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## EPOS Multi-scale laboratories Data Services & Trans-national access program

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EPOS (European Plate Observing System) is an ESFRI Landmark and European Research Infrastructure Consortium (ERIC). The EPOS Thematic Core Service Multi-scale laboratories (TCS MSL) represents a community of European solid Earth sciences laboratories including high temperature and pressure experimental facilities, electron microscopy, micro-beam analysis, analogue tectonic and geodynamic modelling, paleomagnetism, and analytical laboratories.

Participants and collaborating laboratories from Belgium, Bulgaria, France, Germany, Italy, Norway, Portugal, Spain, Switzerland, The Netherlands, and the UK are already organized in the TCS MSL. Unaffiliated European solid Earth sciences laboratories are welcome and encouraged to join the growing TCS MSL community. Members of the TCS MSL are also represented in the EPOS Sustainability Phase (SP).

Laboratory facilities are an integral part of Earth science research. The diversity of methods employed in such infrastructures reflects the multi-scale nature of the Earth system and is essential for the understanding of its evolution, for the assessment of geo-hazards, and for the sustainable exploitation of geo-resources.

Although experimental data from these laboratories often provide the backbone for scientific publications, they are often only available as supplementary information to research articles. As a result, much of the collected data remains unpublished, inaccessible, and often not preserved for the long term.

The TCS MSL is committed to make Earth science laboratory data Findable, Accessible, Interoperable, and Reusable (FAIR). For this purpose the TCS MSL has developed an online portal that brings together DOI-referenced data publications from research data repositories related to the TCS MSL context (<https://epos-msl.uu.nl/>).

In addition, the TCS MSL has developed a Trans-national access (TNA) program that allows researchers and research teams to apply for physical or remote access to the participating EPOS MSL laboratories. Three pilot calls were launched in 2017, 2018, and 2019, with a fourth call scheduled for 2020. The pilot calls were used to develop and refine the EPOS wide TNA principles

and to initialize an EPOS brokering service, where information on each facility offering access will be available for the user and where calls for proposals are advertised. Access to the participating laboratories is currently supported by national funding or in-kind contribution. Based on the EPOS Data policy & TNA General Principles, access to the laboratories is regulated by common rules and a transparent policy, including procedures and mechanisms for application, negotiation, proposal evaluation, user feedback, use of laboratory facilities and data curation.

Access to EPOS Multi-scale laboratories is a unique opportunity to create new synergy, collaboration and innovation, in a framework of trans-national access rules.

An example of such a successful collaboration is between MagIC and EPOS TCS MSL. This collaboration will allow paleomagnetic data and metadata to be exchanged between EPOS and the MagIC (<https://www.earthref.org/MagIC>) database. Such collaborations are beneficial to all parties involved and support the harmonization and integration of data at a global scale.

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