Input from EU funded project relevant for INSPIRE & the SDOs

INSPIRE Conference 2013
Workshop
“GI Standards in Support of Environmental, Societal and Economic Challenges”
Florence, 24 June 2013

Giacomo Martirano - CEN/TC 287 vice-chair
Summary

• Context overview
• CEN/TC 287 project liaisons
• CEN/TC 287 TR 15449 part 2: Best Practices
• Two examples of EU funded projects
Context overview (1/3)

• CEN/TC 287 considers EU funded projects as strategic resources for a mutually beneficial cooperation between SDOs and users of GI Standards.

• Focus is on how GI Standards support GI users’ implementations and on how GI users’ communities contribute to GI Standards development and use.
Context overview (2/3)

• Outcomes of EU funded projects:
  – Wide vision and analysis
  – Wide number of involved stakeholders

• Various roles that projects can assume in relation to the standardisation processes. Contribution to:
  – development
  – evaluation
  – support to the implementation
  – education
Context overview (3/3)

• There are 2 CEN/TC 287 initiatives supporting this mutually beneficial cooperation between SDOs and users of GI Standards:
  – project liaisons
  – TR 15449 part 2: Best Practices
CEN/TC 287 project liaisons (1/3)

• CEN defines a liaison as:
  – "A European or international organisation that follows the work programme of a Technical Committee (TC) in order to support its completion, where necessary, through representative input on behalf of the organisation being represented."
  – Each liaison has responsibilities and rights.

• Responsibilities
  – To contribute actively to the work of the technical committee with which it is in liaison.
  – To attend meetings and exchange technical information with the committee in order to support the development of European Standards and other deliverables.
CEN/TC 287 project liaisons (2/3)

• Rights
  – To receive all the relevant technical documents and
    invitations and to attend technical committee meetings as
    observer.
  – To provide input to the work of the committee with which
    it is in liaison when necessary but without the right to vote
  – To propose in conjunction with new work items their
    technical documents as a basis for TC work, if agreed by
    the CEN TC members.
  – To comment on the Technical Committee Business Plan.
  – To nominate experts to Working Groups in line with the
    Internal Regulations.
<table>
<thead>
<tr>
<th>EuroGeographics</th>
<th>Smart Grid Coordination Group (SGCG)</th>
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<tr>
<td>EUROGI</td>
<td>QUALity aware VIsualisation for GEOSS (GeoViQua)</td>
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<td>EuroSDR</td>
<td>Geographic Information System International Group (GISIG)</td>
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<td>Object Management Group (OMG)</td>
<td>ENVIROFI</td>
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<td>OGC</td>
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<td>Global Earth Observation System of Systems (GEOSS)</td>
<td>Association of Geographic Laboratories for Europe (AGILE)</td>
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<td>ISO/TC 211</td>
<td>Smart Islands</td>
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<td>CEN/TC 278 Road transport and traffic telematics</td>
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<td>JRC</td>
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<td>BRIdging SERvices, Information and Data for Europe (BRISEIDE)</td>
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TR 15449-2 Best Practices

• TR 15449 “Spatial data infrastructures” is a multipart Technical Report aiming at supporting SDI implementations.

• Part 2 “Best Practices” provides best practices guidance for implementing SDI, through the evaluation of the projects in the frame of the European Union funding programmes

• This part 2, along with the CEN/TC 287 document registry, constitutes the backbone for making the outcomes and best practices of projects sustainable.
Repository core goal

• Knowledge management related to standardisation processes

• Project outcomes:
  – documents
  – IT tools
  – Infrastructures
  – Datasets

• Core goal: setup a document registry

• Additional extension to different outcomes (future release)
Content classification

- SDI reference model components
  - Data
  - Register
  - Discovery
  - View
  - Invoke
  - Download
  - GeoRM
  - Orchestration an composition
Content classification

- Architectural reference model services
  - Human interaction services
  - Model management services
  - Workflow/Task services
  - System management services
  - Processing services
  - Communication services
Content classification

• Phase
  – Concept and design
  – Implementation
  – Validation
Document types

• Standards
• Specifications
• Technical reports
• Guidelines
• Software tool
Content providers perspectives

• register the project through a wizard approach
• minimise re-structuring of deliverables which would be time consuming and discouraging.
• to upload a series of pdfs and tag them through a pre-defined structure.
• facilities to access the software code by the provision of a URL or software code page or repository.
Projects inclusion process

- Permanent call for contribution
- Registry management according to ISO 10135
Consumer perspectives

• Reference material relating to a specific topic
• Specific project
• Specific document
• Specific tools/code by pointing other repositories (e.g. SourceForge)
Structure of the BP repository

Two main types of registers

– Reference project
  – Project ID, acronym, full name, URL, Timeline
  – Brief description of the main relevances
  – Classification
  – List of main BP outcomes

– Reference outcomes
Structure of the BP repository

• Reference outcomes
  – Document ID, Title
  – Reference project
  – Classification
  – Summary of relevant issues addressed by the outcomes
This on-line repository records details of European projects and initiatives and their outcomes in the area of spatial data infrastructures. We welcome additional contributions not yet included.

Through CEN/TR 15449 Geographic information - Spatial data infrastructures - Part 2: Best practices and this repository, CEN/TC 287 is offering projects and initiatives a mechanism to consult and contribute to the state of the art in interoperability of Spatial Data Infrastructures and location-based information and services. This will enable the outcomes of projects to be retained and used in future activities.

Information provided through this repository will be used by CEN/TC 287 as input for the update and creation of standards.

CEN/TC 287 addresses standardization in the domain of geographic information. Catering for cross-thematic requirements for anything spatial, this Technical Committee brings together application areas as diverse as location based services, smart grids, and environmental information.
The on-line Best Practice Catalogue

CEN/TR 15449
Best Practice Catalogue

Projects Registry

Advanced Search

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Acronym</th>
<th>Full Title</th>
<th>EU Funding Programme</th>
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<td>GEOSS, INSPIRE and GMES an Action in Support</td>
<td>FP7</td>
<td><a href="http://www.theigiasforum.eu/">http://www.theigiasforum.eu/</a></td>
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Web development by Infologica Ltd. (Design based on Siteground 310-10)
The on-line Best Practice Catalogue

### Projects Outcomes Registry

#### SDI reference model components

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<tr>
<th>Project ID</th>
<th>Doc. ID</th>
<th>Doc. Title</th>
<th>Data</th>
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<tr>
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An example of EU funded projects: eENVplus

- eENVplus (www.eenvplus.eu) is a recently started 3-years ICT-PSP project developing eEnvironmental services for advanced applications within INSPIRE, to be implemented and tested in 10 pilots-scenarios.
An example of EU funded projects: eENVplus

• Many GI Standards used in the project:
  – 21 Annex I, II and III INSPIRE Data Specifications
  – EEA reporting schemas for Air Quality
  – INSPIRE, OGC, ISO standards related to network services (WMS, WFS, CSW)
  – OGC WPS

• Main benefits of standards used:
  – expected significant improvements in all the 10 pilots-scenarios
An example of EU funded projects: eENVplus

• Project support to GI standards:
  – There is a project task dedicated to identify potential existing misalignments between some GI standards/regulations implementation, in order to be properly tackled during the project execution
  • Two misalignment examples identified during the proposal stage, the first one no more in place and the second one currently under check.
An example of EU funded projects: eENVplus

• Example 1:
  – INSPIRE additional operations required for Direct access download service WFS 2.0 (Draft Technical Guidance for INSPIRE Download Services) with respect to EN ISO 19142.

• Example 2:
  – For the exchange of near real-time observations and measurements, the difference between the OGC standard for observations and measurements (also published as EN ISO 19156) and the INSPIRE version of guidelines for observations and measurements
An example of EU funded projects: eENVplus

- Project support to GI standards:
  - Just using them!
  - Raising within the project consortium the awareness of their importance
  - Sharing with the project Advisory Board (JRC, EEA, DG ENV) views/approaches/feedback about their implementations
  - Increasing the partner skills in relation to the use of GI standards
  - Strengthening the cooperation with CEN/TC 287 thanks to the project liaison
  - Reporting to the standardization bodies eventual GI standards misalignments detected and solutions adopted
An example of EU funded projects: i-Scope

• i-Scope (interoperable Smart City services through an Open Platform for urban Ecosystems) (http://www.iscopeproject.net/) is an ICT-PSP project delivering an open platform on top of which it develops three "smart city" services:

1. Improved inclusion and personal mobility of aging and diversely able citizens through an accurate city-level differently-abled-friendly personal routing service which accounts for detailed urban layout, features and barriers.

2. Optimization of energy consumption through a service for accurate assessment of solar energy potential and energy loss at building level.

3. Environmental monitoring through a real-time environmental noise mapping service leveraging citizen's involvement who will act as distributed sensors city-wide measuring noise levels through their mobile phones.
An example of EU funded projects: i-Scope

• i-Scope makes an extensive use of CityGML in three different scenarios:
  1. routing for diversely able citizens
  2. energy dispersion & solar energy potential assessment
  3. Noise mapping & simulation
Scenario 1: routing for diversely able citizens

- CityGml is not the best format for routing calculation
- The Transportation Complex in LoD 0 can describe the road network, sidewalks, pedestrian crossing, and taxi ranks.
- Extension of Transportation Complex can be used to describe ramps, elevators, stairs, and barriers.
- CityFurniture object can be used to describe traffic lights for pedestrians, public transport stations, and mobility obstacles.
- Handicap entrances can be treated as building elements.
- Also, buildings interior routing can be done in some ways.
CityGML use in different scenarios

**Scenario 2**: Energy dispersion & solar energy potential assessment

- A reliable 3D city model is of fundamental importance for this task and the calculation of the output.

- The information obtained from the elaborations can be stored in a CityGML file using some specific generic attributes represented using an appearance model related to the ADE regarding the energy classification and characteristic of the buildings. An attribute can be deployed.
CityGML use in different scenarios

**Scenario 3:** Noise mapping & simulation

- Crown data acquisition in completely independent from CityGML
- The first ADE deployed for CityGML is the Noise ADE that has is composed by a series of attributes that can be attached to Transportation features e.g. roads, rail etc., Building features (at the _AbstractBuilding class) and CityFurniture.
- As in the energy scenario the obtained results can be visualized using an appearance model fitted to some specific parameters contained in the noise ADE.
The i-SCOPE standardization purpose

Standard extension relevant for smart city services:

- CityGML core standard extension;
- Definition of specific ADEs;
- Privacy and security standard.

Technology related standardization activities:

- Provisioning and visualization of CityGML;
- Management of CityGML;
- Crowdsourcing data collection.

"This project is partially funded under the ICT Policy Support Programme (ICT PSP) as part of the Competitiveness and Innovation Framework Programme by the European Community" (http://ec.europa.eu/ict_psp).
Achievements (1)

1) Analysis of CityGML: the core module is exhaustive and suitable for smart services provisioning.

2) Definition of ADEs: Three Application domain Extensions are defined and model in UML:
   - Noise;
   - Inclusive Routing;
   - Energy.
Achievements (2)

3) Development of ad-hoc method for streaming and visualizing CityGML. Contribution to the OGC 3D Portrayal SWG, pushing i-SCOPE technology.

4) Supporting Crowd source data collection providing methodologies and tools in according with defined CityGML ADEs.
Thank you!

Questions?

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