

Ontology Repositories and Semantic Artefact Catalogues with the OntoPortal Technology

Authors

- Clement Jonquet. MISTEA, University of Montpellier, INRAE, France, [ORCID](#)
- With the members of the OntoPortal Alliance.

Abstract

Ontologies and semantic artefacts are crucial for the representation and annotation of data in a standardized manner, aligning with the FAIR Data Principles. With the proliferation of ontologies and semantic artefacts in various domains, the need for common platforms to host, serve, align, and reuse these resources has become essential. The OntoPortal Alliance (<https://ontoportalliance.org>), a consortium of research and infrastructure teams, has developed and maintained multiple ontology repositories and semantic artifact catalogs, including BioPortal, AgroPortal, EcoPortal, MatPortal, and more. These repositories serve different scientific disciplines and are built on the open-source OntoPortal technology [1]. The presentation will present the OntoPortal technology as a generic resource to build ontology repositories and semantic artefact catalogues that can support resources ranging from SKOS thesauri to OBO, RDF-S, and OWL ontologies. The presentation will outline the set of services of OntoPortal, including its standard/default features such as ontology hosting, grouping, versioning, and search, ontology browsing, mappings, community feedback, ontology-based annotation, and ontology recommendation. As well as additional features and services developed by the Alliance, including enhanced mapping features and semantic annotation workflow, extended ontology metadata, ontology FAIRness assessment, and support for SKOS resources. We will illustrate with various running installations of the OntoPortal technology. A specific example on how the O'FAIRe (Ontology FAIRness Evaluator) [2] methodology helps to automatically assess to which level a semantic artefact or ontology respects the FAIR Principles will be illustrated with AgroPortal (<https://agroportal.lirmm.fr>). The OntoPortal Alliance's open-source project organization provides the essentials for a community or a project to start/maintain a semantic artefact catalogue. It also emphasizes the importance of community participation. The OntoPortal code is available on GitHub, and the Alliance encourages collaboration and contributions.

Acknowledgements

This work has been supported by the D2KAB project (ANR-18-CE23-0017), the French NUMEV-IRT OntoPortal Alliance (ANR-10-LABX-20), the Horizon Europe FAIR-IMPACT project (grant #101057344). The Alliance is also supported by the research bodies and organizations of its members. We thank and acknowledge here the discussions, engagement and participation of the Alliance members and any external parties that provide contributions or feedback on our technology or our running OntoPortal installations.

References

1. Clement Jonquet, John Graybeal, Syphax Bouazzouni, Michael Dorf, Nicola Fiore, et al.. Ontology Repositories and Semantic Artefact Catalogues with the OntoPortal Technology. *22nd International Semantic Web Conference (ISWC)*, Juanzi Li, Nov 2023, Athens, Greece, France.
2. Emna Amdouni, Syphax Bouazzouni, Clement Jonquet. O'FAIRe makes you an offer: Metadata-based Automatic FAIRness Assessment for Ontologies and Semantic Resources. *International Journal of Metadata, Semantics and Ontologies*, 2022, 16 (1), pp.16-46.