



Setting up The Geological information and modelling Thematic Core Service for EPOS

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Geological data and models are key assets for the EPOS community. The Geological information and modelling Thematic Core Service of EPOS is being designed as an efficient and sustainable access system for geological multi-scale data assets for EPOS through the integration of distributed infrastructure components (nodes) of geological surveys, research institutes and the international drilling community (ICDP/IODP).

The TCS will develop and take benefit of the synergy between the existing data infrastructures of the Geological Surveys of Europe (EuroGeoSurveys / OneGeology-Europe / EGDI) and of the large amount of information produced by the research organisations.

These nodes will offer a broad range of resources including: geological maps, borehole data, borehole associated observations (borehole log data, groundwater level, groundwater quality. . .) and archived information on physical material (samples, cores), geological models (3D, 4D), geohazards, geophysical data such as active seismic data and other analyses of rocks, soils and minerals.

The services will be implemented based on international standards (such as INSPIRE, IUGS/CGI, OGC, W3C, ISO) in order to guarantee their interoperability with other EPOS TCS as well as their compliance with INSPIRE European Directive or international initiatives (such as OneGeology).

We present the implementation of the thematic core services for geology and modelling, including scheduling of the development of the different components. The activity with the OGC groups already started in 2016 through an ad-hoc meeting on Borehole and 3D/4D and the way both will be interlinked will also be introduced.

This will provide future virtual research environments with means to facilitate the use of existing information for future applications. In addition, workflows will be established that allow the integration of other existing and new data and applications. Processing and the use of simulation and visualization tools will subsequently support the integrated analysis and characterization of complex subsurface structures and their inherent dynamic processes. This will in turn aid in the overall understanding of complex multi-scale geo-scientific questions. This TCS will work alongside other EPOS TCSs to create an efficient and comprehensive multidisciplinary research platform for the Earth Sciences in Europe and abroad.