



An ontology-based approach for FAIR meteorological datasets

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► To cite this version:

Amina Annane, Nathalie Aussénac-Gilles, Catherine Comparot, Mouna Kamel, Cassia Trojahn, et al.. An ontology-based approach for FAIR meteorological datasets. 18th Plenary Meeting Research Data Alliance (RDA 2021), Nov 2021, On line, United Kingdom. hal-03761722

HAL Id: hal-03761722

<https://hal.science/hal-03761722>

Submitted on 26 Aug 2022

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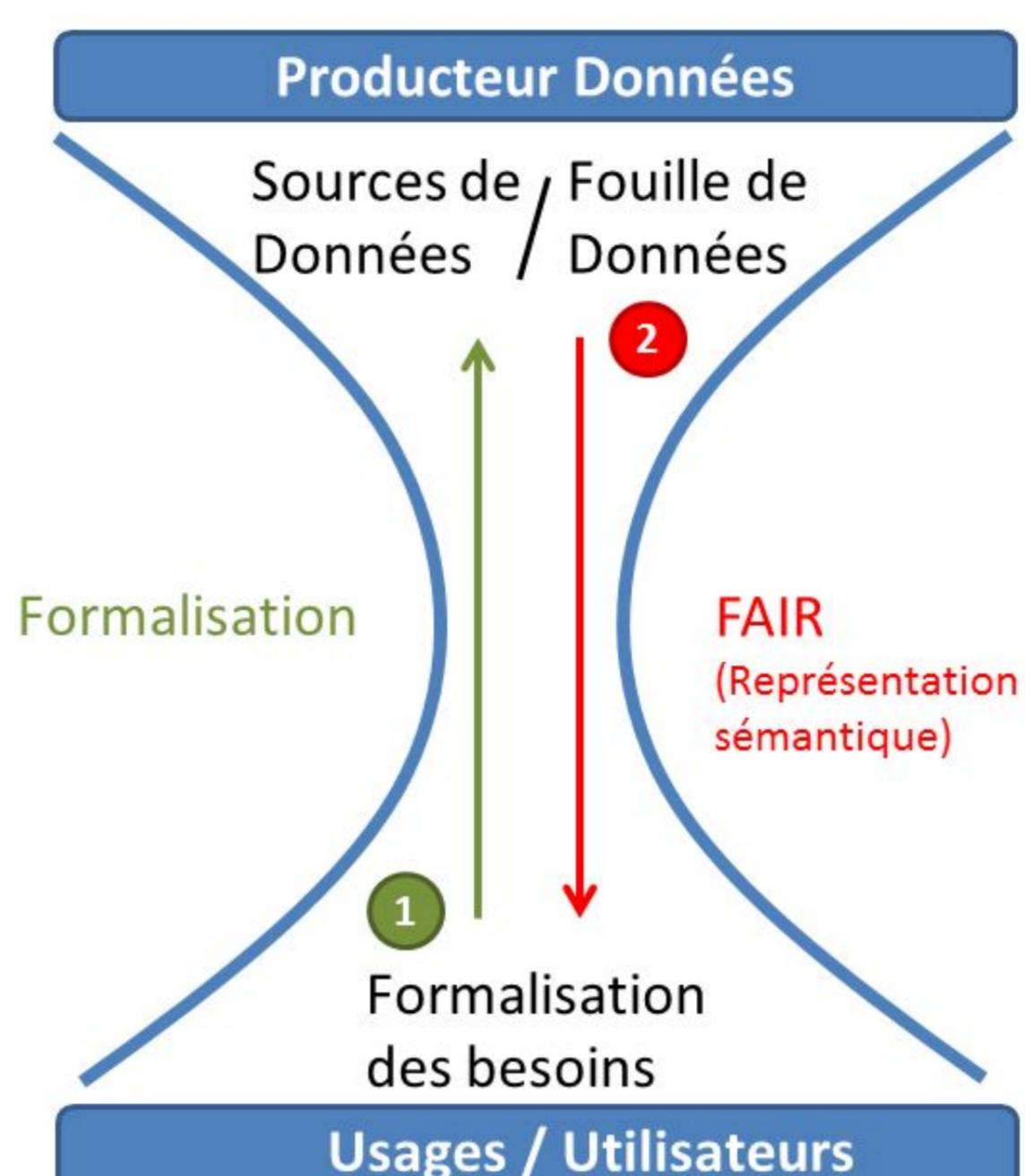


An ontology-based approach for FAIR meteorological datasets

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C. Baehr (CNRM), P. Gaillard (MSHS-T), Y. Auda (OMP)

FAIRNESS of METEOFRENCE DATASETS

- A **multidisciplinary** project (i.e., ergonomics, computer science, biology, and meteorology domains)
- Goal: to **improve** the FAIRness of meteorological datasets using ontologies.
- Use-case: Météo-France datasets are open, published on the web, but users **are not able to exploit them**
- **Gap between two domain conceptualizations:** by data producers and data users



REDUCE THE GAP USING ONTOLOGIES

- Provide definitions, documentation, semantic relations about domain concepts -> use a domain ontology
- Give the ability to explore the datasets
- Make datasets more visible, reachable through requests on the web -> formal metadata

Process Methodology and main options



- Studying the behavior of users when searching for meteorological datasets
- Identifying difficulties that encounter users when trying to reuse meteorological datasets
- Developing an ontology to represent metadata that document meteorological datasets in a semantic way
- Reusing as much as possible existing FAIR ontologies
- Ontology based dataset description => publishing and indexing semantic metadata
- Dataset visualization
- Dataset (semantic) search / Dataset exploration

dataNoos

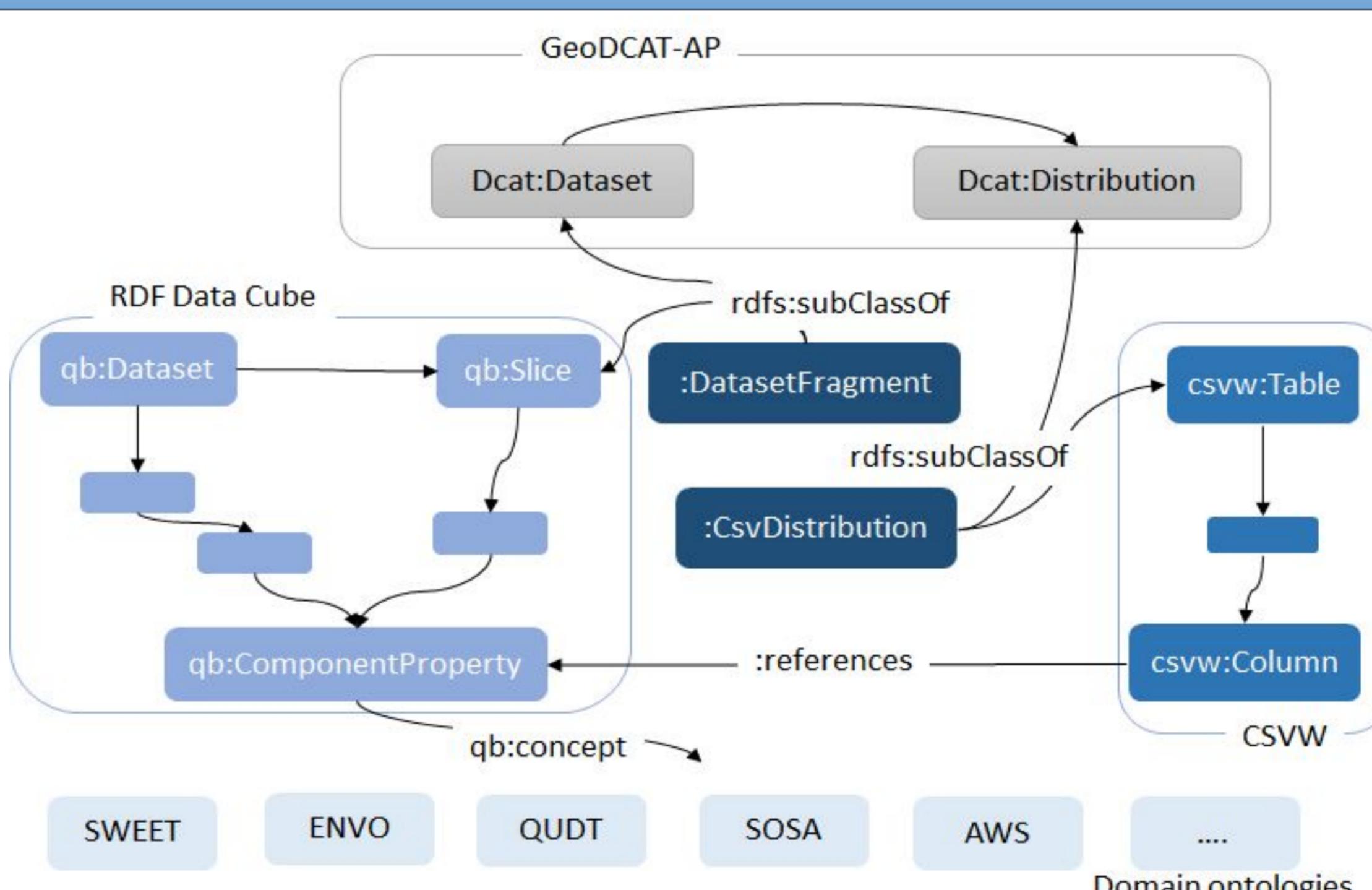


Reuse of RDA WG and results

- Research Data Repository Interoperability WG
+ we adopt FAIR principles and standards [FAIRsharing portal](#)
+ we propose an integrated platform connected to the Open Science eco-system
- FAIR Data Maturity Model WG : [FAIR maturity model](#)
+ we propose a generic platform for domain and community specializations
+ it includes data quality checking.
- RDA for interdisciplinary research
+ a generic platform to manage cross-disciplinary datasets
- Metadata Standards Catalog WG
+ the generic part of our ontology reuses metadata standards
- Research Metadata Schemas WG
+ we propose ontology-based templates for research metadata description

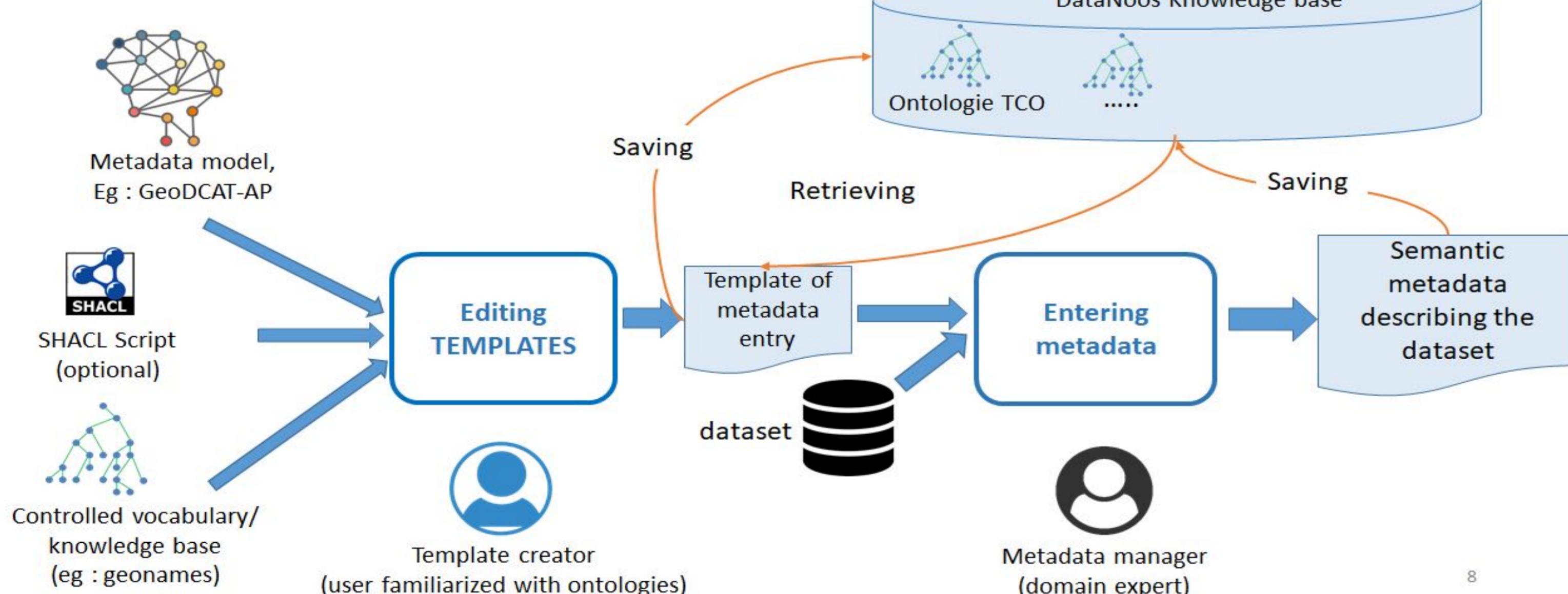
MDO4FAIR: A METADATA ONTOLOGY FOR FAIR DATASETS

- I. Represent general metadata of meteorological datasets
- II. Represent the content of meteorological datasets without transforming data into RDF
 - Represent data schema and coded values
 - Represent semantic entities included in datasets and providing definitions for these entities for non meteorologist users
- III. Represent the schema of dataset distributions



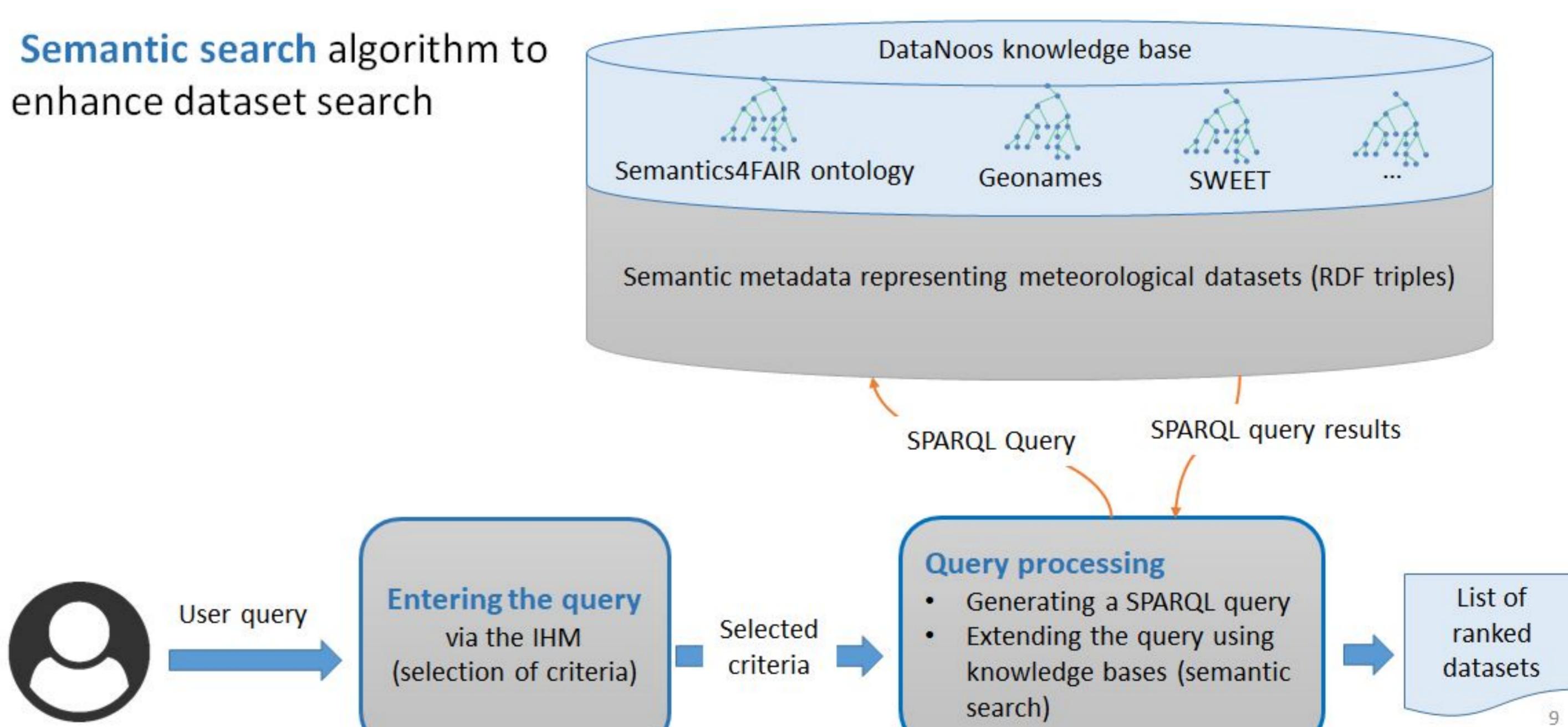
DOMAIN SPECIFIC METADATA TEMPLATES

- A generic framework for [ontology-based dataset description](#)



DATASET SEARCH

- **Semantic search** algorithm to enhance dataset search



PARTNERS



visit our web site <https://www.irit.fr/semantics4fair/>

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