COLLABORATIVE GI BASED APPROACH: Discussing GI relevance towards monitoring EU Legal Framework

Maria José VALE
Raquel SARAIVA
Rui REIS
Summary

• INSPIRE directive and Spatial Data Infrastructure – Data availability for good governance towards national and European Grow
  – Land use planning and sustainable development of Cities
    • BRISEIDE - Bridging Services and Information for Europe
      – eEnvPlus

• INSPIRE and data collection: information fitness for good governance - reducing costs for collecting adequate data.
  – Legal framework accomplishment: Water and land management :
    • TER-ÁGUA – Collaborative SDI to plan and manage land and water use

• Conclusions
Relevance of information management

INSPIRE Directive and European Spatial Data Infrastructure building
- Enable sharing environmental spatial information among organizations and promote public access to spatial information across Europe.

INSPIRE Directive common principles:
- Data should be collected only once and kept where it can be maintained most effectively.
- It should be possible to combine seamless spatial information from different sources across Europe and share it with many users and applications.
- It should be possible for information collected at one levelSCALE to be shared with all levels/scales.
- Geographic information needed for good governance at all levels should be reliable and transparently available.
- GI must be cost effective
- GI must be useful and adequate for egovernement and democracy awareness
INSPIRE directive and European SDI - Land use planning and sustainable development of Cities *(BRISEIDE- eEnvPlus)*

**BRISEIDE - Project Aims**

- Develop web processes for geospatial application, by integrating temporal series of spatial data in open source Geographic Information Systems based applications;
- Demonstrate the relevance of geographic information to understand and improve egovernment in monitoring natural or human induced hazards involving time series integration into web services;
- Evaluate fitness for purpose of existing official datasets to deal with urban landscape evolution and how these different datasets meet the purpose of evaluating the impact of urban sprawl and avoid water stress.

**eEnvPlus**

- Enable sharing environmental spatial information among organisations and promote public access to spatial information across Europe
INSPIRE directive and European SDI - Land use planning and sustainable development of Cities

DGT (Directorate General for Territorial Development) developed an application to monitor urban growth, urban sprawl, water and air quality evolution in the past decades. This application also contributes to evaluate Portuguese and European regulation framework orientations and their accomplishment in recent years.
INSPIRE directive – European and national SDI

- Land use planning and sustainable development of Cities

Datasets

- **Vector cartographic information** includes PDM (Municipality Director Plane), which allows users to monitor planning effectiveness (through the soil classification - rural and urban) towards preventing water contamination from sewage related to urban growth;

- **Portuguese land use maps** from 1990 to 2007;

- **Orthophotomaps from 1990 to 2010** which will allow users to evaluate evolution of housing in a more detailed approach;

- **Official statistics** related to housing and demographic alphanumeric series for the same time period, that evaluate housing and demography evolution associated with each municipality;

- **Official water quality data and water quality indicators**, both giving the more traditional approach to build impact evaluation indicators on environmental quality
In order to evaluate urban growth related parameters it is essential to have access to historical series of datasets and be able to integrate and compare them. The user should be able to access existing datasets and, based on the temporal information and data quality, build approaches to evaluate urban sprawl.
Within BRISEIDE aim DGT build a prototype of a collaborative information management system to monitor the evolution of urban areas since the 90’s, using different datasets.

It also produces simple indicators to understand the population needs within these areas, and relates them with land use in order to build evolution scenarios for landscape transformation.

Doing so it helped decision makers and researcher understanding on in which extent the changes in landscape reflect population requirements and sustainable development options, and allow users to make their own evaluations of urban grow,

This pilot project also allows to evaluate the use of different datasets in terms of fitness to deal with urban landscape evolution and its impact in environmental quality.

Maria José Vale, Raquel Saraiva, Rui Reis - DGT
INSPIRE CONFERENCE Florence 2013
INSPIRE directive and European SDI - Land use planning and sustainable development of Cities

Statistical Maps – Population 1991

Statistical Maps – Population 2011

Population grow

Population 1991
Population 2001
INSPIRE directive and European SDI
- Land use planning and sustainable development of Cities

Statistical Maps – Buildings 1991

Statistical Maps – Buildings 2011

Building evolution

- Construction 1991
- Construction 2001
Understanding data constraints promote more effective land use planning approaches and will enable official data providers to evaluate information fitness for purpose.
INSPIRE and data collection: information fitness for good governance - Legal framework accomplishment (TER-Agua)

Delimitation of urban areas (ortos 1999) Castelo do bode
INSPIRE and data collection: information fitness for good governance - Legal framework accomplishment *(TER-Agua)*

Delimitation of urban areas (Land Use Map) – Landuse thematic maps for the Castelo do Bode watershed
**INSPIRE and data collection: information fitness for good governance - Legal framework accomplishment (TER-Agua)**

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* 1994
INSPIRE and data collection: information fitness for good governance - Legal framework accomplishment (TER-Agua)

- It is important to evaluate accuracy and to provide data quality description for final datasets.
  - The data quality description will follow the Federal Geographic Data Committee standard approach, and will be built as a profile of the INSPIRE requirements for this purpose.
  - Once the user has created the dataset which contains the urban growth, the user should be able to perform different analysis in order to understand how the urban growth is related to the quality of life.

- The users should have access to the urban planning related datasets compare available data and build his owned scenario.
Conclusions – relevant issues

- Describe and evaluate data quality.
  - The developed prototype contributes to understand the relevance of understanding information quality and its reliability for properly understand urban delimitation, urban growing, in a more knowledge shared based approach;

- Within eENVplus will help understand SDI update issues:
  - users needs -datasets –technology

- Review/improve INSPIRE strategy:
  - example: problems within land management- urban sprawl and water stress.
Conclusions - challenges

- Information can be organized in a spatial data infrastructure built in a collaborative way, integrating contributions of users and producers in order to:
  - Assure that information collected is according with users needs
  - Provides support for compliance with the existing legal framework
  - Fits appropriate quality criteria;
  - Allows understand the needs and increase cost/benefit efficiency
- Having a good information basis to evaluate and build good planning approaches is essential.
- Collecting organizing and maintaining the necessary datasets, and making them available to users is vital
- Information can be organized in a spatial data infrastructure built in a collaborative way, integrating contributions of users and producers in order to assure that information collected is according with users needs and fits appropriate quality criteria
- Main constraints: dealing and integrating different data sources and formats, documenting quality; developing mechanisms to share knowledge
The ICT Policy Support Programme (or ICT PSP) aims at stimulating innovation and competitiveness through the wider uptake and best use of ICT by citizens, governments and businesses.
BRISEIDE - Are you interested? Please follow us...

BRISEIDE Bridging services, information and data for Europe

What is BRISEIDE?
BRISEIDE is a 7TH FP7 Support Programme project within EU. It involves 15 EU partners on the development of multi-temporal web processes for geospatial application.

BRISEIDE aims at delivering:
- An innovative extension of data models - application (e.g. Civil Protection)
- Value-added services for spatial-temporal data

Welcome to Briseide Website

Civil Protection operators and Public Administrations, engaged in urban planning, resource & environmental management, need spatial-temporal processing of ES to support decision-making. Current SDI's and the INSPIRE only partially address user needs as they offer no or very limited time variable management. The integration between INSPIRE-compliant geographic datasets and operational databases, essential in domains such as environmental risk management and civil protection, is poor. Thus the present scope of services SDI can offer is somewhat limited. It is the aim of BRISEIDE to build on existing SDI's in order to provide users with more complete and adequate data and processing tools.

The Solution to be Developed
- Application/Validation of the System
- Technical Issues
- Technology Focus
- Content
- Sustainability

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Project Coordination
- Partnership framework
- Project Funding

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Maria José Vale, Raquel Saraiva, Rui Reis - DGT
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http://www.eenvplus.eu/
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http://www.dgterritorio.pt
Thank You.

Contact details

Maria José Vale: mvale@dgterritorio.pt
Rui Reis: rreis@dgterritorio.pt
Raquel Saraiva: rrsaraiva@dgterritorio.pt