EPOS: an e-Infrastructure to integrate Solid Earth Science data

Daniele Bailo writes about requirements and possible areas of collaboration with EGI

The European Plate Observing System (EPOS) is an ambitious long-term integration plan addressing the major solid earth research infrastructures in Europe. For its large scale and extent, EPOS is a unique initiative which will foster new scientific discoveries and enable scientists to investigate the solid earth system in unprecedented ways.

EPOS ended its Preparatory Phase in October 2014 and, being included in the top three infrastructures in the prioritization list by Competitiveness Council, is – at the moment of writing this article – in the process of submitting the proposal for Implementation Phase.

EPOS architecture

A key goal of EPOS is to provide end-users with homogeneous access to services and multidisciplinary data collected by monitoring infrastructures and experimental facilities, as well as access to software, processing and visualization tools. Such a complex system requires a solid, scalable and reliable architecture in order to accommodate innovative features and to meet the evolving expectations of the heterogeneous communities involved.

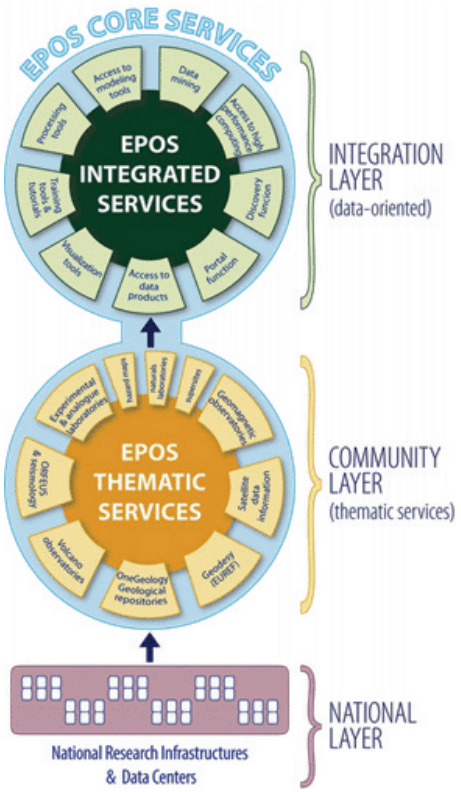
The overarching technical objective is to design and implement an Integrated Core Service (ICS) platform, supporting the standardised and transparent access to data, data products and services.

The EPOS community is organised in Thematic Core Services (TCS) - e-Infrastructures (often distributed) directly connected with national research infrastructures and data centres and providing data, data products, metadata and services related to one discipline only (e.g. seismology). TCS, therefore, are involved both as users and data/services providers.

One of the main components of the ICS system is the metadata catalogue based on the CERIF model, used to manage access and exploitation of users, software, data and resources.

Because one of the aims of EPOS is the integration and optimization of resources at European level, the project relies on IT initiatives which can provide computational services to users and implement fundamental modules, for instance AAAI software to manage secure access to resources. Such services are called Computational Earth Sciences (CES).

In this framework, organisations such as EGI can strongly contribute in the construction of EPOS: this will enable EU to optimise resources and to start tackling the challenging issue of resources procurement management, and EPOS to build on the basis of well tested and reliable technologies, thus creating a new, robust and innovative solid earth science e-Infrastructure.



EPOS architecture

EPOS is numbers

25 countries
256 national research infrastructures
+140 Institutions
+120 Experimental Labs
+170 Monitoring Networks
+7000 seismic and GNSS stations

More information

EPOS website
http://www.epos-eu.org/