Geophysical Research Abstracts
Vol. 15, EGU2013-4032, 2013
EGU General Assembly 2013

Geophysics in INSPIRE

László Sőrés (1,2)
(1) MFGI, Hungary (sores@almos.vein.hu), (2) INSPIRE Thematic Working Group for Geology and Mineral Resources

INSPIRE is a European directive to harmonize spatial data in Europe. Its' aim is to establish a transparent, multidisciplinary network of environmental information by using international standards and OGC web services. Spatial data themes defined in the annex of the directive cover 34 domains that are closely bundled to environment and spatial information. According to the INSPIRE roadmap all data providers must setup discovery, viewing and download services and restructure data stores to provide spatial data as defined by the underlying specifications by 2014 December 1. More than 3000 institutions are going to be involved in the progress. During the data specification process geophysics as an inevitable source of geo information was introduced to Annex II Geology.

Within the Geology theme Geophysics is divided into core and extended model. The core model contains specifications for legally binding data provisioning and is going to be part of the Implementation Rules of the INSPIRE directives. To minimize the work load of obligatory data transformations the scope of the core model is very limited and simple. It covers the most essential geophysical feature types that are relevant in economic and environmental context.

To fully support the use cases identified by the stake holders the extended model was developed. It contains a wide range of spatial object types for geophysical measurements, processed and interpreted results, and wrapper classes to help data providers in using the Observation and Measurements (O&M) standard for geophysical data exchange.

Instead of introducing the traditional concept of "geophysical methods" at a high structural level the data model classifies measurements and geophysical models based on their spatial characteristics. Measurements are classified as geophysical station (point), geophysical profile (curve) and geophysical swath (surface). Generic classes for processing results and interpretation models are curve model (1D), surface model (2D), and solid model (3D). Both measurements and models are derived from O&M sampling features that may be linked to sampling procedures and observation results.

Geophysical products are output of complex procedures and can precisely be described as chains of consecutive O&M observations. For describing geophysical processes and results the data model both supports the use of OGC standard XML encoding (SensorML, SWE, GML) and traditional industry standards (SPS, UKOOA, SEG formats).

To control the scope of the model and to harmonize terminology an initial set of extendable code lists was developed. The attempt to create a hierarchical SKOS vocabulary of terms for geophysical methods, resource types, processes, properties and technical parameters was partly based on the work done in the eContentPlus GEOMIND project. The result is far from being complete, and the work must be continued in the future.