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CURRENT STATE OF A PROTOTYPE OF EPOS THEMATIC CORE SERVICE FOR INDUCED SEISMICITY (IS-EPOS)

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Beata ORLECKA-SIKORA¹, Stanisław LASOCKI², Grzegorz LIZUREK³ and the IS-EPOS Team

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The community focused on seismic processes induced by human operations has been organized within EPOS Integration Program as Working Group 10 Infrastructure for Georesources. This group has brought together representatives from the scientific community and industry from 13 European countries. WG10 aims to integrate the research infrastructure (RI) in the area of seismicity induced (IS) by human activity: tremors and rockbursts in underground mines, seismicity associated with conventional and unconventional oil and gas production, induced by geothermal energy extraction and by underground reposition and storage of liquids (e.g. water disposal associated with energy extraction) and gases (CO₂ sequestration, inter alia) and triggered by filling surface water reservoirs, etc. WG10 priority is to create new research opportunities in the field responding to global challenges connected with exploitation of georesources. WG10 has prepared the model of integration fulfilling the scientific mission and raising the visibility of stakeholders. The end-state Induced Seismicity Thematic Core Service (IS TCS) has been designed together with key metrics for TCS benefits in four areas: scientific, societal, economic and capacity building. IS-EPOS project, funded by National Centre for Research and Development, Poland within the program “Innovative Economy Operational Program Priority Axis 2 – R&D Infrastructure”, aims at building a prototype of IS TCS. The prototype will implement fully the designed logic of IS TCS. Research infrastructure integrated within the prototype will comprise altogether seven comprehensive data cases of seismicity linked to deep mining related, associating geothermal production and triggered by reservoir impoundment. The implemented thematic services in first step will enable studies within case study: “Clustering of induced earthquakes”. The IS TCS prototype is expected to reach full functionality by the end of 2014. Current state of the prototype allows to perform basic operations within user services, such as registration of users and basic data browsing for passive users. The other kind of user will be so called creative user. Such user have a possibility to build his/her own script using the implemented software as a sort of induced seismicity software library. A user obtains the creative user status in a grant system under acceptance of WG10 TCS management. A creative user works in the framework of his/her project(s). Implementation of scientific algorithm library for creative users is under development.

¹ Prof., Institute of Geophysics Polish Academy of Sciences, Warszawa, orlecka@igf.edu.pl

² Prof., Institute of Geophysics Polish Academy of Sciences, Warszawa, lasocki@igf.edu.pl

³ Ph. D., Institute of Geophysics Polish Academy of Sciences, Warszawa, lizurek@igf.edu.pl