Exploitation towards Thematic Communities, Training Framework and stakeholders involvement

Giorgio Saio, GISIG

Exploitation prospects

GeoSmartCity ⟹ has its main objective in creating a **framework** in which Geo Open Data from the cities are exploited towards the Smart City paradigm allowing the developing of added value applications and new specialized services.

- To be effective, GeoSmartCity will implement with various pilot applications two very important strategic scenarios for a Smart City: Green-Energy and Underground.
- The added value of GeoSmartCity Hub can be easily extended to support different scenarios other than the two addressed by the project.
- The proposed approach makes the proposed solution extendable to other important Smart processes and scenario like culture, geo-marketing; mobility, transport, urban planning, environment/health impact, etc

Target users

The target user of the project is the **city**, considered as a body to which the technology of on-line data sharing can give a blow of smartness.

GeoSmartCity will impact on:

- **Public Authorities (PAs):** by making their open data re-usable and demonstrating the added value of produced data. Data publishers (particularly PAs) need support to fulfil the INSPIRE obligations and to connect their data with processes, creating sustainable operations for open data publishing.
- **Utility Companies:** which can have a new and easy access to open GI data and related services facilitating the management and the maintenance of their assets and improving the planning and distribution of their resources.
- **Open Data re-users:** SMEs know the opportunity offered by open data to improve services and create new products. The project will focus on making methods and tools available to SMEs to optimize open data applications, creating the conditions for SMEs to benefit and be part of smart & open cities initiatives

Target users

- **Software developers:** they will be able to leverage on **GeoSmartCity** by building connectors and applications based on the interfaces based on interoperable standards adopted in the project framework.
- **Software service providers:** which are selling (Linked) Open Data processing and consulting, by increasing their possibility to design new advanced processes and products.
- **Citizens and professionals:** at consumer level, there is a big demand in terms of functionalities and content, justifying the interest to build mobile applications based on location aware services and geo-data.

In particular, **GeoSmartCity** will address the project outcomes towards the stakeholders and beneficiaries of the two **GeoSmartCity** scenarios (Underground and Green Energy) and the beneficiaries at each pilot application level.

Communities and Stakeholders involvement

stay tuned with us by looking at….

Leaflet

Pilots

The potentiality of the GeoSmartCity toolkit is demonstrated through the development of 11 operative and re-usable pilot cases in the frame of the two scenarios Green-Energy and Underground.

Pilot cases **Green Energy**:

- Reggio nell'Emilia (IT)
- Maroussi (GR)
- Oeiras (PT)
- Turku (FI)
- Girona (ES)

Pilot cases **Underground**:

- Genova (IT)
- Comarca de Pamplona (ES)
- Oeiras (PT)
- Flanders region (BE)
- South Moravia Region (CZ)
- Ruda Slaska (PL)

Partners

GISIG
SINERGIS
iren acqua gas
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Epsilon
Comune di Genova
Epsilon
Universitat de Girona
Municipia ENERGY
asplan viak internet
GEOBID
TURUN AMMATTIKORKEAKOULU
TURKU UNIVERSITY OF APPLIED SCIENCES

Contacts

GISIG - Geographical Information Systems International Group
Via Piacenza, 54 - 16138 Genova (Italy)
Phone: +39 010 835 55 88
Web: www.gisig.it
E-mail: gisig@gisig.it

GeoSmartCity

Open geo-data for innovative services and user applications towards Smart Cities

Project co-funded by the European Commission
CIP Pilot Actions
Grant Agreement No. 621150

www.geosmartcity.eu

Leaflet

Overview

Smart City management requires integration of geographic data from many and heterogeneous sources, spanning from pan-European data sets (as the ones from the Public Sector Information and the INSPIRE Directives open data infrastructures) to local data with "home-made" semantics. In order to analyze and visualize geographic information (GI) through these data sets, it is necessary to integrate the data in terms of formats, access protocols, transformation and coordinate reference system, data harmonization.

The ICT-PSP European project **GeoSmartCity** establishes a cross-platform, able to publish open GI and to provide specialized services based on open standards services protocols. Starting by the availability of the open GI through open standards, the platform gives the possibility to integrate them with other public/private data in order to design the specialized services needed to implement the two addressed Smart City scenarios: **Green Energy** and **Underground**.

The result is a consistent repository of GI that can be spatially and semantically cross-analyzed to provide an accurate and up-to-date view of the respective problem domains.

Scenarios

GeoSmartCity fosters the creation of an added-value by the integration of urban open data with third-party data (open or restricted) as well as crowd-sourced data. Exploitation of heterogeneous (open) GI data is possible thanks to the connection of different consolidated standards (linked data, INSPIRE, Sensor data, GNSS), allowing open cross-sector interoperability between different data providers and domains and the consequent creation of a wide range of user-driven application scenarios. **GeoSmartCity** implements two scenarios, where 11 pilot cases are developed as example and model for other Smart City applications.

Green Energy Scenario:

To support public energy policy makers, to facilitate the management of renewable energy plants within cities, to promote buildings energy retrofit (buildings are responsible for the 40% of all energy consumption) in order to support the energy transition strategy, to reduce CO_2 emissions, and to develop local energy saving economy.
The Green Energy scenario intends to support the Covenant of Mayors.

Stakeholders and beneficiaries:

- Public Authorities
- Utilities, energy producers, brokers and vendors
- SMEs of energy sector
- Building designers, urban and energy planners
- Universities, Research Centers, training institutions
- Citizens and consumers

Covenant of Mayors
Committed to local sustainable energy

Underground Scenario:

To support integrated management of urban underground utility infrastructures in different sectors sharing the same work environment and background geo-information, produced and/or held by public bodies and fostering the private-public partnership in city infrastructure planning and management.
To integrate underground data with territorial data to search for assets located in risk zones (hydrogeologic, hydraulic, sysmic...), needing for specific monitoring and control.

Digital Agenda for Europe 2010-2020

Stakeholders and beneficiaries:

- Municipalities, Public Administrations
- Utility companies (gas, water, energy, telecommunications)
- Territorial companies (e.g. companies in charge for digging and road maintenance)
- Environmental Agencies
- Civil Protection
- Citizens

Newsletters

- Foreseen to be published electronically periodically (6 months)
- Will highlight the progress of GeoSmartCity, providing insight into the research, development, innovation and Pilots activities.
- The newsletter is managed by a Email Marketing and Email List Manager (Mailchimp).
- This will assure a complete and accurate management of the email campaigns and subscribers.
- All issues will be publicly available online and also downloadable through the GeoSmartCity website.

Newsletters issue #3

Newsletter no. 3 - February 2016

View this email in your browser

Project co-funded by the
European Commission
CIP Pilot Actions
Grant Agreement No. 621150

GeoSmartCity results at the end of the second year

GeoSmartCity has its main objective in creating a framework in which Geo Open Data from the cities are exploited towards the **Smart City** paradigm allowing the development of various added value applications and new specialized services.

In the current stage of the project, the consortium is focused on the **integration** of the developed services architecture and the **validation and test** of the end user applications using these services.

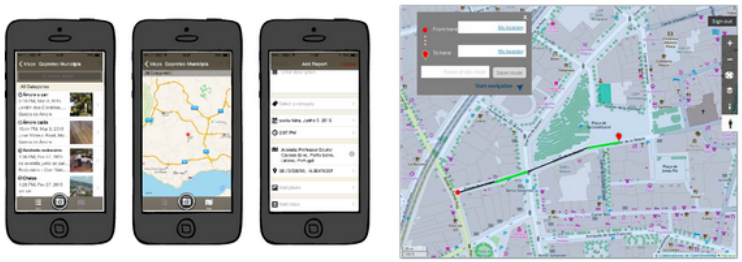
The GeoSmartCity scenarios

Overall 10 Cities/Regions are involved in the project. Each city will implement a pilot in the frame of two scenarios, **Green Energy and Underground**.

During this last year, every pilot has identified the functionalities they will require and the general and specific services from the Hub that they are going to use. Moreover, the Pilots data has been harmonised/validated based on the project own data models and is now being ingested in the Hub catalogue

An important milestone have been the detailed design of the end user's applications. In this sense, interface mock-ups have been provided as the basis for the applications interfaces to be developed.

Currently, Pilot's client applications are under deployment and focus is on on the seamless integration of the Hub services. During the next months, Pilots will be thoroughly tested and validated prior to become operational right after summer 2016.



Oeiras and Girona Pilot applications mock-ups

The GeoSmartCity Hub and innovative services

The GeoSmartCity Hub allows users to upload or connect their data sources, configure map visualizations and publish data through a web based self-service user interface. In detail, the Hub consists of a client-side JavaScript library to facilitate rapid application development as well as a set of server-side Web Services and an administration application

Currently, all sofware core components have been deployed and all data management services are available in a pre-release version. Underground and Green Energy specialised services are also almost complete at this phase of the project, ready to be integrated in the Pilot applications. The final release of these services will be in middle 2016.

The final GeoSmartCity platform will integrate all the developments and the bug-fixes defined during the test and verification phases and will be made available as a stable software solution to the interested users outside of the project.

GeoSmartCity website (www.geosmartcity.eu)

Among the features:

- A subscription mechanism has been set up to permit visitors to receive email newsletters on the status and progress of the project
- For each Pilot a dedicated section has been created
- A section will be dedicated to the GeoSmartCity Training Framework

Training

Our e-Learning training modules provide to the target audience of GeoSmartCity the advanced skills required to cope with the INSPIRE implementation process, knowledge related to Linked Open Data and the documentation and the necessary means to interact, benefit and adopt the GeoSmartCity Infrastructure.

Subscribe to the GeoSmartCity Training Modules

Log in or create a new account in our e-Learning platform.

Some Training Modules are still under development.

Subscribe to the Modules

Level 1: Background Knowledge

Knowledge on Directives/ Technologies. Click the module name for more information and access to the training material.

The INSPIRE Directive and related technologies

+ Introduction to INSPIRE
+ Basics of INSPIRE Data Specification
+ Basics of INSPIRE Network Services
+ Data Harmonisation
+ Procedures for Data and Metadata Harmonization
+ Examples of Data Transformation
+ Metadata and Data validation for INSPIRE
+ Introduction to Linked Data

operative and re-usable pilot cases in the frame of the two scenarios: Green-Energy and Underground. Learn more

To facilitate the day-to-day operation and management of key municipal infrastructure sectors and public utilities activities. Learn more

GeoSmartCity

cip competitiveness and innovation framework programme 2007-2013

GeoSmartCity *Showcase*

Project website | Contact Us

Welcome to the GeoSmartCity applications showcase

Discover 11 operative application cases on Smart City strategic scenarios: Green Energy and Underground Management. Learn how these European cities are already benefiting from the services offered by the **GeoSmartCity Hub**.

Green Energy applications

Reggio nell'Emilia | Italy

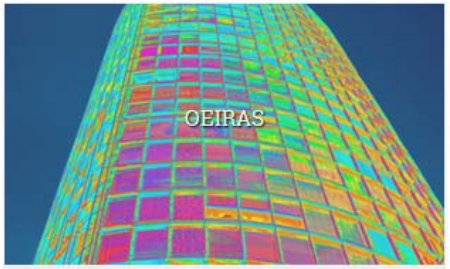
Specialized services for integration and harmonization of buildings energy consumption data.

View details

Maroussi | Greece

Collection of geo referenced information about building data, green energy production and energy consumption.

View details

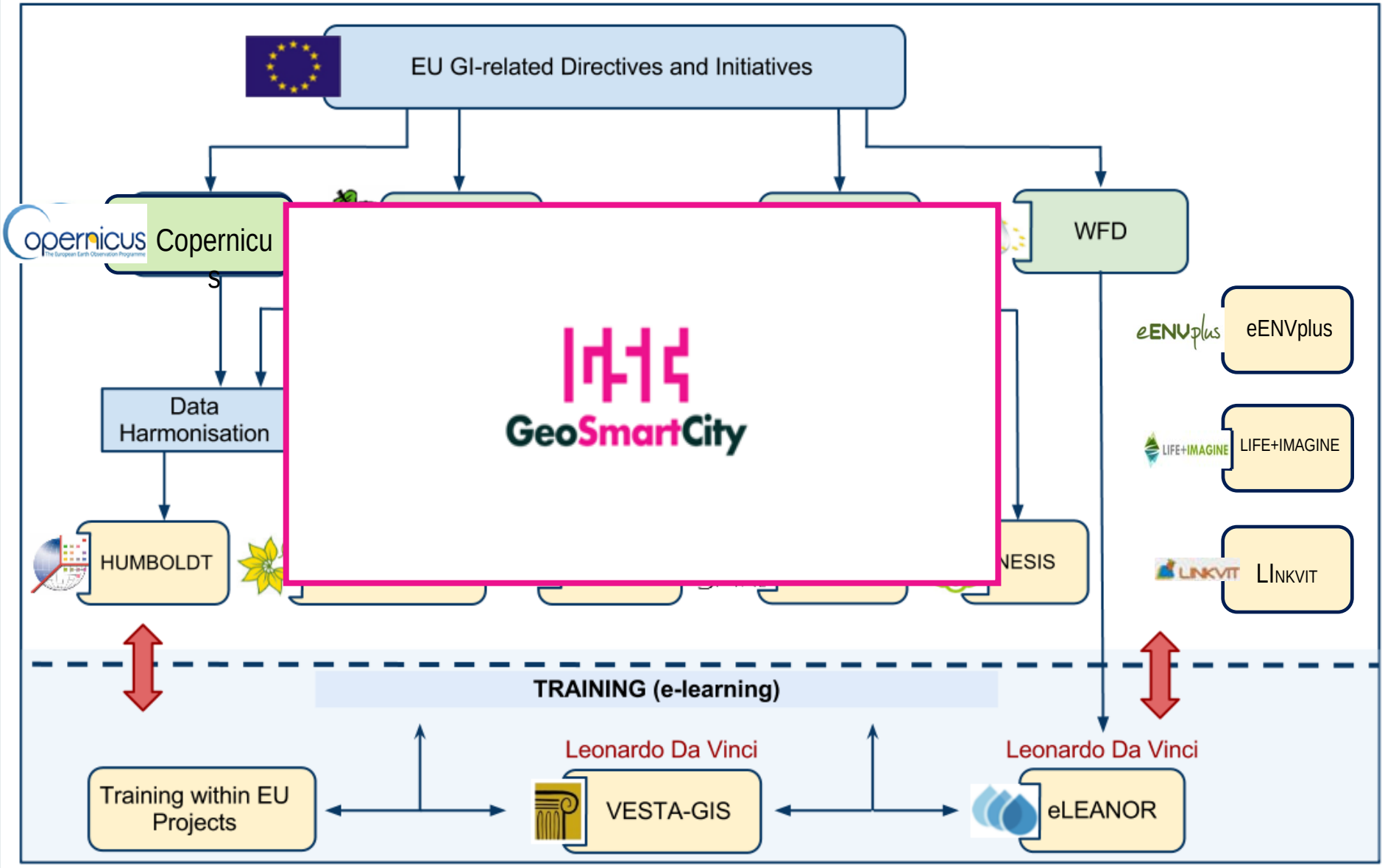


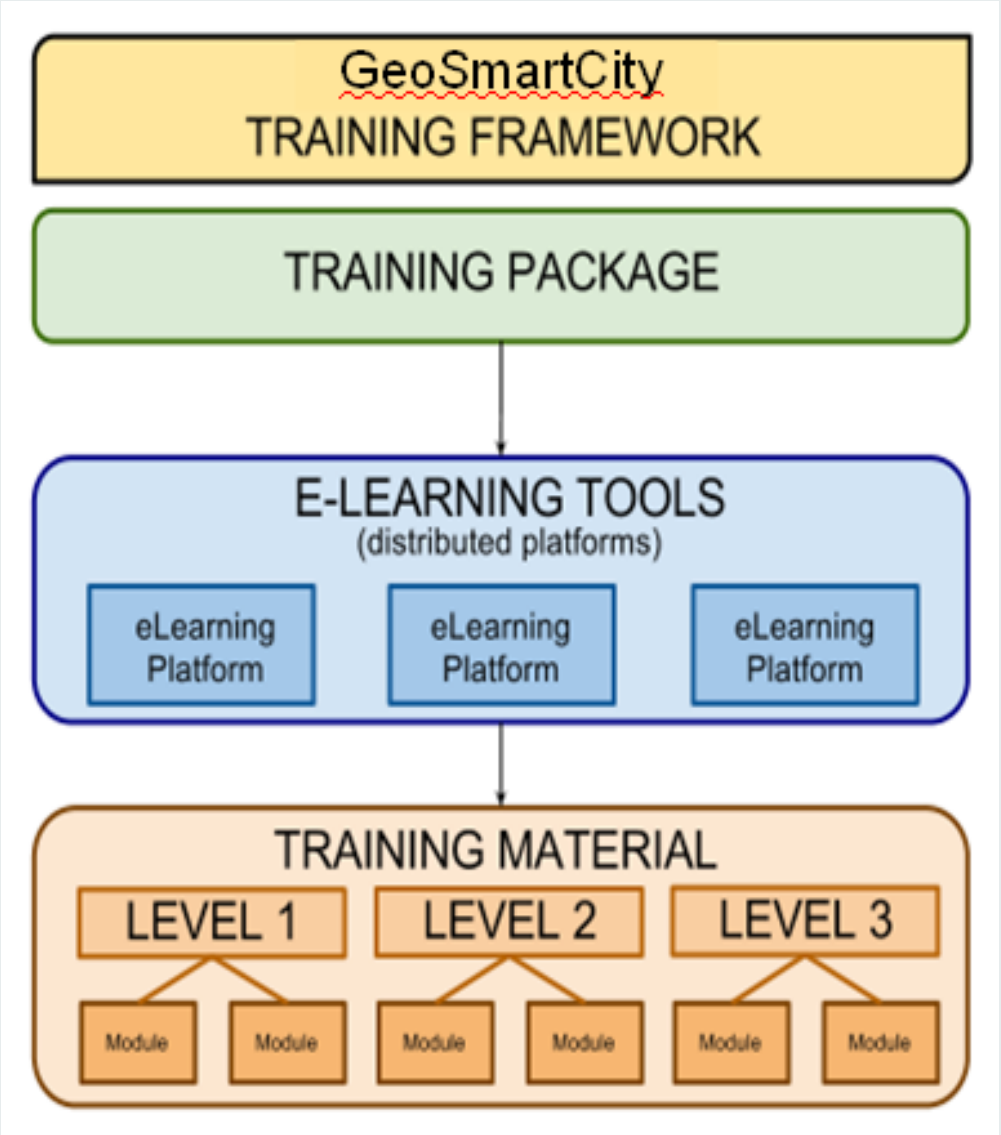
Oeiras | Portugal

Specialided services for energy performance, emissions estimation and Solar potential calculation.

View details

Training Framework




GeoSmartCity
TRAINING FRAMEWORK
TRAINING PACKAGE
E-LEARNING TOOLS
(distributed platforms)
eLearning Platform
eLearning Platform
eLearning Platform
TRAINING MATERIAL
LEVEL 1
LEVEL 2
LEVEL 3
Module
Module
Module
Module
Module
Module

Training organisation

The Training Framework is organised on 3 levels:

1. Background knowledge
    - Knowledge on Directives/ Technologies
2. The GeoSmartCity Infrastructure
    - Knowledge on the technical outcomes and adoption of GeoSmartCity.
3. The GeoSmartCity Pilots
    - Knowledge on the Pilot applications using the GeoSmartCity Infrastructure.

1. Backgroud knowledge 1/2

The INSPIRE Directive and related technologies

- Introduction to INSPIRE
- Basic of INSPIRE Data Specification
- Basics of INSPIRE Network Services
- Data Harmonisation
- Procedures for Data and Metadata Harmonization
- Example of Data Transformation
- Metadata and Data validation for INSPIRE
- Introduction to Linked Data

GIS Technologies

- GIS Introduction
- Data Visualization &Cartography
- Geo-Crowdsourcing: Open Street Map workflow

1. Backgroud knowledge 2/2

Thematic Knowledge: Underground Management

- Urban drainage & Sewerage
- Operation And Maintenance Of Underground Assets
- Water Supply System
- Water and wastewater pollution characterisation and sources
- General Aspects Of Waste Water Treatment Plant

Thematic Knowledge: Greeen Energy

- The European Energy Policy Strategy
- Energy efficiency in buildings
- The Covenant of Mayors

2. The GeoSmartCity Infrastructure

- The GeoSmartCity Data Models
- The GeoSmartCity Architecture
- The GeoSmartCity Hub services
- The GeoSmartCity Specialized services: Green Energy
- The GeoSmartCity Specialized services: Underground
- The GeoSmartCity Client functionalities
- The GeoSmartCity Mobile Client and Crowdsourcing

3. The GeoSmartCity Pilots

- The GeoSmartCity Pilot Applications

Common Metadata template

Structured in a clustering training perspective to allow interoperability of training modules within different project Training Frameworks.

- Format
- Expected workload

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.

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 consist of presentations, supporting documents and a weblecture. 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. The potential for new innovative solutions

Learning outcomes

After the training offer, 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 discuss the major opportunities for different sectors to contribute to the development, maintenance and exploitation of INSPIRE.

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.

Each Training Module must be detailed with metadata:

- Module name
- Source
- Ownership
- Abstract
- Structure
- Learning outcomes
- Intended audience
- Pre-requisites
- Language
- Format
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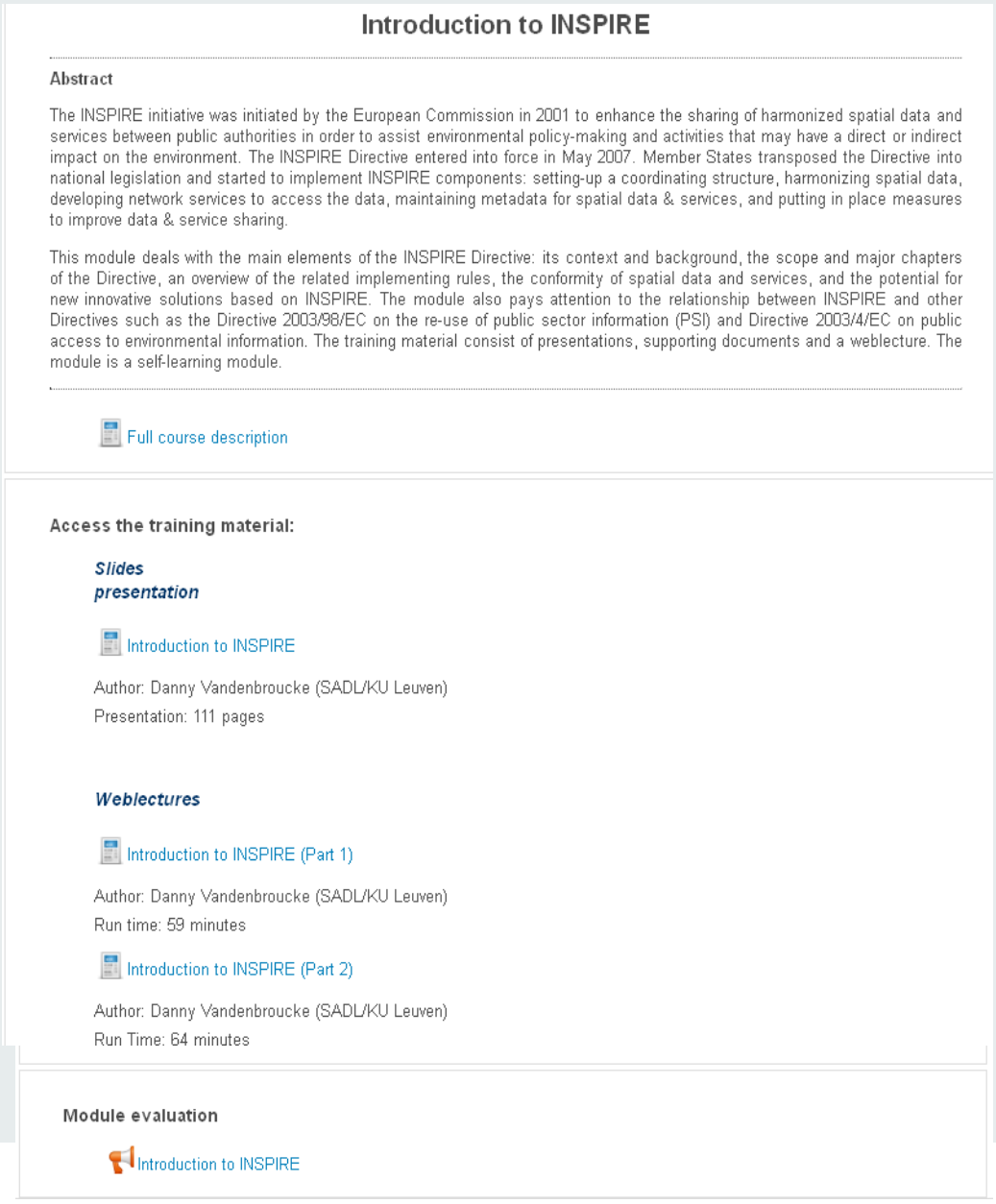
E- learning Platform (www.gisig.eu/platform)

- Costitute the infrastructure(s) hosting the training modules and training material.
- Estabilished by widely diffused open source e-learning tools Moodle, the most popular open-source Learning Management System).
- Open to the project members and (open registration) to the users Communities.
- Once subscribed to the Module (or Modules), the user is redirected to an e-learning platform with personalized access.
- Decentralised: Training Material is hosted in different platforms.
- Training material developed on a variety of formats: Presentations with voice, screencasts, plain text lectures, exercises, etc.
- Allows monitoring the user progress and students/ teachers interaction.



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Full course description

Access the training material:

Slides presentation

Introduction to INSPIRE

Author: Danny Vandenbroucke (SADL/KU Leuven)

Presentation: 111 pages

Weblectures

Introduction to INSPIRE (Part 1)

Author: Danny Vandenbroucke (SADL/KU Leuven)

Run time: 59 minutes

Introduction to INSPIRE (Part 2)

Author: Danny Vandenbroucke (SADL/KU Leuven)

Run Time: 64 minutes

Module evaluation

Introduction to INSPIRE

Self-learning material in different formats:

- Presentations
- Text Lectures
- Audio presentations
- WebLectures
- VideoLectures
- Exercises

All the participants in this workshop will be invited to register to the GeoSmartCity newsletter and to the training actions.

Thanks for your attention !