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Design and Implementation Aspects of the Geological Data Infrastructure for European Society

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Digital geological data play a vital role in responding to the key social and economic challenges facing the European and global communities in the 21st century. These challenges include sustainable supply of energy, water and mineral resources, mitigating the impacts of natural hazards, and responding to climate change by exploiting renewable energy sources and capturing and storing greenhouse gases. As a response to these challenges the European geological surveys have enhanced their collaboration to prepare the implementation of a European Geological Data Infrastructure (EGDI), in order to provide easily accessible, interoperable and harmonized geological information on a European and international level. The high-level objective is to create a proper information base that supports the provision of geological services for European and international organisations, international industry and any other stakeholder working at cross-border or international level. It is additionally expected that the easy access to geological data at European level will enhance the development of new applications.

The datasets to be served by the EGDI will primarily originate from the National Geological Survey Organisations (NGSO's) in Europe and the infrastructure will build further on the results of past, present and future European research projects and international programs in which these surveys are involved, for example the OneGeology-Europe project that serves regularly updated geological maps at 1:1M scale for the European area via a web portal.
To prepare the implementation of the EGDI the NGSO's collaborate under the framework of the EU-FP7 EGDI-Scope study. This paper will present the main results and conclusions of this program, covering the following main issues that are taken into account to achieve the objectives of the EGDI:

Stakeholder involvement: The study has exchanged with representative stakeholders from organisations and institutions to cover perspectives from policy, academia and industry. These exchanges have contributed to the description of relevant use cases.

Prioritization of relevant datasets: Connected to relevant use cases, and the availability of datasets through the European survey organizations, from European projects and INSPIRE, a number of datasets (including associated derived information, tools and services) has been prioritized for the implementation phase.

Technical design: Based on user requirements as well as specific technical requirements principles and preferred options for the technical design of the infrastructure have been described.

Legal aspects: based on inventories and analyses of national and international legal frameworks, and connected to the objectives and requirements of the EGDI conclusions have been drawn with regard to the applicability of certain legal frameworks.

Governance and funding aspects: A strategy and roadmap have been developed for appropriate governance structures for the several development stages of the EGDI, including cost estimates and options for funding from diverse programs at national and international levels.