VTL integration in a SDMX lifecycle solution for dissemination Statistical Data

José Vereecken – NBB
Antonio Olleros – meaningful Data
SDMX Global Conference 2023
Content

➢ Evolution of validation within department Statistics towards a full NBB solution

➢ Some advantages of VTL Suite

➢ Example of how to treat validation rules

➢ Translating current validations to VTL: The BoP example

➢ VTL Suite Integration overview
Current state

National Accounts

External Statistics

Financial Statistics

SDMX

Statistical Information systems
Evolution in Statistical Department
Solution department Statistics

VTI-Solution

SALSA based on .STAT SUITE

Staging

Reporting

Internal Sharing

Pre-Disseminate

Disseminate
Advantages

1. Centralized system for Validation & Transformation of Data

2. Full SDMX based solution
   Early validation possible if data is SDMX compliant

3. Use of VTL-standard/language

4. Reusable & shareable scripts
Example Balance of Payments
Translating current validations to VTL: The BoP example

Input: Current validations format

<table>
<thead>
<tr>
<th>Left Hand Side</th>
<th>Operator</th>
<th>Right Hand Side</th>
</tr>
</thead>
</table>

Translation to VTL: Done in two steps:

1. Automated translation
2. Human streamlining

Key difference: VTL validations are semantic. They focus on settling relationships among business concepts (e.g., hierarchies)

F = F5 + FL applied to INSTR_ASSET

Summary results:

<table>
<thead>
<tr>
<th>Number original validations covered</th>
<th>Distinct VTL validations</th>
</tr>
</thead>
<tbody>
<tr>
<td>datapoint</td>
<td>1092</td>
</tr>
<tr>
<td>hierarchical</td>
<td>672</td>
</tr>
<tr>
<td>other</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>1816</td>
</tr>
<tr>
<td></td>
<td>1031</td>
</tr>
</tbody>
</table>
The VTL Suite provides a **web application** for users to write VTL projects, a **REST API to integrate** with other systems, and a task manager to ensure that several concurrent requests can be handled.

1. **Users** collaboratively create VTL scripts, organised in projects, through the vtlPlayground.

2. Coordinators push the project to vtlProduction, which implies that the script is available for execution via the vtlManager API.

3. A Salsa application requests to execute one of the VTL scripts stored in the vtlProduction.

4. The vtlManager takes care of managing the queues and executing the VTL script.

**Usable for calculation, transformation**

**SDMX based**

**Easy to create own validations**