9th SDMX Global Conference
Empowering Data Communities

BIS Fusion Metadata Registry meets IMF SDMX Central: A Strategic Partnership

Marco Marini (IMF) and Rafael Schmidt (BIS)

October 30, 2023
Outline

- IMF SDMX Central
  - SDMX tool for IMF’s Data Dissemination Standards
  - Migration to Fusion Metadata Registry (FMR)
- BIS Open Tech
- sdmx.io
- Next steps
IMF Data Dissemination Standards

- Developed to enhance the availability of macro economic and financial statistics through dissemination of data on National Summary Data Pages (NSDPs)
- Promote the development of sound statistical systems
- Three tiers with progression encouraged:
  - Enhanced General Dissemination Standard (e-GDDS 2015 - SDMX)
  - Special Dissemination Standard (SDDS 1996 - optional SDMX)
  - Special Dissemination Standard (SDDS Plus 2012 – SDMX)
National Data Summary Pages (NSDPs)

- Single page for key indicators
- Easy access to SDMX data, link to national dissemination, metadata
- Via national websites or IMF Dissemination Standards Bulletin Board (DSBB)
SDMX-enabled NSDPs
What is SDMX Central?

- SDMX Central is a tool provided by IMF to help member countries to create and maintain SDMX files on their NSDPs.
- Established in 2013 as a Software as a Service (SaaS) solution, developed and supported by Metadata Technologies.
- Countries use SDMX Central to:
  - Convert datasets from Excel/CSV into SDMX format (and vice versa).
  - Validate the structure of SDMX artifacts.
  - Register datasets in SDMX Central service (for SDDS Plus).
  - Library of DSDs (e.g., ECOFIN).
How to access SDMX Central
https://sdmxcentral.imf.org/
Transition to Fusion Metadata Registry

- In late 2022, IMF and BIS to discuss possibility to use Fusion Metadata Registry (FMR) for its SDMX Central services
  - FMR open-source tool owned by the BIS
  - SDMX Central and FMR are built on the same code
  - After successful feasibility assessment, IMF decided to align SDMX Central with FMR

- During 2023, BIS and IMF teams worked together to align FMR with SDMX Central functionalities
  - Requirements collected in the spring
  - Development work finalized in the summer
  - SDMX Central migration successfully completed in end-September
How to access SDMX Central – powered by FMR

https://sdmxcentral.imf.org/
Benefits of using FMR

- Upgraded features, including SDMX 3.0 compliance
  - Leapfrogged to FMR v11 – from v9 in SDMX Central

- Participate in FMR prioritization group
  - New and upgraded features can be requested

- Increase standardization of tools among SDMX sponsors
  - Facilitate interoperability

- Cost efficient solution
  - Financial contributions to sdmx.io community through Memorandum of Understanding
BIS Open Tech

- Platform for sharing statistical/financial **software as public and community goods**, promoting international cooperation.
- Projects based on **open source principles**.
- Collectively, more than 15,000 users.

www.bis.org/innovation/bis_open_tech.htm
sdmx.io is not a single project but an ecosystem of open source tools, patterns, guidance, learning materials and other resources like pre-configured containerised environments that make the software quick and simple to deploy.

- An open-source SDMX software and resource portal
  - Software releases (FMR, .Stat Suite, etc.)
  - E-learning courses and webinars
  - Knowledge and use-case articles
- Governance in place, incl. Prioritisation and User Advisory Groups
- Officially public, after the SDMX Sponsors approval

- Share software tools and components based on SDMX
- Complement existing tools in order to achieve statistical use-cases
- Interface SDMX with other standards or tools
- Promote reusability of SDMX software

Want to publish your open-source SDMX tool on sdmx.io? Please contact us contact.sdmx.io@bis.org
Next steps

IMF
- FMR migration one step towards modernizing use of SDMX at IMF
- Continue to collect feedback on SDMX Central from participating agencies
  - Migration to FMR brings opportunities to improve user experience

BIS
- Sdmx.io is being rolled out further
  - Software producers (national, international organisations but also commercial companies) are being contacted
  - MoU for organisations interested in participating to sdmx.io
  - SDMX articles, e-learning courses are being developed
  - Contributions from third parties
Thank you for your attention!

Questions?
Annex slides
What is Fusion Metadata Registry (FMR)

Wikipedia:
“A metadata registry is a central location in an organization where metadata definitions are stored and maintained in a controlled method.”

“Structural metadata registry to the SDMX specification”

All SDMX structures, e.g. Concepts, Codelists, Data Structure Definitions.

Plus: reference metadata reports which are treated like structures in SDMX 3.0

Uses the SDMX 3.0 ‘metamodel’

SDMX 2.1 model backward compatible
What is Fusion Metadata Registry

A database for SDMX structures and data registrations

Data processing services
- Data validation
- Data conversion
- Data mapping

Web user interface
Interactive

Excel data collection forms generator

Fusion Metadata Registry

SDMX REST API
Automation
FMR web user interface anatomy

SDMX organisations
DSDs, Dataflows etc
plus: convert and map data
Item schemes:
Codelists, Concepts etc
VTL transformation structures
Structure mapping rules
Reference metadata
structures and reports
REST API query builder
Bulk download or delete
Structure references
eplorer
Administration and
configuration

Set language
Log in, log out
Load structural metadata
from file or URL
Free text search
structural metadata

Create and maintain
structures
Key FMR use cases

**Centralise and govern statistical metadata**
- Externalise and centralise metadata
- Metadata governance – gain control
- Improve metadata maintainability
- Metadata reuse
- Harmonisation of concepts

**Data collection**
- Publish structural metadata for data reporters
- Generate Excel data reporting forms
- Validate received datasets
- **Reporters register the URLs of their datasets**

**Data reporting**
- Validate SDMX data prior to submission
- Convert data between SDMX formats
- Data mapping – transform data to the collector’s DSD

**SDMX structures authoring / maintenance**
- Create and modify SDMX structures interactively using the web user interface
- SDMX REST API for structure maintenance automation
Fusion Metadata Registry

Centralised SDMX metadata registry

Fusion Metadata Registry (FMR) is an enterprise-grade SDMX metadata registry

Quick start in 10 minutes using Docker

Structure authoring and maintenance tool

SDMX data validation, conversion and mapping

Personal SDMX structure store and workbench

But can help with other tasks as well
**FMR SDMX Central use case**

**IMF**

**FMR SDMX Central**

**Disseminating country**

**Data consumer**

**Dissemination standards**

**DSDs**

SDMX structural metadata

Dataset registrations

Data converter to SDMX

Prepare statistics datasets

Validation report

National Summary Data Page

Real sector

Fiscal sector

Financial (web page)

Email notifications when new data are registered

SDDS Plus countries register the URLs of their datasets

SDMX XML

Data Page

CSV

Data validator

**Link to SDMX XML dataset**

**Link to SDMX XML dataset**

**Link to SDMX XML dataset**