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SDMX Tools

Kamel Abdellaoui
K.ABDELLAOUI@afdb.org

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SDMX IT Infrastructure



The official site for the SDMX community
A global initiative to improve Statistical Data and Metadata eXchange



SDMX Glossary
SDMX User Guide
SDMX Global Registry
SDMX Roadmap 2020

Home Standards Guidelines Implementations **Tools** Learning Events Public Reviews About SDMX

Software Tools for SDMX Implementers and Developers

You will find below an alphabetical list of software tools which have been developed by organisations involved in the SDMX initiative. For each tool, a succinct description is provided – you can use the respective links for a more detailed description of the tools' specific features.

Please note that Eurostat, the Statistical Office of the European Union, also maintains a webpage dedicated to **SDMX-related IT tools**.

If your organisation is ready to offer IT tools to the SDMX user community, please contact the SDMX Secretariat (secretariat@sdmx.org) so that they can be included in the Repository.

Data Structure Wizard

Desktop application that is able to convert/edit commonly used metadata formats into SDMX-ML formats. It contains an interface that allows the user to select a given Data Structure and to complete the data according to requirements... [MORE>>](#)

Euro SDMX Registry

Metadata registry which implements the SDMX registry specifications... [MORE>>](#)

Flex-CB Visualisation Framework

This tool offers libraries, written in Action Script 3, that allow building Flash visualisation tools for statistical data and metadata, provided the data to be visualised is made available in one of the supported SDMX-ML formats... [MORE>>](#)

Fusion Matrix

The Fusion Matrix provides a scalable, well-functioning and robust solution for the storage and retrieval of data and associated

https://sdmx.org/?page_id=4500

SDMX IT Infrastructure



SDMX TOOLS FOR DATA AND METADATA PROVIDERS

SDMX CONVERTER ⓘ

SDMX Reference Infrastructure ⓘ

ESS Metadata Handler ⓘ

SDMX TOOLS FOR DATA RECEIVERS

Euro SDMX REGISTRY ⓘ

Data Structure Wizard ⓘ

TRAINING

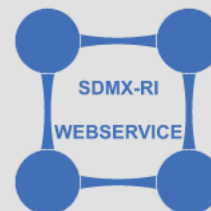
SDMX TOOLS FOR IT DEVELOPERS

SDMX SOURCE ⓘ



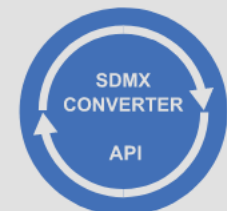
Download

SDMX-RI Web Service ⓘ



Download

SDMX Converter API ⓘ



Download



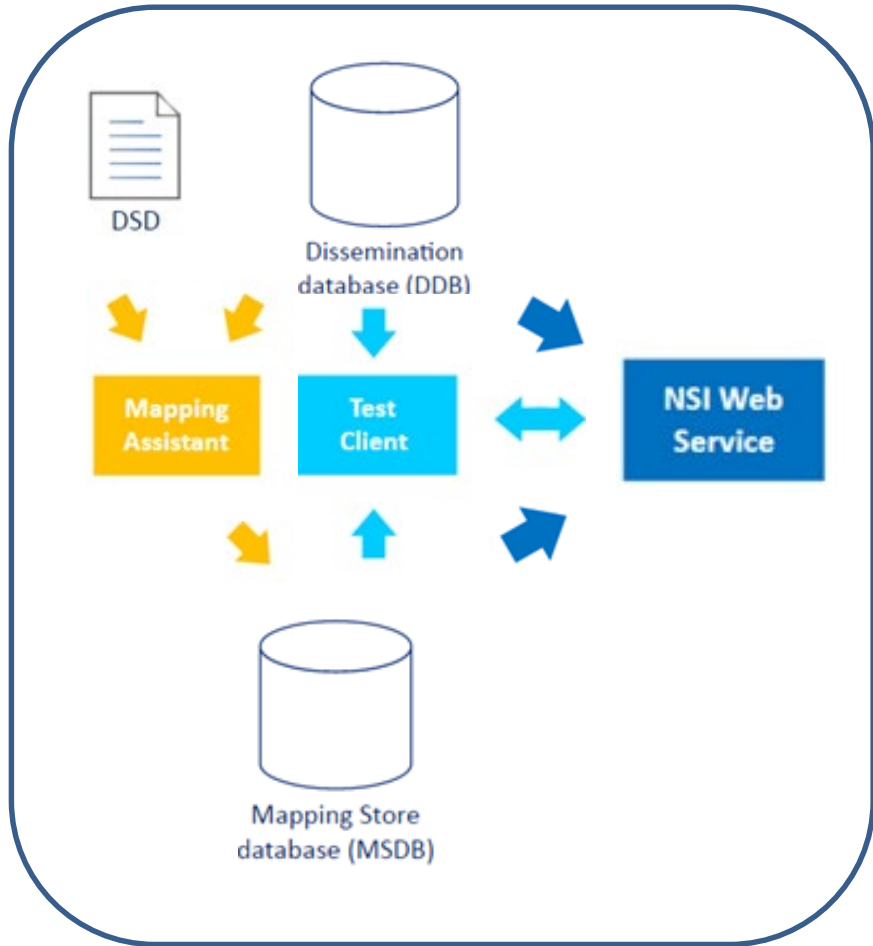
What is SDMX-RI?

- Software suite developed by Eurostat
- Simplifies SDMX export from existing databases
- Has several modules
 - Mapping Assistant
 - Web Service provider
 - Low-level components (query parser, structure retriever, ...)
 - Web client
- Open-source implementation in Java and .Net

SDMX RI Components



Data Provider



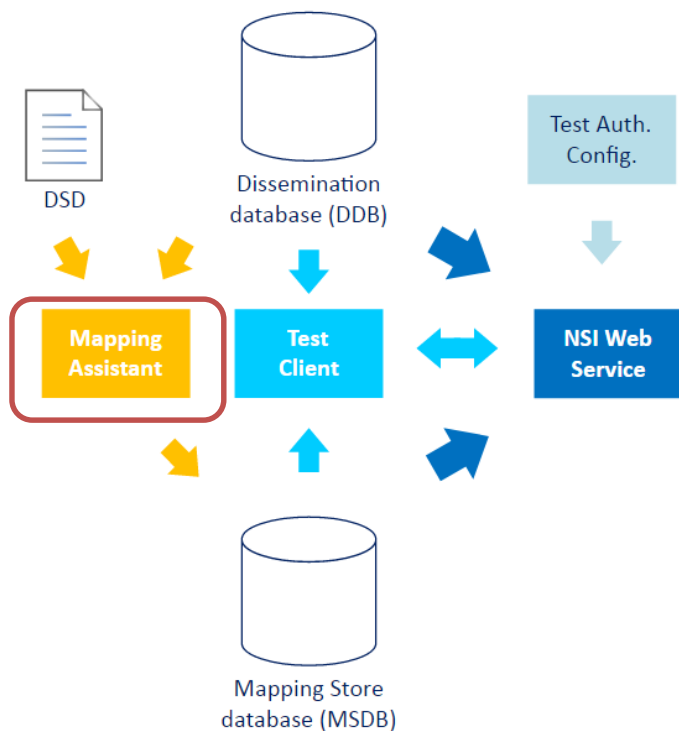
Data Collector



SDMX RI Components



Data Provider



Mapping Assistant:

This module facilitates mapping between the structural metadata provided by an SDMX-ML Data Structure Definition (DSD) and the data that reside in the dissemination database of a dissemination environment.

The Mapping Assistant then stores the mappings between the SDMX and the local data storage scheme in the Mapping Store Database, or MSDB. Internally, the Mapping Assistant provides mapping information to the Data Retriever. The Data Retriever module connects to the Mapping Store database and accesses the appropriate mappings to translate the SDMX-ML queries to SQL for the dissemination database.

Mapping assistant



Mapping Assistant

File Help

en x

Mapping Sets

- CS_TEST
 - CT_DEV
 - DF_SDG_TUNISIA
 - MS_SDG_TUNISIA

Connection:

Dataset:

Id:

Version:

Agency:

Dataset

Local codes View dataset data

NAME	DESCRIPTION
Tunisia1_Serie...	Description of column SeriesCode
Tunisia1_Age...	Description of column AgeCode
Tunisia1_SexC...	Description of column SexCode
Tunisia1_Unit...	Description of column UnitCode
Tunisia1_Geo...	Description of column GeoAreaCode
Tunisia1_Time...	Description of column TimePeriod
Tunisia1_Value	Description of column Value
Tunisia1_Loca...	Description of column LocationCode

Map

DSD

Component Information DSD Codes

ID	NAME	Typ
FREQ	Frequenc...	
REPORTING_TYPE	Reporting...	
SERIES	SDG Series	
REF_AREA	Referenc...	
SEX	Sex	
AGE	Age	
URBANISATION	Degree of ...	
INCOME_WEALTH_QUANTILE	Income or ...	

Performed Mappings

Dataset Columns	DSD Components	Description
Tunisia1_SeriesCode	SERIES	Component to Column mapping. Transcoding is used.
Tunisia1_AgeCode	AGE	Component to Column mapping. Transcoding is used.
Tunisia1_SexCode	SEX	Component to Column mapping. Transcoding is used.

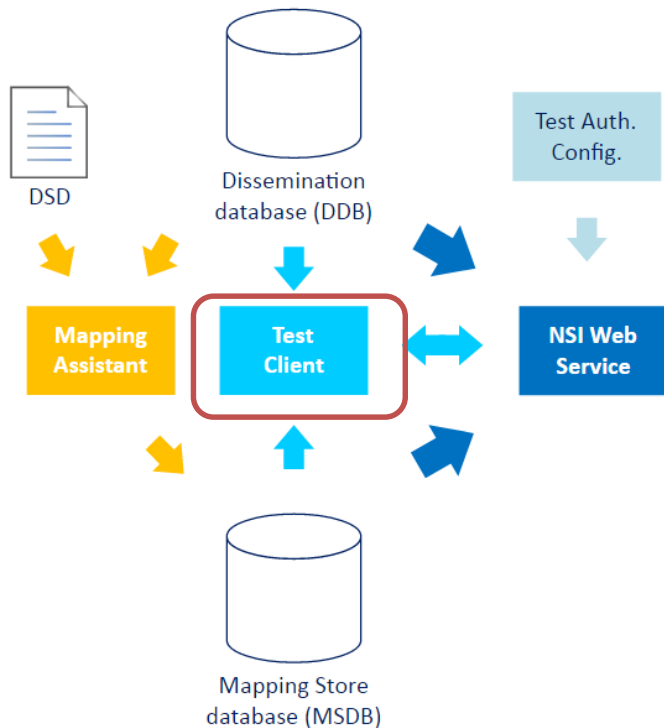
Show IDs Show Names

Is Reporting Period

SDMX RI Components



Data Provider



Test Client:

This module tests the SDMX-RI building blocks and exposes/browses the dissemination environment of an National Statistical Institute (NSI).

can connect directly to the DDB and to the MSDB in order to extract data. Furthermore, it can connect to the NSI Web Service via SOAP or REST protocols to gather data through the web service.

Therefore, it acts as a very important tool of validation of the other services, allowing testers to interact with each of those components individually.

Test Client



Test Client

Show SQL Query Select data format **SDMX-ML 2.1 Structure Spe** Select output **Screen** Settings **en** Exit Application

Select data selection method

[Load Sdmx query from file...](#)

- WS Category Scheme
 - SDG Indicators
 - Zambia SDG dataflow**
 - Uncategorised

Build SDMX Query

SDMX Component Constrains

[All Constrains] Clear all constrains Show all

Clear Component Constraints

Components	Values
------------	--------

REST compatible query Dimension at Observation **TIME_PERIOD**

View/Run SQL-Query (Optional)

```
select Zambia1_SexCode, Zambia1_GeoAreaCode, Zambia1_AgeCode, Zambia1_EducationLevelCode, Zambia1_LocationCode, Zambia1_OccupationCode, Zambia1_DisabilityCode, Zambia1_SeriesCode, Zambia1_UnitCode, Zambia1_TimePeriod, Zambia1_Value from ( select Zambia1.GeoAreaCode as Zambia1_GeoAreaCode, Zambia1.SeriesCode as Zambia1_SeriesCode, Zambia1.AgeCode as Zambia1_AgeCode, Zambia1.SexCode as Zambia1_SexCode, Zambia1.UnitCode as Zambia1_UnitCode, Zambia1.EducationLevelCode as Zambia1_EducationLevelCode, Zambia1.LocationCode as Zambia1_LocationCode, Zambia1.DisabilityCode as Zambia1_DisabilityCode, Zambia1.OccupationCode as Zambia1_OccupationCode, Zambia1.TimePeriod as Zambia1_TimePeriod, Zambia1.Value as Zambia1_Value from Zambia Zambia1 ) virtualDataset order by Zambia1_SeriesCode, Zambia1_GeoAreaCode, Zambia1_SexCode, Zambia1_AgeCode, Zambia1_LocationCode, Zambia1_EducationLevelCode, Zambia1_OccupationCode, Zambia1_DisabilityCode, Zambia1_TimePeriod
```

Generate SQL Execute SQL

Generate Data Execute SDMX Query With REST Execute SDMX Query With Web Service

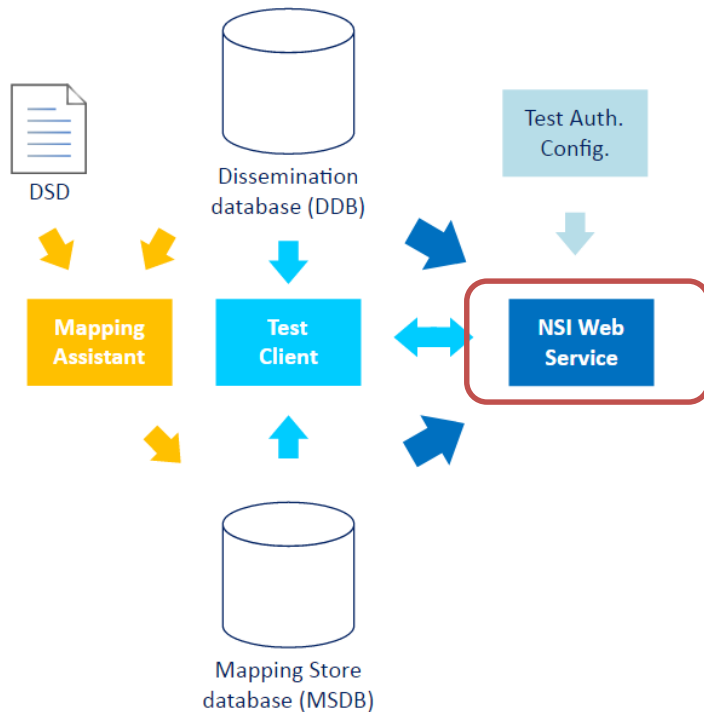
SDMX RI Components



Data Provider

NSI Web Service:


The heart of the SDMX-RI. The NSI Web Service upon a SOAP or REST request (sent by the NSI Client, the Test Client or any other SOAP or REST client), gathers the data from the DDB and the structural metadata from the MSDB, creates the SDMX-ML data and sends it back to the client. The NSI Web Service can be in Java or .NET.



NSI Web Service



This is the presentation page of the web service:



European Commission
euromat Your key to European statistics

Request information

Property	Value
Root URL	http://localhost/ISTAT_SDMX_WS/
Requested Host/IP	localhost
Port	80
Is usable from external users	False

Endpoints

Service Name	Endpoint path	Namespace	WSDL link	XML Schema path
Standard SDMX v2.0	http://localhost/ISTAT_SDMX_WS/NSIStdV20Service.asmx	http://ec.europa.eu/eurostat/sri/service/2.0	WSDL	SDMXMessage.xsd
SDMX v2.0 with Eurostat extensions	http://localhost/ISTAT_SDMX_WS/NSIEstatV20Service.asmx	http://ec.europa.eu/eurostat/sri/service/2.0/extended	WSDL	SDMXMessage.xsd
Standard SDMX v2.0 (No extra element)	http://localhost/ISTAT_SDMX_WS/NSIStdV20Service	http://ec.europa.eu/eurostat/sri/service/2.0/	WSDL	SDMXMessage.xsd
Standard SDMX v2.0 with Eurostat extensions (No extra element)	http://localhost/ISTAT_SDMX_WS/NSIEstatV20Service	http://ec.europa.eu/eurostat/sri/service/2.0/extended	WSDL	SDMXMessage.xsd
Standard SDMX v2.1	http://localhost/ISTAT_SDMX_WS/SdmxService	http://www.sdmx.org/resources/sdmxml/schemas/v2_1/webservices	WSDL	SDMXMessage.xsd

RESTful API

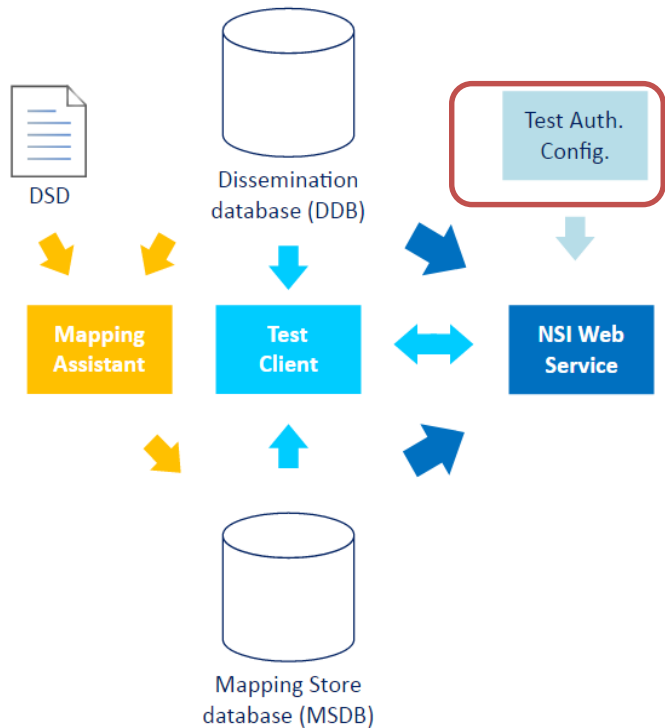
Service name	Resource base	WADL link
RESTful API	http://localhost/ISTAT_SDMX_WS/rest/	http://localhost/ISTAT_SDMX_WS/rest/application.wadl

Remarks

Warning. This page appears to have been requested using a local or internal host name or IP. The above endpoints are not accessible from external users. Please contact your network administrator to retrieve the external hostname or IP for this web service.

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Data Provider



Test Auth. Config:

This is a sample application for configuring authentication and authorization information for the NSI WS Auth Module. It allows the list of users to be updated, with additions and removals as well as allowing the list of permitted dataflows for a user to be maintained

SDMX RI Components



NSI Client:

This application acts like a front-end for a configured web service instance. Its purpose is to connect to the NSI Web Service to retrieve the SDMX-ML data.


Data Collector

NSI Client

SOAP/REST
Client

NSI Web Client





European Commission
eurostat Your key to European statistics

English ▾

Select the dataflow from the tree below.

Expand All - Expand Categories - Collapse All

- SDG Data (working Space)
 - Indicators
 - DF_SDG0_4_ILO - SDG 0.4 ILO
 - DF_SDG_WK1 - SDG 0.7 (all countries)**
 - DF_SDG_WK1_2 - SDG data (all with ZM)
- SDG Data (working Space)

Criteria **View Results**

[[Download Query](#)] [[Clear Criteria](#)]

Using the below tab control you can specify the criteria to be used for filtering the available data into dissemination databases. Click on a tab element to select the page for specifying the filter for a specific dimension.

Note that when a filter for a component is changed the filters for next components will be automatically reset.

Criteria

Maximum possible observations: **451**

FREQ **REPORTING_TYPE** **SERIES** **REF_AREA** >>

Reference area

Note that are listed only the values for which data exists into dissemination databases.

Select All - Deselect All - Invert

- [BI] - Burundi
- [CM] - Cameroon
- [TN] - Tunisia
- [UG] - Uganda
- [ZM] - Zambia

Data Structure Wizard



The Data Structure Wizard (**DSW**) is :

- a desktop application
- a Java standalone application
- able to convert/edit commonly used metadata formats into SDMX-ML formats

It can be used both offline and online.

Data Structure Wizard



Data Structure Wizard

SDMX Version File Tools SDMX Registry Interaction Help

SDMX V2.1 Artefacts

- CodeLists
- ConceptSchemes
- DSDs
- MSDs
- Dataflows
- Metadataflows
- CategorySchemes
- HierarchicalCodelists
- Constraints
- Categorisations
- DataProviderSchemes
- DataConsumerSchemes
- AgencySchemes

The Data Structure Wizard (DSW) application provides an improved solution for the management of *Data Structure Definitions (DSDs)* within the SDMX-ML v2.0 & SDMX-ML v2.1 standard (as published on April 2011).

DSW covers and completes the following functionalities for handling structural metadata artefacts from the *KeyFamilyDB Access tool*, *SDMX Registry*, *Eurostat GESMES Structural Metadatabase* and *ECB Structural Metadatabase*.

- Maintenance of the following SDMX v2.0 and SDMX v2.1 artefacts: Code Lists, Concept Schemes, Data Structure Definitions, Metadata Structure Definitions, Data Flows, Category Schemes, Hierarchical Code lists and Organization Schemes
- Dynamic creation of a template for a specified DSD in SDMX v2.0 and SDMX v2.1 format
- Import and export of artefacts from/to SDMX-ML v2.0 and SDMX v2.1 format
- Import and export of DSDs from/to GESMES/TS structure files
- Interaction with any standard-compliant SDMX Registry
- Connection to SDMX Registry with "query" privilege and update of the local repository of artefacts
- Update of the SDMX Registry, using the "maintain" privilege, with an artefact that was edited or created locally
- Print of summary reports for Codelists, Concepts from ConceptSchemes, DSDs, Dataflows
- Print reports for the DSDs components and for the Codes from Codelists
- Advanced search (search Dataflow for a specified DSD, search DSD for a specified Dataflow, search all DSDs using a code list and search all the DSDs using a given concept)
- Download of structural metadata for use with GENEDI tool
- Import Codelists from CSV files
- Create XML schemas for Data Structure Definition artefacts, for different message formats
- Validate a SDMX-ML file against the Structure XML schema
- Create MIGs for Data Structure Definition artefacts
- Configure the proxy through a user friendly screen layout
- Create SDMX queries starting from a specific statistical domain
- Generate 'Dummy' SDMX-ML DataSets (messages) using a specific DSD
- Define multiple SDMX Registry configurations
- 'SDMX Registry Management' functionality offers interaction for color blind people

THANK YOU

A.AIH@AFDB.ORG

