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EPOS Data portal for cross-disciplinary data access in the Solid Earth Domain

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The European Plate Observing System (EPOS) addresses the problem of homogeneous access to heterogeneous digital assets in geoscience of the European tectonic plate. Such access opens new research opportunities. Previous attempts have been limited in scope and required much human intervention. EPOS adopts an advanced Information and Communication Technologies (ICT) architecture driven by a catalogue of rich metadata. The architecture of the EPOS system together with challenges and solutions adopted are presented. The EPOS Data Portal is introducing a new way for cross-disciplinary research. The multidisciplinary research is raising new requirements both to students and teachers. The EPOS portal can be used either to explore the available datasets or to facilitate the research itself. It can be very instructive in teaching as well by demonstrating scientific use cases.

EPOS ERIC had been established in 2018 as European Research Infrastructure Consortium for building a pan-European infrastructure and accessing solid Earth science data. The sustainability phase of the EPOS (EPOS-SP – EU Horizon2020 – InfraDev Programme – Project no. 871121; 2020-2022) is focusing on finding solutions for the long-term sustainability of EPOS developments. The ambitious plan of geoscientific data integration started already in 2002 with a Conception Phase and continued by an EPOS-PP (Preparatory Phase, 2010-2014) where about 20 partners joined the project. The finished EPOS-IP project (EPOS-IP – EU Horizon2020 – InfraDev Programme – Project no. 676564; 2015-2019) included 47 partners plus 6 associate partners from 25 countries from all over Europe and several international organizations.

The EPOS Data Portal provides access to data and data products from ten different geoscientific areas: Seismology, Near Fault Observatories, GNSS Data and Products, Volcano Observations, Satellite Data, Geomagnetic Observations, Anthropogenic Hazards, Geological Information and Modelling, Multi-scale laboratories and Tsunami Research. The Data portal Graphic User Interface (GUI) provides search functionalities to enable users to filter data by using several criteria (e.g. spatio-temporal extents, keywords, data/service providers, free-text); also, it enables users to pre-visualize data in Map, Tabular or Graph formats; the GUI finally provides details about the selected

data (e.g., name, description, license, DOI), as well as to further refine the search in order to dig into a smaller level of granularity of data.

The presentation is showing achievements of the EPOS community with focus on the EPOS Data Portal which is providing information about available datasets from TCS and access to them. We are demonstrating not only features of the graphical user interface but also the underlying architecture of the whole system.

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