



# Harnessing VTL in business

VTL ENGINE & EDITOR:

AN EASY TO USE TOOL FOR BUSINESS ORIENTED STATISTICIANS

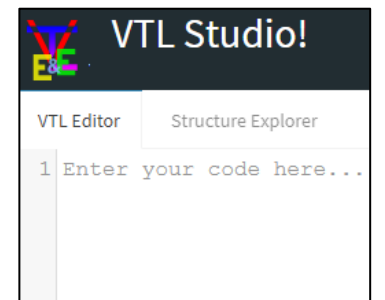
# Context

- ▶ SDMX models data and metadata
  - ▶ Standard meta/data exchange and dissemination
- ▶ VTL models transformations and validations
  - ▶ Discoverable, actionable, reproducible processes
  - ▶ High-level, metadata driven, meant for business
- ▶ VTL and SDMX: a perfect match
  - ▶ Mappings exist for data and metadata
  - ▶ Rules can be embedded in Dataflows

# VTL Engine & Editor

- ▶ Designed to simplify VTL development and test
  - ▶ No complex IT infrastructure or IT expertise needed
  - ▶ SDMX web services and other meta/data sources
  - ▶ Very high coverage of VTL specification
- ▶ Available on GitHub as open source
  - ▶ Distributed under EU Public License
  - ▶ Integrated with R and Shiny as package

```
> install.packages("RVTL")  
> vtlStudio()
```



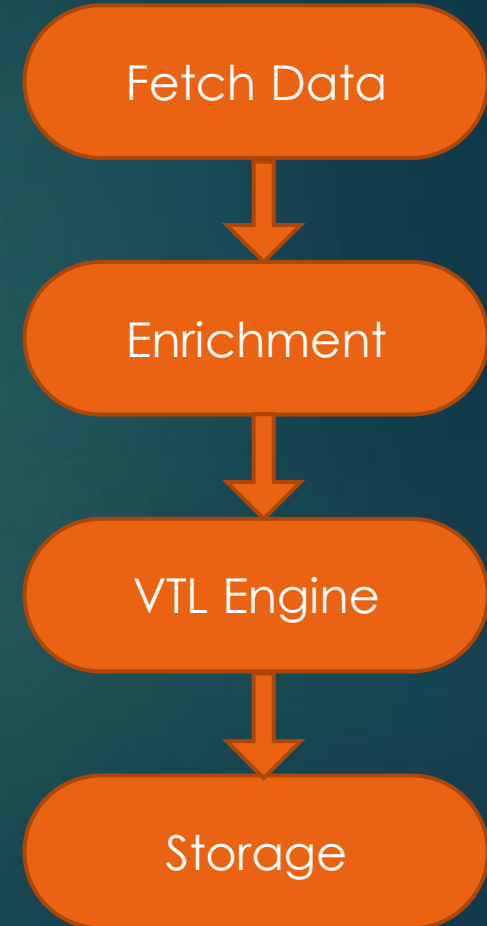
# Pilot on ESCB Balance Sheet Items

- ▶ Business scenario
  - ▶ BSI is a SDMX Dataflow disseminated by ECB
  - ▶ Data sent by NCBs to ECB must comply with some rules
  - ▶ These rules are expressed in a pseudo-language
  - ▶ NCBs implementations may lead to differing results
- ▶ Pilot results
  - ▶ All the rules translated into VTL using VTL Editor
  - ▶ All the rules tested with real data using VTL Engine
- ▶ VTL removes ambiguities on rules interpretation and execution



# ECB Validation & Calculation Engine

- ▶ Business scenario
  - ▶ VALICE is one of the components of ECB data-centric platform
  - ▶ Its role is to support validations and transformations
  - ▶ Aimed at business users without IT skills
- ▶ VTL Engine is at the core of VALICE
  - ▶ The activity lasted for several years
  - ▶ Requirements of VALICE led to performance improvements



# SDMX.IO collaboration

- ▶ Business case
  - ▶ Sdmx.io is a BIS initiative to integrate SDMX tools
  - ▶ Integration of VTL E&E with Fusion Metadata Registry
- ▶ The collaboration started very recently
  - ▶ VTL E&E would process VTL rules embedded in SDMX
  - ▶ Further scenarios considered based on users feedback

The screenshot displays the SDMX.IO web application interface. On the left is a dark sidebar navigation menu with the following items: Home, Organisations, Data, Items, Metadata, VTL (highlighted in blue), Custom Types, Mapping Schemes, Name Personalisation, Ruleset Scheme, Transformations, and User Defined Operators. The main content area is titled 'Transformation Schemes' and shows a table with columns 'Id' and 'Name'. The table is currently empty, displaying the message 'No data available in table' and 'Showing 0 to 0 of 0 entries'. Below the table is a search input field. At the bottom of the main content area, there is a 'Transformation Scheme Details' section with buttons for 'References', 'Changelog', 'Export SDMX-ML 3.0', 'Compare', and 'View Transformation Scheme'. The footer of the page includes the text 'Built By Metadata Technology' and a 'Subscribe to changes' notification icon.

# VTL E&E: Ideas for the future

- ▶ Complete the coverage of VTL 2.0 specification
- ▶ Improved support for Apache Spark
- ▶ Improved usability of VTL Editor with new UI
- ▶ VTL Editor additional features (i.e. GIT support)
- ▶ Deployment of VTL Engine in the cloud
- ▶ Improved integration with other languages





# Thank you!

- ▶ For any question, suggestion or information please drop a line:
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- ▶ Questions can also be posted in the **SDMX User Forum**
  - ▶ [https://www.yammer.com/unstats/#/threads/inGroup?type=in\\_group&feedId=121500557312](https://www.yammer.com/unstats/#/threads/inGroup?type=in_group&feedId=121500557312)