Open Information Linking for environmental research infrastructures

The ENVRIplus project

The ENVRIplus (http://envriplus.eu/) project builds upon the work of the original ENVRI project in providing **shared solutions for science and society**, particularly as regards defining **common operations for environmental research infrastructures**. Addressing the need for interoperable services for such diverse topics as identification and citation, curation, provenance and cataloguing, the **Data for Science** theme of ENVRIplus brings together a cluster of environmental research infrastructures (RIs) and ICT institutions to come up with practical solutions to long-standing problems.
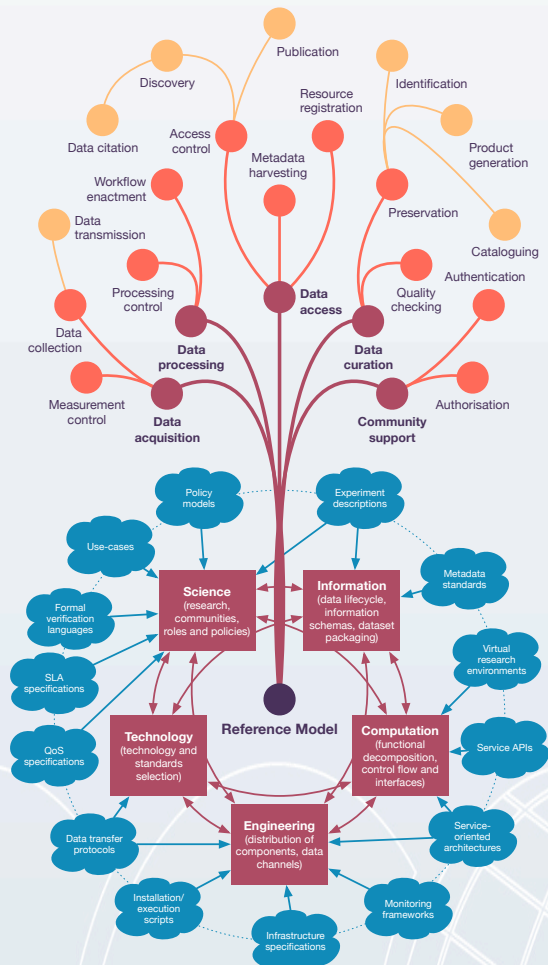
Common vocabularies

The ENVRI Reference Model (http://envri.eu/rm/) provides a standard set of **archetypes** for different classes of actor, information object, behaviour, etc. commonly found within environmental science RIs.

The reference model (E-RM) places these archetypes in the context of the **research data lifecycle**, identifying the critical elements of data acquisition, curation, publishing, processing and use. By referring to E-RM, RI architects can identify which elements are most important to them, determine any gaps within their own (planned) infrastructure, and compare against other RI specifications—in particular looking at *how* other RIs solved the same problems and what technologies they used.

E-RM provides **common vocabulary** for defining:
- The major **actors** in an RI and the **behaviours** they engage in.
- The main **information objects** generated and used within an RI.
- The main **services and resources** needed to support RI **operations**.

By promoting a common set of terms for RI entities, E-RM helps normalise and streamline discourse between different RI initiatives.

E-RM provides common vocabulary that can then be linked to different community standards.

![ENVRIplus logo] **plus ENVRI**

Supporting environmental research with integrated solutions
- the Earth is our lab

Open Information Linking

Open Information Linking for Environmental science research infrastructures (OIL-E) (http://www.oil-e.net/) is intended to provide a **framework for semantic linking** between different RI standards and vocabularies.

Using the archetypes of E-RM to produce an **upper ontology** for RI specifications, OIL-E will provide a **linking model** for describing the overlaps between the different metadata schemes used by RIs to describe their resources, as well as the **semantic mappings** that can be applied to convert between schemes.

Using OIL-E, the ENVRIplus project will build a **knowledge base** describing the **semantic landscape** of environmental science RIs in Europe, capturing information about metadata schemes, ontologies, thesauri and other controlled vocabularies used by RIs and helping to navigate the semantic bottlenecks facing the establishment of an open science commons in Europe and beyond.

ENVRI and RDA

The Research Data Alliance (RDA) is an important forum for addressing the challenges facing the open sharing of data, many of which ENVRI also faces.

The recommendations of RDA will bear influence on future revisions of E-RM, and the standards espoused by RDA should be captured within the semantic linking framework of OIL-E. Notable recommendations include the **Data Foundation & Terminology Model** and **Data Type Registries Model**.

At the same time, it is hoped that the intellectual investment of ENVRI into E-RM and OIL-E will be of value to the RDA community, for example regarding research data collections or metadata standards.
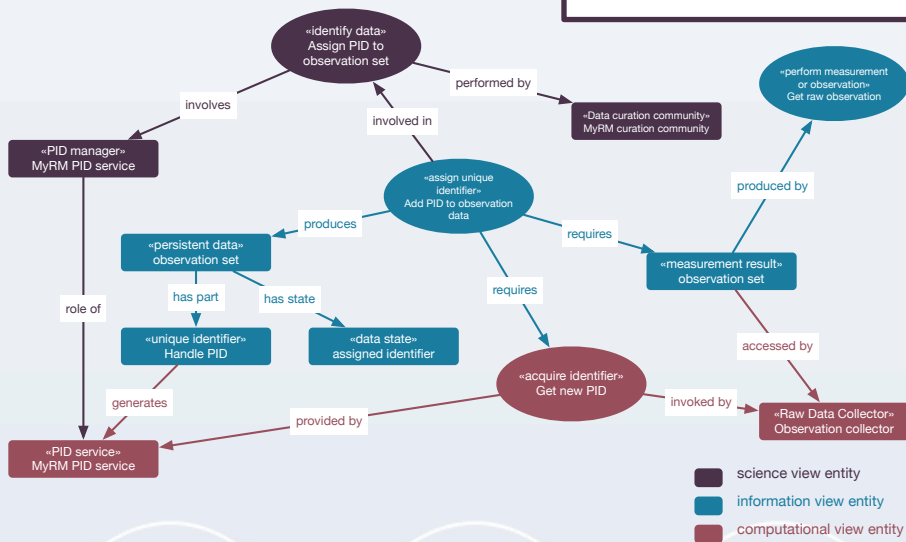
OIL-E helps map out the relations between entities and processes within an RI.

Contact us

- For more information about E-RM or OIL-E, mail: envri-rm@list.uva.nl
- For more information about ENVRI in general, or to register for updates, visit: http://envri.eu/

Acknowledgements