

Big data Architecture for Automatic Transformation and Validation of Heterogeneous Geospatial Data Compliant with INSPIRE Directive

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Geospatial data play a fundamental role in decision-making processes within government entities, private sector organizations and in the context of natural resource management. The integration and harmonization of geospatial data from heterogeneous sources represents a significant challenge in the context of the implementation of the INSPIRE (Infrastructure for Spatial Information in Europe) Directive. The need for standardization of geospatial data, both on a global scale and in the context of the INSPIRE Directive, is primarily driven by the need for interoperability, integration and efficient analysis of spatial information from different systems, formats and semantic structures. In addition, the lack of standardization creates substantial impediments to the aggregation and consistent use of datasets, which leads to a decrease in the accuracy and relevance of the resulting spatial analyses. Therefore in this paper we propose a comprehensive and extensible architecture for the automatic transformation and harmonization of heterogeneous spatial data into INSPIRE-compliant formats, that ensures interoperability within the European infrastructure. Our solution is based on open-source technologies and tools and is validated using the official INSPIRE Reference Validator tool.

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