Workshop

Creating a University-Enterprise Alliance for a Spatially Enabled Society

Giorgio Saio – GISIG

Co-funded by the Erasmus+ Programme of the European Union
WORKSHOP AGENDA

• From LINKVIT to giCASES, a step forward for the creation of knowledge
• giCASES methodologies for the co-creation of knowledge
• Presentation of the giCASES case studies
• giCASES perspective in the context of Copernicus Network Academy
• Round table and conclusions
Round Table

Discussion on:
• Your interest/expertise in the giCASES applications domains
• Your interest for the giCASES University-Enterprises Knowledge Alliance and your vision about the exploitation in your organisation of the giCASES approach

Please sign the participant list and fill-in the questionnaire and interest form
From LINKVIT to giCASES
a step forward for the creation of knowledge
Objectives of the Association

A European Network for innovation and technology transfer in the GI sector and its application domains (territorial planning, water resources and utility networks, coastal management, nature conservation…) for:

• Sharing experience among universities, companies, National and local Bodies and users

• Promoting and developing projects of common interest, with particular reference to the EU programmes
Activity → EU Projects – Thematic Networks

- Promotion of initiatives and EU projects, also with the establishment of thematic networks (participated by several organisations) such as:
  - Water resources Management
  - Coastal Management
  - Nature Conservation
  - ........

- Applications and technical solutions in line with the EU Directives for Geographic Information (INSPIRE, COPERNICUS, SEIS Communication for a Shared Environment Information System for Europe, etc.)

Member of the Copernicus Academy
## Our latest European projects

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<th>Project</th>
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<td>eENVplus</td>
<td>eEnvironmental services for advanced applications within INSPIRE</td>
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<td>LIFE+IMAGINE</td>
<td>Integrated Coastal Area Management Application Implementing GMES/Copernicus, INSPIRE and SEIS Data Policies</td>
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<td>Leveraging INspire Knowledge into Vocational Innovative Training</td>
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<td>i-locate</td>
<td>Indoor/outdoor location and asset management through open geodata</td>
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to update and upgrade the INSPIRE Training Framework
LINKVIT - Objectives and activities

- **upgrade the existing training material**, harmonize it with a common didactic approach and **adapt it according to national/regional needs**.

- **set-up an interoperable Training Infrastructure** constituted by eLearning platforms.

- **establish a LINKVIT Training Framework**, as a portal for all the organization of training initiatives.

- **test and validate the whole Training Framework** with training actions.

- **exploit the whole LINKVIT Training Framework** for further curricular training actions, also with the organization of University Master programmes and the promotion of an INSPIRE Driver’s licence.
The modules are classified into:

a) Context Knowledge for INSPIRE
b) Advanced technical Modules
c) Modules addressed to the stakeholders of Nature Conservation
d) Modules addressed to the stakeholders of Geology and Civil Protection
e) Technological trends and innovative solutions
A. Context knowledge for INSPIRE

1. Introduction to INSPIRE
2. European Geospatial Portals as SDI User Interfaces
3. Basics of INSPIRE Data and service sharing
4. Basic concepts of XML and GML
5. Basics of INSPIRE Data Specifications
6. Data Quality
7. Basics of INSPIRE Network Services
8. Data Harmonisation

B. Advanced technical Modules

9. INSPIRE advanced
10. Metadata and Catalogue Services
11. INSPIRE Network Services advanced
12. Procedures for Data and Metadata Harmonization
13. Examples of Data Transformation
14. Metadata and Data validation for INSPIRE
### C. Modules addressed to the stakeholders of Nature Conservation

|-----|------------------------------------------|

### D. Module addressed to the stakeholders of Geology and Civil Protection

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### E. Technological trends and innovative solutions

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Common approach on the licensing

Training components are provided by the members of the Project Consortium under a Creative Commons Attribution-Share-Alike License, ensuring maximum dissemination and use of project results.

Shareable content

The material is collected, structured and organized in an eLearning platform, but presentations and video lectures are available in SlideShare and YouTube making the material very easy to be shared and used in other contexts.
Geospatial Knowledge Base (GKB) Training Platform (in the pipeline)

✓ This e-learning platform will host a set of training modules in the field of the European Location Interoperability Solutions for E-Government - such as ELISE project - addressing Geospatial and location services in eGovernment, based on the INSPIRE Directive.
GKB Training Platform

- In a first phase, the GKB Training Framework will include a first set of training modules dealing with INSPIRE and its implementation, based on the training Package defined and developed within the Leonardo da Vinci project LINKVIT - Leveraging Inspire Knowledge into Vocational Innovative Training (www.linkvit.eu)

- These training Modules will be freely accessible upon registration and licensed under a CC BY-SA license.

- The platform will be hosted and maintained by GISIG (www.gisig.eu)
GKB Training Platform planned modules (I)
(1st phase)

- Context knowledge for INSPIRE
  - Introduction to INSPIRE
  - Basics of INSPIRE Data and service sharing
  - Basic concepts of XML and GML
  - Basics of INSPIRE Data Specifications
  - Data Quality
  - Basics of INSPIRE Network Services
  - Data Harmonisation
# GKB Training Platform planned modules (II) (1st phase)

## Advanced technical Modules

- INSPIRE advanced
- Metadata and Catalogue Services
- INSPIRE Network Services advanced
- Procedures for Data and Metadata Harmonization
- Examples of Data Transformation
- Metadata and Data validation for INSPIRE
GKB Training Platform planned modules (III) (1st phase)

- Technological trends and innovative solutions
  - LusTRE, Linked Thesaurus Framework for the Environment
  - Introduction to Sensor Web Enablement

- Resources
  - INSPIRE Glossary
Training library

Training Material

A number of training resources are available, both from the Commission and EEA and from research projects and other stakeholders.

This section will provide a gateway to such training resources in the future.

Title

Introduction to INSPIRE

Category:

INSPIRE

Learn
Introduction to INSPIRE

Go to training module: Introduction to INSPIRE

Abstract:
The INSPIRE initiative was initiated by the European Commission in 2001 to enhance the sharing of harmonized spatial data and services between public authorities in order to assist environmental policy-making and activities that may have a direct or indirect impact on the environment. The INSPIRE Directive entered into force in May 2007. Member States transposed the Directive into national legislation and started to implement INSPIRE components: setting-up a coordinating structure, harmonizing spatial data, developing network services to access the data, maintaining metadata for spatial data & services, and putting in place measures to improve data & service sharing.

This module deals with the main elements of the INSPIRE Directive: its context and background, the scope and major chapters of the Directive, an overview of the related implementing rules, the conformity of spatial data and services, and the potential for new innovative solutions based on INSPIRE. The module also pays attention to the relationship between INSPIRE and other Directives such as the Directive 2003/98/EC on the re-use of public sector information (PSI) and Directive 2003/4/EC on public access to environmental information. The training material consists of presentations, supporting documents and a web lecture. The module is a self-learning module.

Structure: This seminar contains the following parts:

1. The use of geographic information in work processes and policy making: key challenges
2. Spatial Data Infrastructures to facilitate access and sharing of data
3. Overview of the INSPIRE Directive
4. The Implementing Rules
5. The conformity of data and services
6. Trends, challenges and opportunities

Learning outcomes:
After the training offers, the participant will be able to summarize the major challenges for spatial data access and sharing; to understand and explain the concepts and main components of a Spatial Data Infrastructure; to define and summarise the main chapters of the INSPIRE Directive; to recognise and classify who is who in INSPIRE and its most important stakeholders; to define and discuss the different Implementing rules (metadata, data specifications, network services, data and service sharing, monitoring and reporting) and technical guidelines; to list and illustrate the most advanced SDIs in Europe and best practices; and to describe and
We invite you all to the presentation of the INSPIRE Knowledge Base Wednesday 6th at 15:30 (coffee break) at the INSPIRE stand
About giCASES

Starting date: January 1st 2016 - Duration: 3 years

Consortium:
14 Partners (9 non-academic), 7 countries

GISIG (Coordinator), KU Leuven (BE), PLUS (Univ. of Salzburg, AT), Politecnico of Milano (IT), West Hungary University (HU), NOVA IMS (PT), Epsilon Italia (IT), NOVOST (SE), ISPRA (IT), Epsilon International (GR), TRLOGIS (IT), INI-Novation (DE), Digpro (SE), Geosparc (BE)

Project website (www.gicases.eu)
Objectives

• To fill the gap between the knowledge currently being offered by the European universities and the knowledge and skills requested by the enterprises and public authorities.

  The gap is partly due to a fast technological development but also due to recent societal changes, for instance the EU INSPIRE directive and the e-government action plans within the member states

• giCASES aims to develop new methods for collaborative learning and co-creation of knowledge, where industrial partners and universities jointly develop new learning material to cope with real case studies to be integrated in existing or new academic curricula.

• The case studies are being developed using one or more collaborative platforms, among enterprises, universities and students.
Keywords

**co-creation of knowledge**: the process through which two or more organizations and/or actors interact with each other in a collaborative fashion to generate learning content. By nature, co-creation of knowledge is a cooperative and multidirectional process, where all the subjects involved intervene.

**case study**: it consists of a real-world problem, which tackle specific topics and issues and has well-defined scopes, learning outcomes, results, time frames (beginning and end dates), actors and corresponding roles, and is addressed in a learning environment.

**case-based (collaborative) learning**: the educational approach adopted within the giCASES project, where knowledge is cooperatively produced by all the actors involved in the specific case studies planned.

**(case-based) learning/training material**: the whole of materials produced and/or used to co-create knowledge.

**(case-based) learning/training tools**: the solutions and technical tools adopted to store, visualize, reproduce, present or aid the development and exchange of learning/training material as well as the results of the learning process.
Case based learning

- Based on **real world problem** as identified by the enterprise partners
- The **6 case studies** within giCASES are the means by which the process of co-creation of knowledge is exemplified and tested. They are:
  - Use of indoor GIS in health care
  - Environmental analysis using cloud service systems
  - From INSPIRE to e-government
  - Integrated management of the underground
  - Harmonising data flows in energy saving EU policies
  - GIS Applications in Forestry

- Open to welcome further case-studies proposed by **external stakeholders**
Main outputs developed

- Analysis of the needs of industry and academia
- Repository of best practices
- Definition of the focus, scope and requirements of the case studies
- Processes and tools for co-creation of knowledge
- Specification of methodology for co-creation of knowledge

Presently working on:

- Implementing the technical infrastructure for collaborative learning and knowledge sharing
- Planning in detail the testing of the collaborative learning method, including:
  - Design of case-based learning actions
  - Development / up-dating / customizing supporting learning material

The testing of first pilot cases started; the complete set of testing will be closed by Spring 2018.
Collaboration tools

To cover:

- Communication
- Project and task management (covered by ICT Application Tool)
- File sharing and management
- Learning management System
Requirements

• installation of the application vs. use of SaaS
• important not to introduce technical complexities
• intuitive to use, easy to set-up and uses already existing applications
Product vetting

Analysis Pros & Cons

- Riot
- Basecamp
- Freedcamp
- Slack
- Teamwork

Based on 1,379 ratings and trailing 30 days of pageviews on TrustRadius.com through 3/1/2017.
Slack Pros

Slack Pros

- Document sharing
- Organization (channels, conversations, etc.)
- Synchronisation between the desktop version and the app
- Separate channels for task related discussions in a project
- Individual chat option with team members
- Free version, upgrades possible
- Integration of tools that are already used in the project
the giCASES web site, will include a section to access to the LMS (Moodle) containing the giCASES Training modules:

- At Case Study level, a **“Case Study Training Framework”** with evidence of the “Learning Path” and a catalogue of the Training modules, with the link to the training material and the condition for the accessibility (IPR, etc).
- The catalogue will include as well a standard metadata description of each training module, based on the format already used for LINKVIT, GeoSmartCity, etc).
Introduction to INSPIRE

Source
Earlier versions of this training module have been developed within the VESTA-GIS project in 2009 (http://www.vesta-gis.eu/), the Nature-SDIPlus project in 2010 (http://www.nature-sdi.eu/) and within the Educational Services Programme (EduServ) of EuroSDR in 2010 and 2011 (http://www.eurosdr.net).

Ownership
Author: Danny Vandenbroucke, KU Leuven. The material is provided under Creative Commons Attribution Share-Alike License (http://creativecommons.org/licenses/by-sa/3.0/).

Abstract
The INSPIRE initiative was initiated by the European Commission in 2001 to enhance the sharing of harmonized spatial data and services between public authorities in order to assist environmental policy-making and activities that may have a direct or indirect impact on the environment. The INSPIRE Directive entered into force in May 2007. Member States transposed the Directive into national legislation and started to implement INSPIRE components: setting-up a coordinating structure, harmonizing spatial data, developing network services to access the data, maintaining metadata for spatial data & services, and putting in place measures to improve data & service sharing.

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Intended Audience
This seminar aims at professionals seeking for an overview of the INSPIRE initiative (e.g. managers of SME’s and public bodies). Also unemployed people seeking new job opportunities.

Pre-requisites
No pre-requisites are required for this module.

Language
English

Format
PDF documents, presentations, Weblecture. The module is a self-learning module.

Expected workload
Expected workload is 4 hours.
More giCASES details in the next presentations:

• giCASES methodologies for the co-creation of knowledge
• Presentation of the giCASES case studies
giCASES methodologies for the co-creation of knowledge
Process and tools for co-creation of knowledge
Modelling the learning process

- All **case studies** are **different** from each other, but the **processes** they use to **co-create knowledge** may have many characteristics in common.

- The common characteristics of the collaborative processes used in the various cases studies to co-create knowledge have been modelled through a high-level description (abstraction), defined as **patterns of co-creation** or “use cases”, i.e. the abstraction of a context-specific process of collaboration which can be then realized within one or multiple case studies. The process patterns of case based learning and co-creation of knowledge have been classified according to their **degree of collaboration** and their **type of output**.

- **4 collaboration patterns** have been identified and described using **BPMN** (Business Process Model and Notation) diagrams.
Collaboration patterns

1) Shared development of learning material
2) Collaborative development of learning material
3) Shared provision of training
4) Internships

For each of the patterns, guidelines, templates and draft agreements to be used when developing and providing case based learning have been defined.
Basic collaborative processes from the literature
Selection of process patterns

• Shared development of learning material
  — upon an initial agreement, the university and the company develop and share the material by working in parallel
Selection of process patterns

• Collaborative development of learning material
  – upon an initial agreement, the university and company staff develop the material by working collaboratively, i.e. either physically or using any tool offering collaboration functions
Selection of process patterns

• Shared provision of training
  – upon an initial agreement, the university and company staff provide training in parallel
Selection of process patterns

• Internship
  – upon an initial agreement, students interact and collaborate physically with the industry staff