Using SDMXthon in the statistical value chain
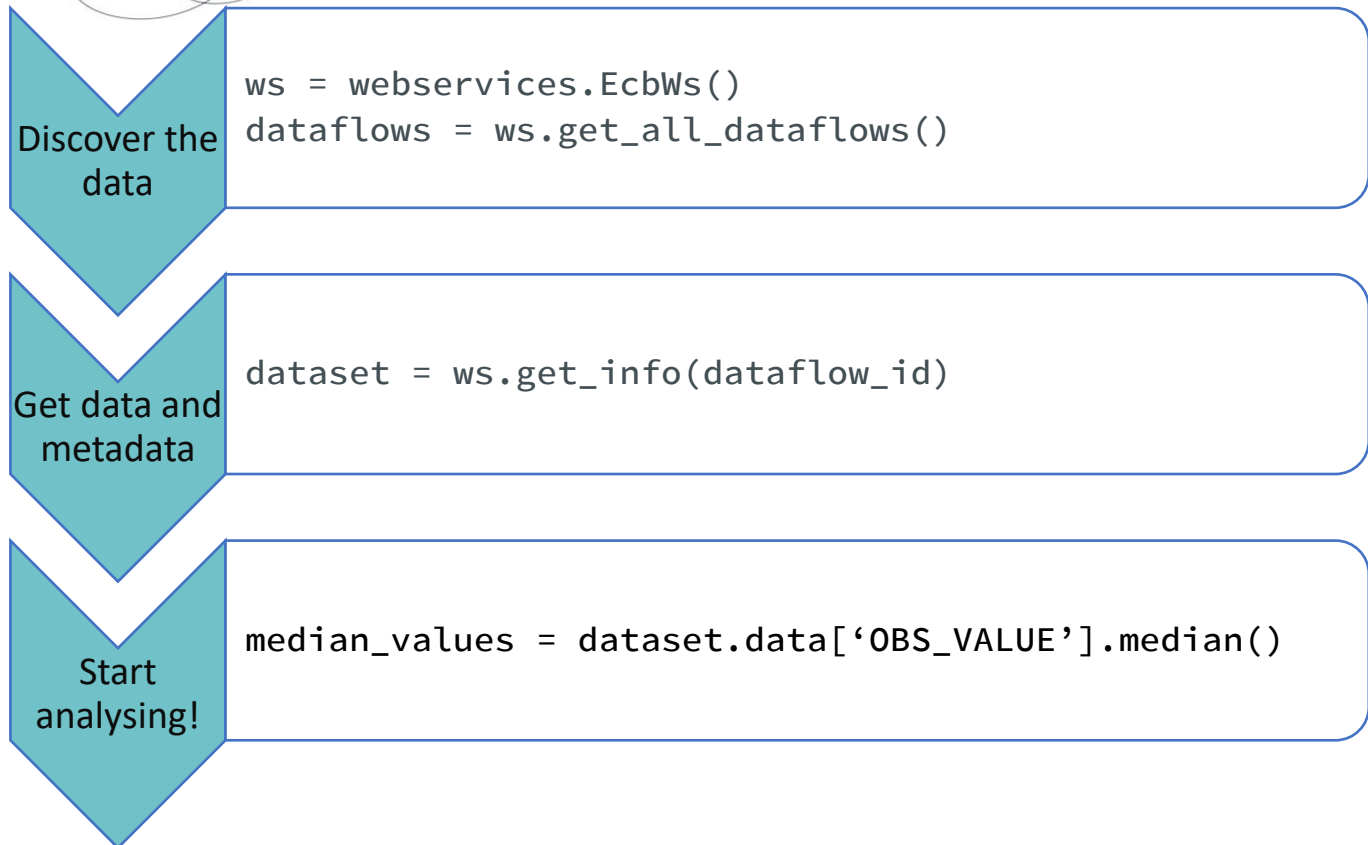
Overview

- SDMXthon is a **Python library** used to work on SDMX-ML files.

- It defines the data manipulation based on **Pandas Dataframe** and custom objects for metadata manipulation. Performs **data and metadata validations**.

- Available on **PyPi** (Python Package Index): https://pypi.org/project/sdmxthon/

- Hosted on **GitHub** (source code and issue tracker): https://github.com/Meaningful-Data/sdmxthon

For data users

I'm following an SDMX disseminating organization, and I want to use Pandas to analyze their data... How can I get there?

✓ Simple connection to **download data and metadata on a single method**

✓ Ability to **use webservices** that implement **SDMX API v1 and v2**

✓ Using **Pandas Dataframes** to **read and write on SDMX-ML** in all formats (Generic/Structure Specific using all dimensions or Time Series)

Discover the data

```
ws = webservices.EcbWs()
dataflows = ws.get_all_dataflows()
```

Get data and metadata

```
dataset = ws.get_info(dataflow_id)
```

Start analysing!

```
median_values = dataset.data['OBS_VALUE'].median()
```

For data producers

In our organization, we derive new data using Pandas. I would like to get the output in SDMX-ML. How could I reuse our SDMX infrastructure?.

✓ Ability to **define metadata** and perform a **structural validation**.

✓ Generation of **SDMX-ML Structure files** with DataStructures, DataFlows, Constraints and AgencySchemes.

✓ Message class is available to generate a **complete Structure file** with all these elements (use case: detail='full'&references='all' on SDMX API)

Work with Pandas

```
data_instance = Dataset()
data_instance.read_csv('data.csv')
```

Load the Metadata

```
dataset.get_metadata(agency_id, dataflow_id, version)
–
read_sdmx(path_or_url).payload  -> assign DataStructure to dataset.structure
```

Validate structurally the dataset

```
dataset.structural_validation()
```

Generate the SDMX-ML!

```
dataset.to_xml()
```

Interaction with tools (VTL Suite and FMR)

Our organization is already making use of SDMX tools, and we would like to add SDMXthon in the statistical value chain, what can we do?

- SDMXthon is currently used in VTL Suite to generate the VTL DataStructure from a SDMX-ML Structure file, as well as using Pandas Dataframe to generate CSV files.

- It can interact with Fusion Metadata Registry by downloading the metadata using the URLs generated by this tool.

- You can request the addition of a specific webservice in our GitHub! https://github.com/Meaningful-Data/sdmxthon

meaningful DATA

Making your data **worthwhile.**

Javier Hernandez

Lead SDMX Services Developer

✉ javier.hernandez@meaningfuldata.eu

Antonio Olleros

Founder & CEO

📱 **+34 645 89 16 57**

✉ **antonio.olleros@meaningfuldata.eu**