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Ethics issues in scientific data and service provision: evidence and challenges for the European Plate Observing System (EPOS)

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Addressing Ethics issues is nowadays a relevant challenge for any initiative, program or project dealing with scientific data and products provision, access to services for scientific purposes and communication with different stakeholders, including society. This is corroborated by the evidence that Ethics has very high priority in EU funded research. Indeed, all the activities carried out under Horizon 2020 must comply with ethical principles and national, Union and international legislation. This implies that "For all activities funded by the European Union, Ethics is an integral part of research from beginning to end, and ethical compliance is seen as pivotal to achieve real research excellence." Here, we present the experience of EPOS, a public pan-European research infrastructure.

EPOS aims at integrating data, data products, services and software (DDSS) for solid Earth science generated and provided by monitoring networks, observing systems and facilities belonging to European countries. EPOS fosters the integrated use of multidisciplinary solid Earth data to improve the understanding of physical and chemical processes controlling earthquakes, volcanic eruptions, tsunamis as well as those driving tectonics and surface dynamics. The EPOS integration plan will make significant contributions to understanding and mitigating geo-hazards, yielding data for hazard assessment, data products for engaging different stakeholders, and services for training, education and communication to society. Numerous national research infrastructures engaged in EPOS are deployed for the monitoring of areas prone to geo-hazards and for the surveillance of the national territory including areas used for exploiting geo-resources. The EPOS community is therefore already trained to provide services to public (civil defence agencies, local and national authorities) and private (petroleum industry, mining industry, geothermal companies, aviation security) stakeholders.

Our ability to monitor planet Earth is rapidly evolving through the development of new sensor technology and we can deliver this information with increasing rapidity, integrate it, provide solutions to scientific challenges and furnish essential information for decision makers. EPOS is aware that the research promoted by its data and service provision can have a profound influence on the environment, human health and wellbeing, economic development, national security, and other facets of human societies. For these reasons EPOS must address Ethics issues associated with the exploitation of its achievements involving security issues, use and misuse of data, environmental protection and risk communication.

The EPOS community feels the obligation to adopt a responsible conduct, both within the scientific community and in the broader society, exploring the implications of open provisioning of data and services, up to imposing justified constraints. This requires that contributing to the DDSS provision cannot be simply limited to activities fostering the capacity (i.e., ability) to access scientific products, but must promote the creation of capabilities (i.e., conscious use of data) and the functioning (i.e., activities constitutive of a scientist's being) to access and use scientific products in an ethically consistent way.

We will present and discuss Ethics issues envisaged in EPOS, focusing on the most relevant for its implementation phase: protection of personal data, misuse of data, communication, and societal impact.