

## Anthropogenic Hazards



### Overview

EPOS will 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.

EPOS will deliver services related to:

- 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;
- Problem-oriented, bespoke services uniquely designed for the discrimination and analysis of correlations between technology, geophysical response and resulting hazard.

Activities will see scientific and industrial collaboration ensuring bi-directional information exchange, including unique and previously unavailable data furnished by industrial partners. Data are related to a wide spectrum of inducing technologies, with seismic/aseismic deformation and production history as a minimum dataset requirement.

### Objectives

- Build a functional e-research environment with access to High-Performance Computing resources. A prototype for such an environment is already under construction and will become operational in mid-2015;
- Integrate at least 20 episodes - related to the conventional hydrocarbon extraction, reservoir treatment, underground mining and geothermal energy production;
- Implement services for analyzing the episodes to study the seismic/deformation response to time-varying georesources exploitation technologies on long and short time scales and the related time- and technology-dependent seismic hazard issues;
- Providing a virtual laboratory for researchers where they can perform in silico experiments, create personalised workspaces with processing streams.

### Our services ready for 2019

Virtual Access to data/products/services

Seismic, geological, technological data for anthropogenic hazards episodes and metadata (Level 1, 2)

Virtual Access to dissemination and exploitation platforms/s

Simulator for multi-hazard/multi-risk assessment in exploration/exploitation of geo-resources

Virtual Access to computational platform/s

Platforms for:

- AH users' designed problem tailored processing based on implemented specialized software library
- Computationally demanding AH analysis;
- AH users' data handing and storage;
- Visualisation of all types of AH data