

## **The role of metadata and semantic web technologies in SDI**

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### **Abstract:**

Implementing GIS systems on the Internet has caused a rapid increase in the number of spatial data users. At the same time, a vast number of new sources of data shared on the Internet has appeared. Contrary to enterprise type GIS systems, the data sources available on the Internet are of a distributed and heterogeneous character and the information available about them is limited. This concerns both their qualitative and semantic parameters. The author identifies two main approaches to the problems of integrating, searching and processing distributed datasets. The first is of a systemic and legislative character and involves building an infrastructure for spatial information. It is based on the standardization of Web service communication protocols, application schemas and metadata for discovery. This approach most often addresses spatial data sets and services created by the public administration and its thematic scope is limited (to 34 themes in the case of INSPIRE). The other approach, which is currently being developed, involves creating metadata sets which can be used for searching as well as the semantic description of the shared information, which should allow e.g. to achieve semantic interoperability. In the paper the author describes the advantages and disadvantages of both approaches and discusses the potential applications of the semantic web technologies, which could constitute a new semantic layer in the SDI.

**Keywords:** metadata, semantic web, SDI, interoperability