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OneGeology-Europe - The Challenges and progress of implementing a basic geological infrastructure for Europe

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OneGeology-Europe is making geological spatial data held by the geological surveys of Europe more easily discoverable and accessible via the internet. This will provide a fundamental scientific layer to the European Plate Observation System

Rich geological data assets exist in the geological survey of each individual EC Member State, but they are difficult to discover and are not interoperable. For those outside the geological surveys they are not easy to obtain, to understand or to use. Geological spatial data is essential to the prediction and mitigation of landslides, subsidence, earthquakes, flooding and pollution. These issues are global in nature and their profile has also been raised by the OneGeology global initiative for the International Year of Planet Earth 2008.

Geology is also a key dataset in the EC INSPIRE Directive, where it is also fundamental to the themes of natural risk zones, energy and mineral resources.

The OneGeology-Europe project is delivering a web-accessible, interoperable geological spatial dataset for the whole of Europe at the 1:1 million scale based on existing data held by the European geological surveys. Proof of concept will be applied to key areas at a higher resolution and some geological surveys will deliver their data at high resolution. An important role is developing a European specification for basic geological map data and making significant progress towards harmonising the dataset (an essential first step to addressing harmonisation at higher data resolutions). It is accelerating the development and deployment of a nascent international interchange standard for geological data – GeoSciML, which will enable the sharing and exchange of the data within and beyond the geological community within Europe and globally.

The geological dataset for the whole of Europe is not a centralized database but a distributed system. Each geological survey implements and hosts an interoperable web service, delivering their national harmonized geological data. These datasets are registered in a multilingual catalogue, who is one the main part of this system. This catalogue and a common metadata profile allows the discovery of national geological and applied geological maps at all scapes, Such an architecture is facilitating re-use and addition of value by a wide spectrum of users in the public and private sector and identifying, documenting and disseminating strategies for the reduction of technical and business barriers to re-use.

In identifying and raising awareness in the user and provider communities, it is moving geological knowledge closer to the end-user where it will have greater societal impact and ensure fuller exploitation of a key data resource gathered at huge public expense. The project is providing examples of best practice in the delivery of digital geological spatial data to users, e.g. in the insurance, property, engineering, planning, mineral resource and environmental sectors. The scientifically attributed map data of the project will provide a pan-European base for science research and, importantly, a prime geoscience dataset capable of integration with other data sets within and beyond the geoscience domain.

This presentation will demonstrate the first results of this project and will indicate how OneGeology-Europe is ensuring that Europe may play a leading role in the development of a geoscience spatial data infrastructure (SDI)

globally.