

Exploitation towards Thematic Communities, Training Framework and stakeholders involvement

Giorgio Saio, GISIG

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

GeoSmartCity scenarios are implemented at **city** and **regional level**, being the exploitation of open data and the adoption of innovative solutions to **improve the living**, the **environment**, the **services** and the **quality of life**, among the priorities in most of the EU Municipalities, which are addressing, with growing intensity, lot of efforts and resources in reaching **Digital Agenda** and the **Smart City** concepts.

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

- ❑ **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.
- ❑ **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.

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....

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 Under-ground.

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



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



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

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 CO₂ 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



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, seismic...), needing for specific monitoring and control.



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

- ☐ 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.

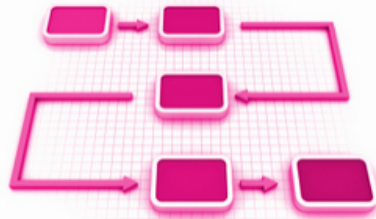


Project co-funded by the
European Commission
CIP Pilot Actions
Grant Agreement No. 621150



Towards the GeoSmartCity operating capacity

[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 various added value applications and new specialized services.



The initial analysis phase of GeoSmartCity, focused on the study of the pilots' operational contexts, has been concluded given as result the identification of the **technical, data and functional requirements** to the implemented.

Consequently, the technical specifications of the GeoSmartCity data platform, clients and specialised services has been released and the data modelling/harmonization process has been completed.

In the current stage of the project, the consortium is focused on the **technical implementation** of the services architecture (including integration of the server and client components) and the design and development of the foreseen specialized services.

The GeoSmartCity scenarios

GeoSmartCity will implement, with various pilot applications, two very important strategic scenarios for a Smart City: Green-Energy and Underground.

Green-Energy scenario

The Green Energy scenario is strictly related to the [Covenant of Mayors](#). The Covenant of Mayors (CoM) is the mainstream European movement involving local and regional authorities, voluntarily committing to meet and exceed the European Union 20% CO2 reduction objective by 2020.



Together with Transportation, Energy performance of buildings represents the main focus of the overall scenario. Buildings are indeed one of the main CO2 emission sources to be considered by Municipalities and other Public Authorities aiming to reduce the overall amount of energy needed at urban level.

Underground scenario



In the case of the Underground scenario the common thread has been the focus on the following key aspects for the underground management:

The improvement of the efficiency of the underground network management (mainly in terms of integration of resources from different actors) and the citizen involvement (crowdsourcing mobile apps).

The use cases of this scenario refer to real operative tasks using underground data that take advantage of this integrated work environment.

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



The ICT-PSP European project GeoSmartCity establishes a cross-platform, able to publish open GI and to provide specialized services based on open standards.



Pilot cases

The potentiality of GeoSmartCity is demonstrated through the development of 11 operative and re-usable pilot cases in the frame of the two scenarios: Green-Energy and Underground. [Learn more](#)



Virtual hub

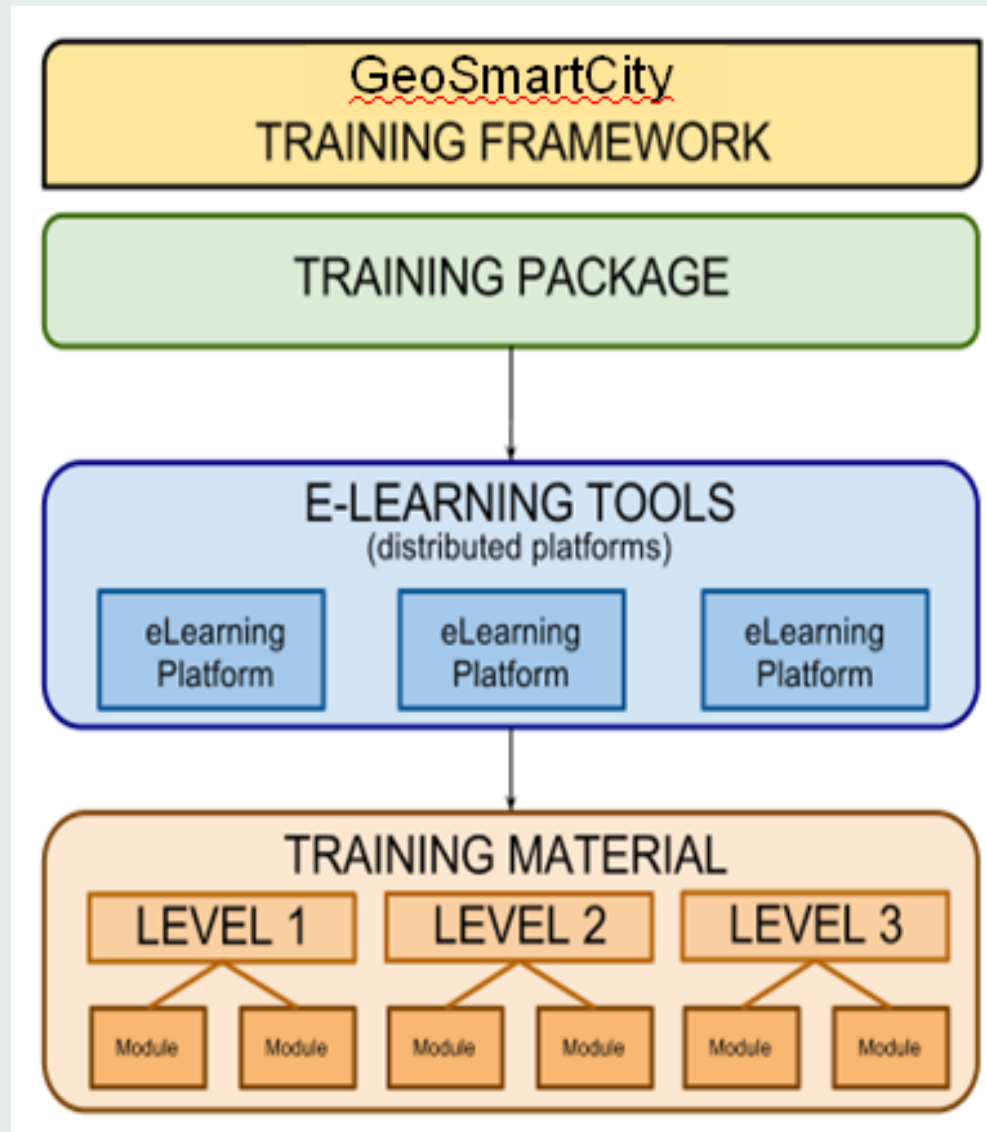
For integration and publishing of local, web based, real-time sensor or user-generated open geo-information. [Learn more](#)



Innovative services

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





The Training Framework is organised on 3 levels:

1. Background knowledge

- To support basic background knowledge and skills around GSC topics and related technical issues

2. GeoSmartCity Hub

- Architecture, services, guidelines

3. Scenarios and Pilots

- One module for each pilots

- o Introduction to INSPIRE
- o Basic of INSPIRE Data Specification
- o Basics of INSPIRE Network Services
- o Data Harmonisation
- o Procedures for Data and Metadata Harmonization
- o Example of Data Transformation
- o Metadata and Data validation for INSPIRE
- o Linked Data
- o Smart Cities
- o GIS Introduction
- o Geo-visualization
- o Geo-Crowdsourcing: Open Street Map workflow
- o Urban drainage & water supply system
- o Underground management and operational aspects
- o Environmental Monitoring and assessment

Common Metadata template

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

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.eurosdri.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 consists 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
- 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.eurosdrr.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.

E- learning Platform (www.gisig.eu/platform)

- Constitute the infrastructure(s) hosting the training modules and training material.
- Established 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.

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 consist of presentations, supporting documents and a weblecture. The module is a self-learning module.



[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:

- o Presentations
- o Text Lectures
- o Audio presentations
- o WebLectures
- o VideoLectures
- o 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 !