

Il progetto GeoSmartCity

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

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GeoSmartCity implementa una piattaforma ICT per pubblicare e condividere i dati geografici *open* e multisorgente, provenienti quindi da Amministrazioni Pubbliche, Aziende di Servizi, Industrie, Cittadini e *Crowdsourcing*.

La piattaforma include servizi web specialistici per integrare il dato geografico pubblico con altri dati geo-riferiti (pubblici o proprietari) utili alla gestione *smart* delle infrastrutture cittadine e dei servizi pubblici.

Il progetto sviluppa due scenari applicativi:

- Underground (6 siti pilota in UE)
- Green Energy (5 siti pilota in UE)

GeoSmartCity è un progetto della Call CIP ICT-PSP, ha una durata di 3 anni a partire dal 1 marzo 14

Partnership



COMUNE DI GENOVA



La piattaforma e i servizi di GeoSmartCity permettono di ricavare valore aggiunto dall'informazione esistente attraverso l'integrazione di dati territoriali con i dati provenienti da terze parti, e grazie all'implementazione di standard operativi (linked data, INSPIRE, GNSS) che ne permettono l'interoperabilità.

Scenario Green Energy

- ✓ Supporta le nuove politiche energetiche
- ✓ Facilita la gestione degli impianti per l'energia rinnovabile nelle città
- ✓ Promuove l'efficienza energetica negli edifici
- ✓ Favorisce le strategie di transizione energetica per ridurre le emissioni di CO2 e per sviluppare un'economia basata sul risparmio energetico locale



Scenario Underground

- ✓ Supporta la gestione integrata del sottosuolo
- ✓ Promuove partnerships tra settore pubblico e privato nella gestione dei sottoservizi
- ✓ Sviluppa applicazioni per integrare i dati di rete con le mappe dei rischi naturali (aree inondabili, frane...) per individuare i tratti di rete sottesi ad aree a rischio





1. **GeoSmartCity Hub**

Una piattaforma riutilizzabile e aperta, in grado di pubblicare informazioni geografiche aperte e fornire servizi specializzati basati su servizi di standard aperti.

2. **Innovative Services**

Una piattaforma di Servizi per visualizzare, analizzare, estrarre i dati dall'OpenData Hub di GeoSmartCity; Universal Discovery Services; piattaforma di servizi di Geoprocessing; motore di ingestione e integrazione dei dati

3. **GeoSmartCity Target Data Models**

Modelli di dati per gli scenari I Underground e Green Energy, compresi metodi e processi per l'armonizzazione dei dati e la loro validazione

4. Scenario Green Energy

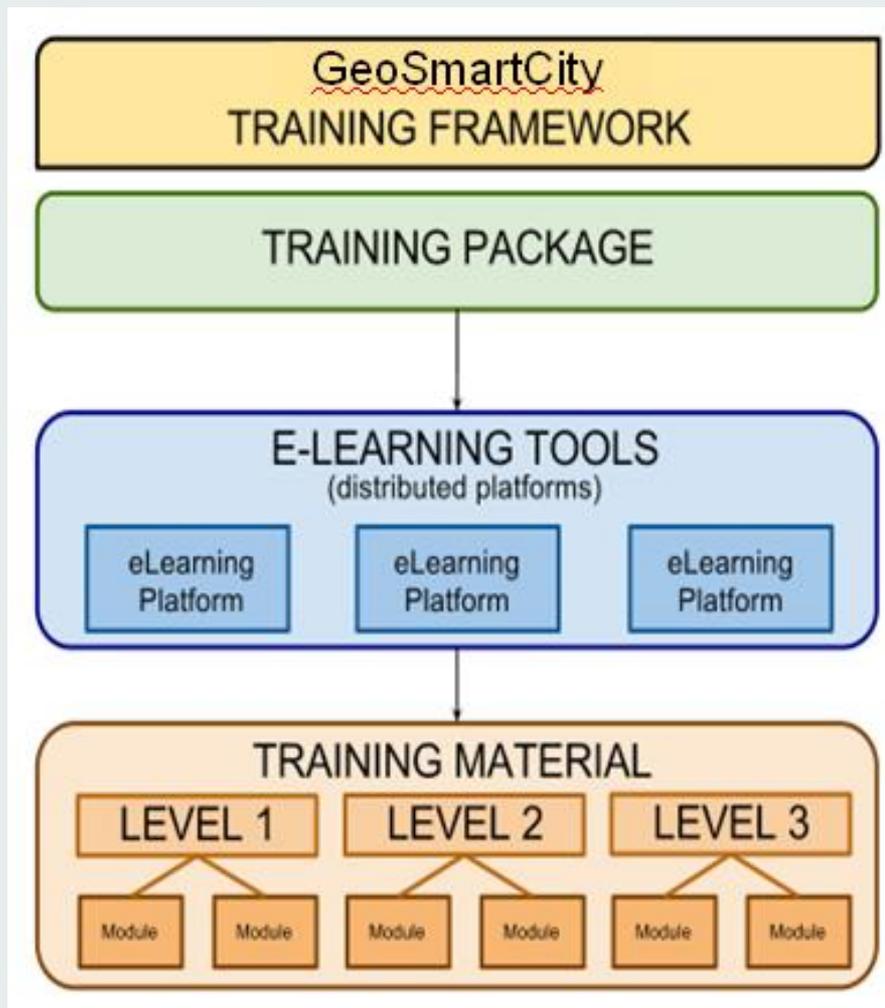
Casi pilota operativi e riutilizzabili per facilitare la diffusione e la gestione delle energie rinnovabili nelle città

5. Scenario Underground

Casi pilota operativi e riutilizzabili per supportare la gestione integrata delle infrastrutture dei sottoservizi

6. Offerta Formativa GeoSmartCity

Progettata in modo da mettere a disposizione conoscenze esistenti e trasferire i risultati del progetto nei confronti dei gruppi target di utenti. L'offerta formativa è di supporto alla diffusione e alla valorizzazione dei risultati del progetto



<http://www.geosmartcity.eu/training/>

È organizzata su 3 livelli:

1. Background knowledge (*conoscenze di base*)
 - Conoscenze sulle Direttive / Tecnologie
2. The GeoSmartCity Infrastructure (*l'infrastruttura di GSC*)
 - Conoscenze sui risultati tecnici di GeoSmartCity.
3. The GeoSmartCity Pilots (*l pilota di GSC*)
 - Conoscenze delle applicazioni pilota utilizzando l'infrastruttura GeoSmartCity

The INSPIRE Directive and related technologies

- 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 Introduction to Linked Data

GIS Technologies

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

Thematic Knowledge: Underground Management

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

Thematic Knowledge: Green Energy

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

2. The GeoSmartCity Infrastructure

- o The GeoSmartCity Data Models
- o The GeoSmartCity Specialised services
- o The GeoSmartCity Hub
- o The GeoSmartCity Web and Mobile Clients

3. The GeoSmartCity Pilots

- o The GeoSmartCity Pilot Applications

INNOVATIVE SERVICES AND USER APPLICATIONS TOWARDS SMART CITIES

Smart City management requires integration of geographic data from many and heterogeneous sources.

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

[Learn more](#)



Innovative underground networks management applications



The Hub

The project's main product is "the **Hub**": A cross-platform, able to publish open GI and to provide specialized services based on open standards services protocols.

[Access the Hub](#)



Pilot Applications

The potentiality of the GeoSmartCity Hub is demonstrated through the development of 11 pilot cases in the frame of the two scenarios: **Green-Energy and Underground**.

[Pilot's Showcase](#)



Training

Our training Modules are designed in order to make available existing knowledge and transfer the outcomes of the project towards the target groups of users.

[Training Modules](#)



The Network

In view of the exploitation of the GeoSmartCity project results, the project Consortium invites you to be part of a large stakeholder community.

[Join the Network](#)



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
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GIS Technologies

- GIS Introduction
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Thematic Knowledge: Underground Management

- Urban drainage & Sewerage
- Operation and Maintenance of Underground Assets
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Open geo-data for innovative services and user applications towards Smart Cities

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

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 Hub
- 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 de 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).

The GeoSmartCity Infrastructure

- GeoSmartCity Data Models
- GeoSmartCity Specialised Services
- GeoSmartCity Hub
- 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
- Município - Portugal

More info at:
www.geosmartcity.eu

- GeoSmartCity è una rete aperta
- Tutte le organizzazioni ed i soggetti interessati sono benvenuti

Modulo di adesione in distribuzione