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EPOS-DCAT-AP a representation for enabling cross-disciplinary collaboration in solid Earth sciences

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The European Plate Observing System (EPOS), recently granted with the legal status of European Research Infrastructure Consortium, is the ESFRI Landmark infrastructure for Solid Earth sciences.

EPOS is creating a pan-European infrastructure for solid Earth science to support a safe and sustainable society. The mission of EPOS is to monitor and understand the dynamic and complex Earth system by relying on new e-science opportunities and integrating diverse and advanced Research Infrastructures in Europe for solid Earth science.
This is sustained by an intense community-driven, collaborative action to tackle governmental, financial, legal, ethics and technical challenges. One of the main technical challenges is the integration of multidisciplinary data into a single e-infrastructure, namely the EPOS Integrated Core Services (ICS). ICS aggregate dataset, data products, software and services from thematic infrastructures, the so-called Thematic Core Services.
A key element to achieve integration is the exchange of metadata between main ICS node and Thematic Services.

Sharing and exchanging of heterogeneous information, communication and mutual understanding of diverse terminology and vocabulary are major challenges in cross-disciplinary collaborations. To support pooling of knowledge in EPOS we defined and adopted a representation named EPOS-DCAT-AP - an Application Profile that draws on well-known standards (e.g. W3C) and reuses elements of popular vocabularies such as DCAT, Schema.org and SKOS.
EPOS-DCAT-AP is based on a set of high level Core Concepts that cover the main assets and resources of the EPOS communities. Those 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. Those features support interoperability of heterogeneous data and services and promote cross-disciplinary collaboration.

EPOS-DCAT-AP facilitated an incremental population process that was carried out engaging the communities in in different stages in order to support the project implementation phases. That process was supported by tools such as an interactive Web Metadata Editor (http://epos.cineca.it/apache/mde/public/index.php).
Starting from concepts such as Person, Organisation and WebService we included progressively Dataset, Software, Facility and Equipment.