



## **Nordic format (SEISAN) to QuakeML converter**

Christian Rønnevik, Jens Havskov, Terje Utheim, Lars Ottemöller, Kuvvet Atakan, and Jan Michalek  
University of Bergen, Department of Earth Science, Bergen, Norway (christian.ronnevik@uib.no)

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 Horizon2020 – 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. A principal goal of the EPOS-N project is to integrate Norwegian geoscientific data into an e-infrastructure. Before the data can 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.

At the University of Bergen (UiB), seismological waveform data have successfully been integrated through the European Integrated Data Archive (EIDA) system, while parameter data (earthquake catalogues, macroseismic observations) are only available in the Nordic format, which since 1985 has been the common exchange format in the Nordic countries. The Nordic format is also the basic format for the widely used SEISAN earthquake analysis software. The standard format for provision of earthquake parametric data within EPOS is QuakeML. Hence, UiB is developing a conversion tool to properly integrate these data into the EPOS system. The conversion tool currently has a web interface, which allow users to test the tool independently of their system. Users can upload a file in the Nordic format which returns a QuakeML file. Additionally, a user can upload a QuakeML file, enter an URL for a web-service or raw text for conversion to the Nordic format. Both QuakeML version 1.2 and 2.0 are supported.

The conversion tool is currently reading and producing earthquake event data (event parameters) but will be extended to include macroseismic observations (macroseismic parameters). Further development will also include to introduce a command-line interface (CLI) for interactions with the SEISAN structure. The tool will then be executable in a Java environment for offline use. Additional functionalities/components (e.g. integrated database and web-services) are under consideration.