



## **The EPOS infrastructure: a novel solution for data and service provision in solid Earth science**

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The European Plate Observing System (EPOS, [www.epos-eu.org](http://www.epos-eu.org)) is midway in its implementation phase. EPOS aims at integrating the diverse and advanced European Research Infrastructures for solid Earth relying on new e-science opportunities with the final goal of contributing for a better understanding of the Earth dynamics. By developing a sustainable and multidisciplinary research platform for the coordinated access to harmonized and quality controlled data and products from diverse Earth science disciplines, EPOS is facilitating the integration, access, use, and re-use of solid Earth science data and services (including tools for the use of data). EPOS is also facilitating the physical access to European experimental facilities.

The current phase of EPOS is dedicated to implement the Thematic Core Services (TCS), the domain-specific service hubs for coordinating and harmonizing national infrastructures with the European dimension of EPOS, and to build the Integrated Core Services (ICS), the novel research platform for scientists and other stakeholders. EPOS is also designing the access to distributed computational resources (ICS-D) for developing novel research environments for computational (solid) Earth science.

Here we (i) present the EPOS data and service provision, focusing on the data, data-products, software and services (DDSS) that will enter in pre-operational phase for testing in October 2018; (ii) introduce the ICS functionalities and solutions to provide TCS-ICS interoperability; (iii) discuss the EPOS integration plan as a solution to make FAIR data principles a reality and to adopt effective data management plans; and (iv) update on the progress in the legal establishment of the EPOS European Research Infrastructure Consortium (ERIC).

Understanding how the Earth works as a system is critically important to modern society. Volcanic eruptions, earthquakes, floods, landslides, tsunamis are all Earth phenomena impacting on society. Solid Earth science by bringing together many diverse disciplines such as geology, seismology, geodesy, volcanology, geomagnetism as well as chemistry and physics as they all apply to the workings of Earth, is the place where to find answers on how to maintain the Earth a safe, prosperous, and habitable planet. A pan-European infrastructure such EPOS is an effective solution to maintain, operate and develop an integrated research infrastructure to foster innovation for science and society.