FIWARE Global Summit



Smart Data Models

SDMX towards context information: achieving interoperability with NGSI-LD

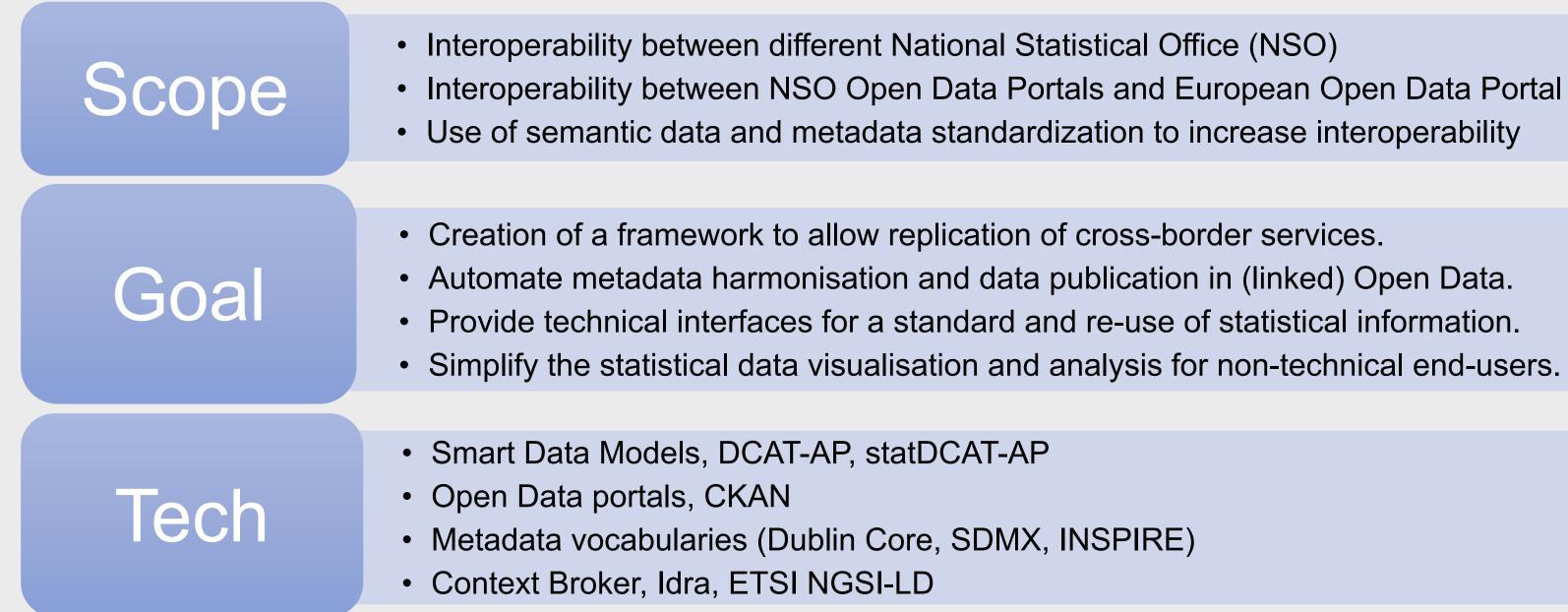
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Use cases

S4Y - The School For you



Know the distribution of students or potential students in the territory and the services addressed to them.

- Search for sources of statistical data
- Outline the original source;
- Harmonization of the data sources
- Provide the integrated scheme through the ontologies
- Detail steps for the transformations and physical integrations of the data
- Technological scheme for achieving the physical integration of data
- Provide a single data access to resolve heterogeneity of data formats

Geolocalized Facilities



Set up a mechanism for providing decision support based on use of geolocalized information about infrastructures and events.

- Finding the nearest facilities of a visiting place
- Search for events close to their location
- Search for capacity of the equipment in the neighbourhood
- Combine with data on the demographic evolution at a fine level
- Combine the statistical information with other more relevant data sources





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Support for Environment Policies



Enrich air quality information, produced to support local policy makers responsible for environmental decisions.

- Exploration of published open data related to the domains of interest
- Inventory of potential data providers
- Selection of specific datasets, description of data models and structures
- Analysis of available ontologies , data vocabularies and tools.





Outcomes

- Publish statistical data with the FIWARE Context Broker
- Interoperability between ETSI NGSI-LD and statistical models
- SDMX Information model (data and metadata)
- VTL data model
- DDI Cross-domain integration (CDI) model
- Extraction of Statistical Data (Datasets) from Eurostat (SDMX)
- Transformation of SDMX (RDF) content into DCAT-AP / CKAN through FIWARE Idra and publication into European Data Portal
- Transformation of SMDX (RDF) into JSON-LD using statDCAP-AP and publication the information using ETSI NGSI-LD for External Systems.

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Results

- Air quality data
 - Specified and published by the European Environment Agency (EEA). Ο
 - Models and metadata from the Eionet data dictionary[1]. Ο
- Demographic data
 - Using the Census Hub models and metadata. Ο
 - Expressed in SDMX / Data Cube[2]. Ο

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[1] https://dd.eionet.europa.eu [2] https://github.com/FranckCo/Statistics-Contextualized/blob/main/sep-dsd.md







DCAT-AP data models

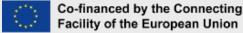
- Agent Agent Schema meeting DCAT-AP 2.0 specification.
- Catalogue Catalogue of datasets compliant with DCAT-AP specification.
- CatalogueRecord This is a Catalogue Record belonging to a dataset according to the DCAT-AP standard 2.0.1.
- DataService Data Service adapted from DCAT-AP 2.0 specification, but extended with additional properties and compatible with NGSI standard.
- Dataset Dataset Schema meeting DCAT-AP 2.0 specification.
- Distribution This is a distribution belonging to a dataset according to the DCAT-AP standard 2.0.1.

statDCAT-AP extension

Dataset - Dataset Schema meeting STAT-DCAT-AP 1.0.1 specification.

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Potentially new SDMs to propose:

- statDCAT-AP.Checksum.
- Deal with SDMX metadata model.
- Generalize to other statistical models (VTL, DDI-CDI).
- Link to other useful models (e.g. Semantic Sensor Network Ontology for sensor data).

Potential extension of currently SDMs:

AirQuality, introduction of statistical information of the pollution information.

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First results: translation of census data to NGSI-LD

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