



Implementation of SDMX for National Accounts

DSD Guidelines

September 2013

1 Table of Contents

1	Table of Contents	2
2	Version History	3
3	Introduction.....	4
4	From Pilot Package to Final Version	5
4.1	Changes done	5
4.2	Not yet fully covered	5
5	Concepts and Code Lists.....	7
6	The DSD Matrix file.....	11
6.1	Overview.....	11
6.2	Matrix Sheet	11
6.3	Code List Sheet	14
7	SDMX Artefacts.....	15
7.1	National Accounts implementation model	15
7.2	DSD Split	15
7.3	Availability of the SDMX Artefacts	16
8	Description of DSD concepts	21
8.1	Decomposition of concepts.....	21
8.2	Coding Combinations	21
8.3	Dimensions	22
8.4	National Accounts Attributes	25
8.5	Cross Domain Attributes	26
9	Coding Examples.....	28
9.1	Coding Rest of the World	28
9.2	Time transformation	29
9.3	The use of the currency denomination concept	29
9.4	Coding long term / short term debt securities or loans.....	30
9.5	Custom breakdown	30
10	Annexes	31
10.1	Annex 1 – Sample SDMX headers.....	31
10.2	Annex 2 – National Accounts Coding Guidelines	32

2 Version History

Version	Date	Editor(s)	Remarks
1.0	30/09/2013	ECB, Eurostat, OECD	Initial release

3 Introduction

The adoption of SNA 2008 / ESA 2010 and the work on the associated transmission programmes created a new momentum for the further alignment of international standards for the compilation and dissemination of macro-economic statistics. In the light of scarce resources, there is a growing willingness for closer international cooperation and an increasing emphasis on statistical business process integration. SDMX serves as the standard to facilitate statistical data and metadata exchange initiatives and is thus allows for rationalisation of data flows, harmonisation of reporting needs and standardisation of information systems.

The SDMX sponsors (BIS, ECB, Eurostat, IMF, OECD, United Nations and World Bank) mandated ECB, Eurostat and OECD to propose Data Structure Definitions (DSDs) in order to implement SDMX in National Accounts according to SNA 2008 / ESA 2010. This comprises in particular the definition of SDMX Data Structures for exchanging data from reporting countries to international organisations and between the organisations. It also comprises the maintenance of the DSDs over time, in accordance with the procedures agreed upon by the SDMX governance bodies.

The so-called “DSD Matrix” was defined as an inventory for structuring the relevant data flows in the area of National Accounts. As a proof of concept the current transmission programmes (SNA 2008 / ESA 2010) as well as ECB guidelines and other National Accounts tables exchanged internationally have been coded using the new framework.

The DSD Matrix includes the list of concepts that are necessary to code the reporting requirements of the different SDMX sponsors agencies. The codification of domain concepts in the DSDs has to be descriptive and comprehensive enough to fulfil any current and future reporting requirements within the scope of the national accounts reporting framework.

In this note, a short description will be provided of the contents of the DSDs. Also the above mentioned DSD Matrix will be explained in some more detail. Doing so, we will also try to describe the main terms and definitions used.

4 From Pilot Package to Final Version

This chapter provides a short overview on the main changes done in the model compared to the one distributed at the start of the technical pilot phase. For further details we would like to refer to the rest of the chapters of this document and to the issue log that you can find in the package. The number in brackets gives a reference to the main items from the issue log.

4.1 *Changes done*

- 1) Changes to concepts
 - a) The custom breakdown dimension was included in the SU DSD to code some specific breakdowns in ESA supply and use tables (#838).
 - b) The transformation dimension was added to the REG DSD (#563).
 - c) Two optional attributes (economic function, tax category) were added to the SEC DSD to classify taxes by economic function in Government Finance Statistics (GFS) related to ESA table 999 (#767).
- 2) Changes to code lists
 - a) The regional code list was updated to include the latest changes in regional codes in Europe (#755).
 - b) A final synchronisation exercise was performed with the BOP and FDI DSDs to ensure full consistency for the shared code lists between the domains (#749).
- 3) Other changes
 - a) The sibling group was removed after synchronisation with BOP. All attributes which were previously attached to the sibling group have been moved to the series level (#549).
 - b) The mapping table from the old S2 breakdowns to the new coding system has been corrected, in order to provide suggested coding for geographic aggregates with evolving composition. In the pilot guidelines the suggested coding referred wrongly to geographic aggregates with a fixed composition (#770).
 - c) The crossing between the code lists and tables in the matrix have been removed. They were used as tools for the pilot review. The Excel visualisation templates can now be used as a reference for usage of codes in specific tables.
 - d) Excel visualisation templates for annual and quarterly reporting of the same table have been merged into the same template (#768).
 - e) Pilot specific chapters have been removed from the guidelines.

4.2 *Not yet fully covered*

Government Finance Statistics

Work on the reporting framework includes an analysis of GFS tables defined in ESA 2010. Further work will be needed to cover some series related to the collection of tax data in GFS, and to cover the needs of the International Monetary Fund related to GFS statistics. This work will be done in close

cooperation between the international organisations and enhanced coverage of GFS is expected to be included during the first maintenance cycle (#844).

Derived data

In national accounts, the user requirements have gradually increased in relation to the need for more “derived data”. Derived data can be defined as a time series resulting from the combination of two other time series, sometimes from different statistical domains (e.g. private or public debt as a percentage of GDP).

Those indicators are not covered by the reporting framework at this stage.

Satellite accounts

Satellite accounts are not yet included in the reporting framework. Based on the user needs arising in the future, the DSD matrix can however be extended to include satellite accounts as needed.

Data Flows

At the time of publishing the package, a dummy data flow is available for each DSD. These dummy data flows do not represent the real reporting needs and do not have any constraints linked to them. Additional data flows will be created on the basis of the transmission programs in place.

5 Concepts and Code Lists

A Data Structure Definition (DSD) in SDMX consists of several statistical concepts: institutional sectors, industries, transactions, etc. These concepts are separated into dimensions and attributes. Dimensions are used to uniquely identify a certain data item or variable, and when joined together, they provide the “time series key” as the unique identifier for this item. In an SDMX dataset, a valid code must be assigned to each of the dimensions relevant for a data item. Attributes relating to, for example, compiling organisation, the confidentiality of the relevant data and the number of decimals, are used to further describe the data. They can be attached at different levels of the data file: at the level of the whole file (attached at dataset level in SDMX terminology), at the level of a certain series (attached at series level), or at the level of single observations. Attributes are either mandatory or conditional (i.e. can be omitted).

Most of the concepts provided in this DSD are coded, meaning associated with a code list and a descriptor for the coded item. For example, the code list for institutional sectors contains a full list of all (sub-)sectors distinguished in the reporting of national accounts data. Code lists can be shared between concepts. For example, the same code list is used for identifying items of the reporting institutional sector and the counterpart institutional sector, as they both refer to the same list of sectors. All the code lists in this package are provided in a flat, non-hierarchical presentation. However, “integrity rules” are provided for selected items to help users identify the relationships that exist within a code list.

Some attributes are not coded but directly contain a value. This is the case for the reference period used in every table (must contain a valid time value) and the base year used in some tables (must contain a valid year).

Details on the concepts included, their role (dimension/attribute), the attribute attachment level, and further details on the concepts can be found in the matrix on the “**Overview**” sheet.

Table 1 below provides a summary of the concepts defined in the National Accounts reporting framework. Further details are described in chapter 8, *Description of DSD concepts* from page 21 onwards. As stated before, each data item (observation) has to be identified by a combination of codes (for each dimension), which **uniquely** identify the relevant time series of observations within the reporting context.

Concept	Concept Mnemonic	Concept Name	Concept Description	
National accounts concepts	Core concepts	ACCOUNTING_ENTRY	Accounting Entry	Uses and resources, assets and liabilities or use and supply
		REF_SECTOR	Reporting institutional sector	SNA 2008, Annex 1B.1
		COUNTERPART_SECTOR	Counterpart institutional sector	
		STO	Stocks, Transactions, Other Flows	SNA 2008, Annex 1B.2
		INSTR_ASSET	Instrument and Assets Classification	SNA 2008, Annex 1B.4
		ACTIVITY	Activity classification	NACE V2, ISIC V4
		ACTIVITY_TO	Activity classification	
		PRODUCT	Product classification	CPA, CPC
		PRODUCT_TO	Product classification	CPA, CPC
		PRICES	Prices	National accounts price concepts
	VALUATION	Valuation	National accounts valuation concepts	
	CONSOLIDATION	Consolidation Status	Non-consolidated or Consolidated data	
	Supplementary Concepts	EXPENDITURE	Expenditure by Function of Government Household expenditure by purpose Classification of Outlays of Producers Purposes of Non-profit institutions	COFOG COICOP COPP COPNI
		MATURITY	Original and Residual Maturity	
		CUST_BREAKDOWN	Custom breakdown	needs custom breakdown label
		PENSION_MANAGER		
		PENSION_CLAIMANT		
		PENSION_FUNDTYPE	Pensions type/fund	
	Generic Concepts	REGIONAL	Regional Classification	Includes NUTS 2010 for Europe
		REF_AREA	Reference area	ISO 3166 2 Character geographical codes
COUNTERPART_AREA		Counterpart area		
FREQ		Frequency	Frequency of the time series (e.g. quarterly)	
TIME_PERIOD		Reference period	Reference / reporting period of	
REF_YEAR_PRICE		Reference year (price)	Base year for price references	
COLL_PERIOD		Collection period	Period in which data was collected	
OBS_VALUE		Observation value		
UNIT_MEASURE		Unit	Unit of measurement (e.g. money metric, hours, persons...)	
CURRENCY_DENOM		Currency of denomination	Currency in Money metric	
ADJUSTMENT		Adjustment indicator	Specific adjustment for the time series (e.g. seasonally adjusted)	
TRANSFORMATION		Transformation		
EMBARGO_DATE		Embargo date		
OBS_EDP_WBB		EDP working balance bar	EDP working balance bar	
GFS_ECOFUNC		Economic function		
GFS_TAXCAT		Tax category		
TABLE_IDENTIFIER	Table identifier	Identification of the table in transmission programme		
Cross domain Atributor	REF_PERIOD_DETAIL	Reference period detail	Calendar year or fiscal year reporting	
	COMMENT_DSET	Comment on dataset level		
	COMMENT_OBS	Comments to the observation value		
	COMMENT_TS	Detailed description of the group of series		
	CONF_STATUS	Confidentiality status		
	DECIMALS	Decimal		
	OBS_STATUS	Observation status		
	TIME_FORMAT	Time format		
	TIME_PER_COLLECT	Time period collection		
	TITLE	Title		
	UNIT_MULT	Unit multiplier		
	LAST_UPDATE	Data Update – Last Update		
	CUST_BREAKDOWN_LBL	Custom breakdown label		
	COMPILING_ORG	Compiling organization		

Table 1: Concepts used in the SNA2008 DSD

It should be noted that not all concepts are used for each reporting context. Also some code lists may be used in multiple concepts.

Code lists have been derived as much as possible from the standard classifications as specified in the Annex of the 2008 SNA. For National Accounts specific code lists (Stocks, Transactions, Other Flows; Instruments and Assets Classification; Institutional sector), these have been complemented with

coding conventions for deriving codes for which no standard codes exist¹. For all other code lists, the SDMX coding guidelines have been applied.

¹ See *Annexes*

Annex 1 – Sample SDMX headers

Sample headers are provided for SDMX-EDI, SDMX 2.0 and SDMX 2.1 formats. Note that the relevant fields would need to be set by the data provider according to the DSD and data flow for which the dataset is exchanged. Details on the header fields, their meaning and usage can be found in the SDMX technical standard packages (http://sdmx.org/?page_id=10). The data flow identifiers are agreed upon between the organisations participating in the exchange process up-front and the respective data flows are published in the registry after such an agreement.

Sample header for SDMX-EDI:

```

UNA:+.?.? '
UNB+UNOC:3+4F0+BE2+130419:1547+IREF000001++GESMES/TS++++0 '
UNH+MREF000001+GESMES:2:1:E6 '
BGM+74 '
NAD+Z02+ESTAT '
NAD+MR+4F0 '
NAD+MS+BE2 '
IDE+10+description '
DSI+ESA2010_T1 '
STS+3+7 '
DTM+242:201304191547:203 '
IDE+5+NA_MAIN '
GIS+AR3 '
GIS+1:::- '
  
```

Sample header for SDMX-ML 2.0 Compact:

```

<Header>
  <ID>IREF000001</ID>
  <Test>false</Test>
  <Name>description</Name>
  <Prepared>2013-04-19T15:47:00+02:00</Prepared>
  <Sender id="BE2" />
  <Receiver id="4F0" />
  <KeyFamilyRef>NA_MAIN</KeyFamilyRef>
  <KeyFamilyAgency>ESTAT</KeyFamilyAgency>
  <DataSetID>ESA2010_T1</DataSetID>
  <Extracted>2013-04-19T15:47:00+02:00</Extracted>
</Header>
  
```

Sample header for SDMX-ML 2.1 Structure Specific:

```

<message:Header>
  <message:ID>IREF000001</message:ID>
  <message:Test>false</message:Test>
  
```

The SDMX coding guidelines and cross-domain code lists have been drafted by the SDMX Statistical Working Group. It should be noted that, at the time of writing this document, the relevant proposals are pending final approval by the SDMX sponsor organisations and may therefore be subject to change.

Please also note that several code lists are shared with other statistical domains. The **Overview** sheet shows some code lists shared within the SDMX community (SDMX), and some code lists shared with the SDMX implementation project for Balance of Payments and Foreign Direct Investment statistics (BOP). Some code lists also show, for informational purposes, the coding relevant to BOP. To facilitate harmonisation and sharing of code lists, in some cases codes are included despite being not directly relevant for National Accounts.

You will find also the so called cross-domain attributes. Those are added to each DSD in SDMX for common use. Examples for such attributes are for instance the unit multiplier, the status and confidentiality flags, textual comments for series and observations and others. More information about SDMX cross-domain concepts and content oriented guidelines can be found on the SDMX website, <http://sdmx.org>, in the "Guidelines" section.

```
<common:Name>description</common:Name>
<message:Prepared>2013-04-19T15:47:00+02:00</message:Prepared>
<message:Sender id="BE2" />
<message:Receiver id="4F0" />
<message:Structure dimensionAtObservation="TIME_PERIOD"
structureID="NA_MAIN"
namespace="urn:sdmx:org.sdmx.infomodel.datastructure.DataStructure=ES
TAT:NA_MAIN(1.0):ObsLevelDim:TIME_PERIOD">
  <common:Structure>
    <Ref agencyID="ESTAT" id="NA_MAIN" />
  </common:Structure>
</message:Structure>
<message:DataSetID>ESA2010_T1</message:DataSetID>
<message:Extracted>2013-04-19T15:47:00+02:00</message:Extracted>
</message:Header>
```

Annex 2 – National Accounts Coding Guidelines at the end of this document

6 The DSD Matrix file

6.1 Overview

The Matrix file summarised all concepts and code lists contained in the reporting framework. Those have been selected from various tables from a number of National Accounts manuals and transmission programmes (SNA 2008, ESA 2010, ECB MUFA, ECB GFS, IAG/G-20 Recommendation 15, OECD transmission programme). It contains the following sheets:

- **Overview sheet**, showing the concepts used;
- **Matrix sheet**, showing the relationship between selected tables from well-known transmission programs on the one hand, and the concepts used on the other hand. Filters have been added to the sheets in the first three columns to select the tables applicable for ESA, ECB, OECD and G20 transmission programmes, respectively;
- **Code list sheets**, showing the contents of each of the code lists used and some additional comments like for instance integrity rules.

It may be useful to keep in mind relationships between the various tables, for instance it may be useful to compare the different tables that deal with institutional sector accounts (Tables 0610 to 0625, 0710, 0725, 0800 and 0801, MUFA 1 to 9 and 2600), or those dealing with Supply and Use tables and Input Output Tables (Tables 1500 to 1950).

Please note again that some code lists are used in multiple concepts (e.g. the area code list for reporting and counterpart area) and some code lists are currently not yet used at all (e.g. COPNI). The latter should ensure flexibility of the coding framework for other needs (e.g. national data sharing), and also ensure a long term solution with less future maintenance. At a later stage, the framework can be extended to accommodate additional concepts if needed (e.g. satellite accounts currently not covered).

6.2 Matrix Sheet

The list of concepts linked to all the tables is shown in the headline. Each coded concept has a hyperlink pointing to the corresponding code list sheet.

The cells are linking a transmission table (row) to a concept (column), and contain:

- A **#** sign if the code list from the concept is fully used in the table;
- A **%** sign if the code list from the concept is partially used in the table;
- A **code** if the concept is fixed to a single code; and
- A **Blank** for concepts not used in table.

Example 1: The cell at the intersection of table 0121 and concept STO contains code P7. This means that table 0121 uses only code P7 (imports of goods and services) from the concept STO (Stocks, Transactions, Other Flows).

Example 2: The cell at the intersection of table 0800 and concept REF_SECTOR contains a % sign. This means that several sectors are linked to table 0800. For more details you can consult the Excel visualisation template of the respective table.

To see which dimensions are used in which DSD and which tables are covered by the DSD, just select a DSD type in the "DSD Split" column filtering. Only tables using the respective data structure are displayed. The coloured columns correspond to the concepts used in the selected DSD. Note that for the purpose of coding, dimensions left blank in the matrix are to be coded `_Z` (not applicable) in a data file.

Select one type of DSD in the filter (e.g. MAIN)

Split	Code	ACCOUNTING_ENTRY	REF_SECTOR	COUNTERPART_SECTOR	STO	INSTR_ASSET	ACTIVITY	ACTIVITY_ID	PRODUCT_ID	PRICES	VALUATION	CONSOLIDATION	EXPENDITURE	COPDOG	COICOP	COPP	COPNI	MATURITY	CUSTOM_BREAKDOWN	PENSIONS	REGIONAL	AREA	REF_AREA	COUNTERPART_AREA	FREQ	ADJUSTMENT	REF_YEAR_PRICE	UNIT_MEASURE	TRANSFORMATION	CURRENCY_DENOMINATION	PENSION_MANAGER	PENSION_CLAIMANT	PENSION_FUNDTYPE		
MAIN	0101	%	S1	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MAIN	0102	%	%	S7	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MAIN	0103	%	S1	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MAIN	0110	%	S1	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MAIN	0111	%	S1	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MAIN	0117	D	S14	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MAIN	0120	D	S1	S1	P6	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
MAIN	0121	C	S1	S1	P7	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
MAIN	0301	%	S1	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
MAIN	0302	D	S1	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
MAIN	0303	%	S1	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
MAIN	0501	D	S14	P31DC	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
MAIN	0502	D	S14	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
MAIN	2000	D	S1	LE	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
MAIN	2200	D	S1	P510	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

The column with the same colour are concepts used in the selected DSD

6.3 Code List Sheet

Each coded concept is linked to a code list as shown in the "Overview". A separate sheet is provided for each code list:

CL_ACCOUNTING_ENTRY / CL_SECTOR / CL_NA_STO / CL_INSTR_ASSET / CL_ACTIVITY / CL_PRC

Each list contains the codes in the first column, the code labels in the second column and, in some cases, additional comments in the third column. In relevant cases, the comment may also relate to integrity rules:

S12K	Monetary financial institutions	(S121,S122,S123)
S12T	Monetary financial institutions other than central bank	(S122,S123)
S12M	Financial corporations other than MFIs	(S124,S129)
S12P	Other Financial Institutions	(S124,S125,S126,S127)
S12O	Other Financial Institutions	(S125,S126,S127)
S12R	Other financial institutions	(S123,S129)
S12Q	Insurance companies	(S128,S129)
S13	General government	Option 1: S13=S1311+S1312+S1313+S1314 Option 2: S13=S1321+S1322+S1323

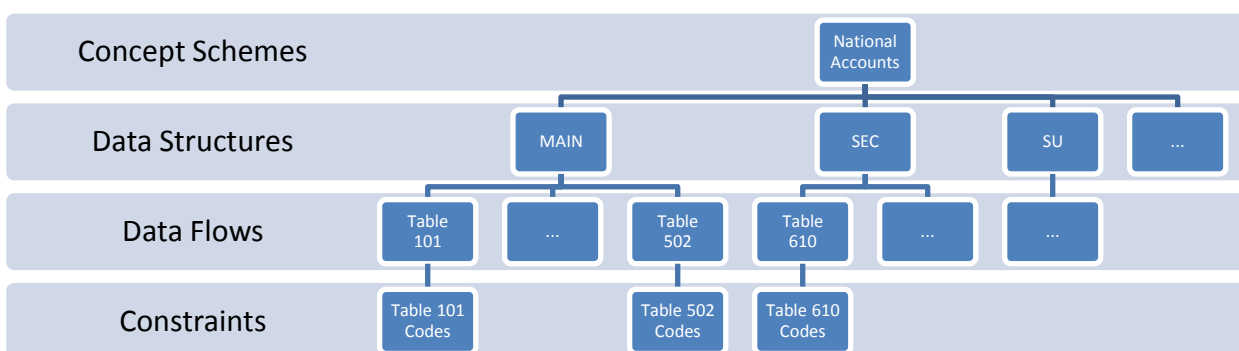
Integrity rules in CL_SECTOR

7 SDMX Artefacts

The technical representation of the data structures and related concepts and code lists is stored as so-called SDMX artefacts in an SDMX registry. Once the SDMX reporting framework is used in production, the global registry will be used as a central repository for all internationally agreed Data Structure Definitions and related objects. For the pilot implementation a specific instance of the registry was installed, the National Accounts sandbox registry. This instance has the same look and feel that the global registry will have with the difference that it contains only objects related to National Accounts.

7.1 National Accounts implementation model

The approach in National Accounts was to start with the "National Accounts Domain Concepts". In SDMX those are expressed in the Concept Scheme artefacts. On that basis the data structures have been derived. Data structures can now be used for multiple data flows. The relevant subset of codes applicable for a specific data exchange is expressed by constraint artefacts. The technical implementation model can be visualised as follows:



7.2 DSD Split

For the optimal representation of the National Accounts reporting framework, the following data structure definitions have been created by the technical group:

DSD ID	DSD Title	Tables included in the package
MAIN	Main aggregates	ESA / OECD: 1, 3, 5, 20, 22
SEC	Sector accounts and government finance	ESA / OECD: 2, 6, 7, 8, 9, 11, 25, 26, 27, 28 ECB: MUFA, GFS OECD: 119, 7HH, 7II, PSD
SU	Supply / use and input / output statistics	ESA / OECD: 15, 16, 17, 18, 19
REG	Regional statistics	ESA: 10, 12, 13

DSD ID	DSD Title	Tables included in the package
PENS	Pension schemes	ESA: 29

Further details on the dimensions linked to each DSD are shown in the matrix sheet as explained above.

The coding of tables related to existing international transmission programs are of course not the only way of using the DSDs. Any DSD can and should be reused for other data exchange exercises in the field of National Accounts.

7.3 Availability of the SDMX Artefacts

The Data Structure Definitions and related SDMX artefacts are available for download from the National Accounts pilot registry (<http://nac.sdmxregistry.org>). No authentication is required for the registry. Once the Global SDMX Registry will be available, the artefacts will be moved there and the URLs will change accordingly. This will not change the content of the DSDs. Details on the availability of the Global SDMX Registry will be published on the SDMX.org website.

The SDMX artefacts in the pilot registry are expressed in SDMX V2.1, in order to make use of its enhanced capabilities related to content constraints. For compatibility reasons, the pilot registry offers the possibility of downloading artefacts in various versions. Please refer to the documentation of your respective tool to find out which formats are supported. For instance for the SDMX Reference Infrastructure or the Eurostat SDMX Converter, you should download artefacts in SDMX 2.0 format.

Using the National Accounts Pilot Registry

The following screenshots will show you how to visualise the DSDs and related artefacts online and how to download them for local use.

TO VISUALISE THE ARTEFACTS ONLINE:

FUSION REGISTRY
National Accounts

Login

Show Labels

Main Menu Help

Management

- Structures
- Registrations

Services

- Web Service

Registry Structures

Agency [ESTAT]

- Agency Schemes -
- Categorisations -
- Category Schemes -
- Codelists 23
- Concept Schemes 1
- Content Constraints -
- Data Consumer Schemes -
- Data Flows -
- Data Provider Schemes -
- Data Structure Definitions 4
- Hierarchical Codelists -
- Metadata Structure Definitions -
- Organisation Unit Schemes -
- Processes -
- Provision Agreements -
- Reporting Taxonomies -
- Structure Sets -

Download All Registry Structures

Download All ESTAT Structures

Click here to view the DSD in the Registry

Click on the Codelists to see the content

Click on Codelists to see the NA codelists

Id	Name
_T	Total - All activities
A	Agriculture, forestry and fishing
A01	Crop and animal production, hunting and related service activities
A02	Forestry and logging
A03	Fishing and aquaculture
BTE	Industry (except construction)
BTF	Industry and construction
B	Mining and quarrying
B05	Mining of coal
B06	Mining of oil shale
B07	Mining of gas
B08	Other mining
B09	Mining support
C	Manufacturing
C10T12	Manufacture of food products; beverages and tobacco products
C10	Manufacture of food products
C11	Manufacture of beverages
C12	Manufacture of tobacco products
C13T15	Manufacture of textiles, wearing apparel, leather and related products
C13	Manufacture of textiles

Content of the selected codelist

Selected DSD

DSD elements

Click on Data Structure Definition to see the NA DSD

Id	Conc...	Concept Scheme	Concept
OBS_VALUE	ESTAT	List of concepts for National Accounts DSDs	Observation value
Text Type	-	Start Value	- Decimals
Sequence	-	End Value	- Pattern
Min Length	-	Interval	-
Max Length	-	Time Interval	-

FUSION REGISTRY National Accounts

Control Bar | Selected Agency: ESTAT | Registry Structures | Data Structure Definitions

Data Structure Definitions

DSD for MAIN tables(1.0)
 DSD for REGIONAL tables(1.0)
 DSD for SECTOR tables(1.0)
 DSD for SU tables(1.0)

Dimensions

Id	Concept	Codelist \ Concept Scheme	Dimension Type
FREQ	Frequency	Frequency codes(1.0)	NORMAL
REF_AREA	Reference area	Area codes(1.0)	NORMAL
ADJUSTMENT	Adjustment indicat	Adjustment codes(1.0)	NORMAL
TRANSFORMA	Transformation	Transformation codes(1.0)	NORMAL
PRICES	Prices	CL_NA_PRICES(1.0)	NORMAL
VALUATION	Valuation	Valuation codes(1.0)	NORMAL
STO	Stocks, Transactio	STO codes(1.0)	NORMAL
INSTR_ASSET	Instrument and As	Instrument asset codes(1.0)	NORMAL
MATURITY	Original and Resi-		NORMAL
REF_SECTOR	Reporting institutic	Sector codes(1.0)	NORMAL
COUNTERPAR	Counterpart area	Area codes(1.0)	NORMAL
COUNTERPAR	Counterpart Instit.	Sector codes(1.0)	NORMAL
ACTIVITY	Activity classificat	Activity codes(1.0)	NORMAL
EXPENDITURE (CO	EXPENDITURE (CO	COFOG codes(1.0)	NORMAL
ACCOUNTING	Accounting Entry	CI_ACCOUNTING_ENTRY(1.0)	NORMAL

Text Type - Start Value - Decimals -
 Sequence - End Value - Pattern -
 Min Length - Interval -
 Max Length - Time Interval -

TO DOWNLOAD THE DSDs FOR LOCAL USE:

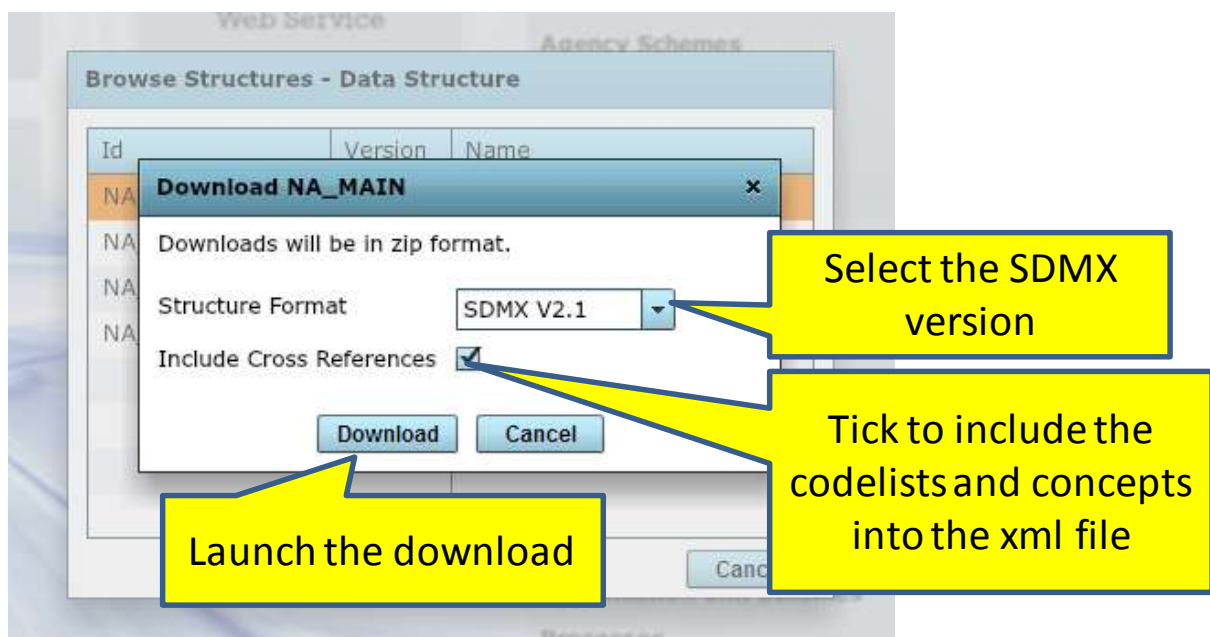
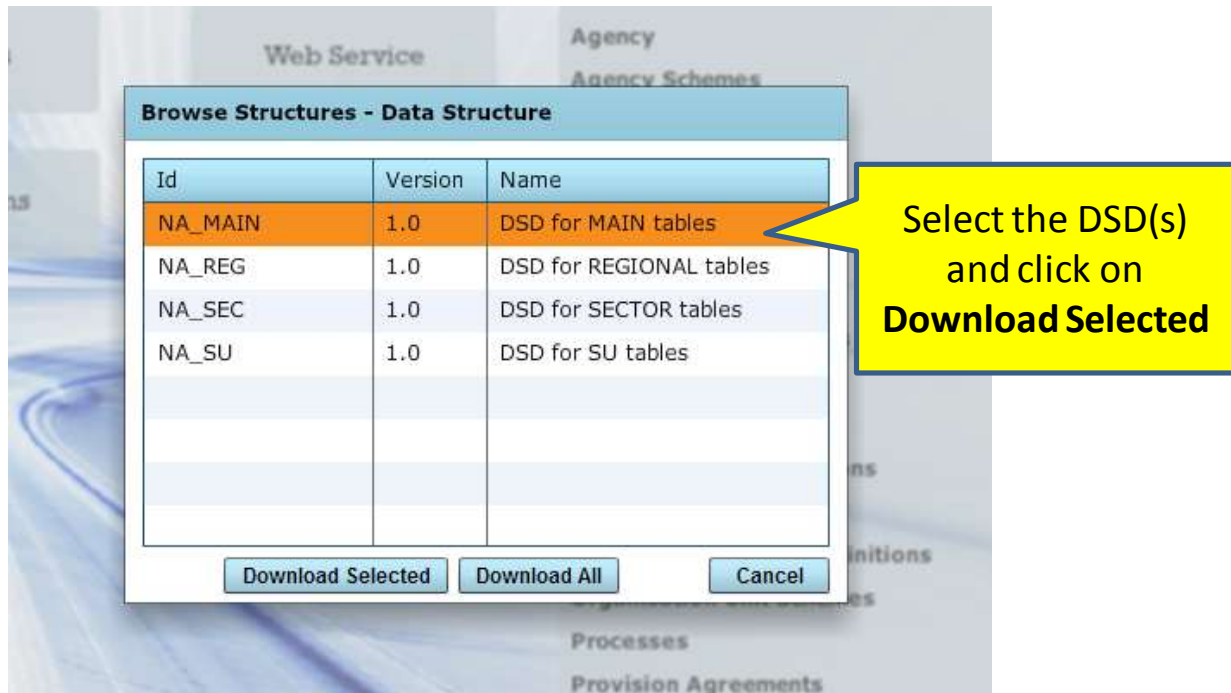
FUSION REGISTRY National Accounts

Management | Services | Registry Structures

Agency: ESTAT

- Agency Schemes -
- Categorisations -
- Category Schemes -
- Codelists 23
- Concept Schemes 1
- Content Constraints -
- Data Consumer Schemes -
- Data Flows -
- Data Provider Schemes -
- Data Structure Definitions 4
- Hierarchical Codelists -
- Metadata Structure Definitions -
- Organisation Unit Schemes -
- Processes -
- Provision Agreements -
- Reporting Taxonomies -
- Structure Sets -

Download All Registry Structures
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Note that for most tools the structure format supported is **SDMX V2.0**. Please refer to the documentation of your specific tool for further details.

At the time of publishing the package, a dummy data flow is available for each DSD. These dummy data flows do not represent the real reporting needs and do not have any constraints linked to them. Additional data flows will be created on the basis of the transmission programs in place.

8 Description of DSD concepts

8.1 Decomposition of concepts

For the purpose of creating clean dimensions, i.e. not to merge different statistical concepts into the same code list, some code lists or breakdowns were decomposed when creating the reporting framework. The most visible examples are the decomposition of the previous "S2" breakdown (rest of the world) into institutional sectors and geographical area. Another example is the separate dimension for maturity, thus removing all items related to short or long term maturity from the instruments and assets.

This chapter gives some explanations on the dimensions used in the reporting framework. Some more detailed examples related to the new codification are given in chapter 8 (page **Error! Bookmark not defined.**).

8.2 Coding Combinations

It should be noted that the DSDs offer coding combinations that are technically possible but do not make sense from a content point of view. There are two types of cases where such "meaningless" coding combination can occur.

The first case is due to the linkage of specific values in particular dimension with another code in another dimension based on accounting principles. For example if one would like to code a series that is a balancing item, the assignment of the accounting entry dimension should be always *N=net* or *B=balance*. The use of alternative accounting entries available in CL_ACCOUNTING list would be possible but not meaningful in the context of national accounts.

The second case of possible "miss-coding" is due to redundancy of codes. This is the case of coding total government revenue and expenditure. In the STO dimension there are two different codes used to identify total government revenue (OTR) and total government expenditure (OTE). This is an obvious example of over-coding, since the description of OTR and OTE include information on the reporting sector and the accounting entry, thus using in addition the concepts of reporting sector and the accounting entry will be redundant. This is a real example of a code mixing several concepts in it. In addition this example falls under case one described above because the use of the codes OTR/OTE with reporting sectors different than government will be meaningless. An alternative solution is to use one single code like OT to indicate expenditure/revenue and use the reporting sector dimension to indicate general government and the accounting entry dimension *D=debit* or *C=credit* to indicate the expenditure of revenue part. Of course due to the asymmetry in the integrity rules for expenditure and revenue two separate rules should be included and they would depend on the value of the accounting entry. Even though technically feasible, this optimisation has for now been left out of the package.

Another example for redundancies in the codes that were kept in the model refers to coding of exports and imports of goods and services. In the STO dimension there are two different codes used to identify exports of good and services (P6) and imports of good and services (P7). In addition the two concepts were broken down into sub items namely export/import of goods (P61/P71); export/import of services (P62/P72); and export/import of FISIM (P62F/P72F). Since the two concepts export and imports are

symmetric they could be coded with a single STO code and appropriate accounting entry value. In the current model a meaningful coding of P6 and its sub-elements will require to be always coded with accounting entry *D=debit* and P7 and its sub-elements will require accounting entry *C=credit*. This example relates also to the first example above of linking specific code values in different dimensions. The cleaner solution of coding P6/P7 is to use a single value in STO to indicate exports/imports of goods and services and then use the accounting entry dimension *D=debit* or *C=credit* to indicate if export or import is implied. The technical group decided to keep the current coding of exports and imports using the codes P6 and P7 because it is common practise in National Accounts and is also lined out in the SNA standards.

In SDMX 2.1 specific constraint artefacts can be created and linked to DSDs, data flows or provision agreements to document such cases. This has not yet been done in the context of the package. Consequently additional validation may be required after exchanging the data on correct usage of coding combinations.

8.3 Dimensions

1. **Frequency:** This concept refers to the periodicity of the reported data. A single data file (or dataset in SDMX terminology) could include multiple frequencies. The most commonly used frequencies are annual, quarterly and monthly.
2. **Reference area:** The reference area refers to the economic territory, country, or region on which statistics are provided. Statistics made available by international organisations could cover many countries as well as regional country groupings (areas). The reference area concept is linked to the default reference area code list in most DSDs. The exception is the DSD for regional statistics, where the regional classification is used instead.
 - a. **Reference area:** The reference area code list is shared with BOP and contains codes for countries, geographic aggregates and economic aggregates that can be used as area or counterpart area.
 - b. **Regional classification:** This code list includes the NUTS (Nomenclature of Territorial Units for Statistics) classification in the European regional accounts and the Territorial Level (TL) codification in the OECD regional accounts.
3. **Adjustment indicator:** This concept identifies different types of seasonal, trading day, and trend cycle adjustments. In practice, they usually apply only to infra-annual series, while annual time series data would usually be coded as “neither seasonally or working day adjusted”.
4. **Time transformations:** This dimension gathers the most commonly used time transformations concepts in national accounts, other than seasonal adjustment. Different types of moving averages and sums are included. In addition, for example growth rates for different periods of time are included.
5. **Prices.** This concept defines different kinds of price and volume measures, as well as current prices. Two volume concepts are mainly used: prices of the previous year and chain linked volume estimates. In a few countries a concept based on a fixed base year is still used (constant prices). These concepts are described in Chapter 15 of the 2008 SNA.

- 6. Valuation.** This concept relates to different types of valuation: basic prices, producer prices and purchaser's prices. The differences between these concepts follow from the inclusion or exclusion of transport and trade margins, and taxes less subsidies on products. Furthermore, an additional concept in the valuation layer that refers to imports exists. Valuation layer concepts are to be clearly distinguished from prices in national accounts, as they may be applicable to measures in current prices as well as measures in constant prices (volume measures). These concepts are described in Chapter 14 of the 2008 SNA. In addition the concept identifies different methods of valuation and time of recording. It refers to, for example, face value, nominal value, market value, cash and accrual.
- 7. Stocks, transactions, other flows (STO):** This concept refers to the classifications related to opening balance sheets (outstanding amounts), through transactions and other changes in assets, to closing balance sheets (outstanding amounts). Balancing items are also included in this classification. Doing so, all details of transactions and flows are included, except for the classification of non-financial assets and financial instruments; see below. To simplify the model, also codes related to employment have been included in STO. Standard entries in this concept list thus corresponds to 2008 SNA Annex I paragraphs 1.17 to 1.24 as well as 1.35.
- 8. Instruments and asset dimension.** This concept describes the classification of non-financial assets and financial assets and liabilities. Positions and transactions are in principle independent. This implies that the breakdown into financial instruments in the standard SNA-classification is redundant (e.g. AF4 in the asset classification and F4 in the transactions classification). Therefore, the codes for assets and transactions are the same in this dimension. The instrument dimension should be used in combination with the STO dimension to differentiate positions from transactions (e.g., AF4 as described in the 2008 SNA is coded with LE/LS (opening/closing stock) in the dimension STO and F4 in the dimension instruments and asset, whereas F4 as described in the 2008 SNA is coded with F (financial transactions) in the dimension STO and F4 in dimension instruments and asset). Standard entries in this concept list therefore correspond to 2008 SNA Annex 1, paragraphs A1.36 to A1.39, and financial assets and liabilities described in A1.26.
- 9. Maturity:** Although a maturity distinction is part of the SNA2008/ESA2010 assets categories, it is limited to distinguishing between an original maturity of less and more than one year. In parts of the Balance of Payments, and also for other reporting templates, more breakdowns for original as well as residual maturities are needed. It was decided to merge the coding for original and residual maturity into a single code list, following the coding rules lined out in the maturity code list sheet. This ensures flexibility to extend the list as needed for any combination of original and residual maturity, while at the same time the model can be kept simple for the most commonly used maturity combinations (short/long term).
- 10. Reference institutional sector:** This concept relates to the institutional (sub-)sectors. Institutional sectors consist of groupings of institutional units, economic entities that are capable of owning goods and assets, of incurring liabilities and of engaging in economic activities and transactions with other units in their own right. This concept is also used in the

Balance of Payments (BoP) statistics. The standard items pertaining to this concept are listed in 2008 SNA, Annex I.11.

- 11. Counterpart area:** This dimension shares the same code list as the one applied in the reporting area dimension and is used for from-whom-to-whom reporting.
- 12. Counterpart institutional sector:** This concept uses the same description and codes as the ones in the reporting institutional sector classification. This kind of detail is often referred to as statistics on a “from whom to whom” basis.
- 13. Activity classification:** This concept applies to groupings of units engaged in production of goods and services, so called establishments. The model allows reporting in both commonly used standard classifications, NACE and ISIC. For the level of detail needed in National Accounts (two digit level), the classifications map one-to-one and no extra effort is needed to mark which of the two classifications is used.
- 14. Activity to:** This concept uses the same code list as the activity classification and is used for coding input/output tables.
- 15. Product classification:** This concept describes different types of products, and is mainly used in the context of supply and use tables. The model allows using both main standards, the Central Product Classification (CPC) and the Classification of Products by Activity (CPA). The CPC is a standard UN classification describing products on the basis of their characteristics. The CPA describes products in terms of the activity that typically produces them, and is used in the context of supply and use and square input-output tables. In order to distinguish which classification is applied to code the series, a prefix is used in the codes.
- 16. Product to:** This concept uses the same code list as the product classification and is used for coding input/output tables.
- 17. Expenditure:** The reporting framework lists a single expenditure concept, which can be linked to different classifications in the DSD depending on the expenditure classification applicable. Currently only COFOG and COICOP are used in practice. COPP and COPNI code lists have been added for completeness and future use.
 - a. The Classification of the functions of government (COFOG).** This concept is used to classify government expenditures by function (defence, health, education, etc.).
 - b. The Classification of individual consumption by purpose (COICOP):** This concept is geared towards describing final consumption expenditure of households by purpose (food, clothing, health, education, etc.).
 - c. The Classification of Outlays of Producers by Purpose (COPP).** This concept provides information on the outlays of producers by purpose, such as infrastructure, research and development, environmental protection, marketing, human resources and production programmes.
 - d. Classification of the Purposes of Non-profit Institutions serving households (COPNI):** This concept describes the main purpose of the activities carried out by non-profit institutions serving households, like health, recreation and culture, education, social protection, religion etc.

- 18. Accounting entry:** The code list for accounting entry is aligned with the Balance of Payments (BOP), although the use of terminology may slightly differ in both domains. The concept identifies:
- for transactions on the non-financial (current and capital) accounts, whether the data item or variable is a credit, a debit, or the balance of credit minus debit.
 - for positions and transactions in the financial accounts and balance sheets, whether the variable refers to (the net acquisition of) assets, (the net incurrence of) liabilities, or net positions, defined as assets minus liabilities.
- 19. Consolidation Status** makes a distinction between non-consolidated and consolidated data (at the sector or sub-sector level of the institutional sector classification). In principle the standards recommend the reporting of non-consolidated data; however consolidated reporting schemes exist.
- 20. Unit of measurement:** This concept includes both physical units (employees or hours worked) and money metrics (e.g., national and foreign currencies). For regular country transmissions to international organisations of data expressed in money metrics, only national currency (XDC) coding is required. The complete list of currencies may be used for specific transmissions or for data transmissions among international organisations.
- 21. Currency of denomination:** This concept is linked to the measurement unit. In case of money metrics, it describes the currency of denomination
- 22. Custom breakdown:** This concept has been added to allow coding customised breakdowns of existing series. The custom breakdown code list contains dummy codes. If used, the custom breakdown label attribute should be used to provide additional information on the custom item.
- 23. Pension manager:** This concept is only used in the pension table and identifies the pension manager using the institutional sector code list.
- 24. Pension claimant:** This concept is only used in the pension table and identifies the pension claimant using the institutional sector code list.
- 25. Pension fund type:** This concept is only used in the pension table and identifies the pension fund type.
- 26. Reference period:** The reference period is a special dimension in SDMX marked as Time Dimension. Unlike the other dimensions, it is not presented at sibling or series level but for each observation. The time format is standardised in SDMX-ML for each possible frequency (e.g. 2010 for annual, 2010-Q1 for quarterly).[†]

8.4 National Accounts Attributes

Please note that attributes are attached at different levels. Possible levels are the dataset (root level), the sibling (series without frequency), the series and the observation. Furthermore, attributes can be defined on an optional or a mandatory basis. Mandatory attributes have to be added to any data file

[†] Note that for SDMX-EDI transmissions the time format for the reference period needs to be provided separately as an attribute (see “Time Format”).

whereas optional attributes can be skipped. For the attachment level and applicability of the listed attributes, reference is made to the pilot registry or the overview sheet in the matrix file.

In some cases attributes may be defined as optional in the DSD but are still required in the context of a specific data exchange agreement. Please refer to the documentation of the respective data exchange agreement for details on such cases.

1. **Table identifier:** This attribute should identify the table number to which a data item belongs. The attribute is attached at the “sibling” level. Note that the attribute is defined as optional in the model, but will be required in the ESA 2010 transmission program and some other cases.
2. **Reference year (price):** This concept can be used to add the reference year for relevant codes from the price concept (D, L, O and Q).
3. **Embargo date:** Allows adding a specific date before which the receiver should treat the data as being under embargo for further dissemination. When embargo data is reported, the observation should be flagged 'N' in the OBS_CONF attribute and a date[‡] should be provided in the embargo date attribute. The 'N' flag identifies the data under embargo and the embargo date informs until when the data is under embargo. In the Excel visualisation template, this is represented by the corresponding cells in the header part of the questionnaire. Only the conjunction of these two pieces of information guarantees that the data will not be published.

Those two attributes are used to classify taxes by economic function in Government Finance Statistics (GFS) related to ESA table 999:

4. **Economic function**
5. **Tax category**

8.5 Cross Domain Attributes

6. **Reference period detail:** This additional concept accompanies the frequency concept, and indicates whether reporting is done for a calendar year (C) or a fiscal year (F..). Additional level of detail can be given by providing the month in which the fiscal year starts (e.g. F04 for April).
7. **Comments:** These attributes allow free text comments to be added to the data at several levels (dataset, siblings and observations).
8. **Confidentiality status:** This attribute provides coded information about the sensitivity and/or confidentiality status of the data. The attribute is attached at the individual “observation” level. The attribute is optional. If no confidentiality status is provided, the observation is assumed to be free for publication (same as providing code F).

[‡] Note that the date format for embargo date (YYYY-MM-DD) does not use the same format used for the reference period (YYYY for annual, YYYY-Qx for quarterly), since a specific day and not a period needs to be provided.

9. **Decimals:** This attribute provides a list of values showing the number of decimal digits used in the data.
10. **Observation status:** This attribute provides coded information about the "flags" of an observation (with respect to the status of the relevant figures, as reflected in the code list). The attribute is attached to individual observations. The attribute is optional. If no status flag is provided, the observation is assumed to be a "normal value" (same as providing code A).
11. **Time format:** This attribute provides codes to indicate the type of time references used in the data. It is not anymore needed for SDMX-ML messages, but is required to provide backwards compatibility with SDMX-EDI.
12. **Time period collection:** This attribute can be provided to report a time period for data collection different from the reference period. In some cases it is used to present data collected multiple times in a single reference period (e.g. annual data collected twice a year as done in EDP).
13. **Title:** The title attribute can be used as a "headline" for the series and is mainly used for presenting data to end users.
14. **Unit multiplier:** Since the unit code list only contains base units, the unit multiplier can be used to add an exponent to the value (e.g. Million €). It is thus not needed to add very large numbers to the file.
15. **Last update:** A time stamp can be provided when the data was last updated.
16. **Custom breakdown label:** This textual attribute allows adding a label in case a customised breakdown is provided.
17. **Compiling organization:** This attribute indicates the organization that has compiled the series. This is usually fixed to a single value in the case of transmissions from a national to an international organisation. However, in international dissemination or data exchange, this attribute might be used to refer to the original data compiler.

9 Coding Examples

Detailed coding examples are provided by the Excel visualisation sheets for tables of some transmission programs. This chapter outlines some key rules and gives some examples on how to code data exemplifying the principle of having clean dimensions.

9.1 Coding Rest of the World

Before: S2 breakdown in the sector code list

Now: combination of institutional sector and counterpart area

SDMX aims at having clean dimensions. Thus the coding changes the convention of using the Rest of the World (S2) sector and its breakdowns (as applied, for example, in the ESA95 Transmission), to using the institutional sector concept (code list CL_SECTOR) in conjunction with the counterpart area concept (code list CL_AREA). Instead of reporting S2, S1 (total economy) is reported with counterpart area W1 (Rest of the World). In the "from-whom-to-whom" detail not only the reference area and reporting sector have to be defined, but also the counterpart area and counterpart institutional sector of a transaction or outstanding amount.

The codes S212 and S13P are currently excluded. They are used in Government Finance Statistics and cannot be covered through the counterpart area concept due to specific collection needs. Those cases will be reviewed in the next maintenance cycle.

Old sector coding related to S2		SDMX counterpart area coding (counterpart sector = S1 → total economy)	
S2	Rest of the world	W1	Rest of the World (non allocated)
S21	Member-States and institutions of the European Union: "Intra-EU"	B0	Intra-EU (changing composition)
S211	Member States of the European Union	Z8	Other EU member states (all countries except the reference area)
S2111	Member States of the euro area	L0	Other Euro area member states (all countries except the reference area) (changing composition)
S2112	Member States of the European Union that are not Member States of the euro area	K0	EU member states not belonging to the Euro area (changing composition)
S212	The institutions of the European Union	<i>Currently excluded</i>	
S2121	Institutions of the euro area	4FM	European Central Bank + European Stability Mechanism (ESM)

Old sector coding related to S2		SDMX counterpart area coding (counterpart sector = S1 → total economy)	
S2122	Other institutions of the European Union	4Z	European Union Institutions, Organs and Organisms (excluding ECB)
S22	Third countries (and international organisations) vis-à-vis the European Union: "Extra-EU"	D0	Extra-EU (changing composition)
S2I	Member-States and institutions of the euro area: "Intra-EA"	I0	Euro area (changing composition)
S2X	Third countries (and international organisations) vis-à-vis the euro area: "Extra-EA"	J09	Extra-Euro area not allocated (changing composition)
S13P	General Government and Institutions of the EU (S13+S212)		<i>Currently excluded</i>

Note that the area code list offers different codes related to rest of the world. Additionally to the code W1 used in National Accounts, codes such as W19, W190, W1X1 have been defined. Those are in use in Balance of Payments and do not need to be taken into account for National Accounts reporting.

9.2 Time transformation

Often time transformations concepts, other than seasonal adjustment are used in national accounts. Examples for such transformations are different type of moving averages and sums. In addition, growth rates defined in different time adjustments and differences could be also used in national accounts. Expressing different growth rates in national accounts can be used to illustrate the new time transformation concept. Growth rates in national accounts may be derived in different ways, depending on the source data used. Growth rates for non-financial transactions (NF) are for instance calculated as period on period (in case of annual $(NF(t)-NF(t-1))/NF(t-1)$) or period on 4 period (in case of quarterly $(NF(t)-NF(t-4))/NF(t-4)$) growth. However in financial accounts, flow (F) over stock (LE) concept is applied: $(F(t-3)+F(t-2)+F(t-1)+F(t))/LE(t)$ for deriving growth rates. These two methods are fundamentally different, therefore in terms of codification those should be distinguished in the concept list. The codes that correspond to growth rate over four periods is G4 and the code for growth rate, flow over stock over 4 periods is F4. In this respect the growth rate in gross disposable income for the euro area can be coded as I6.G4.B6G._Z, and the euro area growth rate of quoted shares can be coded as I6.F4.F.F51. The dimensions in the last examples are just illustrative and their sequence indicates: reference area, transformation, stock/flow and instrument.

9.3 The use of the currency denomination concept

Currency denomination has not been considered as part of the current national accounts DSD, as it has no immediate relevance in the context of the data transmissions as listed in the SDMX-NA DSD matrix. However, the Government Finance Statistics transmission programme includes series where the DSD Guidelines

reported debt is denominated in a currency other than the national currency. For instance one may be interested in collecting debt in Hungary denominated in Swiss francs. In this case Hungary will report the relevant debt items denominated in Swiss francs: HU.GD.XDC.CHF. In this example the first dimension indicates the reporting area being Hungary, GD indicates the Maastricht debt, XDC indicates the unit of measurement which is national currency and CHF indicates the denomination currency Swiss francs.

9.4 Coding long term / short term debt securities or loans

Before: specific breakdowns for long term / short term within the code lists

Now: combination of instrument / asset and maturity

As mentioned above, one of the main goals of the SDMX implementation in National Accounts is to keep concepts clear, meaning not to merge different concepts in one dimension. In this respect, the existing F41 and F331 codes in SNA 2008 and ESA 2010 are modelled using the items F4 and F3 from CL_INSTR_ASSETS along with the maturity concept. Following the proposition long term debt securities will be coded as F3.L, where L stands for long term original maturity (over 1 year). Short term debt securities will be coded as F3.S, where S stands for short term original maturity (less than 1 year). In line with this approach, short and long term loans will be coded as F4.S and F4.L.

9.5 Custom breakdown

The custom breakdown dimension can be used in combination with the custom breakdown label attribute to provide breakdowns not covered directly by the codification. Please use this breakdowns with care, as it cannot be guaranteed that time series using a custom code are consistent. The custom code C01 might mean something else in one year than in the next year or between different reference areas in the same year. The usage should be clearly described in the respective data exchange agreement. As much as possible, the coding should be applied in such a way that time series integrity is maintained.

STO ▼	DETAILS ▼	Tax name according to national classification (English)
D2	_T	TAXES ON PRODUCTION AND IMPO
D21	_T	Taxes on products
D211	_T	Value added type taxes
D211	C01	National VAT type 1
D211	C02	National VAT type 2
D211	C03	National VAT type 3
D211	C04	National VAT type 4
D211	C05	National VAT type 5
D212	_T	Taxes and duties on imports exclud
D2121	_T	Import duties
D2121	C01	National import duty A
D2121	C02	National import duty B
D2121	C03	National import duty C
D2121	C04	National import duty D
D2121	C05	National import duty E

The simplified example on the left taken from a National Accounts tax table shows one possible use of the custom breakdown.

Comparability across time and countries can only be ensured on the highest level (_T for the Details column), whereas the C01..C05 codes are used to provide additional national breakdowns which may vary from year to year and country to country. Since the labels are also not known in advance, the code list cannot include fixed codes and labels. The codes are enumerations from C01..C99 and the labels are provided individually through the attribute.

10 Annexes

10.1 Annex 1 – Sample SDMX headers

Sample headers are provided for SDMX-EDI, SDMX 2.0 and SDMX 2.1 formats. Note that the relevant fields would need to be set by the data provider according to the DSD and data flow for which the dataset is exchanged. Details on the header fields, their meaning and usage can be found in the SDMX technical standard packages (http://sdmx.org/?page_id=10). The data flow identifiers are agreed upon between the organisations participating in the exchange process up-front and the respective data flows are published in the registry after such an agreement.

Sample header for SDMX-EDI:

```

UNA:+.?. '
UNB+UNOC:3+4F0+BE2+130419:1547+IREF000001++GESMES/TS+++0 '
UNH+MREF000001+GESMES:2:1:E6 '
BGM+74 '
NAD+Z02+ESTAT '
NAD+MR+4F0 '
NAD+MS+BE2 '
IDE+10+description '
DSI+ESA2010_T1 '
STS+3+7 '
DTM+242:201304191547:203 '
IDE+5+NA_MAIN '
GIS+AR3 '
GIS+1:::- '
  
```

Sample header for SDMX-ML 2.0 Compact:

```

<Header>
  <ID>IREF000001</ID>
  <Test>false</Test>
  <Name>description</Name>
  <Prepared>2013-04-19T15:47:00+02:00</Prepared>
  <Sender id="BE2" />
  <Receiver id="4F0" />
  <KeyFamilyRef>NA_MAIN</KeyFamilyRef>
  <KeyFamilyAgency>ESTAT</KeyFamilyAgency>
  <DataSetID>ESA2010_T1</DataSetID>
  <Extracted>2013-04-19T15:47:00+02:00</Extracted>
</Header>
  
```

Sample header for SDMX-ML 2.1 Structure Specific:

```

<message:Header>
  <message:ID>IREF000001</message:ID>
  <message:Test>false</message:Test>
  <common:Name>description</common:Name>
  <message:Prepared>2013-04-19T15:47:00+02:00</message:Prepared>
  
```

```

<message:Sender id="BE2" />
<message:Receiver id="4F0" />
<message:Structure dimensionAtObservation="TIME_PERIOD"
structureID="NA_MAIN"
namespace="urn:sdmx:org.sdmx.infomodel.datastructure.DataStructure=ES
TAT:NA_MAIN(1.0):ObsLevelDim:TIME_PERIOD">
  <common:Structure>
    <Ref agencyID="ESTAT" id="NA_MAIN" />
  </common:Structure>
</message:Structure>
<message:DataSetID>ESA2010_T1</message:DataSetID>
<message:Extracted>2013-04-19T15:47:00+02:00</message:Extracted>
</message:Header>

```

10.2 Annex 2 – National Accounts Coding Guidelines

Standard concepts in the System of National Accounts 2008 (SNA 2008)

The standard concepts in the 2008 SNA are described in the Annex of the System of National Accounts statistical framework published by Eurostat, IMF, OECD, World Bank and United Nations. Leaving apart multipurpose classifications such as ISIC/NACE, CPC/CPA, COICOP, COFOG, etc. These classifications deal with concepts specific to national accounts, regarding transactions, assets/instruments and institutional sectors.

The relevant classifications all share a common standard structure, namely that they use a leading letter or letters, indicating the type of concept being described, followed by a series of digits, indicating the hierarchy of the classification; see example below (the letter indicating *Distributive transactions*).

D61 Net social contributions
 D611 Employers Actual Social Contributions
 D6111 Employers Actual Pension Contributions
 D6112 Employers Actual non-pension contributions

...

Often these standard classifications cover ‘pure’ statistical concepts. Existing data flows therefore often combine several concepts into a single one, and in some cases additional detail is added.

In order to accommodate such codes, and to maintain the logic behind the general classification structure in National Accounts, a number of conventions are presented in this annex.

Non-standard concepts

There are four sets of non-standard concepts,

Within standard hierarchical classifications we have:

1. Non-hierarchical aggregations and derived concepts.
2. Non-standard detail
3. Alternative breakdowns

Outside standard hierarchical classifications we have

4. Concepts that are not included in the 2008 SNA

Non-hierarchical aggregations and derived concepts

There are currently a number of different conventions ruling non-hierarchical aggregations. Non-standard aggregations occur within hierarchical classifications. This may involve concepts that do not have a common **ancestor** in the classification, or are defined at different levels.

There are three possible conventions with respect to non-hierarchical aggregations

1. Enumeration coding. This method is followed in the transmission programme questionnaire.

Examples

Concept	Code
D.42+D.43+D.44+D.45	D.42+D.43+D.44+D.45
D.6311+D.63121+D.63131	D.6311+D.63121+D.63131
D9+NP	D9+NP
D21-D31	D21-D31

The enumeration coding solution is most complete and explicit in terms of understanding the underlying concepts. However, in the examples it is easy to see that the resulting codes easily become long and cumbersome to use. More importantly, the codes used in the example cannot be used, as the only special character allowed is the **underscore** character, the '+', '-' and '.' characters are not allowed in the SDMX-DSD's. Note that the proposed SDMX coding convention suggests the use of the underscore as an addition operator.

2. Expression coding

Expression coding is a solution when the parts of the non-hierarchical aggregation do not belong to the same tree, or when the concept being conveyed is indeed an expression denoting a net concept. It is possible in expression coding to also use the underscore character. The current convention is to employ the letter A to mean addition, and the letter X to mean subtraction.

Examples

Concept	Code
D9+NP	D9ANP
D21-D31	D21XD31

3. Range coding

Examples

Concept	Code
D42+D43+D44+D45	D42_5

Range coding can **only** be applied to concepts that are within the same subtree of the classification hierarchy. The convention uses the **underscore** character “_” to denote it is a range concept rather than an enumeration. Range coding, if it is applied to the same level in the classification, is highly economical, because the end of the range can be unambiguously indicated by the last digit of the last code in the range. (E.g D42_5).

Note: For clarity in relation to the use of the underscore as addition operator in the proposed SDMX coding conventions, ranges have been coded using the trailing letter coding below.

4. Trailing letter coding

Examples

Concept	Code
D42+D43+D44+D45	D4N
D.6311+D.63121+D.63131	D631M
P.11+P.12	P1N
P.11+P.12+P.131	P1M

Trailing letter coding is the most efficient way to define non-hierarchical aggregates **within** the hierarchy. It requires that all concepts captured by it belong to the same branch of the hierarchy. Because it allows for alternative non-hierarchical aggregates at the same level and does not require adjacent codes as is the case in the range coding convention, it is more flexible than range coding. When non-hierarchical aggregates exist that belong to the same **branch** in the hierarchy, but exist at different levels, then the letter code is applied at the highest level of the items in that aggregation.

The choice of the trailing letter can be important. For instance, if only a single non-standard aggregation exists at a specific level, the letter ‘N’ could be used (‘Not-specified’) or the letter ‘O’ (other ...), or the letter ‘U’ for unspecified. In some instances, the letter ‘N’ has already been used, for instance for the non-hierarchical aggregates D.4N, D.7N and D.9N in the legislation on quarterly sector accounts.

Sometimes the demands of the variety of data flows covered exceed the available number of letters. This is especially true to the various combinations of economic sectors below the total economy (S1). In cases that available letters do not exist, the convention is to add a second letter. It is then still clear

that a non-standard aggregate is indicated, and what its position is in the hierarchy. E.g. S1K and S1KK would both be non-standard aggregates below the level of the total economy.

However the use of a trailing letter codes is not limited to defining non-standard aggregations within the classification hierarchy, as trailing letters are also used to denote further sub classifications. In such cases additional detail is coded using the sequence 'A' to 'I', corresponding to '1' through '9'. This occurs in Table 9 of the European System of Accounts (ESA2010) transmission program.

The trailing letter coding is therefore applied as follows

- The range of letters A to J is used to indicate non-standard detail below the most detailed standard items.
- The range of letters K to Z is used to indicate non-standard aggregations at a given level in the hierarchy
- Some characters have special meaning in the standard items, these are N, G and C, as in B1N, B1G and P51C. These are preserved in the convention

From the above discussion, it follows that different conventions need to be followed in different cases.

The conventions followed are (in the order of sequence of preference)

1. Trailing letter convention (Within a hierarchy)
2. Range coding (Within a hierarchy, at the same level, requires adjacent codes)
3. Expression coding (Distinct hierarchies, additions, subtractions)

Enumeration coding is not recommended.

Our preference is to use the trailing letter convention whenever suitable. This means cases where all the concepts involved in the aggregation are located in the same branch of the classification hierarchy, and preferably at the same level.

When this is not possible, i.e. when concepts are combined that are not part of the same branch in the hierarchy, range coding should be used.

Finally, with respect to expressions, these should be coded using expression coding. It is preferred that the letter 'X' denotes difference, and the letter 'A' denotes addition, to distinguish them from possible range codes.

Not applicable

When the dimension associated with the code list of transactions, other flows and balancing items is **not relevant** for a given data item, it follows that such a data item should not be classified in terms of this dimension. Because each key from a key family should be fully specified in all dimensions, this poses a problem. Therefore each code list includes a specific code for **not applicable** (_Z, according to the proposed SDMX coding convention).