Democratizing data: How to empower users with new and existing SDMX connectors

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Introduction

- **Connectors:**
  
  *A thing which links two or more things together*

- **Integration connectors:**

  *Components that allow you to easily connect to and integrate with apps and data sources*

- **SDMX Expert Group SWOT analysis actions:**

  *Leverage existing tools and SDMX standard to improve interoperability*

  *Integrate SDMX with commercial software*
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.

If your organisation is ready to offer IT tools to the SDMX user community, please contact the SDMX Secretariat (contact@sdmx.org) so that they can be included in the Repository.
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<th>Manage/Store Structural metadata</th>
<th>Author Structural metadata</th>
<th>SDMX collection/provisioning/validation</th>
<th>Data discovery (DCAT, Schema.org)</th>
<th>Code libraries</th>
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## Mapping of Connectors to Technology

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<th>R</th>
<th>Matlab</th>
<th>SAS</th>
<th>Eviews</th>
<th>Excel</th>
<th>Python</th>
<th>Power BI</th>
<th>Stata</th>
<th>Javascript</th>
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- **R**
  - readSDMX
  - ILOSTAT Excel Add-in

- **Matlab**
  - rsdmx
  - SDMX Connectors

- **SAS**
  - pandaSDMX
  - SDMX in Eviews

- **Eviews**
  - SDMX USE
  - SIS-CC Power BI connector

- **Excel**
  - SDMX in Power BI

- **Python**
  - SDMX in Eviews

- **Power BI**
  - SDMX in Eviews

- **Stata**
  - SDMX in Eviews

- **Javascript**
  - SDMX in Eviews
### Mapping of Connectors to Licencing

<table>
<thead>
<tr>
<th>“Open source”</th>
<th>Free software license</th>
<th>Apache License, Version 2.0</th>
<th>Open source (GPL -3)</th>
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All connectors are free, most are open source.
How and why are SDMX connectors created?

Some examples
Read SDMX

Motivation
Matthew DeQueljoe (OECD statistician):
I need a way to **quickly** parse large SDMX data messages into **R data frames**.

Development
- Matthew had light development experience
- Estimated development time for a C++ developer: **2 weeks** 😊

Outcome
- The connector is open source and available on SDMX.org: [https://sdmx.org/?page_id=8368](https://sdmx.org/?page_id=8368)
- Used in production processes
SIS-CC SDMX Power BI Connector

Motivation:

- SIS-CC members need a way to **easily** create **Power BI** visualisations from SDMX datasets.

- Integrate SDMX with **market leading** data visualisation software.
SIS-CC SDMX Power BI Connector

Development

- Project managed by David Barraclough (me) and outsourced to Curbal (Ruth’s company)
- Delivery took only 2 months from initial specification.
- Applied Microsoft certification – several months for approval
- The connector is open source, source can be downloaded from Gitlab
SIS-CC SDMX Power BI Connector

Outcome

- It has been used in **multiple agencies for many dashboards**.
- Microsoft approved the connector as an **official Power BI connector**.
- A first - SDMX is now **part of the Microsoft platform**.
- SIS-CC webinar held with over 200 participants

"It's amazing to see how quickly a valuable decision-support dashboard like this could be put together through Power BI"
Phil Bright, GIS, Innovation and Dissemination Lead from the Pacific Community Statistics for Development Division.

“We can easily embed the visualisations on any website where the media and general public can interact with them and even print, download or share them in social networks.”
Iulian Pogor, Data Architect and Statistical Tools Engineer at the International Labour Organisation
Demo of SIS-CC SDMX
Power BI connector
Opportunities for SDMX connectors

- Reference metadata processing
- Integration with programming languages, e.g. SQL/NoSQL, C/++,#, etc.
- Integration with other standards such as DDI, XBRL, etc.
- Integration with other platforms such as Google workspace, Data commons
- Microdata, Geospatial, Big data, AI
- Upgrade existing connectors to use SDMX 3.0 features
- Linking to automation/orchestration platforms, e.g. Gitlab pipelines
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Empowering Data Communities

Thank you!

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