Future challenges and opportunities

VTL - 2017

(Validation and Transformation Language)

The international language for data validation and transformation

Vincenzo Del Vecchio - Bank of Italy

SDMX TWG & VTL Task Force
A standard Language for defining …

… Validation and Transformation rules

Main goals:

– Define rules by means of a common language
– Exchange and share rules
– Apply rules in automated processes

Maintained by the SDMX TWG through its VTL task-force, open to SWG and other standards’ representatives
Why VTL

- **Language for SDMX** (and DDI, GSIM)
- **Operating on statistical artefacts** *(non-IT)*
- **Declarative** *(algorithms, not procedures)*
- **For subject matter experts** *(non-IT)*
- **Neutral language** *(independent of IT tools)*
2012: Mandate from the SDMX Secretariat

2013: VTL Task-force

2015: VTL 1.0 on-line

presented at the fifth SDMX Global Conference →

VTL – first release

Validation and Transformation Language

A new international standard for enhancing data validation and processing

Vincenzo Del Vecchio - Bank of Italy
Marco Pellegrino – Eurostat
SDMX TWG & VTL Task Force

28-30 September 2015

VTL
VTL enhancement and stabilisation

**VTL 1.0**: published in March 2015 (http://sdmx.org/?page_id=5096)

- *Assessments by many institutions after publication*

**VTL next version**: publication by end 2017
- Public review closed in January 2017 (https://sdmx.org/?page_id=5096)
- Large number of contributions that the VTL-TF is finalizing

**VTL integration in SDMX**: work in progress
- Messages for exchanging VTL rules
- Registry for storing VTL rules, web services for retrieval

- *Pilot Implementations* (based on draft versions)
A powerful and stable version

**VTL - Definition Language**  (*new*)
- **artefacts** (e.g. datasets, value domains, subsets)
- **reusable rules** (e.g. aggregation, transcoding ...)
- **user-defined operators**

**VTL - Manipulation Language**  (*improved*)
- existing **operators improved**
- powerful **new operators** added
- support for **reuse of artefacts and rules**
some VTL implementations

European System of Central Banks / ECB

BIRD – Banking Integrated Reporting Dictionary

Transformations and Validations for reporting Banks

(Implementations by independent software companies)

http://banks-integrated-reporting-dictionary.eu
some VTL implementations

Eurostat / European Statistical System
Validation Service / Task Force Validation
Data Validation

http://ec.europa.eu/eurostat/web/sdmx-infospace/validation-transformation/validation-service-operation
some VTL Implementations

Statistics Norway

Java – VTL (Open source implementation of VTL)

VTL for statistical production

https://github.com/statisticsnorway/java-vtl
http://java-vtl.org
some VTL Implementations

Central Statistical Office of Poland

VTL processing lib  (Software for translation of VTL to SQL)

Data Validation and compilation

UNECE – Conference of European Statisticians – working paper

Italian National Institute of Statistics

VTL editor  (Software for writing VTL rules)

Definition of Validation and Transformation rules
**C² Metadata project** - Continuous Capture of Metadata

- **Script Parser** - Conversion of SPSS, SAS, Stata, R to VTL
- **Metadata Updater** - Storage of VTL rules as metadata

http://c2metadata.org/

**Bank of Italy**

INFOSTAT software platform

*(based on the EXpression Language, a VTL precursor)*

- Collection, Compilation and Dissemination

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Thanks for your attention!

Comments and suggestions can be sent to the SDMX Technical Working Group, mail to: twg@sdmx.org

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