A major challenge in EPOS is the integration of multi-disciplinary, multi-organisational, distributed resources and community assets into a single overarching Research Infrastructure - the EPOS Integrated Core Services (ICS). ICS aggregate and harmonise descriptions of datasets, data products, software and services from different domain-specific services - the Thematic Core Services (TCS). TCS adopt heterogeneous formats, vocabularies, protocols and standards to represent and make their resources available.

The exchange of metadata between ICS and TCS is crucial to achieve integration and interoperability in EPOS. In order to capture, organise and harmonise information from different sources and to enable semantic interoperability, a data model has been developed and adopted, namely EPOS-DCAT-AP. It extends and builds on an established W3C standard - the Data Catalog Vocabulary (DCAT).

EPOS-DCAT-AP is based on a set of high level Core Concepts that covers the main assets and resources of the EPOS communities. These are defined and represented with a flexible common notation and can be enriched and extended with domain-specific knowledge. The combination of an agreed set of Core Concepts and a flexible and extensible representation enables us to support a wide spectrum of use cases and requirements. Moreover, existing domain knowledge can be retained and data and resources independently managed by the communities can be integrated into a coherent framework. We followed the DCAT-AP recommendations for extensions and included additional entities and relationships as well as we reused elements of popular vocabularies such as Schema.org, Hydra Core Vocabulary, Web Annotation and SKOS.

EPOS-DCAT-AP is represented in RDF/turtle, its latest version is available on GitHub (https://github.com/epos-eu/EPOS-DCAT-AP) - it includes a UML diagram, ontology definition, examples and more details.

EPOS-DCAT-AP facilitated an incremental metadata collection
process that was carried out by engaging the EPOS communities at different stages of the project timeline.

The continued collaboration between ICS and TCS delivered substantial results. It yielded valuable feedback and as a consequence additional features were included in the model to address new requirements. Examples are: an improved support for spatio-temporal coverages, web API and service parameters descriptions.

Currently EPOS-DCAT-AP achieved a level of maturity which makes it suitable to be considered by other research infrastructures and to be applied in different contexts.

Reference

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