

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

TRAINING MODULES

Background Knowledge

The INSPIRE Directive and related technologies

- Introduction to INSPIRE
- Basic of INSPIRE Data Specification
- Basic of INSPIRE Network Services
- Data Harmonisation
- Procedure for Data and Metadata Harmonisation
- Examples 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

Thematic Knowledge: Underground Management

- Urban drainage & Sewerage
- Operation and Maintenance of Underground Assets
- Water Supply System
- Water and wastewater pollution characterization and sources
- General aspects of waste water treatment plant

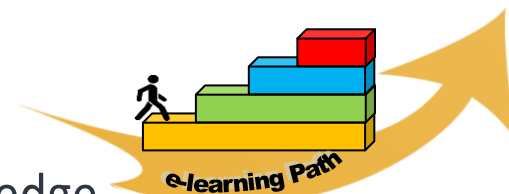
Thematic Knowledge: Green Energy

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

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) to local data with “home-made” semantics. In order to analyse 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 **GeoSmartCity Training Framework** is designed in order to make available existing knowledge and transfer the outcomes of the project towards the target groups of users. The Training Framework complements and support dissemination and exploitation, fostering Capacity Building.



Background Knowledge

The INSPIRE Directive and related technologies

Introduction to INSPIRE

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.

Basic of INSPIRE Data Specification

The module aims to teach the INSPIRE data specification development approach; it explains the standardized approach, the different interoperability components to be taken into account and how this was implemented in INSPIRE.

Basic of INSPIRE Network Services

The module introduces the concept of a Service Oriented Architecture (SOA). It describes and illustrates the 5 types of INSPIRE network services. It explains the link to existing standards of ISO and OGC (e.g. CSW) and also discusses the INSPIRE implementing rules that are applicable including conformity aspects.

Data Harmonisation

This module explains the basic concepts of data harmonisation in general and specifically schema translation.

Procedure for Data and Metadata Harmonisation

This Module explains how to transform heterogeneous source datasets and metadata according to the relevant INSPIRE target schemas.

Examples of Data Transformation

This module provides transformation examples of a source dataset into a dataset compliant to the INSPIRE Data Specifications.

Metadata and Data validation for INSPIRE

This module provides validation examples of datasets and metadata against the Requirements of the INSPIRE Data Specifications.

Introduction to Linked Data

The objective of this training module is to acquire know how on the basic concepts of Linked Data principle.

GIS Technologies

GIS Introduction

Provides definition about what is a GIS, which are the key components of a GIS, which are the inputs of the system, and how important it is the role that geodata plays in the whole system.

Data Visualization & Cartography

The module is designed to explore the basics of cartography, learn how to build better maps and discover different types of data visualization according to new tendencies.

Geo-Crowdsourcing: Open Street Map workflow

The training module seeks to highlight the OSM workflow: starting with the capture and acquisition of geographical information, to editing and publishing the data.

Thematic Knowledge: Underground Management

Urban Drainage & Sewerage

This course aims at providing an explanation of the elements and processes involved in the urban drainage systems and a recommendation of appropriate application.

Operation and Maintenance of Underground Assets

Deals with having an overall understanding of processes, activities and authorizations needed to intervene on the underground infrastructures.

Water Supply System

The learner will be provided with an understanding of the basic principles and knowledge of water supply system.

Water and Wastewater Pollution Characterization and Sources

The module provides an overview of the water pollution and its origins providing an introduction to water quality guidelines, regulations and performance criteria.

General Aspects of Waste Water Treatment Plant

This course is designed to offer an overview of the various treatment processes including physical, chemical and microbiological treatment of water and wastewater.

Thematic Knowledge: Green Energy

The European Energy Policy Strategy

The module traces the path of the European energy policy evolution, starting from the beginning of the common European energy policy (2005) to the present days, highlighting goals, challenges and critical issues.

Energy Efficiency in Buildings

Overview of the building energy performance assessment activity and its role into improving the global energy consumption into the building sector.

The Covenant of Mayors

To provide a general overview of the Covenant of Mayors initiative, its history and further evolution.

The GeoSmartCity Infrastructure

- GeoSmartCity Data Models
- GeoSmartCity Specialised Services
- GeoSmartCity Data Catalogue
- GeoSmartCity Web and Mobile Clients

The GeoSmartCity Pilots

- The GeoSmartCity Pilot Applications

PARTNERS

GISIG, Geographical Information Systems International Group – ITALY

IREN S.p.A. - Italy

Dedagroup Public Services s.r.l. - Italy

INTERGRAPH CS s.r.o. - Czech Republic

AVINET - Norway

EPSILON ITALIA s.r.l. - Italy

TRACASA - Spain

Comune di Genova - Italy

TICASS - Italy

TUAS - Finland

EPSILON International SA - Greece

VMM - Belgium

GEOBID sp.z - Poland

Universitat de Girona - Spain

Comune di Reggio nell'Emilia - Italy

Municípia - Portugal

The GeoSmartCity Infrastructure

A set of Modules to transfer the technical results of the project and the Infrastructure:

- The GeoSmartCity Data Models
- The GeoSmartCity Specialised Services
- The GeoSmartCity Data Catalogue
- The GeoSmartCity Web and Mobile Clients

The GeoSmartCity Pilot

The GeoSmartCity Pilot applications

A set of Modules to transfer the results of the GeoSmartCity Pilot applications.

UNDERGROUND SCENARIO:

Pilots of: **Comarca of Pamplona (ES), Flanders Region (BE), Genova (IT), Oeiras (PT), Ruda Slaska (PL), South Moravia (CZ).**

GREEN ENERGY SCENARIO:

Pilots of: **Girona (ES), Maroussi (GR), Oeiras (PT), Reggio nell'Emilia (IT), Turku (FI).**

More info at:
www.geosmartcity.eu