



EPOS PL - Polish national contribution towards EPOS infrastructure

Tomasz Werner (1), Dorota Olszewska (1), Beata Górka-Kostrubiec (1), Grzegorz Lizurek (1), Waldemar Józwiak (1), Jan Kryński (2), Wojciech Czuba (1), Witold Rohm (3), Andrzej Araszkievicz (4), Grzegorz Mutke (5), Mariusz Sterzel (6), Tomasz Szepieniec (6), and Dariusz Wójcik (1)

(1) Institute of Geophysics, Polish Academy of Sciences, Warsaw, Poland (twerner@igf.edu.pl), (2) Institute of Geodesy and Cartography, IGC, Warsaw, Poland, (3) Wrocław University of Environmental and Life Sciences, WUELS, Wrocław, Poland, (4) Military University of Technology, MUT, Warsaw, Poland, (5) Central Mining Institute, CMI, Katowice, Poland, (6) Academic Computer Centre CYFRONET AGH University of Science and Technology, ACC Cyfronet AGH, Cracow, Poland

EPOS as a pan-European project may be a source of inspiration and motivation for the complex and ambitious efforts of building national research infrastructures (RI). Such a case happened in Poland, where new, national RI is aimed to facilitate research and to improve its outputs in the area of Solid Earth sciences. The areas of interest are anthropogenic seismicity, magnetism and magnetotelluric studies, GNSS observations, gravimetry, radiometry, deep seismic soundings and multiscale laboratories of Solid Earth. The project called EPOS PL is run by the Consortium of scientific and industrial partners lead by Institute of Geophysics, PAS. Consortium members are: ACC Cyfronet AGH, Central Mining Institute (GIG), Institute of Geodesy and Cartography, Wrocław University of Environmental and Life Sciences, The Jarosław Dąbrowski Military University of Technology (WAT) and Polska Grupa Górnicza (industrial partner). Multidisciplinary approach to the scientific challenges with use of the smart R&D environment in the form of web platform including dedicated software and visualization tools is one of the priorities of the project. Following this approach, it is possible to conduct the research across the disciplines as well as within specific subject with use of the EPOS-PL RI. The first layer of RI is built by so called Research Infrastructure Centers (RICs). RIC provides a complete dataset concerning given research field (e.g. seismic data, geodetic data, geological data). Each national RIC has its own IT support. This solution ensures effective data storage and basic computing resources. Data from all the RIC will be served for EPOS through dedicated TCS's. The second layer of innovative EPOS-PL infrastructure concerns the integration of infrastructure in the scale of Poland. Measurement polygons for the integrated observation of geodynamic processes are going to be built. The first polygons from the group of MUSE - Multidisciplinary Upper Silesian Episode will be built in mining and post-mining areas of Upper Silesian Coal Basin (Poland). The first step for the creation of MUSE is to build an integrated geodetic observation system, which uses a combination of various point and surface measurement techniques. Additionally, in MUSE areas an integrated geophysical observation and measurement system will be used in order to observe physical processes, which take place inside the rock mass. The system will include local and regional seismological, geodetic, gravimetric and geophysical networks. Collected data and products will be integrated as a Multidisciplinary Upper Silesian Episode and would be available as new episodes on IS-EPOS platform.

EPOS-PL is multidisciplinary infrastructural project, but in broader perspective there are significant scientific goals, which built RI is aimed for. Data and data products obtained during EPOS-PL would be part of dedicated TCS's and may be used in specialized research within every specialty represented in the project as well as in multidisciplinary, holistic approach exemplified by MUSE.