

# International conference on International Outreach and Coordination in National Accounts for Sustainable Growth and Development

Session 9 – *Common tools*

Title: Common Open Standards for the exchange and sharing of data and metadata (SDMX)

Institution: Eurostat

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## 1. Introduction

The Statistical data and metadata eXchange (SDMX) initiative is carried out by seven international organisations, namely the Bank of International Settlements, the European Central Bank, Eurostat, the International Monetary Fund, the Organisation for Economic Co-operation and Development, the United Nations Statistical Division and the World Bank. SDMX is aiming at defining standard formats, an IT architecture and content oriented guidelines for the national and international exchange of statistical data and metadata.

## 2. The main components of SDMX

**Standard formats for data and metadata:** based on a common information model, the SDMX standards include formats based on XML (SDMX-ML) and EDIFACT (SDMX-EDI, which is essentially identical to GESMES/TS). The SDMX data format standards are implemented for a particular statistical domain as a "data structure definition" (DSD), which describes the structure of a particular dataset through a list of dimensions (= structural metadata, for example: country, variable, year, unit, etc.) and their associated code lists. In addition, SDMX also defines a standard format for explanatory (or reference) metadata. The reference metadata used by a particular statistical domain or by a particular statistical organisation are described via a "metadata structure definition" (MSD).

**The IT architecture for data and metadata exchange:** In addition to the normal transmission of data file in "push" method, SDMX provides guidelines and tools to support the "pull" method of data sharing, where the collecting organization retrieves the data from provider's website. The data may be made available for download in an SDMX-conformant file, or they may be retrieved from a database in response to an SDMX-conformant query, via a web service running on the provider's web server. In both cases, the data are made available to any organization requiring them, in formats which ensure that data are consistently described by appropriate metadata, whose meaning is common to all parties in the exchange.

In order to facilitate the building of new architectures SDMX-based, sponsoring organizations have provided a set of openly accessible IT tools which can be used for editing, viewing and converting of data files into or from SDMX-ML formats.

**The Content-oriented guidelines (COG):** these are recommendations for categorising and describing data and metadata. The set of guidelines released in 02/2008 consists of

- *Cross-Domain Concepts*, which provide common descriptors for concepts used in DSDs or MSDs for different statistical domains,

- *Cross-domain code lists* which detail for a number of those lists the code descriptions to be used
- *Statistical Subject-Matter Domains* which provides a list of statistical domains based on the UNECE Classification of International Statistical Activities
- *Metadata Common Vocabulary (MCV)* of terms used for describing statistics and their compilation processes (across subject-matter domains) by national statistical authorities and international organisations.

The SDMX standards are currently implemented at various levels of international co-operation in the following main statistical domains: external debt statistics, external trade statistics, National Accounts (see next chapter), Millennium Development Goal indicators, Education statistics, Balance of Payments Statistics, etc.

### 3. The implementation of SDMX in National Accounts

Based data sharing agreement between the ECB, Eurostat and the OECD, these three sponsoring organisations also worked out common data structure definitions in 2007. These common DSD are also based on structural metadata harmonised for these DSDs. The DSDs cover: National Accounts aggregates, Institutional Sector Accounts and Balance sheets, Financial Accounts, Government finance statistics, supply and use tables, input/output tables, regional accounts.

The implementation of these common DSDs is done two-fold:

**With the National Accounts Data collection using SDMX-ML (led by the OECD):** producing statistical agencies are asked to make data available on their web using the SDMX-ML format; from the websites of the data producer user institutions can then pull the data.

**With the ESA95 revised transmission programme:** this reporting covers national and financial accounts to the ECB and Eurostat using SDMX compliant formats and technologies. It mainly uses the push approach, i.e. national data producer are asked to send the data to the collection international bodies.

With regard to reference metadata, Eurostat created the Euro SDMX metadata structure (ESMS) which uses a certain number of SDMX cross-domain concepts for a standard structure of reference metadata to be used within the European Statistical System. This ESMS will also impact the reference metadata to be provided for National Accounts.

### 4. Conclusions

The SDMX initiative is a success story of international co-operation and standardisation. Beside the further development of the SDMX deliverables, the main efforts of the sponsoring organisations will be on broader implementation and capacity building on all levels of statistical or other organisations.