SeCoGIS 2010
›› Panel Discussion

Panelists
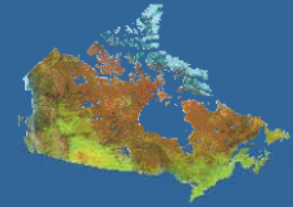›› Prof. Esteban Zimányi
›› Prof. Mir A. Mostafavi
›› Dr. Diego Seco
›› Dr. Arne J. Berre

Background

- Semantics through conceptual modeling and ontologies has progressed significantly in information technology, on the Web, and in geographic information in the last decade.
- a new paradigm impacting the origin of data: Web 2.0.
- In addition to well structured and defined data, data is also captured by user's communities following a loosely model
  - e.g., Wikipedia and other flavours of Wikis,
  - OpenStreetMap and Wikimapia in geographic information.
- Conceptual models and ontologies of well structured and defined data are typically established from a top-down approach adhering to standards (e.g., Web, ISO, OGC, OMG, etc.) and supporting spatial data infrastructures.
- Data from communities (i.e, "volunteer geographic information" and "crowd sourced data") follows a bottom-up approach with social tagging.
- Geographic data is also captured dynamically by people but also by Web sensors.
- Internet users navigate in an increasing amount of geographic information not always well described and qualified.
- This information varies in scope, scale, space, etc.
- Widespread access thanks to location based services and ubiquitous geographic information applications.

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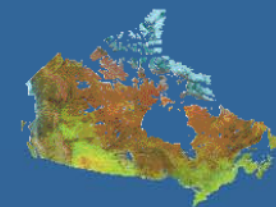
Five papers and a keynote address

1. Helena Piccinini, **Marco Casanova**, *et al.* addressed the issue of accessing of conventional and geographic data from the Deep Web and proposes an approach that considers the description of data through natural language sentences, published as Web pages.

2. Mohamed Bakillah and **Mir A. Mostafavi** addressed the multiplicity and heterogeneity of geospatial Web services and their lack of description to achieve semantic interoperability, and especially for spatiotemporal features. A new mapping model is proposed to facilitate the reconciliation geospatial Web services.

3. **Tarek Sboui** and Yvan Bédard tackled the issue of heterogeneity of multidimensional geographic data and their interoperability in which the identification of semantic similarity is a central issue. An extension of the Geosemantic Proximity approach (MGsP) for multidimensional geographic data is proposed to qualify the similarity of multidimensional concepts.

4. Nieves R. Brisaboa, **Diego Seco**, *et al.* were concerned by the indexing of geographic information to speed up the retrieval of the data on the Web.

5. **José R.R. Viqueira** *et al.* were concerned by the development of a Spatial Data Infrastructure related to the capture, management and integrated access of Sensor Web data in meteorology based on the OGC Sensor Observation Service (SOS).

6. Finally, **Dr. Arne J. Berre** (SINTEF) addressed the topic of semantic infrastructure and platform for geospatial services.

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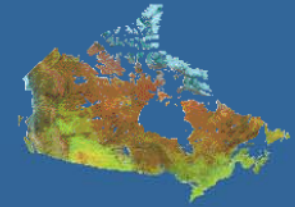
The next challenges?

- Considering
  - what has been achieved in research in semantics and conceptual modeling in the last years,
  - the avenue of Web 2.0 and volunteer geographic information,
  - the place of well structured and defined data,
  - the orientation of the Semantic Web (Web 3.0)
- What would be the semantic and conceptual modeling issues an challenges that need more attentions from the research community in geographic information in the coming years?
- To what extent the reconciliation of volunteer geographic information with well structured and defined data would be important?
- What would be the research perspectives that the geo- semantics and conceptual modeling research community should embrace in the future to help end users in finding, accessing, and using geographic information better (either well structured and defined data or volunteer geographic information)?
- Are there mechanisms needed to extract relevant information in the context of spatial information overload? Can data and knowledge discovery from VGI repositories be made easier?
- How data mining techniques can be applied? Are new characteristics required in data mining techniques (e.g., semantic similarity metrics)?
- Are there any effort deployed by standardization bodies (ISO/TC 211, OGC) in the area of VGI?

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