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Items for information: common open standards for the exchange and sharing of data and metadata

Report of the Statistical Data and Metadata Exchange sponsors

Note by the Secretary-General

In accordance with Economic and Social Council decision 2014/219, the Secretary-General has the honour to transmit the report of the Statistical Data and Metadata Exchange (SDMX) sponsors. The present document provides an overview of the progress made with regard to the implementation of the SDMX standards and related information technology applications, including the SDMX Global Registry, since the previous report, submitted to the Commission in February 2013. SDMX is now being implemented in several statistical domains, such as national accounts and balance of payments. These implementation actions have led and will lead to more harmonized data structures that involve more timely, reliable and cost-efficient exchanges.

* E/CN.3/2015/1.



Report of the Statistical Data and Metadata Exchange sponsors

I. Introduction

1. In 2001, the Bank for International Settlements, the European Central Bank, Eurostat, the International Monetary Fund (IMF), the Organization for Economic Cooperation and Development (OECD) and the United Nations joined to develop more efficient processes and standards for exchanging and sharing data and metadata. The World Bank joined the initial group of sponsor organizations in 2003. The commitment of the sponsor organizations to the Statistical Data and Metadata Exchange (SDMX) initiative was reinforced in 2007 by a memorandum of understanding that established an SDMX secretariat and set the framework for the creation of two working groups: the SDMX Technical Working Group and the SDMX Statistical Working Group.

2. The aim of the SDMX initiative is to create and maintain technical and statistical standards and guidelines, together with an information technology architecture and information technology tools, to be used and implemented by the SDMX sponsors and other organizations that use statistical data and exchange metadata. Combined with modern information technology, these SDMX standards and guidelines should improve the efficiency when managing statistical business processes. After more than 10 years of experience, the SDMX standards and guidelines have progressed sufficiently to be broadly implemented in statistical domains and, globally, by organizations that use statistics.

3. The Statistical Commission has received SDMX progress reports since 2002. The Commission recognized and supported the SDMX standards and guidelines in 2008 as the preferred standard for the exchange and sharing of data and metadata, requesting the SDMX sponsors to continue their work and to encourage national and international statistical organizations to increase the use and implementation of SDMX.

II. Implementation of SDMX in statistical domains

4. The SDMX sponsors mandated the European Central Bank, Eurostat and IMF to implement SDMX in statistics on balance of payments and foreign direct investment in accordance with the *Balance of Payments and International Investment Position Manual*,¹ and mandated the European Central Bank, Eurostat and OECD to implement SDMX in national accounts in accordance with the *System of National Accounts 2008*.² All three global SDMX implementation actions came to a conclusion. The data structure definitions are now hosted in the Global Registry and are continuously maintained.

5. SDMX will also be implemented in additional statistical domains. Initiatives that include statistics on research and development, education, short-term business, government finance and international trade are in progress. For many of these

¹ International Monetary Fund, *Balance of Payments and International Investment Position Manual*, sixth edition (Washington, D.C., 2009).

² United Nations publication, Sales No. E.08.XVII.29.

domains, several SDMX sponsors and international organizations are steering the SDMX implementation work, organized similarly to the global SDMX implementation in national accounts and balance of payment statistics (i.e. the analysis of the data structures, the harmonization of metadata, the creation of data structure definitions and the pilot exchange of data).

6. The Task Force on International Data Cooperation was set up by the Inter-Agency Group on Economic and Financial Statistics to carry out two pilot exercises with national accounts data in order to test SDMX-based data exchanges between international organizations in practice, with the aim of lessening the reporting burden on national statistics offices and national central banks and of synchronizing, to the extent possible, the data published by international organizations. The first pilot, which focused on main national accounts aggregates, is under way. The technical feasibility of exchanges has been proven and the exercise is scheduled to move to the following stage in 2015, at which exchanges will be carried out in real time and will simulate true production workflows. The second pilot covering sectoral accounts will start in 2015.

7. In a number of statistical domains and international collections, SDMX has become standard practice, for example:

- Eurostat collects census and national account data via SDMX.
- The European System of Central Banks exchanges statistics on the balance of payments and international investment positions, sector accounts and government finances based on global data structure definitions.
- OECD receives short-term economic statistics from a number of member countries through SDMX web services.
- The IMF Special Data Dissemination Standard Plus requires dissemination of national data in SDMX format.
- A joint initiative between the African Development Bank and IMF provides a country-specific cloud-based platform for data dissemination to African countries that converts data into an SDMX format, with data from 16 countries already available.
- The Bank for International Settlements, together with some 60 central banks, operates most of its statistical data exchange based on SDMX.
- The Statistics Division of the Department of Economic and Social Affairs has established the SDMX exchange of data linked to the Millennium Development Goals and to other development indicators with a number of countries. The implementation of SDMX for post-2015 indicators is expected to commence in 2015 and will build on this experience.

III. SDMX governance and the Global Registry

8. The SDMX sponsors have established clear governance rules for supporting the implementation of SDMX in statistical domains. These rules define the role and obligation of ownership groups, maintenance agencies and other bodies involved in this work. In addition, a change management procedure related to the SDMX artefacts was established, allowing for regular or emergency updates of those

artefacts. Domain-related SDMX ownership groups are the final decision-making bodies for creating and maintaining SDMX artefacts.

9. The SDMX sponsors have put in place a top-level SDMX registry, the SDMX Global Registry, as a strategic deliverable of the SDMX initiative. In April 2014, the Global Registry started its operation at <https://registry.sdmx.org>, hosting key SDMX artefacts for three globally coordinated statistical domains: national accounts, balance of payments and foreign direct investment, with Eurostat, IMF and OECD acting as their respective maintenance agencies. More artefacts will follow, in line with the Global Registry content policy. The SDMX Global Registry facilitates the dissemination of data and reference metadata by implementing the data-sharing vision of SDMX. It is established and financed as a joint effort by the SDMX sponsors.

10. For a smooth longer-term operation of the Global Registry, guidelines on the scope of domains and artefacts to be hosted in the registry are being developed, as well as guidelines on the versioning of various interrelated SDMX artefacts.

IV. SDMX technical and statistical standards

11. The SDMX Technical and Statistical Working Groups are mainly responsible for the management and enhancement of the SDMX technical and statistical standards and the related SDMX information technology applications.

12. The work of the SDMX Technical Working Group focused on the following main deliverables: the technical preparations for the SDMX Global Registry (the Group remains responsible to the technical testing of Global Registry updates) and the preparation of a new draft specification for the SDMX-JSON (JavaScript Object Notation) data exchange format. In 2013, together with interested technical experts, the Group formed a task force for the new validation and transformation language. This language is based on the general statistical information model and allows statisticians to define transformation and validation rules for statistical data. Public review of the specification of the draft language finished in late 2014. The Group collects and analyses bug reports and feature requests for the SDMX technical standards. Based on this work, a small update of the technical standards is in preparation. The Group is also working to make the SDMX technical standards more easily accessible to developers. In 2014, the Group finished a report on the SDMX information technology tools strategy. Additional work related to those tools is ongoing.

13. The work of the SDMX Statistical Working Group focused mainly on the following deliverables: guidelines for the creation of data-structure definitions and standard code lists; the enhancement of the SDMX content-oriented guidelines; and the relationship of SDMX to other technical standards. Additional guidelines have been created on representing multiple observation statuses, the governance of SDMX artefacts, the versioning of SDMX artefacts, a checklist for the implementation of SDMX in a statistical domain and exchanging embargoed data. An SDMX Global Registry contents policy was drafted to determine the scope of the content that could be hosted in the global registry. New cross-domain code lists have been published on age, sex, activity, civil status, occupation and seasonal adjustment, and several existing code lists have been revised. The Statistical Working Group formed task forces that included members from both SDMX

Working Groups to create an SDMX glossary that included a revision of the cross-domain concepts and to create an approach for modelling a statistical domain for data exchange in SDMX.

14. Technical Committee 154 of the International Organization for Standardization has approved the revision of the SDMX technical specification, from ISO/TS 17369:2005 (SDMX 1.0) to ISO/TS 17369:2013 (SDMX 2.1).

V. SDMX Global Conference 2015

15. The SDMX Global Conference 2015 will be hosted jointly by the Economic and Social Commission for Asia and the Pacific and the Statistics Division in Bangkok, from 28 to 30 September 2015, with the opening day being devoted to capacity-building organized by the SDMX sponsors.

16. The programme of the SDMX Global Conference 2015 is currently under preparation. It will put the emphasis on presenting recent implementations of the standard, success stories and lessons learned. The programme will also provide for the presentation of ongoing developments and discussions on the future of SDMX.
