

## What is EPOS

EPOS, the European Plate Observing System, is a long-term plan to facilitate integrated use of data, data products, and facilities from distributed research infrastructures for solid Earth science in Europe.

EPOS will bring together Earth scientists, national research infrastructures, ICT (Information & Communication Technology) experts, decision makers, and public to develop new concepts and tools for accurate, durable, and sustainable answers to societal questions concerning geo-hazards and those geodynamic phenomena (including geo-resources) relevant to the environment and human welfare.

EPOS vision is that the integration of the existing national and trans-national research infrastructures will increase access and use of the multidisciplinary data recorded by the solid Earth monitoring networks, acquired in laboratory experiments and/or produced by computational simulations. The establishment of EPOS will foster worldwide interoperability in the Earth sciences and services to a broad community of users.

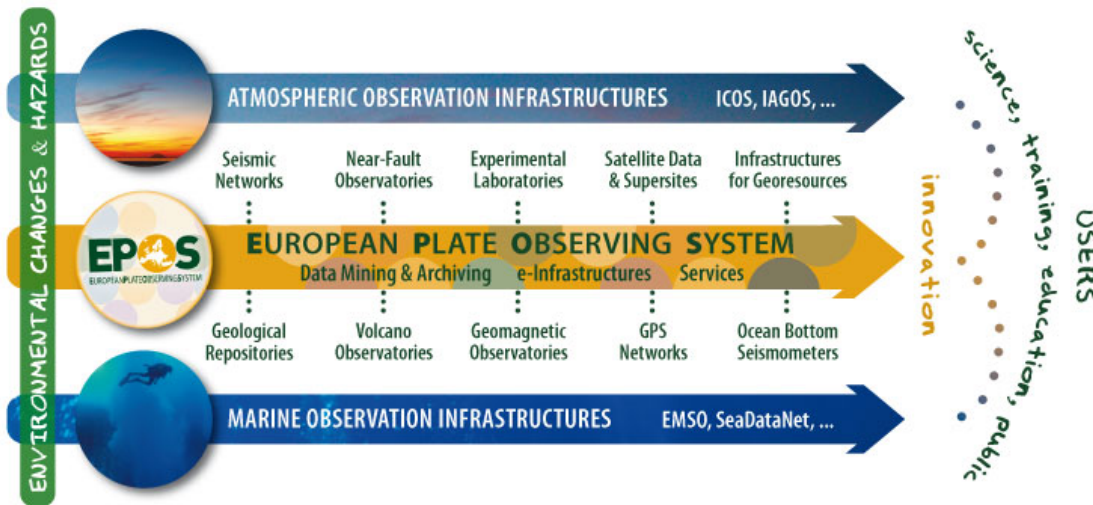
EPOS mission is to integrate the diverse and advanced European Research Infrastructures for solid Earth science, and build on new e-science opportunities to monitor and understand the dynamic and complex solid-Earth System. EPOS will identify existing gaps and promote implementation plans with environmental, marine and space science to help solve the grand challenges facing the Earth and its inhabitants.

## What is EPOS delivering?

Solid Earth science is concerned with the internal structure and dynamics of planet Earth, from the inner core to the surface.

Solid Earth science deals with physical and chemical processes, which cover wide temporal and spatial scales, from microseconds to billions of years and from nanometers to thousands of kilometers. Geology, natural hazards, natural resources and, in general, environmental processes do not respect national boundaries, therefore seamless, trans-national integration of measurements and data is often vital for optimal research and related activities.

The Earth Science community worldwide has already begun to reap the benefits of integrated accessible data. The study of solid Earth is necessarily multidisciplinary and requires the access to data and products generated by different communities with different data formats and processing procedures. The understanding of Earth dynamics and tectonic processes relies on the analysis of seismological data, ground deformations inferred from terrestrial and satellite observations, geological and petro-chemical studies and laboratory experiments to investigate the chemical and physical processes occurring at depth. In this framework, the next generation of researchers must be able to use multidisciplinary data and prepared to collaborate for cross-disciplinary investigations. This is one of the key challenges for future research in all disciplines.



EPOS addresses exactly that and will help Earth scientists and others to develop a more holistic understanding about the underlying processes of Earth's dynamics and will use this progress in science for the assessment of geo-hazards and the secure and sustainable use and exploitation of geo-resources.

EPOS will enable the use of research infrastructures and services across traditional disciplines. EPOS will not only provide access to a wealth of observational data, but also the data products to offer intelligible integrated knowledge and solutions.

The innovation potential of the EPOS infrastructure involves facilitating the integration and use of solid Earth science data, data products, services and facilities, based on distributed national research infrastructures across Europe. The ground-breaking nature of the EPOS federated approach relies on joining the capacity of delivering high-quality standardized and multi-disciplinary data, the involvement of ICT experts in guaranteeing novel e-science opportunities and the leverage effect of user's engagement.

## What is EPOS aiming at?

The EPOS overarching goal is to establish a comprehensive multidisciplinary research platform for the Earth sciences in Europe. The ground-breaking nature of the EPOS federated approach relies on joining the capacity of delivering high-quality standardized and multi-disciplinary data, the involvement of ICT experts in guaranteeing novel e-science opportunities and the leverage effect of user's engagement.

EPOS aims at:

- representing a scientific vision and approach in which innovative multidisciplinary research is made possible for a better understanding of the physical processes controlling earthquakes, volcanic eruptions, unrest episodes and tsunamis as well as those driving tectonics and Earth surface dynamics;
- establishing a long-term plan to facilitate the integrated use of data, models and facilities from existing, and new distributed research infrastructures (RIs), for solid Earth science;
- adopting appropriate legal solutions to manage distributed pan European Research Infrastructures, securing on a common and shared data policy the open access and the transparent use of data, and guaranteeing mutual respect of the Intellectual Property Rights.

