EPOS-Norway – Integration of Norwegian geoscientific data into a common e-infrastucture

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The European Plate Observing System (EPOS) is a European project about building a pan-European infrastructure for accessing solid Earth science data. Implementation phase of the EPOS project (EPOS-IP – EU Horison2020 – InfraDev Programme – Project no. 676564) started in 2015. The EPOS-Norway project (EPOS-N; RCN-Infrastructure Programme - Project no. 245763) is a Norwegian project funded by National Research Council and is closely linked to the EPOS-IP project. The aims of EPOS-N project are divided into four work packages where one of them is about integrating Norwegian geoscientific data into an e-infrastructure. The other three work packages are: management of the project, improving the geoscientific monitoring in the Arctic and establishing Solid Earth Science Forum to communicate the progress within the geoscientific community and also providing feedback to the development group of the e-infrastructure.

Among the six EPOS-N project partners, five institutions are actively participating and providing data in the EPOS-N project – University of Bergen (UIB), University of Oslo (UIO), Norwegian Mapping Authority (NMA), Geological Survey of Norway (NGU) and NORSAR. The data which are about to be integrated are divided into categories according to the thematic fields – seismology, geodesy, geological maps and geophysical data. Before the data will be integrated into the e-infrastructure their formats need to follow the international standards which were already developed by the communities of geoscientists around the world. Metadata are stored in Granularity Database tool (developed in EPOS-IP) and therefore easily accessible by other tools. For now, there are 33 Data, Data Products, Software and Services (DDSS) described in EPOS-N list.

We present the Norwegian approach of integration of the geoscientific data into the e-infrastructure, closely following the EPOS-IP project development. The sixth partner in the project – NORCE Norwegian Research Centre AS is specialized in visualizations of data and developing the EPOS-N Portal. It is web-based graphical user interface adopting Enlighten-web software which allows users to visualize and analyze cross discipline data. Expert users can launch the visualization software through a web based programming interface (Jupyter Notebook) for processing of the data. The seismological waveform data (provided by UIB and NORSAR) will be available through an EIDA system, seismological data products (receiver functions, earthquake catalogues, macroseismic observations) as individual datasets or through a web service, GNSS data (provided by NMA) through the GLASS framework (web service) and geological and geophysical (magnetic, gravity anomaly) maps (provided by NGU) as WMS web services. Integration of some specific geophysical data is still under discussion, such as georeferenced cross-sections which are of interest especially for visualization with other geoscientific data.

Constant user feedback is achieved through dedicated workshops. Various use cases are defined by users and have been tested in these workshops. Collected feedback is being used for further development and improvements of the software.