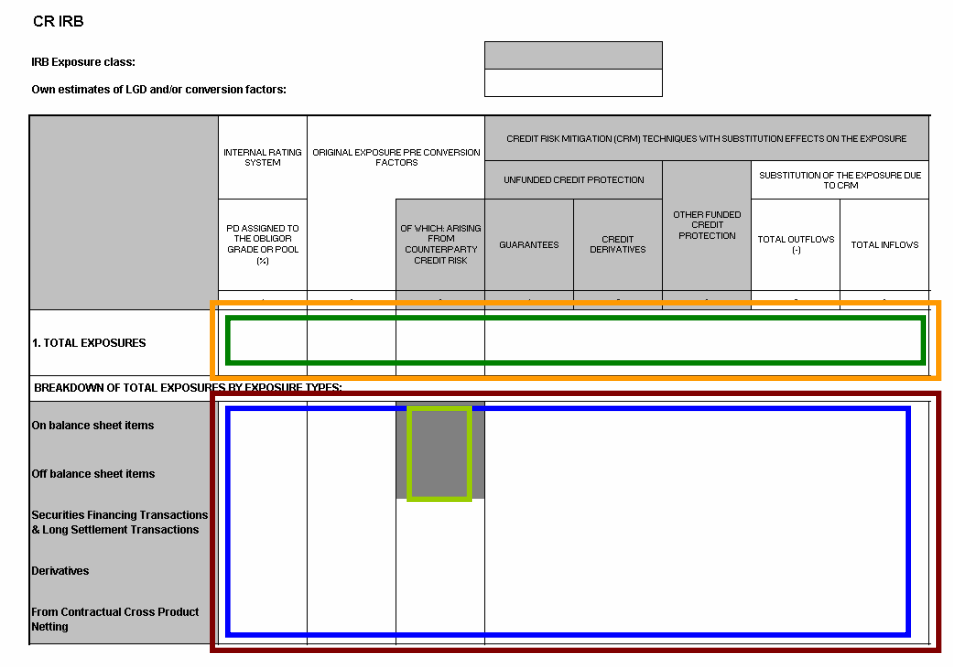
Cells belong to **3** different dimensions
- Exposure Dimension
- Exposure Class Dimension
- Own Estimates … Dimension

Cells belong to **4** different dimensions
- Exposure Dimension
- Exposure Type Dimension
- Exposure Class Dimension
- Own Estimates … Dimension

Exercise II

Step IV: Identify the necessary hypercubes and create the abstract elements for them

•Within this choice, identify blocks which refer to the same domain of each dimension (depends on position of white and grey cells)

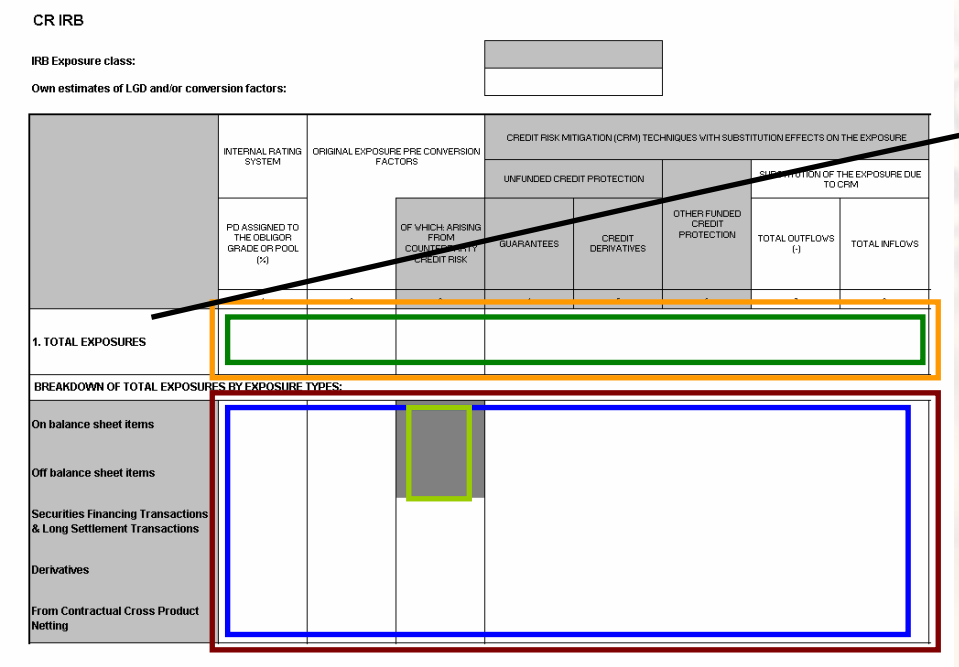


In the first choice, all the elements belong to the same domain
➔ According hypercube is called **hcSectionExposures**

In the second choice, two cubes are modelled: **One cube** spans over the complete choice, **the other cube** only includes the grey cells
➔ Similar to Exercise I
➔ According hypercubes are called **hcSectionExposureTypes** and **hcExcludedBalanceSheetItems**

Exercise II

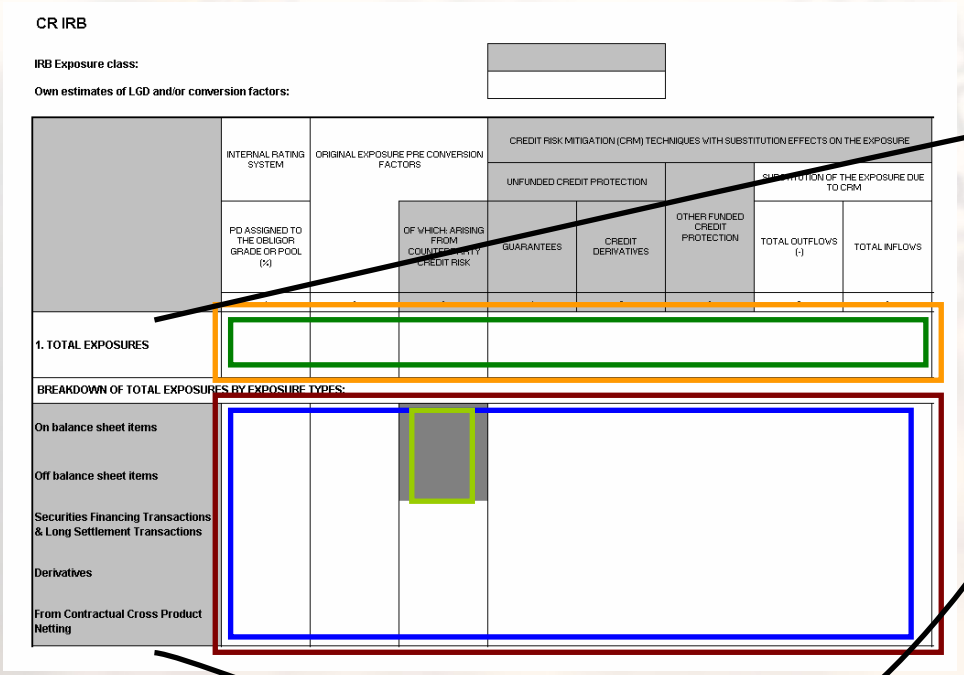
Step V: Build the links between the hypercubes and the according dimensions in the definition linkbase (1)



hcSectionExposures
- Exposure Dimenison
  - Total Exposures
- Exposure Class Dimension
  - Complete domain member network
- Own estimates … Dimension
  - Complete domain member network

Exercise II

Step V: Build the links between the hypercubes and the according dimensions in the definition linkbase (2)



hcSectionExposureTypes

Exposure Dimenison

Total Exposures

Exposure Type Dimension

Five domain member

Exposure Class Dimension

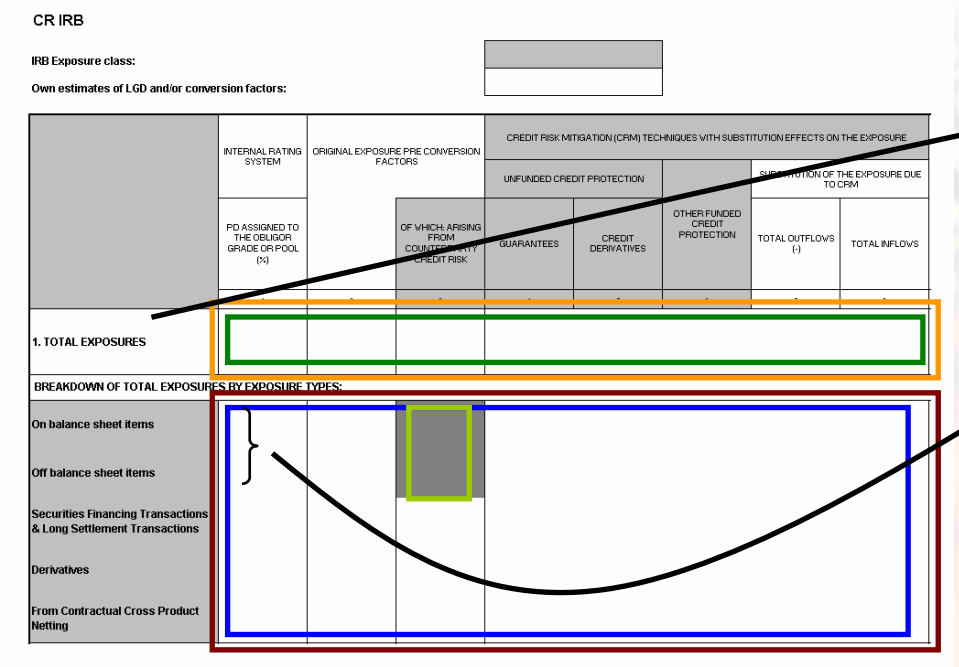
Complete domain member network

Own estimates … Dimension

Complete domain member network

Exercise II

Step V: Build the links between the hypercubes and the according dimensions in the definition linkbae (3)



hcExcludedBalanceSheetItems

Exposure Dimenison

Total Exposures

Exposure Type Dimension

Two domain member

Exposure Class Dimension

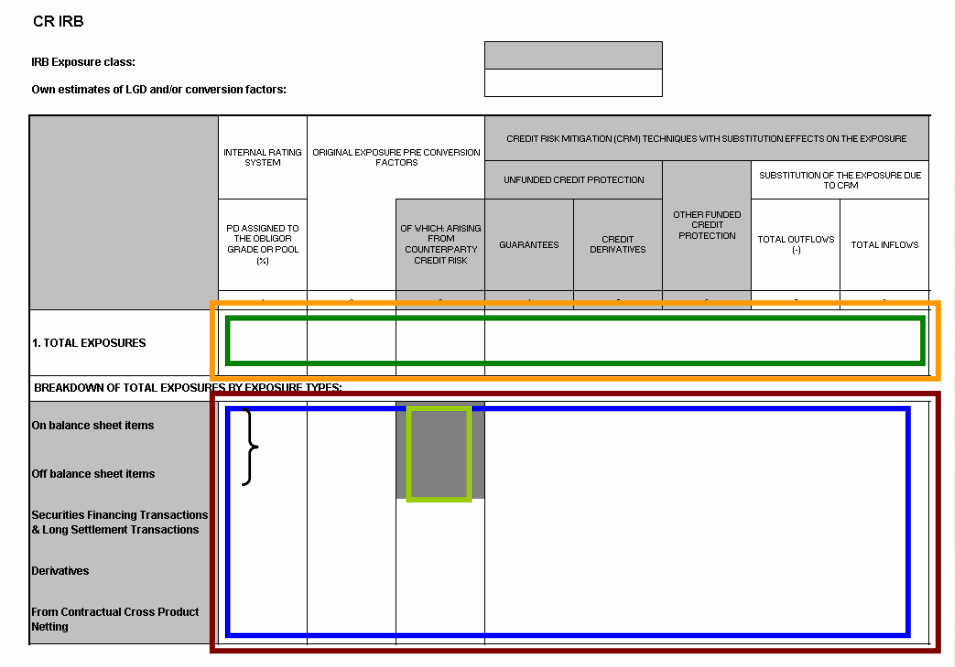
Complete domain member network

Own estimates … Dimension

Complete domain member network

Exercise II

Step VI: Link the hypercubes to the according primary items


CR IRB

IRB Exposure class:

Own estimates of LGD and/or conversion factors:

	INTERNAL RATING SYSTEM	ORIGINAL EXPOSURE PRE CONVERSION FACTORS	CREDIT RISK MITIGATION (CRM) TECHNIQUES WITH SUBSTITUTION EFFECTS ON THE EXPOSURE				
			UNFUNDED CREDIT PROTECTION		OTHER FUNDED CREDIT PROTECTION	SUBSTITUTION OF THE EXPOSURE DUE TO CRM	
	PD ASSIGNED TO THE OBLIGOR GRADE OR POOL (%)	OF WHICH: ARISING FROM COUNTERPARTY CREDIT RISK	GUARANTEES	CREDIT DERIVATIVES		TOTAL OUTFLOWS (-)	TOTAL INFLOWS
1. TOTAL EXPOSURES							
BREAKDOWN OF TOTAL EXPOSURES BY EXPOSURE TYPES:							
On balance sheet items							
Off balance sheet items							
Securities Financing Transactions & Long Settlement Transactions							
Derivatives							
From Contractual Cross Product Netting							

True for COREP taxonomies: Within one extended link role, two hypercubes which refer to different dimensions **are never** linked to the same primary item.

Therefore **two** different extended link roles are needed:

- One for **hcSectionExposures**
  - **http://www.c-ebs.org/2006/corep/eu/t-ci/SectionExposures**
- One for **hcSectionExposureTypes** and **hcExcludedBalanceSheetItems**
  - **http://www.c-ebs.org/2006/corep/eu/t-ci/SectionExposureTypes**

COREP Project

Thank you for your attention

Please visit
http://www.xbrl.org
and
http://www.corep.info
for more information

See COREP Documentation

Daniel Hamm
Daniel.Hamm@bundesbank.ded

XBRL eXtensible Business Reporting Language

CEBS