

SDI Semantics

Semantic Enrichment of Geodata: an Approach towards Producing Transferable Knowledge



ÖAW – GIScience R&D Programme

SPATIAL DATA INFRASTRUCTURES

Building spatially enabled 'information highways' is a requirement for better management of our societies and environments. Our contributions aim at the specification of advanced multi-dimensional data models, the integration of realtime sensor input and open interfacing across system architectures.

SPATIAL ANALYSIS AND MODELLING

Research questions address segmentation-based information extraction from remotely sensed imagery, multidimensional geostatistics and the modelling of dynamic processes. Methods for flexible regionalisation, the analysis of mobility patterns and work with multi-scalar data receive special consideration.

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Project Description

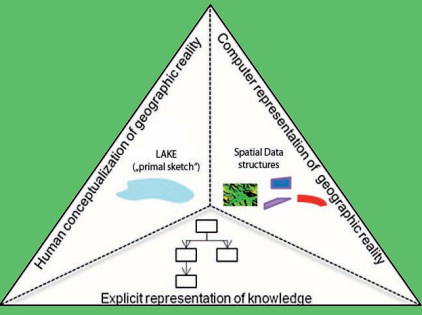
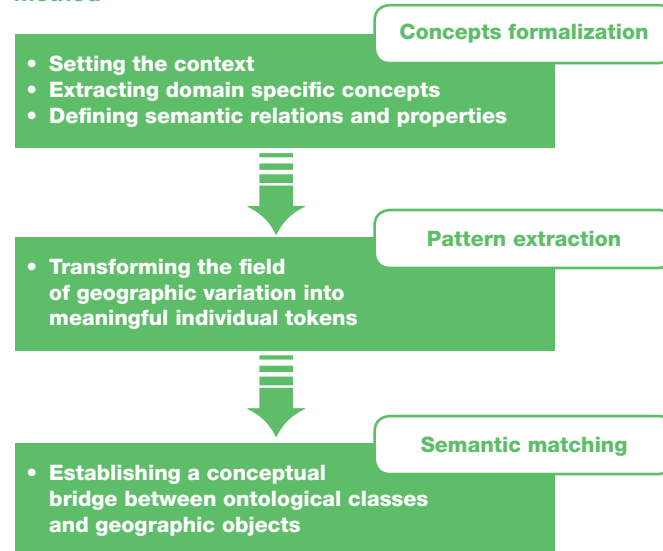
In digital image interpretation field one of the main challenge is to provide the appropriate model for objects to be found in the image and to make this model transferable. A robust ontological structure is seen as the solution to formalize domain specific knowledge, because it enables a "formal explicit specification of a shared conceptualization" (Gruber, 1993).

Objectives

The overall goal is to develop a conceptual framework for semantic mapping between the ontology classes formalizing the spatial entities and the meaningful objects extracted from field representation of geographic reality in order to produce transferable knowledge. The specific focus of this research is threefold:

- To formalize the domain (a priori) knowledge into a set of class objects
- Project the formalized domain-specific knowledge onto other conceptualizations (multiple inheritance issue)
- To align the feature extracted from raw data with ontology classes

Method



PhD Project

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Duration

April, 2010 – March, 2013

Cumulative (paper based)
PhD at the University of Salzburg

Supervision

Prof. Dr. J. Strobl,
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