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EPOS Thematic Core Service Anthropogenic Hazards: Implementation Plan

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EPOS Thematic Core Service ANTHROPOGENIC HAZARDS (TCS AH) aims to integrate distributed research infrastructures (RI) to facilitate and stimulate research on anthropogenic hazards (AH) especially those associated with the exploration and exploitation of geo-resources. The innovative element is the uniqueness of the integrated RI which comprises two main deliverables:
(1) Exceptional datasets, called “episodes”, which comprehensively describe a geophysical process; induced or triggered by human technological activity, posing hazard for populations, infrastructure and the environment,
(2) Problem-oriented, bespoke services uniquely designed for the discrimination and analysis of correlations between technology, geophysical response and resulting hazard.
These objectives will be achieved through the Science-Industry Synergy (SIS) built by EPOS WG10, ensuring bi-directional information exchange, including unique and previously unavailable data furnished by industrial partners. The Episodes and services to be integrated have been selected using strict criteria during the EPOS PP. The data are related to a wide spectrum of inducing technologies, with seismic/aseismic deformation and production history as a minimum data set requirement and the quality of software services is confirmed and referenced in literature.
Implementation of TCS AH is planned for four years and requires five major activities:
(1) Strategic Activities and Governance: will define and establish the governance structure to ensure the long-term sustainability of these research infrastructures for data provision through EPOS.
(2) Coordination and Interaction with the Community: will establish robust communication channels within the whole TCS AH community while supporting global EPOS communication strategy.
(3) Interoperability with EPOS Integrated Core Service (ICS) and Testing Activities: will coordinate and ensure interoperability between the RIs and the ICS. Within this modality a functional e-research environment with access to High-Performance Computing will be built. A prototype for such an environment is already under construction and will become operational in mid -2015 (is-epos.eu).
(4) Integration of AH Episodes: will address at least 20 global episodes related to conventional hydrocarbon extraction, reservoir treatment, underground mining and geothermal energy production which will be integrated into the e-environment of TCS AH. All the multi-disciplinary heterogeneous data from these particular episodes will be transformed to unified structures to form integrated data sets articulated with the defined standards of ICS and other TCS’s.
(5) Implementation of services for analyzing Episodes: will deliver the protocols and methodologies for analysis of the seismic/deformation response to time-varying georesource exploitation technologies on long and short time scales and the related time- and technology-dependent seismic hazard issues.