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## Building geological services for the EPOS European Research Infrastructure

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## **Building geological services for the EPOS European Research Infrastructure**

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EPOS is a major initiative supported by the European Commission to develop and operate a pan-European infrastructure for solid earth sciences. It will integrate different “Thematic Core Services” (TCS) through “Integrated Core Services” (ICS). Its implementation has now started through a large project involving academic, research and geological surveys organisations.

Geological data and models are important assets for the EPOS community. The Geological information and modelling Thematic Core Service of EPOS is being designed and will be implemented in 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 / EGD) 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, geophysical data (seismic data, borehole log data), archived information on physical material (samples, cores), geochemical and other analyses of rocks, soils and minerals, and Geological models (3D, 4D).

The services will be implemented 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).

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.

This talk will develop the possibilities to connect these EPOS Geological services with other infrastructures at the global scale.