



SDMX Roadmap 2020

SDMX is the leading standard for exchanging and sharing data and metadata in official statistics. SDMX is sponsored by seven [International Organisations](#) and is recognised by many international bodies, such as the United Nations' Statistical Commission, the Interagency Group on Economic and Financial Statistics coordinating and monitoring the G20 Data Gap Initiative, the UN regional Economic Commissions, the European System of Central Banks (ESCB) and the European Statistical System (ESS).

1. Why is there a need for an SDMX Roadmap?

In 2011, the SDMX sponsors published an action plan for the years 2011 to 2015. This plan was instrumental in channelling development efforts and providing SDMX users with a clear view of how the standard was developing. Key strands of the action plan included setting up a Global SDMX Registry to share metadata assets, implementing Data Structure Definitions (DSD) for local and global use in macroeconomic statistics, improving Content-Oriented Guidelines, producing a new generation of IT tools, and rolling out new training services.

SDMX has already achieved an optimal level of maturity and it is widely recognised as a global standard for data exchange. Building on the positive experience of the previous action plan and in response to the needs expressed by users, the SDMX sponsors have decided to develop a "Roadmap 2020" presenting a vision of where SDMX is heading in the next few years.

In this Roadmap 2020, the SDMX sponsors outline a series of strategic objectives:

1. Strengthening the implementation of SDMX;
2. Making data usage easier via SDMX (especially for policy use);
3. Using SDMX to modernise statistical processes, as well as continuously improving the standards and IT infrastructure;
4. Improving communication in general, including a better interaction between international partners.

These priorities will be developed in an action plan covering the period 2016 to 2020. For each action, this plan will identify the organisations responsible, timelines and deliverables. The SDMX Sponsors will monitor the progress of these actions on an annual basis.

SDMX: some background

In 2001, the Bank for International Settlements (BIS), the European Central Bank (ECB), Eurostat, the International Monetary Fund (IMF), the Organisation for Economic Cooperation and Development (OECD), the World Bank and the United Nations Statistics Division (UNSD) joined forces to develop more efficient processes for the exchange and sharing of data and metadata. The seven sponsor organisations called their initiative Statistical Data and Metadata eXchange (SDMX).

The sponsors' main goal has been to develop and maintain 'common open standards' (this was the title of the first report presented to the United Nations Statistical Commission in March 2002) for data and metadata that are accepted worldwide for exchanging and sharing statistical information as well as for providing a modern basis for statistical data modelling. In their first joint statement, the sponsor organisations declared their intention to join forces "to focus on business practices in statistical information that would allow more efficient processes for exchange and sharing of data and metadata within the current scope of our collective activities. The goal is to explore common e-standards and on-going standardisation activities that could allow us to gain efficiency and avoid duplication of effort in our own work and possibly for the work of others in the field of statistical information".

The first work programme was approved in June 2002. The SDMX sponsors released the first version of the SDMX specifications in 2004, and the XML-based version 2.0 in December 2005. The technical standards were typically used first in data exchanges between the sponsor organisations and their constituencies, which helped the technical standards to mature and the technical infrastructure to develop. In 2007, the first Memorandum of Understanding between the seven sponsoring organisations was signed, formalising the commitment of the sponsor organisations and the governance of the SDMX initiative. Since then, the implementation of SDMX across statistical domains (such as Balance of Payments, National Accounts and Government Finance in the economic statistics domain) has increased steadily, supporting the global exchange of statistical information.

SDMX (ISO IS-17369) addresses a number of strategic and operational challenges, such as:

- *responding to the 'open data' challenge;*
- *helping statistical systems to harness the benefits of the 'data revolution';*
- *supporting data processing, analysis and dissemination, particularly for key indicators, such as those in the 2030 Agenda for Sustainable Development;*
- *producing more with less resources;*
- *getting data faster and in a more standardised form to users;*
- *getting the same data across International Organisations at the same moment;*
- *improving the overall quality of official statistics.*

SDMX now supports a wide range of international data exchange activities and is widely used around the world. Many national and international modernisation initiatives use SDMX to improve and standardise data and metadata exchange and dissemination, to make data usage easier, to maintain data quality and to save production and dissemination costs. This progress has been acknowledged by the international community, for instance by the Data Gaps Initiative endorsed by the G20.

2. SDMX 2020: Vision and strategic goals for the next years

The main objective of the SDMX initiative is a stronger and more global information system that can provide open and real-time access to official statistics. To achieve this, national and international statistical authorities will make available timely and comparable statistics using globally agreed data structures supported by good-quality metadata. SDMX has already shown that it has the potential to achieve this through a number of initiatives, such as the data sharing initiative of the Interagency Group on Economic and Financial Statistics, the IMF SDDS Plus, the UN Millennium Development Goals, the Joint ESCB Dissemination Standard between the ECB and national central banks, and the 'Census Hub' used in the European Statistical System.

SDMX is one of the bedrocks of a modern and industrialised statistical process. If each partner system were to use SDMX data structures and common IT building blocks, international information systems would be able to communicate 'machine-to-machine' as in industrial production processes. SDMX would make it possible to interconnect remote dissemination databases in a 'virtual data warehouse'. This would cut transmission delays, save resources, and improve the data quality in making global data more comparable.

National statistical offices and central banks have to guarantee the overall quality of statistics, using international standards. Similarly, International Organisations are ultimately responsible for the overall quality of internationally comparable statistics as well as their global aggregates. In this context, more SDMX would make it easier to disseminate open, timely, high-quality and comparable data.

By enabling national statistical authorities to use harmonised reporting structures for data and metadata, SDMX 2020 will reduce their reporting burden to International Organisations. In parallel, SDMX 2020 will ensure that International Organisations receive more timely and comparable statistics. It will also help analysts, policy-makers and users by making the same data available across organisations.

The use of SDMX could even extend beyond the current communities responsible for official statistics by reaching out to communities using standards and technologies for statistical processing, in particular those supporting data discovery, query and visualisation. SDMX provides the basis for sharing data with others: shared data can then be used to populate websites or can be presented dynamically. SDMX also offers harmonised statistical concepts and codes for data sets. All these features make SDMX particularly useful for a wide variety of statistics used in public administrations, in research or in the private sector. Promoting the use of SDMX assets (the Information Model, content guidelines and software tools) could be particularly beneficial to those agencies that need to respond to the so-called "open data" initiatives.

Why has SDMX had so much success in recent years?

- *Its sponsor organisations, which account for a major proportion of the world's official statistical data and metadata exchange operations, are committed to SDMX and its implementation.*
- *The SDMX governance structure is well-defined and transparent, but also quite light and flexible. This is also true for its ownership groups, which deal with specific implementing actions in statistical domains.*
- *Like many national statistical organisations, each sponsor organisation has dedicated activities for modernising statistical production, exchange and dissemination. These have been set up in response to resource constraints, the need for better user orientation and data quality and for integrating statistical processes. Many organisations see SDMX as a valuable toolbox that can help them to progress with their modernisation agenda.*
- *Major statistical domains decided to use the SDMX standards for data and metadata exchange and international data sharing. This is a big step towards harmonised global data dissemination and data consumption (i.e. the same data values being disseminated globally according to a mutually agreed structure).*
- *Expert knowledge and SDMX experience is growing in many statistical organisations. Many organisations have made the initial investment necessary and can now use SDMX for a greater number of statistical domains.*
- *SDMX has been integrated as a key element into the statistical modernisation policy led by the UNECE High-Level Group.*

In order to achieve our vision for where SDMX should be in 2020, the sponsors have identified the following main priority areas:

1. Strengthening the implementation of SDMX;
2. Making data usage easier via SDMX (especially for policy use);
3. Using SDMX to modernise statistical processes, as well as continuously improving the standards and IT infrastructure;
4. Improving communication on SDMX in general and the capacity building, including a better interaction between international partners.

Strategic goals and expected results are described more in detail in the following table.

3. SDMX strategic goals

	Strategic goals	Expected results
1. Strengthening the implementation of SDMX	1.1 Implement SDMX in more statistical domains and promote its use through a coordinated action plan among SDMX Sponsor organisations. 1.2 Develop additional SDMX Data Structure Definitions and make them available for global uses.	Greater global use of SDMX.
	1.3 Encourage more data sharing agreements using SDMX standards and IT infrastructure.	More efficient data sharing and dissemination between national and international organisations, reducing reporting burden and validation costs.
	1.4 Improve data sharing processes with a better coverage of reference (textual) metadata.	SDMX Metadata Structure Definitions for global use made available to complement data structures.
2. Making data usage easier	2.1 Encourage the use of SDMX for data dissemination (especially for policy purposes) and for more interactive data visualisation.	More data and metadata disseminated to users in SDMX formats.
	2.2 Encourage more compatibility of SDMX with other standards used for micro-data, such as DDI (Data Documentation Initiative) and XBRL (eXtensible Business Reporting Language).	Mappings to DDI and XBRL provided. Guidelines to the use of SDMX for micro-data released.
	2.3 Develop closer collaboration with Linked Open Data communities and their initiatives, actively promoting SDMX in open data initiatives.	Web dissemination channels based on SDMX fully supporting open data initiatives.
	2.4 Provide easier access to SDMX for national organisations through more SDMX-compatible exchange formats, based on the SDMX Information Model, and better IT tools.	'Easy-to-use' SDMX-compatible formats, more harmonised SDMX implementations, and better IT infrastructure and tools available.

<p>3. Modernising statistical processes and improving standards</p>	<p>3.1 Develop further the SDMX IT infrastructure and software tools, providing services that can be shared internationally.</p> <p>3.2 Improve technical standards and statistical guidelines for a better coverage of user needs.</p>	<p>Upgraded SDMX IT infrastructure and software tools.</p> <p>Enhanced version of SDMX technical specifications and statistical guidelines.</p>
	<p>3.3 Integrate data validation within the SDMX standard, based on the Validation and Transformation Language (VTL) developed and maintained as an implementation of the SDMX Information Model.</p>	<p>SDMX-based data validation available, completing the technical specifications.</p>
<p>4. Better communication and capacity-building</p>	<p>4.1 Improve communication about SDMX with senior managers, policy-makers, users and bodies that implement SDMX.</p>	<p>SDMX website constantly improved, promoting SDMX to a wider audience.</p>
	<p>4.2 Review of the lessons learned from more than 10 years of Global SDMX Conferences and expert group meetings.</p>	<p>New set-up for SDMX conferences and expert groups.</p>
	<p>4.3 Explore new avenues to communicate and advertise SDMX products.</p>	<p>Plan for SDMX media communication drawn up.</p>
	<p>4.4 Better communication and interaction with other modernisation initiatives, such as the ESS Vision 2020 and the UNECE High-Level Group for the Modernisation of Official Statistics. This involves collaboration over international models and activities such as GSBPM, GSIM and CSPA ⁽¹⁾.</p>	<p>Cooperation proposals will be worked out and announced.</p>
	<p>4.5 Improve SDMX training.</p> <p>4.6 Strong efforts to build SDMX capacity, in countries where a better awareness is needed.</p>	<p>Common policy on training and capacity building in place.</p> <p>Release of a list of SDMX experts and trainers.</p>

⁽¹⁾ GSBPM: Generic Statistical Business Process Model; GSIM: Generic Statistical Information Model; CSPA: Common Statistical Production Architecture.

As a result of these actions, Sponsors envisage that SDMX will be characterised – in 2020 – by:

- its broad use in data exchanges and dissemination by sponsor organisations and their respective constituencies;
- comprehensive data sharing in the main statistical domains, based on SDMX DSDs for global use;
- the broad use of international SDMX MSDs;
- greater SDMX-based dissemination and usage, in part by linking SDMX to other standards used for those purposes, being a standard well suited to supporting open data initiatives;
- the broad use of SDMX-based data validation (using VTL) in statistical processes;
- the availability of an upgraded and more integrated SDMX IT infrastructure and IT tools;
- a better SDMX communication ‘package’ that reaches out to relevant stakeholders;
- better collaboration with other institutions aiming to modernise official statistics;
- being a standard that is applicable to both public and private sectors.

4. Moving forward

The Sponsors will mobilise their resources to the strategic directions described above. These priorities will be laid down in more detail in a medium-term action plan covering the period 2016 to 2020, with particular focus initially on the first two years. For each action, this plan will identify the organisations responsible, timelines and deliverables. The SDMX Sponsors will monitor the progress of these actions on an annual basis and will update the work plan on the basis of a rolling calendar.

The Sponsors have set out the above-described strategy. They also recognise that the growing community of SDMX implementers and users is a rich source of ideas. Therefore, the Sponsors Group is keen to take into account ideas coming from this broad community, by organising dedicated conferences and using various communication channels, e.g. in the context of the G20 Data Gaps Initiative progress reports.

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Comments or questions regarding the SDMX Roadmap 2020 can be sent to contact@sdmx.org

Annex

Key SDMX milestones (2001-2015)

- 2001 May: First common statement of the Sponsoring Organisations
September 6-7, Washington D.C.: initial workshop
- 2002 March: First report to UNSC (Common Open standards for the Exchange and Sharing of Socio-economic Data and Metadata: the SDMX Initiative)
June: Approval of the first work programme
- 2003 Launch of Joint External Debt statistics Hub project (JEDH)
- 2004 December: SDMX version 1.0 published on the web
SDMX 1.0 published as ISO Technical Specification (TS) 17369
- 2005 December: SDMX version 2.0 published on the web
- 2006 Launch of Joint External Debt statistics Hub on the web
- 2007 January 9-11, Washington D.C.: First SDMX Global Conference
March: Memorandum of Understanding on the establishment and operation of SDMX
- 2009 January 19-21, Paris: Second SDMX Global Conference
First set of content-oriented guidelines published on the web
- 2011 April: SDMX Version 2.1 published on the web
May 2-4, Washington D.C.: Third SDMX Global Conference
Setup of the SDMX Statistical Working Group (SWG) and Technical Working Group (TWG)
- 2013 SDMX published as ISO International Standard (IS) 17369
September 11-13, Paris: Fourth SDMX Global Conference
Establishment of task-force on international data cooperation (TFIDC) by the Inter-Agency Group on Economic and Financial Statistics (IAG)
First release of global Data Structure Definitions for National Accounts, Balance of Payments and Foreign Direct Investment
- 2014 Setup of the Ownership Group for SDMX in Macro-Economic Statistics (SDMX-MES OG).
- 2015 Publication of the Validation and Transformation Language 1.0, implementing a new part of the SDMX 2.1 Information Model
Launch of the SDMX Global Registry; revision and enhancement of SDMX guidelines
Go-live of the international data cooperation pilot on GDP and population
September 28-30, Bangkok: Fifth SDMX Global Conference