



Harmonisation of geological data to support geohazard mapping: the case of eENVplus project

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In the eENVplus project, which aims is to unlock huge amounts of environmental data managed by the national and regional environmental agencies and other public and private organisations, we have developed a cross-border pilot on the geological data harmonisation through the integration and harmonisation of existing services. The pilot analyses the methodology and results of the OneGeology-Europe project, elaborated at the scale of 1:1M, to point out difficulties and unsolved problems highlighted during the project.

This preliminary analysis is followed by a comparison of two geological maps provided by the neighbouring countries with the objective to compare and define the geometric and semantic anomalous contacts between geological polygons and lines in the maps. This phase will be followed by a detailed scale geological map analysis aimed to solve the anomalies identified in the previous phase. The two Geological Surveys involved into the pilot will discuss the problems highlighted during this phase.

Subsequently the semantic description will be redefined and the geometry of the polygons in geological maps will be redrawn or adjusted according to a lithostratigraphic approach that takes in account the homogeneity of age, lithology, depositional environment and consolidation degree of geological units.

The two Geological Surveys have decided to apply the harmonisation process on two different dataset: the first is represented by the Geological Map at the scale of 1:1,000,000, partially harmonised within the OneGeology-Europe project that will be re-aligned with GE INSPIRE data model to produce data and services compliant with INSPIRE target schema.

The main target of Geological Surveys is to produce data and web services compliant with the wider international schema, where there are more options to provide data, with specific attributes that are important to obtain the geohazard map as in the case of this pilot project; therefore we have decided to apply GeoSciML 3.2 schema to the dataset that represents Geological Map at the scale of 1:100,000.

Within the pilot will be realised two main geohazard examples with a semi-automatized procedure based on a specific tool component integrated in the client: a landslide susceptibility map and a potential flooding map.

In this work we want to present the first results obtained with use case geo-processing procedure in the first test phase, where we have developed a dataset compliant with GE INSPIRE to perform the landslide and flooding susceptibility maps.