



XBRL Reporting from SAP Business Systems

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SAP AG

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SAP ERP and XBRL

How to get data from SAP -> XBRL

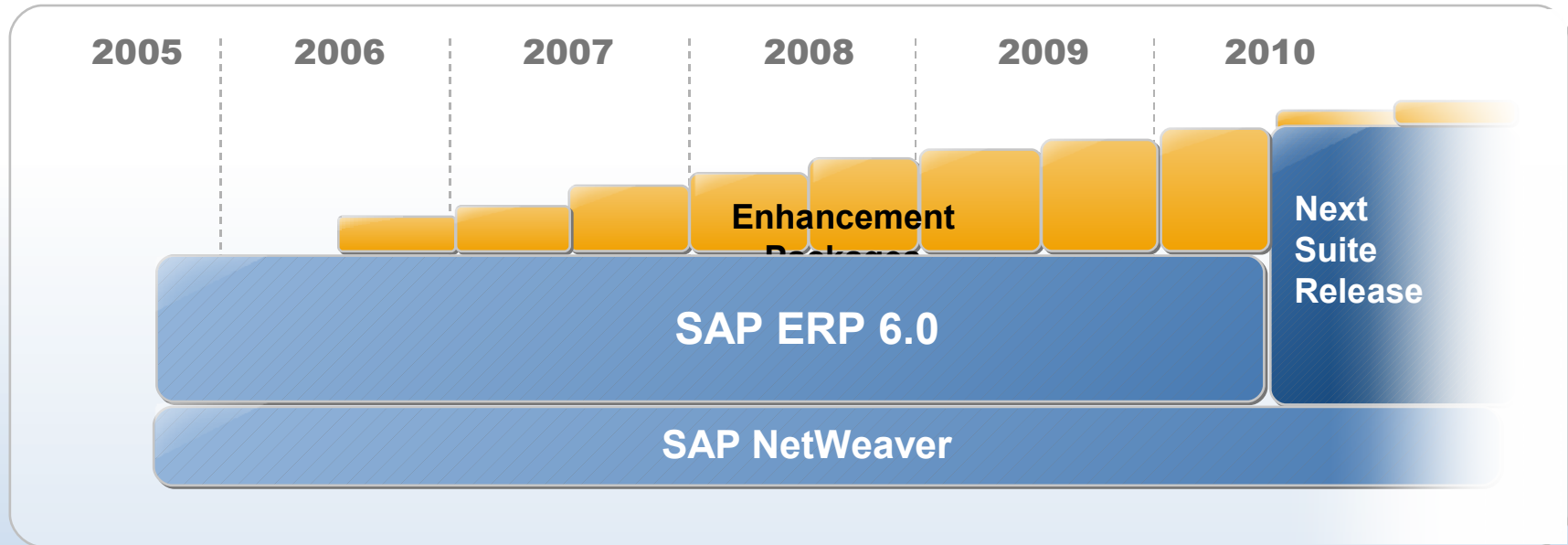
Mapping XBRL concepts – BI objects in detail

Architecture of SAP XBRL application

Transactions

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SAP ERP 6.0 (time line – conceptual)



Customers Adopt Innovation at their Pace

Process and User
Interface Simplification

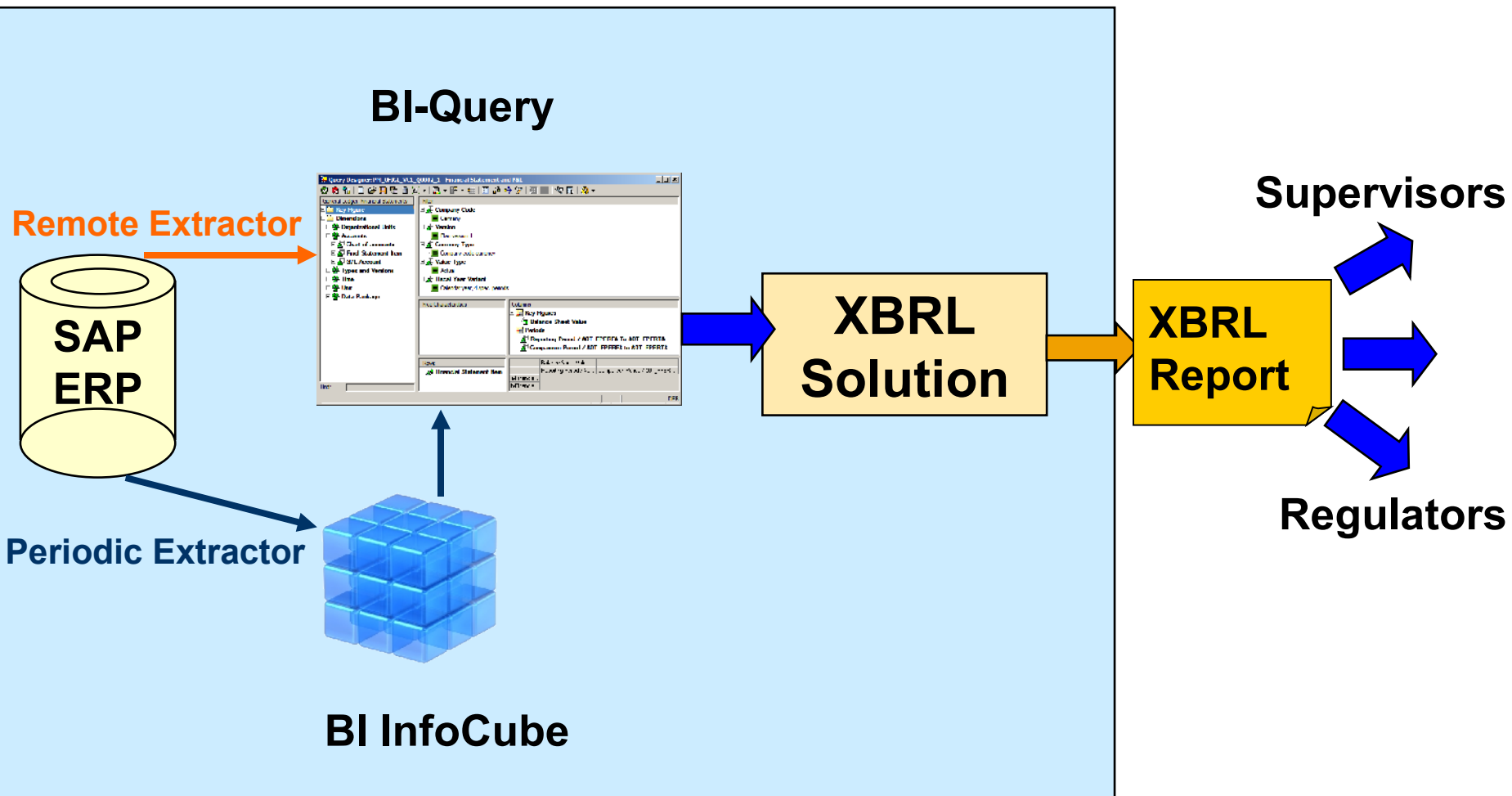
Industry-Specific
Enhancements

Enterprise SOA

Cross-Industry Enhancements

SAP ERP XBRL solution (intended)

SAP ERP 6.0



- Create XBRL instance documents from data in SAP systems
- Fully generic solution:
 - Any data from SAP BI or from ERP can be reported
 - Any query can be used (enabled for OLE/DB for OLAP)
- Compliant to XBRL specification 2.1
- Import of taxonomies
- Generic mapping of XBRL concepts to BI Info Objects and values
- Support of dimensional taxonomies:
 - Mapping of XBRL dimensions to BI characteristics
 - Mapping of explicit dimension domains to BI characteristic values
- Periodic scheduling of XBRL report generation

- **Financial Statements (quarterly, yearly) for:**
 - **US: SEC (Securities and Exchange Commission)**
 - **Germany: Bundesanzeiger, Unternehmensregister**
- **Basel II Reporting to Banking Supervisors from Bank Analyser:**
 - **COREP Taxonomy**



SAP ERP and XBRL

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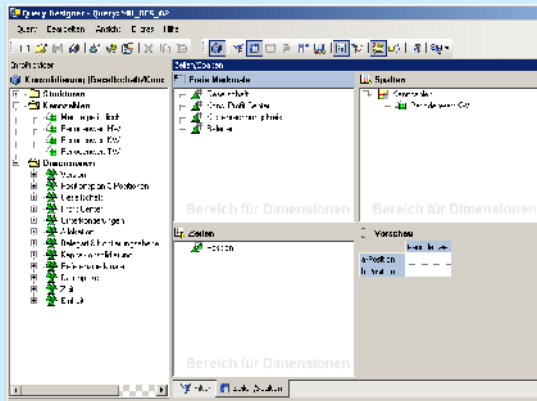
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XBRL Reporting from SAP with external XBRL application

BI Query

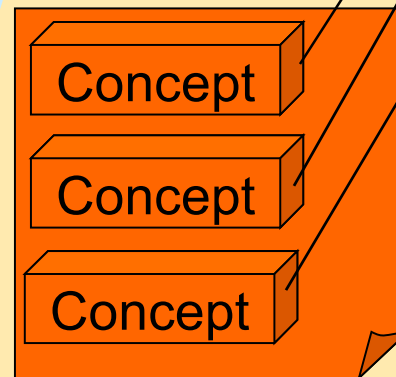


XLS Workbook

The screenshot shows an Excel spreadsheet with financial data. The data is organized into columns and rows, with some cells highlighted in blue. The spreadsheet includes a table with the following data:

	A	B	C	D	E	F	G	H
0	CONFID. CONTINGENCY C	STANDARDISED APPROACH TO CAPITAL REQUIREMENTS						
1	TOTAL EXPOSURES	75300.00	73905.20	3.184.884.80	2.86.950.00	23.162.230.00	88.750.00	
2	MARKET VALUE - TOTAL EXPOS							
3	On balance sheet items		630.844.35	2.127.244.00	4.795.510.00	18.464.530.00	70.590.00	
4	Off balance sheet items		1670.20	10.400.00	50.00.00	0.00	0.00	
5	Securities Financing Transactions & Long Settlement Transactions	5700.00	36.745.80	107.068.80	0.00	1.628.000.00	28.230.00	
6	Derivatives	0.00	7.00	0.00	0.00	0.00	0.00	
7	From Contractual Parties	0.00	2194.240	62.982.90	0.00	0.00	0.00	
8	Product Noting							

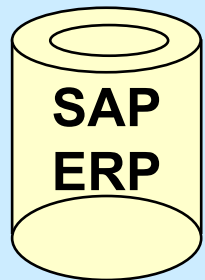
Mapping by Tagging



XBRL Taxonomy Schema



XBRL World



BI InfoCubes

SAP World

■ Steps and Problems with external XBRL application

Steps

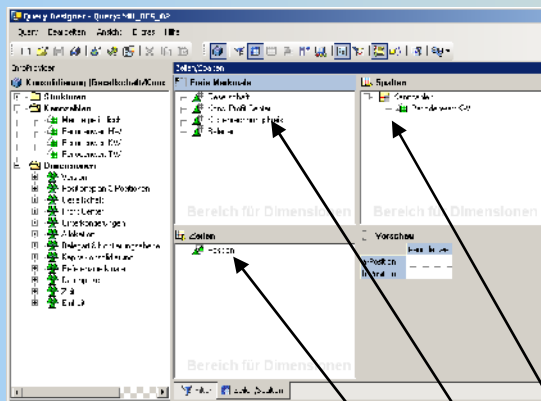
2. Extraction of operational Data into Info Cubes in BI
or: Definition of Virtual InfoProvider with Remote Extractor
3. Execute Queries for Selection of data
4. Load Query Results into spreadsheet (XLS Workbook)
5. Mapping:
Tagging of spreadsheet cells to concepts of XBRL taxonomy
6. Create XBRL Report

Problems:

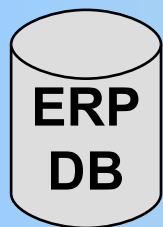
- Difficult Reuse of tagging from XLS templates
- Any change in query and workbook requires shift of many tags.
- No direct mapping of BI objects to XBRL concepts

XBRL Reporting from SAP with internal XBRL application

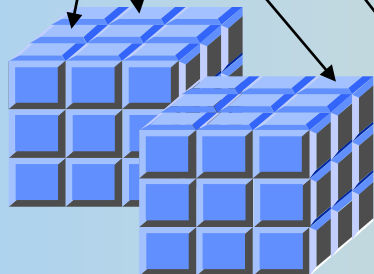
BI Query



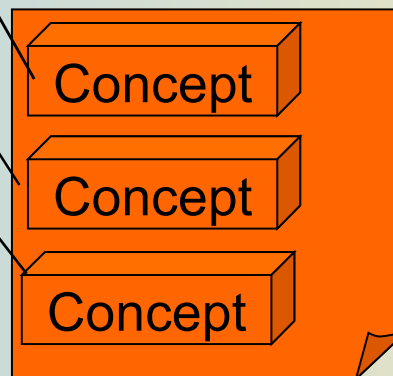
XBRL Report



BI InfoCubes



XBRL Taxonomy Schema



SAP World

XBRL World

Query result in XLS workbook from InfoCube

Filter Company

Time Column

Item Rows

Concept

Concept

Concept

	A	B	C	D
1	Financial Statement and P&L			
2				
3	Key Figures			
4	Periods			
5	Financial Statement Item			
6				
7	Company code	Germany		
8	Currency Type	Company code currency		
9	Fiscal Year Variant	K4		
10	Version	1		
11	Value type	10		
12				
13		Balance Sheet Value		
14	Financial Statement Item	Reporting Period 001.2003 To 012.2003	Comparison Period 001.2002 to 012.2002	
15	Commercial balance sheet	0,00 EUR	0,00 EUR	
16	ASSETS	738.888.929,62 EUR	123.286.415,93 EUR	
17	LIABILITIES	-738.888.929,62 EUR	-123.286.415,93 EUR	
18	Profit and loss statement	-239.232.791,11 EUR	-50.112.550,70 EUR	
19	Financial result	-782,28 EUR		
20	Taxes	13.586,56 EUR	52.151,77 EUR	
21	Financial statement usage	568.039.275,44 EUR	16.501.965,79 EUR	
22	Supplement	-328.819.288,61 EUR	33.558.433,14 EUR	
23				

Microsoft Excel - Mappe4

Company code

Tabelle1 / Tabelle2 / Tabelle3 /

Bereit

THE BEST-RUN BUSINESSES RUN SAP™

SAP

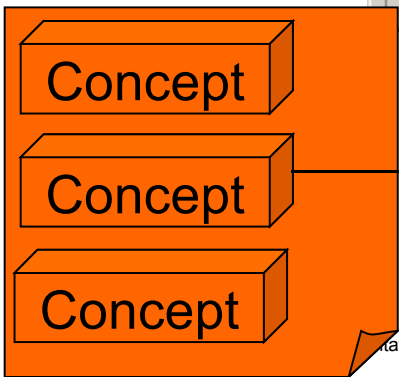
Query definition from Info Cube and Mapping to XBRL

The screenshot shows the SAP Query Designer interface for a query named 'PM_OFIGL_VC1_Q0002_1 - Financial Statement and P&L'. The interface is divided into several panes:

- General Ledger: Financial Statements:** A tree view on the left showing the hierarchy of dimensions: Key Figure, Dimensions, Organizational Units, Accounts, Chart of accounts, Fincl Statement Item, G/L Account, Types and Versions, Time, Unit, and Data Package.
- Filter:** A pane on the right showing selected filters: Company Code (Germany), Version (Plan version 1), Currency Type (Company code currency), Value Type (Actual), and Fiscal Year Variant (Calendar year, 4 spec. periods).
- Free Characteristics:** A pane below the filter, currently empty.
- Columns:** A pane on the right showing selected columns: Key Figures (Balance Sheet Value) and Periods (Reporting Period / &OT_FPERF& To &OT_FPERT&, Comparison Period / &OT_FPERF& to &OT_FPERT&).
- Rows:** A pane below the columns showing the selected row: Financial Statement Item.

Annotations on the left side of the screenshot map a 3D cube to the query structure:

- Filter Company:** An arrow points from the 'Company' dimension in the cube to the 'Company Code' filter in the query.
- Time Column:** An arrow points from the 'Time' dimension in the cube to the 'Periods' columns in the query.
- Item Rows:** An arrow points from the 'Item' dimension in the cube to the 'Financial Statement Item' row in the query.



Query	Key Figure	Characteristic	Value
FinStat	BalSh_Value	Fin_Stat_Item	14711000

■ Steps with internal XBRL application

Steps:

2. Extraction of operational Data into Info Cubes in BI
or: Definition of Virtual InfoProvider with Remote Extractor
3. Import XBRL Taxonomy
4. Define Queries for XBRL Report
5. Define Mapping of Taxonomy concepts to query selections
6. Execute XBRL Report (with internal Queries)
7. Transfer XBRL document to local PC / external regulator

Advantages:

- Define mapping only once
- Easy change and addition of mapping rules

Logic defined in queries can be re-used:

- Calculated key figures
- Filters and restrictions
- Selection variables
- Special query logic
 - Contra items (debit – credit change, „Saldowechselposition“)
 - Bank Analyser



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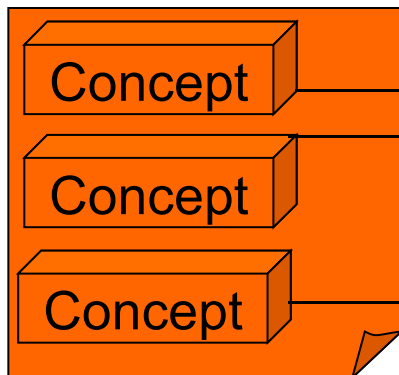
Transactions

■ Mapping of taxonomy elements to query selections

Value elements are mapped to:

- A query
- A key figure
- An n-tuple of selection conditions for characteristics and values

XBRL Taxonomy Schema



Query	Key Figure	Characteristic	Value	Characteristic	Value
FinStatement	BalSheetValue	FinStat_Item	14711000	MovementType	(100,...,199)
FinStatement	BalSheetValue	FinStat_Item	14812000	MovementType	*

Query	Companies
Relevant characteristic	Company_Code
Display	Key / Text
Characteristic	Country
Value	DE, AT
Characteristic	Currency
Value	EUR

For **text elements** the key or text of a BI characteristic can be assigned for display. The selection can be restricted by an n-tuple of characteristics and values.

■Time context:

The time context is entered at report execution and translated into BI time variables

■Entity context:

The entity context is entered at report execution.

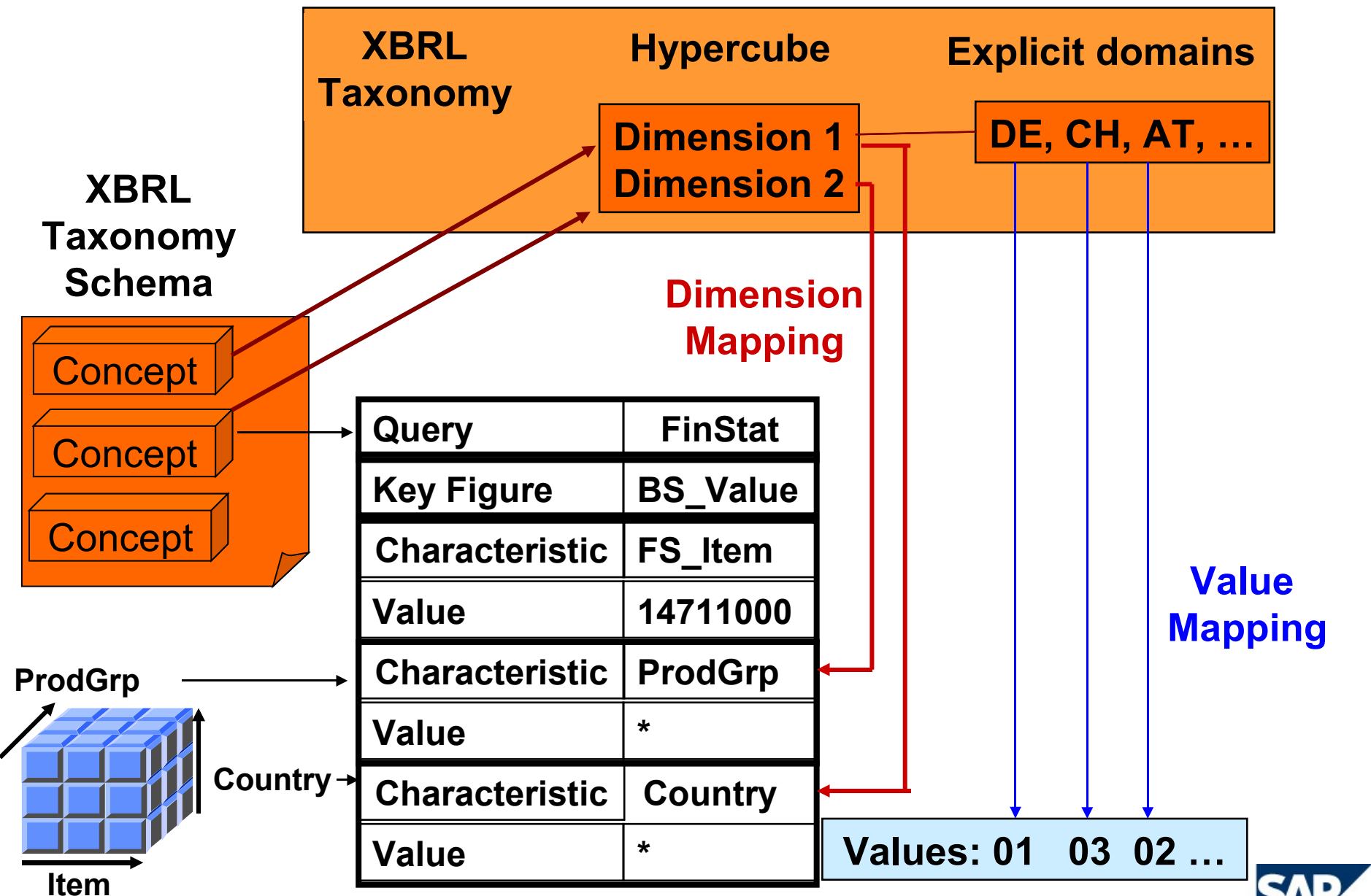
■Currency context:

The currency is determined by BI selection variables and delivered by the queries for every key figure.

■Segment and scenario:

Segment and scenario are filled by dimensions.

Mapping of dimensions to BI characteristics





SAP ERP and XBRL

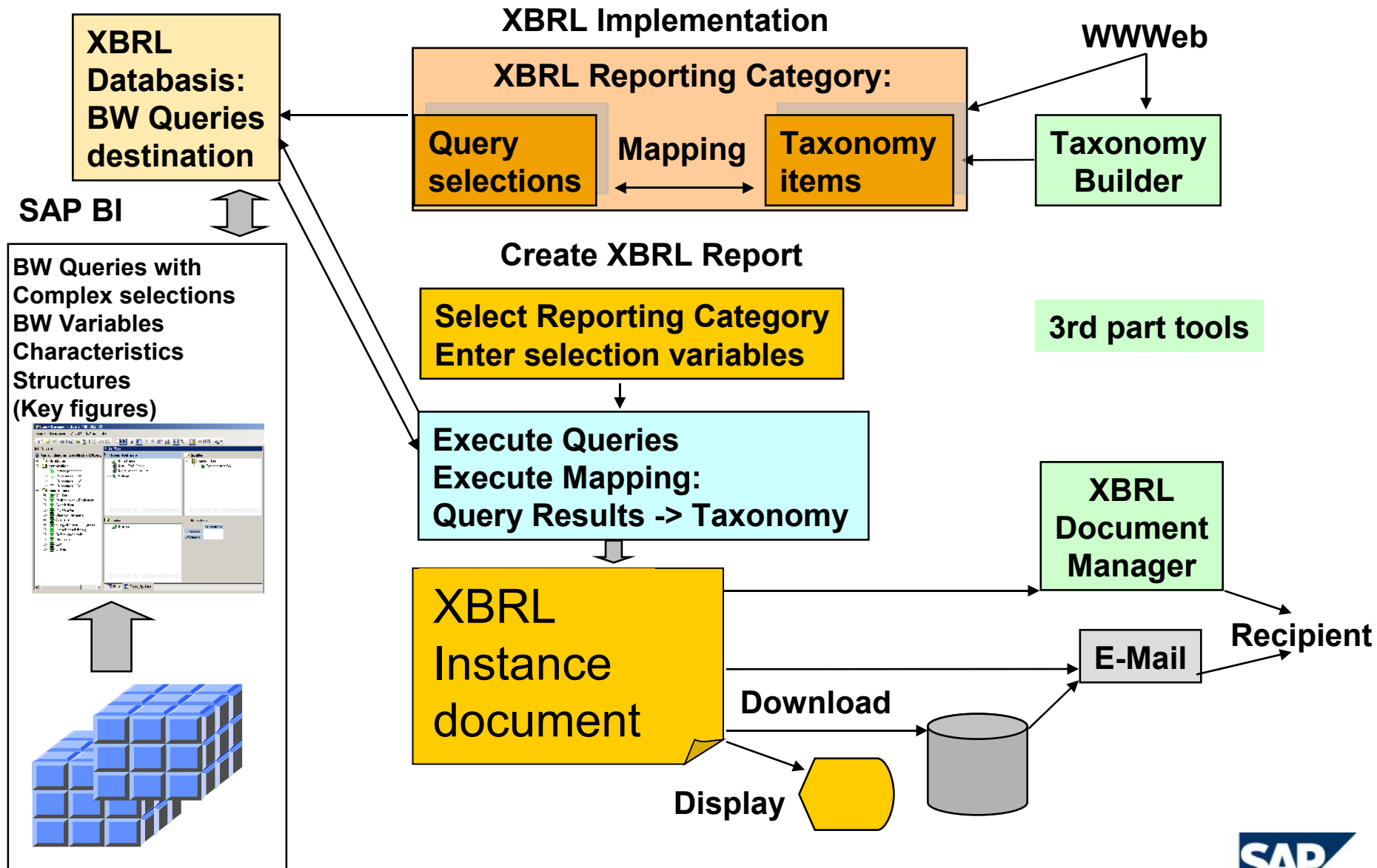
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Architecture of SAP XBRL application



■ Steps for XBRL reporting from SAP BI

Implementation

- Import Taxonomy (from external Taxonomy Builder or Internet)
- Define Reporting Category (Requirement):
 - Define Data Basis:
 - ◆ Select Query / queries
 - ◆ Define remote destination (if required)
 - Select Taxonomy and entry schema
 - Define Mapping of taxonomy elements to query elements
- For dimensional taxonomy:
Define mapping of dimensions to BI characteristics

Creation of XBRL instance documents

(Can be scheduled for automatic periodic execution)

- Select Reporting Category
- Enter time context(s) and BI time variable
- Enter entity context
- Hand-over XBRL instance document to external Document Manager



SAP ERP and XBRL

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Mapping of query selections to taxonomy elements

Change mapping of taxonomy elements for Reporting Category REP_TASK_1

[Help](#)

Save Check Cancel

General

Taxonomy View

Characteristics View

Dimensions

Taxonomy Tuple

▼ Associated Services

New Reporting Category
Copy
Transport

▼ Associated Links

Data basis
Vaue Selections
Taxonomy
Dimension mapping
Instance document

Mapping of query selections to taxonomy elements

Show	All	Expand	Search	Focus	Texts
Taxonomy Elements					Mapping
▼ REP_TASK_1					<input checked="" type="checkbox"/>
▶ PrimaryFinancialStatements					<input type="checkbox"/>
▼ ProfitLossOperationFunctions					<input checked="" type="checkbox"/>
▶ GrossProfitFunctions					<input checked="" type="checkbox"/>
▶ OperationExpensesFunction					<input type="checkbox"/>
▶ OtherOperatingIncome					<input type="checkbox"/>
▶ Others					<input type="checkbox"/>

Detail for taxonomy element GrossProfitFunctions

Query Selections			Dimensions		
Insert	Delete	Fix Characteristic			
BI-Query	KeyFigure	FS_Item	VS	Transact Type	Country
Fin_Stat	BS_Value	25712000	<input checked="" type="checkbox"/>	TTY_GRP_1	DE
Ass_Sheet	Gr_Amnt	25713000	<input checked="" type="checkbox"/>	TTY_GRP_2	
PL_Stat	PL_Amnt	25800000	<input type="checkbox"/>	120	
			<input type="checkbox"/>		
			<input type="checkbox"/>		

The columns for the characteristics are created dynamically after entry of the query

The column 'value selection' is only available if sets of value selections are available for a characteristic

Input disabled since these characteristics are not available for the query selected

Dimension mapping for explicit dimension

Change Dimension mapping Product Group - Material Group

[Help](#)

Data basis XBRL1 Taxonomy TAX_01

Save

Check

Cancel

Definition

Where used list

▼ Associated Services

New Dimension Mapping
Copy
Transport

▼ Associated Links

[Data basis](#)
[Value Selections](#)
[Taxonomy](#)
[Dimension mapping](#)
[Instance document](#)

Allgemein

Description Product_Group – Material Gr.

Dimension * Prod_Group

Product Groups

Characteristic* Mat_Group

Material Groups

The tables for the value mapping are created dynamically for the selected XBRL dimension and BI characteristic, if the dimension is an explicit one.

Dimension domain values

ProdGrp	Description
P1	Cars
P2	Trucks
P3	Cycles
P4	Accessories
P5	Spare Parts

Prod_Group P1: Assigned Mat_-Group

Einfügen

Löschen

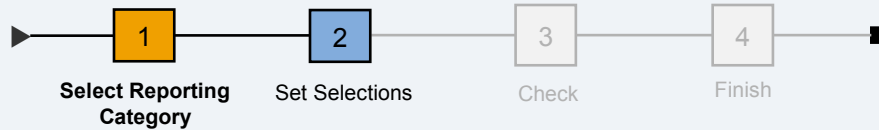
Mat_Group	Description
M_1A	Limousines
M_1B	Station Wagon

If the BI characteristic is compound to superordinate characteristics then they have to be shown as additional columns

Create an instance document: 1) Select Report

Create an XBRL Instance document

[Help](#)



Reporting Category

Reporting Category  Form 8-K for SEC

Create an instance document: 2) Set selections

Create an XBRL Instance document

[Help](#)

Select Reporting
Category

Set Selections

Check

Finish

Selection

Consolidation Group ▼

Version ▼

Company

Time context

Period end date

BI Time Variables ←

Entity context

Schema *

Identifier

Default values for the BI time variables are calculated using the XBRL time contexts entered. If the user wants to change the default values he can press on the button „BI time variables“. A popup will appear in this case where an ALV is shown with the XBRL time contexts and the calculated BI time variables. The BI time variables can be changed there.

Create an instance document: 3) Check Selections

Create an XBRL Instance document

[Help](#)



You are about to create an XBRL Instance Document for:

Reporting Category

ReportingCategory SEC_8-K

Selektion

ConsolidationGroup C1000
Version 100
Company C100 – C199

Time context

Period end date 31.03.2007

Entity Context

Schema http://www.neyse.com
Identifier SAP

Previous Step

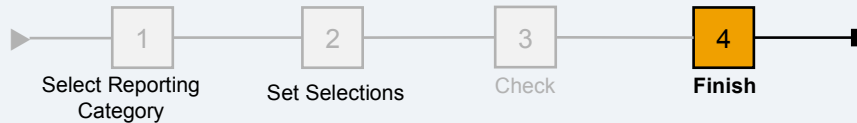
Create Document

Cancel

Create an instance document: 4) Document created

Create an XBRL Instance document

[Help](#)



i The XBRL instance document has been created.

What do you want to do next ?

[Display Instance Document](#)

[Save Instance Document as local file](#)

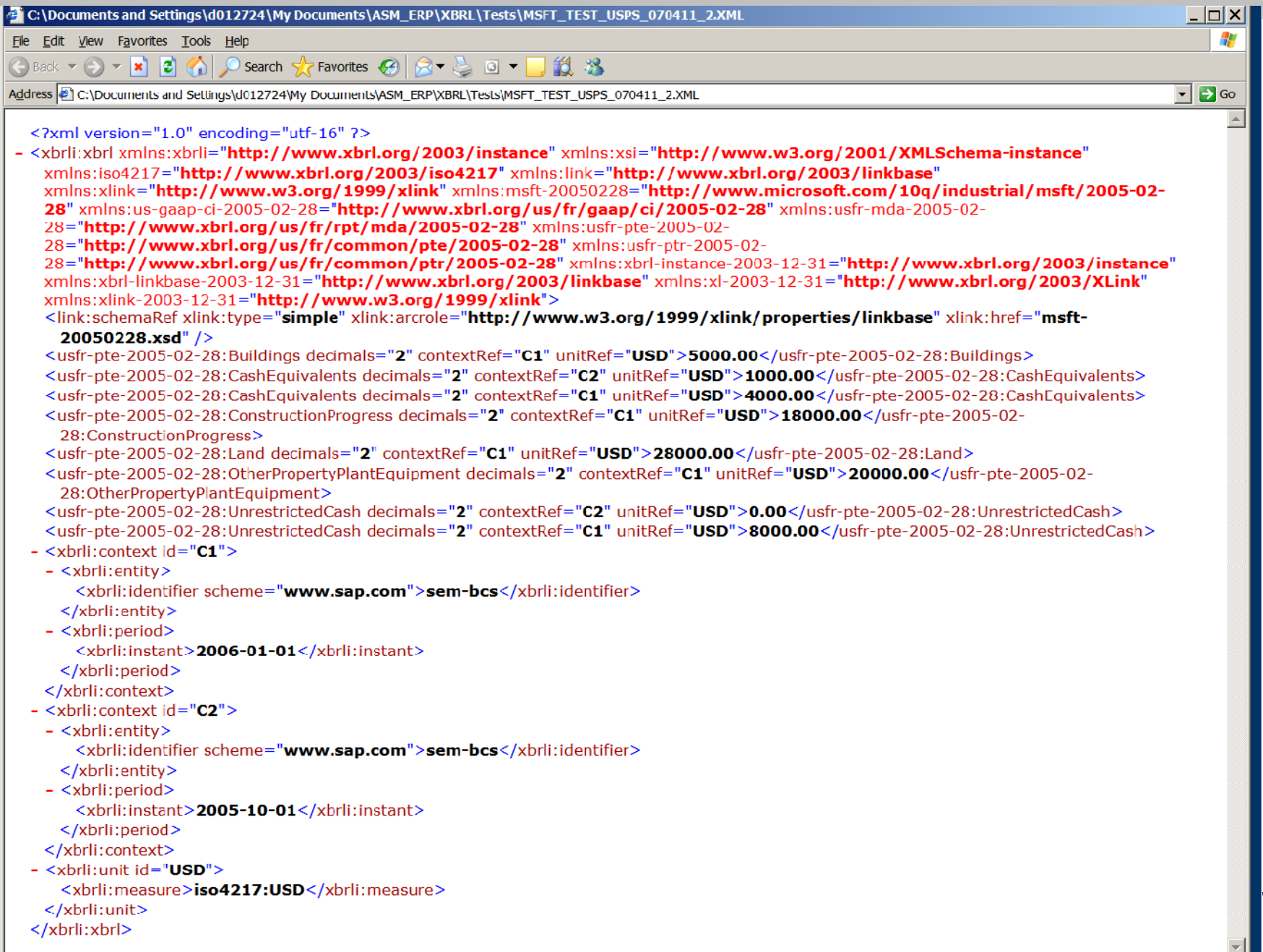
[Create another Instance Document](#)

Close

The instance document will be displayed in a new browser window.

The MS Windows file download / save dialogue will be displayed.

Display XBRL Instance Document



```
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  xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:msft-20050228="http://www.microsoft.com/10q/industrial/msft/2005-02-
  28" xmlns:us-gaap-ci-2005-02-28="http://www.xbrl.org/us/fr/gaap/ci/2005-02-28" xmlns:usfr-mda-2005-02-
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