

## Enabling provision and processing of

### Findable



- Unique, Persistent & Resolvable Identifiers (IGSN, DOI)
- Registries
- re3data.org, EOSC CoS
- schema.org, bioschemas.org
- Indexable by search engines

### Accessible



- OGC WPS/WFS2.0
- Annotated APIs for end user services (OpenAPI)
- Retrievable landing page in distributed service infrastructure
- Federated AAI

### Interoperable



- Controlled Vocabularies and ontologies like SWEET, ENVO
- Dockerized reproducible model pipelines

### Reusable



- INSPIRE
- Provenance (W3C PROV)
- State transactions
- FAIR-DO
- Annotations for RDM

## Earth and Environmental Data

# From assessment ...



NFDI4Earth

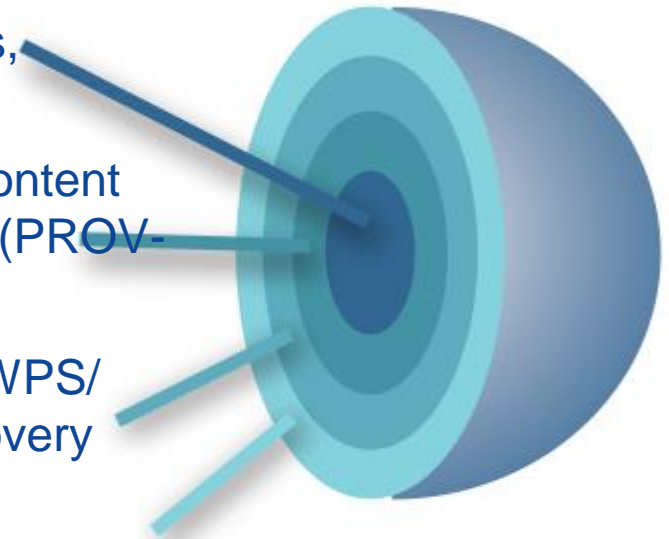
(Meta-)Data content: e.g. shapefiles, n-D datacubes, ENVO annotations

Metadata describing content as Information Artifact (PROV-O, SAML, IAO, OBI)

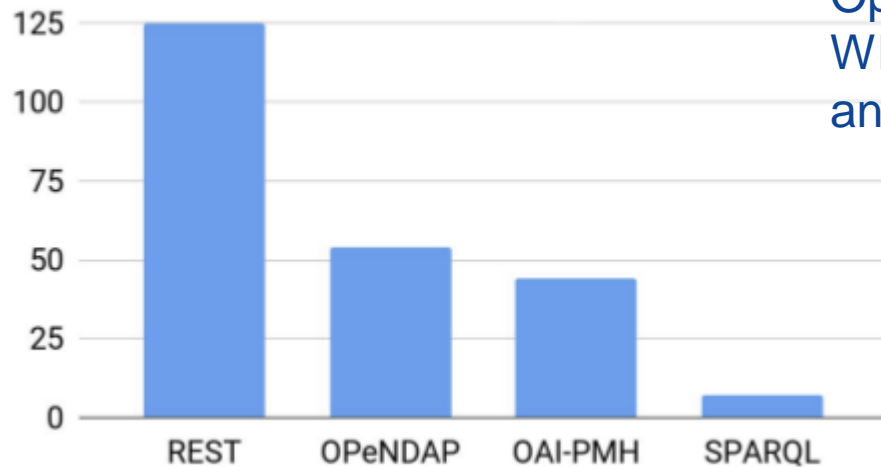
Operations: e.g. WPS/WFS 2.0 for discovery and transaction

PID: e.g. IGSN, DOI, ePIC

A complementary, technical (Digital Object) view to FAIR [[de Smedt, Koureas & Wittenburg 2020, modified](#)]



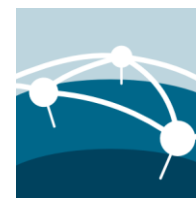
re3data.org  
REGISTRY OF RESEARCH DATA REPOSITORIES



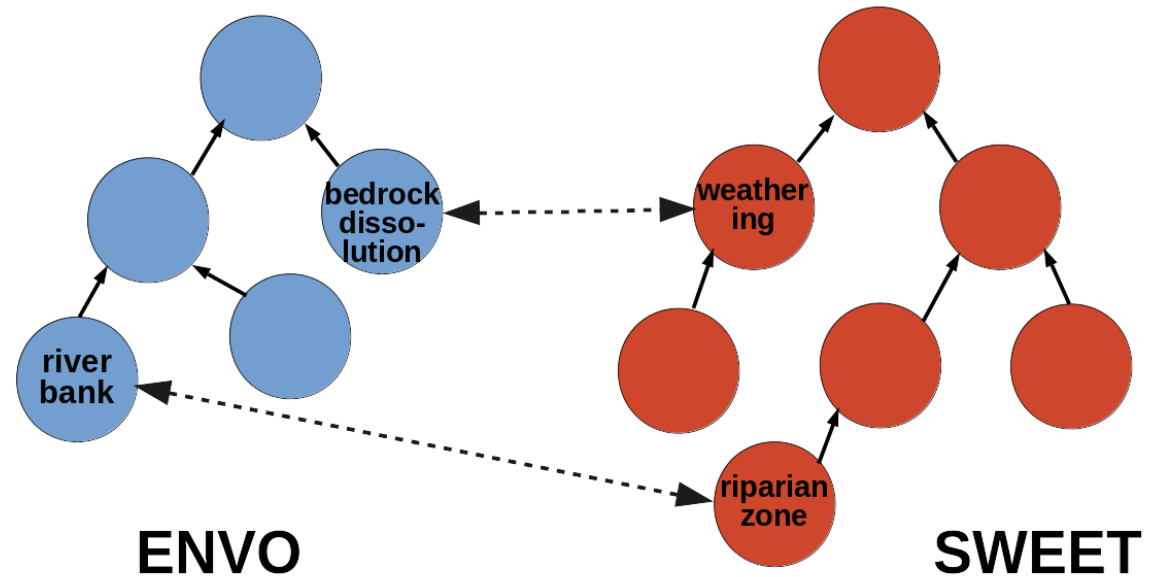
739 Repositories tagged „Geosciences“ [Stocker et al 2020]

## ... to a NFDI4Earth label

# Vocabulary mapping



- Focus on vocabularies and mappings open to reuse in related NFDIs (NFDI4BioDiversity, NFDI4Agri) based on **Weak Semantics**
- Align with relevant projects and initiatives in the **EOSC, RDA** [...] context (SEMAF, FAIRsFAIR and many more)



Assertion that term „river bank“ used in ENVO is a synonym of term „riparian zone“ in SWEET  
[\[Karam et al 2020\]](#)

Term 1	Vocab 1	Term 2	Vocab 2	Relation
river bank	envo_00000143	riparian zone	sweet_Riparian Zone	equivalence
bedrock dissolution	envo_02500029	weathering	sweet_Weathering	subclass



**NFDI4Earth**

**Many thanks!**

**Questions?**

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