FAIRSFAIR
Fostering Fair Data Practices in Europe

FAIR PRINCIPLES AND SEMANTIC INTEROPERABILITY: Approaches for enabling I2 of the FAIR Principles

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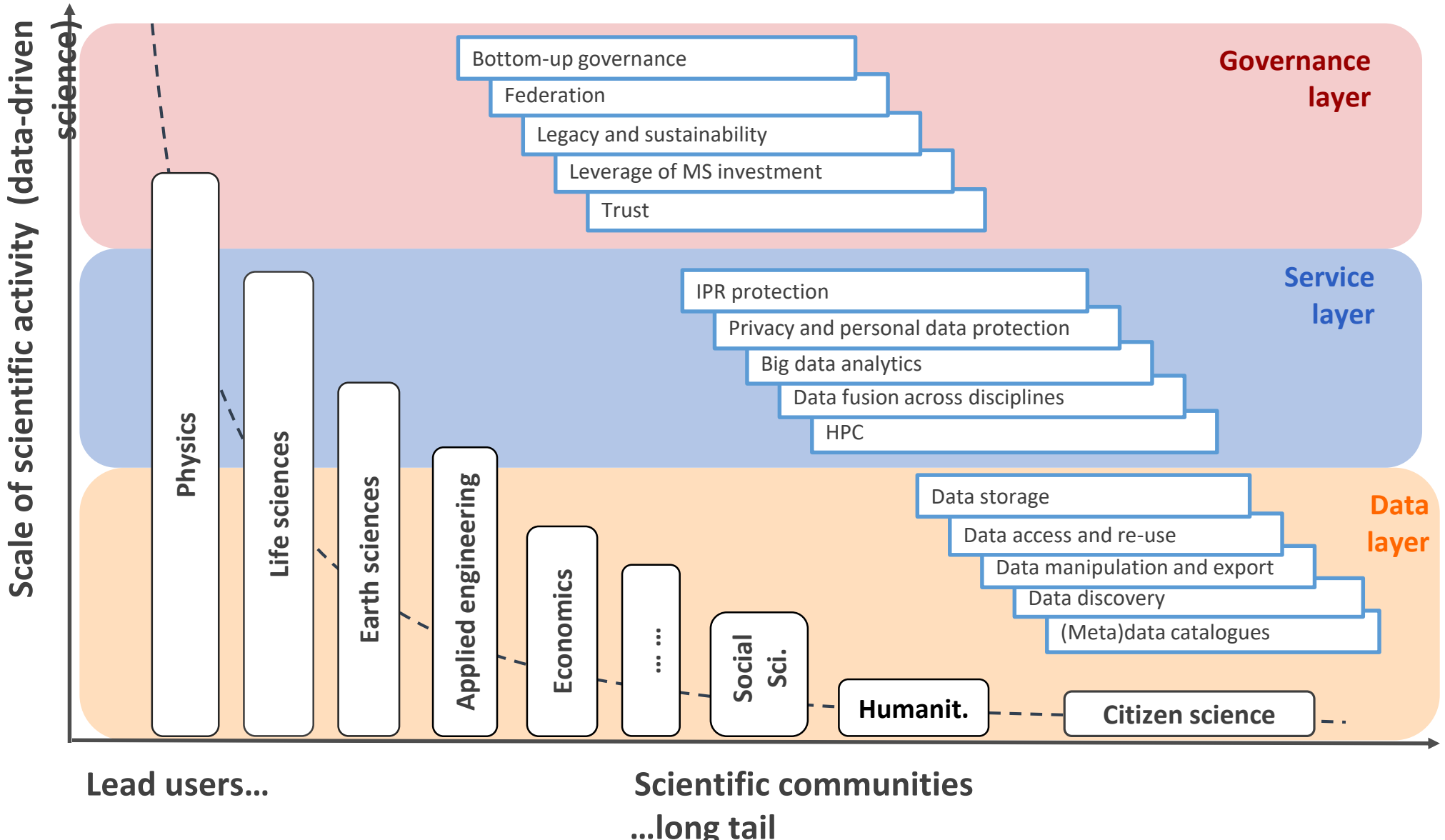
FAIRsFAIR "Fostering FAIR Data Practices in Europe" has received funding from the European Union's Horizon 2020 project call H2020-INFRAEOSC-2018-2020 Grant agreement 831558

European Open Science Cloud (EOSC)

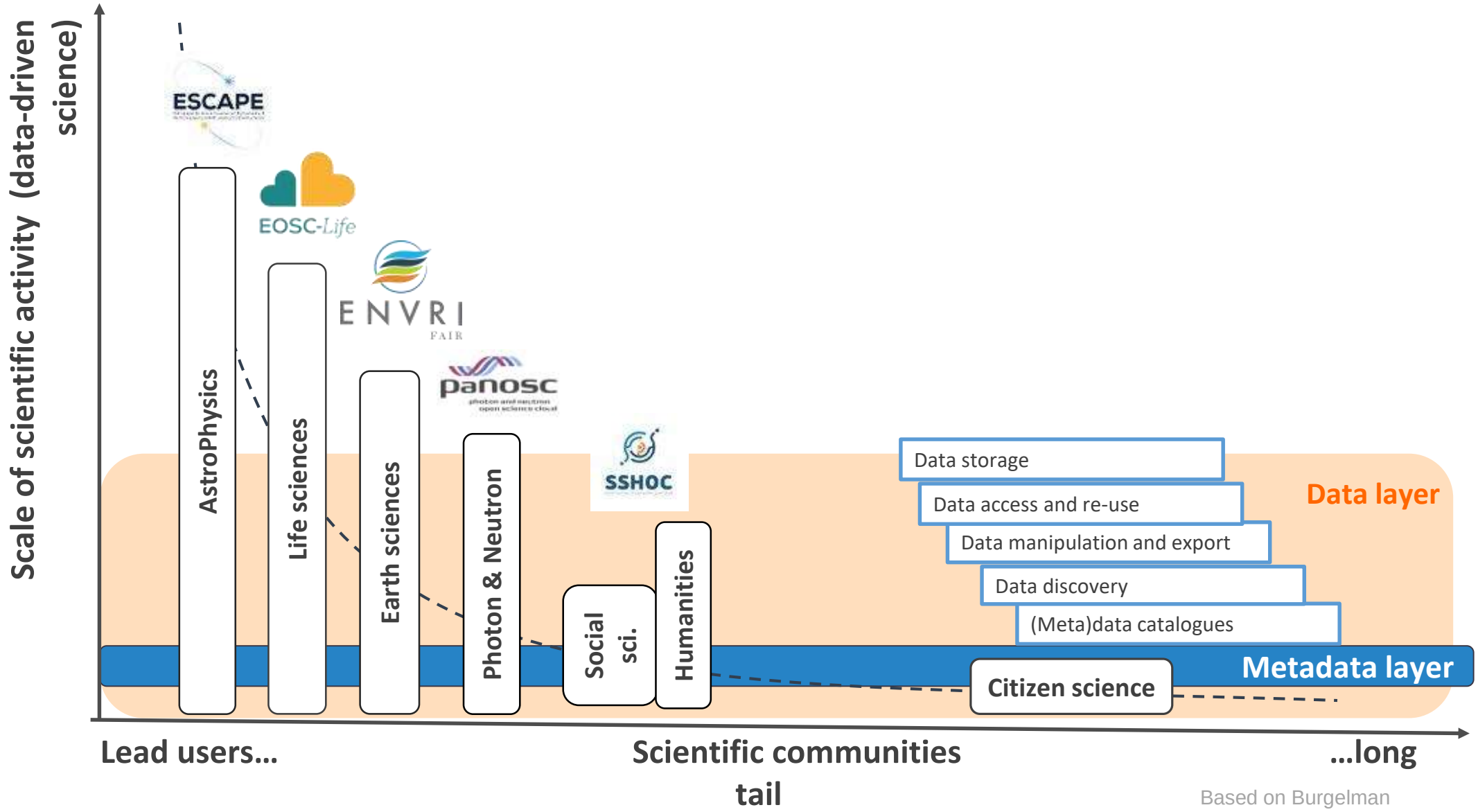
The mission of the European Open Science Cloud (EOSC) is to provide a web of FAIR (Findable, Accessible, Interoperable, and Reusable) data and services for science in Europe.

Scientific landscape for EOSC



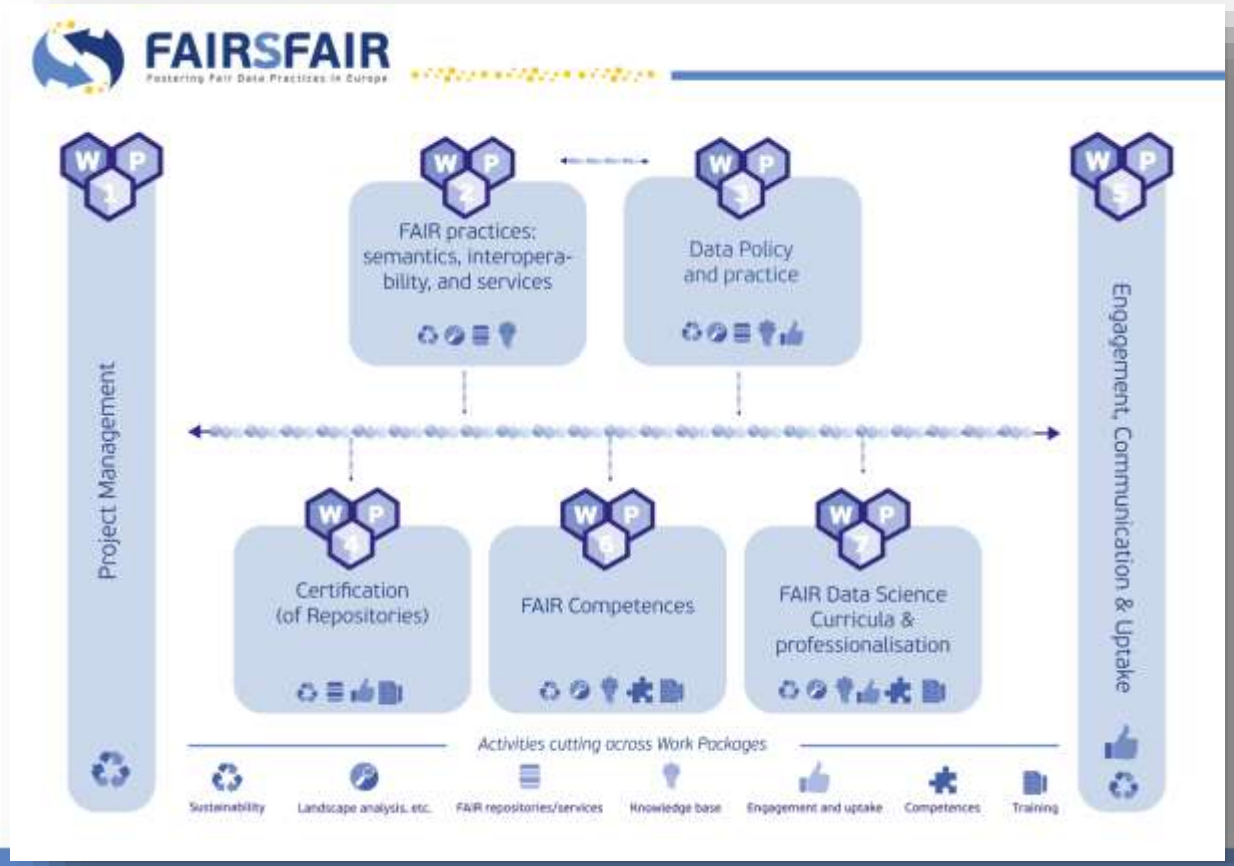
Based on Burgelman

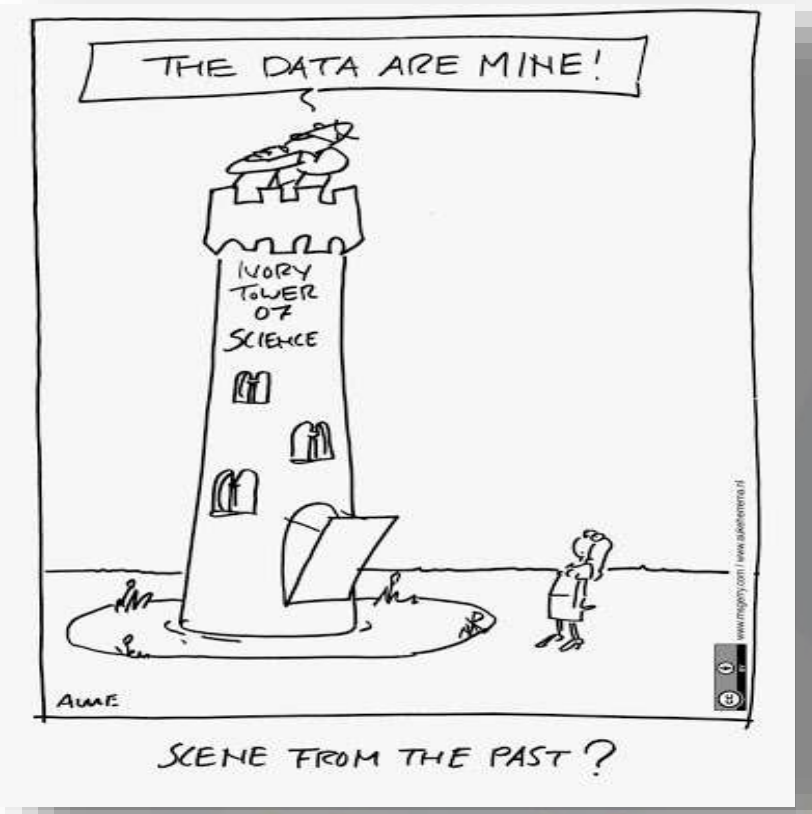
Semantics, metadata, and ontologies are a core component for interoperability



FAIRsFAIR overarching objective

To supply practical solutions for the use of the FAIR data principles throughout the research data life cycle. Emphasis is on fostering FAIR data culture and the uptake of good practices in making data FAIR.





What is meant by FAIR Semantics?

“Semantic artefact” is a broad term including research resources such as ontologies, terminologies, taxonomies, thesauri, vocabularies, metadata schemas, and standards.

They are key components to enabling FAIR but these semantic artefacts have themselves have to be FAIR.

“FAIR Principle I2: (Meta)data use vocabularies that follow FAIR principles”

“FAIR Semantics” are semantic artefacts which adhere to the FAIR principles.

The end goal of the FAIR Semantics team...

...is to co-create both recommendations for making semantic artefacts FAIR, and a set of agreed best practices to follow together with the semantics community at large

- Based on community input & feedback processes

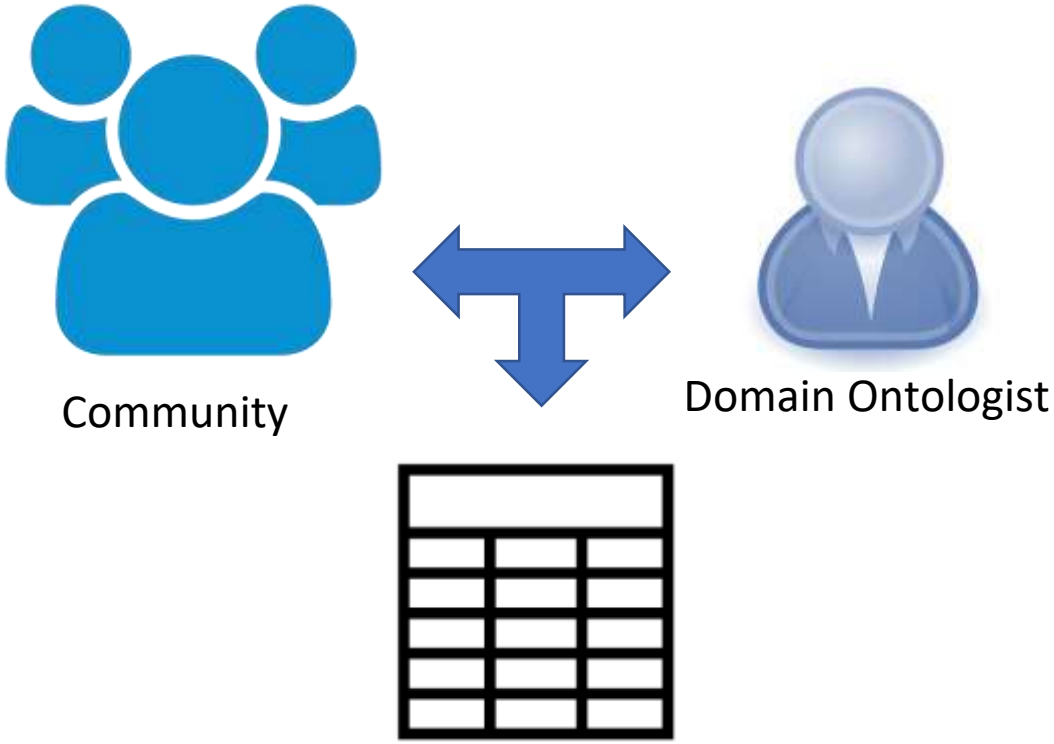
- ***First version*** released in March 2020
  - DOI: 10.5281/zenodo.3707984.
    - ***Second version*** released in January 2021
      - DOI:10.5281/zenodo.4314320
        - ***Third version*** due to be released in February 2022

- 17 Priority Recommendations & 14 Best Practices Recommendations

One Example - Priority Recommendation #3

P-Rec 3: « A common minimum metadata schema **must** be used to describe semantic artefacts and their content »

A guiding use-case: searching for ontology



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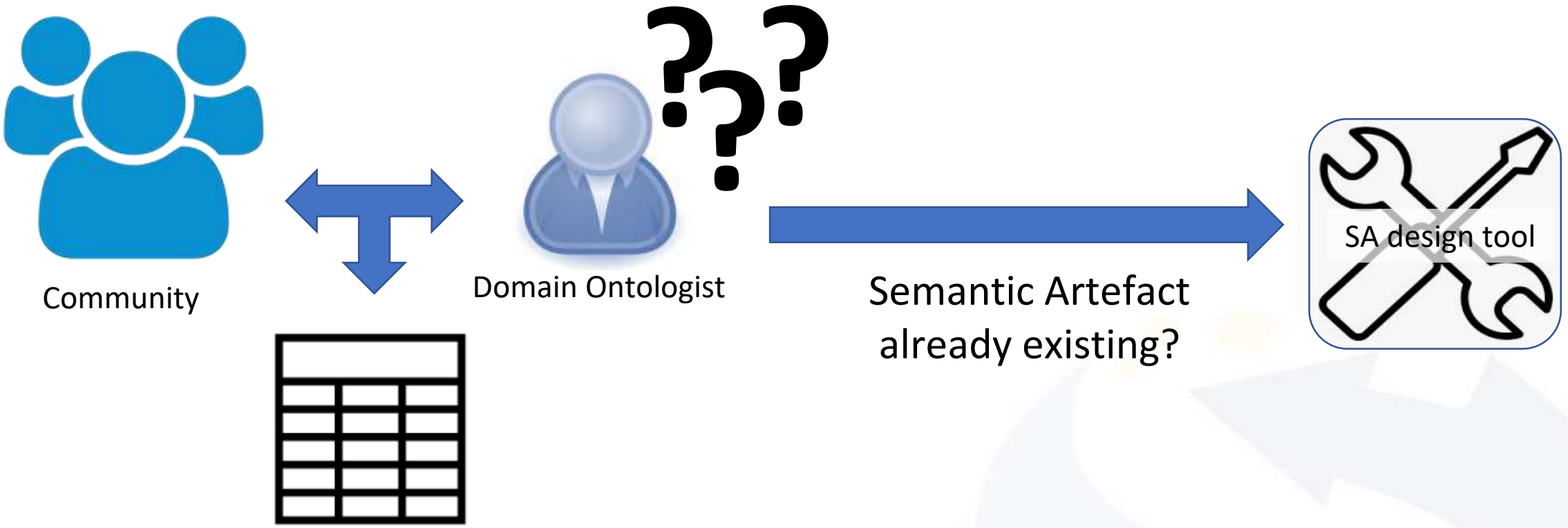
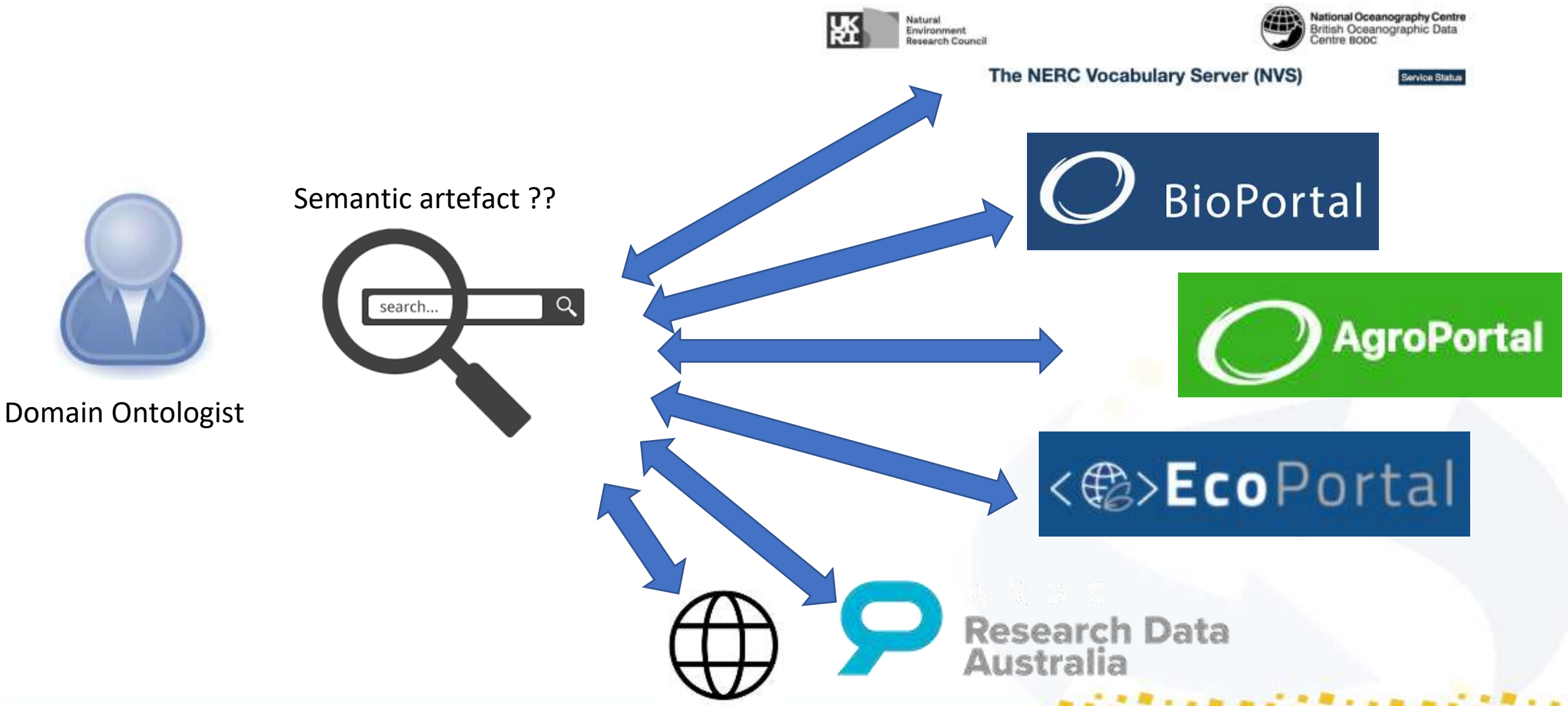


A search engine for Semantic Artefacts

Domain Ontologist

Semantic artefact ??

A search engine for Semantic Artefacts



Examples of the changes 1st >> 2nd version (D2.5)

D2.2 >	*P-Rec. 3: Use a common minimum metadata schema to describe semantic artefacts and their content*	F2, R1.1, R1.2 and R1.3

D2.5 >	Mandatory	P-Rec. 3: A common minimum metadata schema must be used to describe semantic artefacts and their content	F2, R1.1, R1.2 and R1.3	Metadata

Alignment with RFC 2119 (9 MUST, 7 SHOULD, 1 MAY Recommendations)

Examples of the changes 1st >> 2nd version (D2.5)

D2.2 >	*P-Rec. 4: Publish the Semantic Artefact and its content in a semantic repository*	F4

D2.5 >	Optional	*P-Rec. 4: Semantic Artefact and its content should be published in a trustworthy semantic repository*	F4	Repository

Integrating the idea of trustworthiness for repositories. Proposed as an 'Optional' requirement.

*CoreTrustSeal plus FAIR overview: https://doi.org/10.5281/zenodo.4003630

*See: Lin, D., Crabtree, J., Dillo, I. *et al.* The TRUST Principles for digital repositories. *Sci Data* 7, 144 (2020). https://doi.org/10.1038/s41597-020-0486-7

** Relate to trustworthiness in data repositories but the notion of adherence to quality standards, certification and compliance is still relevant.*

Ways to get involved

Workshop to discuss the future of the recommendations (timing TBC)

Suggestions, contributions, and feedback are always welcome...

GitHub

GitHub is being used by the team to collect feedback:
https://github.com/FAIRsFAIR/FAIRSemantics

Use of labels:

Please use "Clarification Needed" where you feel like a recommendation lacks clarity

Please use "Relevance" to comment on the relevance (or lack thereof) for the stakeholder you represent.

Please use "Implementation Example" to suggest practical implementations or initiatives that are missing for this recommendation.

It is also possible to submit problems encountered, suggestions, questions, recommendation proposals etc. as issues.

Working with the RDA VSSIG

TG - Minimum metadata for FAIR Semantic Artefacts and DCAT profiles

Lead: Clement Jonquet (INRAE)

- Defining a minimum metadata schema for minimally FAIR semantic artefacts
- Defining a DCAT profile for semantic artefacts

TG - FAIR Semantic Repositories

Lead: Alexandra Kokkinaki (BODC) & Gerard Coen (DANS)

- Evaluate the recommendations from the perspective of repositories & service providers
- Establish a list of technical implementations for the recommendations

Email: alexk@bodc.ac.uk & gerard.coen@dans.knaw.nl

Acknowledgements & Questions

Thank you!

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