

NORDIC EPOS: Strengthening Nordic collaboration

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Nordic EPOS - A FAIR Nordic EPOS Data Hub – is a consortium of Nordic geophysical institutions, universities and surveys financed by NordForsk. Nordic EPOS enhances and stimulates the active Nordic interactions related to EPOS and solid Earth research in general. It promotes common Nordic interests in EPOS, builds data services beneficial for the Nordic community. Nordic EPOS offers joint workshops and trainings on FAIR data collection, usage and management, monitoring of seismicity and induced seismicity, ash and gas eruptions, and geomagnetic hazards. It also disseminates related tutorials, demos, and actual and virtual training sessions. Together we can address global challenges in Norden with Nordic data.

Keywords: EPOS (European Plate Observing System), Nordic countries, collaboration, FAIR (Findable, Accessible, Interoperable and Re-usable), data

1. Overview

The European Plate Observing System, EPOS, brings together Earth scientists, national research infrastructures (RIs), information and communication technology experts, decision makers, and public to develop new concepts and tools for accurate and sustainable solutions for today's and future's societal questions concerning geo-hazards and those geodynamic phenomena relevant to the environment and human welfare. EPOS is a multidisciplinary, distributed ESFRI landmark RI that facilitates the integrated use of data, data products, and facilities from the solid Earth science community in Europe.

Nordic EPOS builds on the long-standing Nordic tradition of sharing geo-related data and experiences on processing and analyzing of such a data. Nordic EPOS enhances and stimulates the ongoing active Nordic interactions related to solid Earth RIs in general and EPOS in particular. By developing and sharing expertise and tools designed to integrate Nordic RI data and further enhancing their accessibility and usefulness to the Nordic research community we are addressing global challenges in Norden with Nordic data.

Nordic EPOS - A FAIR Nordic EPOS Data Hub- is a project funded through NordForsk's Nordic Research Infrastructure Hubs (2020–2022). It is a consortium of geophysical institutions from Nordic universities and surveys that are members of the national EPOS consortia. Namely, the six partners are University of Helsinki (UH; Finland), Geological Survey of Denmark and

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Greenland (GEUS; Denmark and Greenland), Icelandic Meteorological Office (IMO; Iceland), University of Bergen (UiB; Norway), University of Oulu (UOULU; Finland), and Uppsala University (UU; Sweden). Partner organizations operate National Research Infrastructures (NRI) that deliver data to EPOS Thematic Core Services (TCS) and/or are partners in TCS consortiums.

2. Nordic EPOS Objectives

One of the main objectives of the FAIR Nordic EPOS Data Hub is to increase awareness of the FAIR principles in the geoscientific community by offering trainings on EPOS data and metadata standards to RI and research personnel specially in Nordic countries. Trained personnel can proceed in opening new EPOS related data sets and they can help other scientists and students in applying the standards to their experimental data sets for publication in international journals. In addition, the hub aims to increase expertise of the geoscientific community in using multi-disciplinary scientific data set of EPOS in cross-disciplinary research of the Arctic and in the supplying mineral and energy resources of Fennoscandia. Similarly the data sets will be open to other groups studying e.g. the Arctic, global change, natural hazards and urbanization. For comprehensive list of objectives, see Figure 1 where the mission and goals of the hub are illustrated.

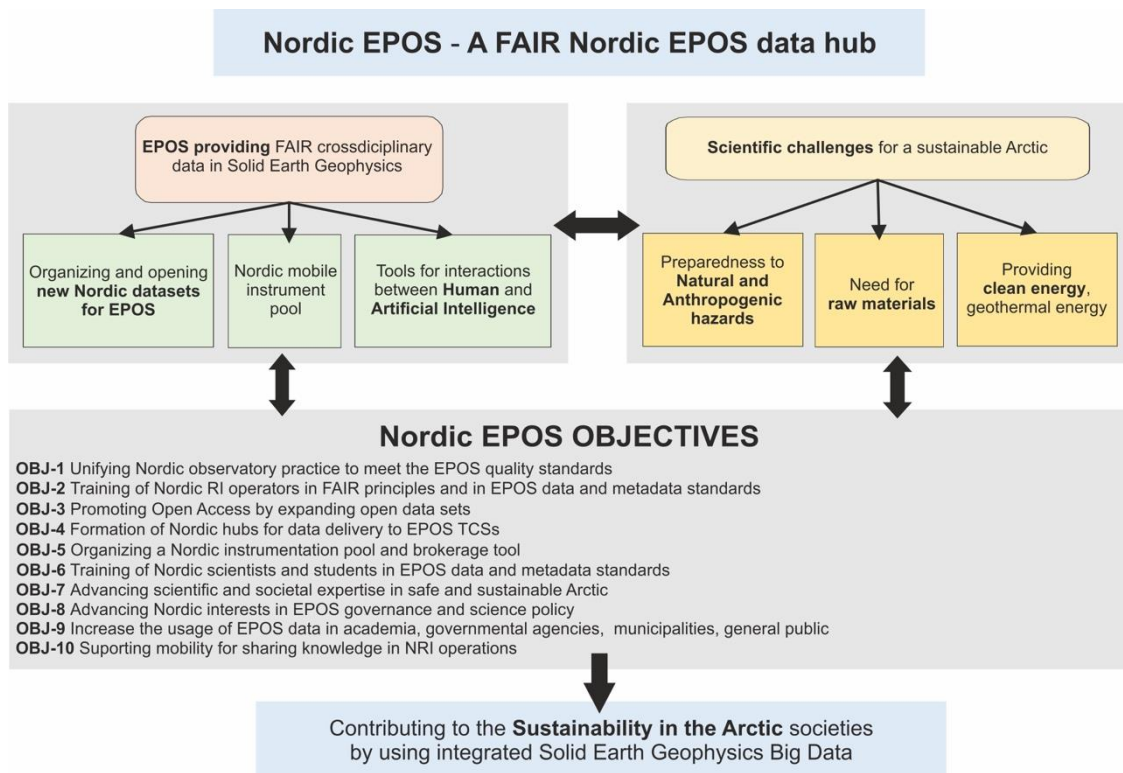


Figure 1. Mission and goals of Nordic EPOS.

3. Nordic EPOS objectives and activities

The hub aims to advance the usage of multi-disciplinary solid Earth data sets on scientific and societal problem solving, increase the amount of open, shared homogenized data sets, and increase the scientific expertise in creating sustainable societies in Nordic countries and especially in the Arctic region. In addition to developing services better suited for Nordic interest for EPOS, it will also try to bring forward Nordic research interest, such as research of Arctic areas in TCS and EPOS-ERIC governance and scientific boards.

To reach the objectives, the hub is organized into tasks and activities. The main task are:

- Training in usage of EPOS-RI data and services
- Nordic data integration and FAIRness (Findable, Accessible, Interoperable and Reusable)
- Nordic station management of seismological networks
- Induced seismicity, safe society
- Ash and gas monitoring
- Geomagnetic hazards
- Communication and dissemination

Activities within the tasks are e.g. workshops, tutorials, demonstrations and training sessions (virtual and on-site) communication and dissemination of EPOS data and metadata at local, national and international workshops, meetings, and conferences. Many of the task are addressing several objectives of the hub and each of the main partners is responsible for several activities in one or several tasks.

In seismology, NORDIC-EPOS is particularly active in standardizing observatory practices and databases, especially in following EPOS metadata standards, in increasing expertise in seismic hazard assessment for intraplate regions, in preparing a seismic hazard map for the Nordic countries and in expert capacity building in monitoring of induced seismicity in urban areas.

For comprehensive list of upcoming events, see the Nordic EPOS webpages (<https://www.helsinki.fi/en/infrastructures/nordic-epos>). In addition, the activities are advertised via EPOS (<https://www.epos-eu.org>) and national RI websites and communicated and disseminated in public lectures, seminars, and short articles in expert journals. Most activities take place at or back-to-back with local, national and international conferences, meetings, workshops and seminar series.

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