GEOSMARTCITY SCENARIOS

Maria Cabello
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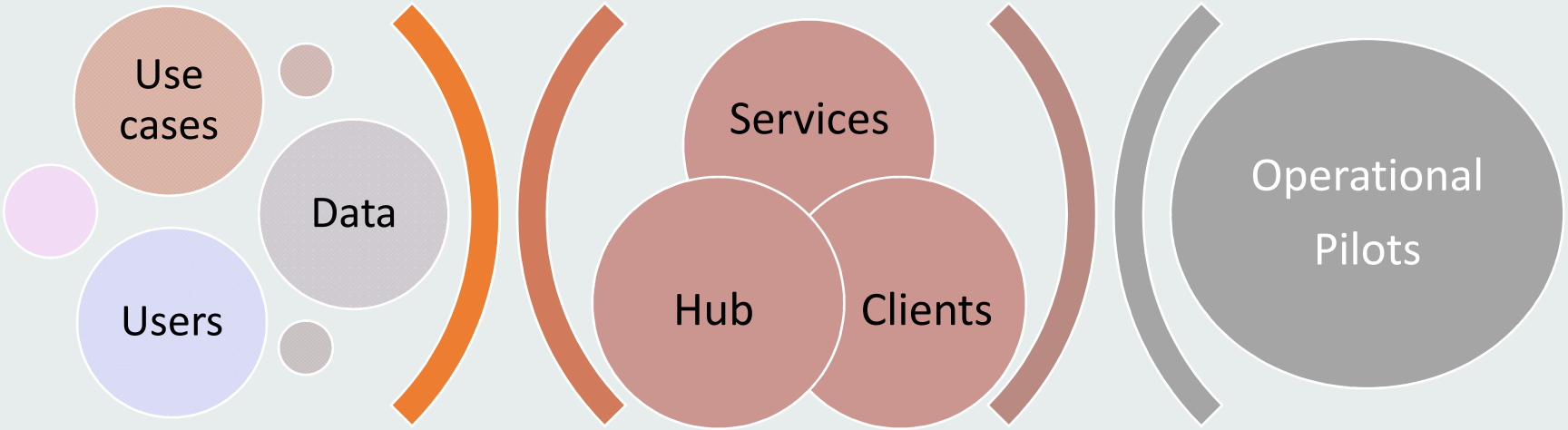
PROJECT PHASES



ANALYSIS

- Use case analysis and description
- Requirements analysis and description

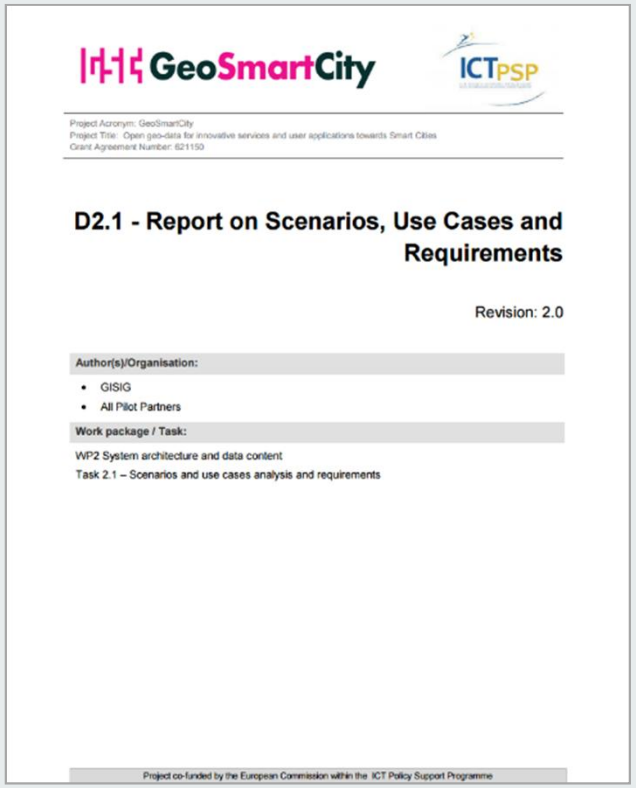
DESIGN

- Technical specifications

IMPLEMENTATION

- Real Deployment

USE CASES AND REQUIREMENTS



GeoSmartCity ICTPSP

Project Acronym: GeoSmartCity
Project Title: Open geo-data for innovative services and user applications towards Smart Cities
Grant Agreement Number: 621150

D2.1 - Report on Scenarios, Use Cases and Requirements

Revision: 2.0

Author(s)/Organisation:

- GISIG
- All Pilot Partners

Work package / Task:

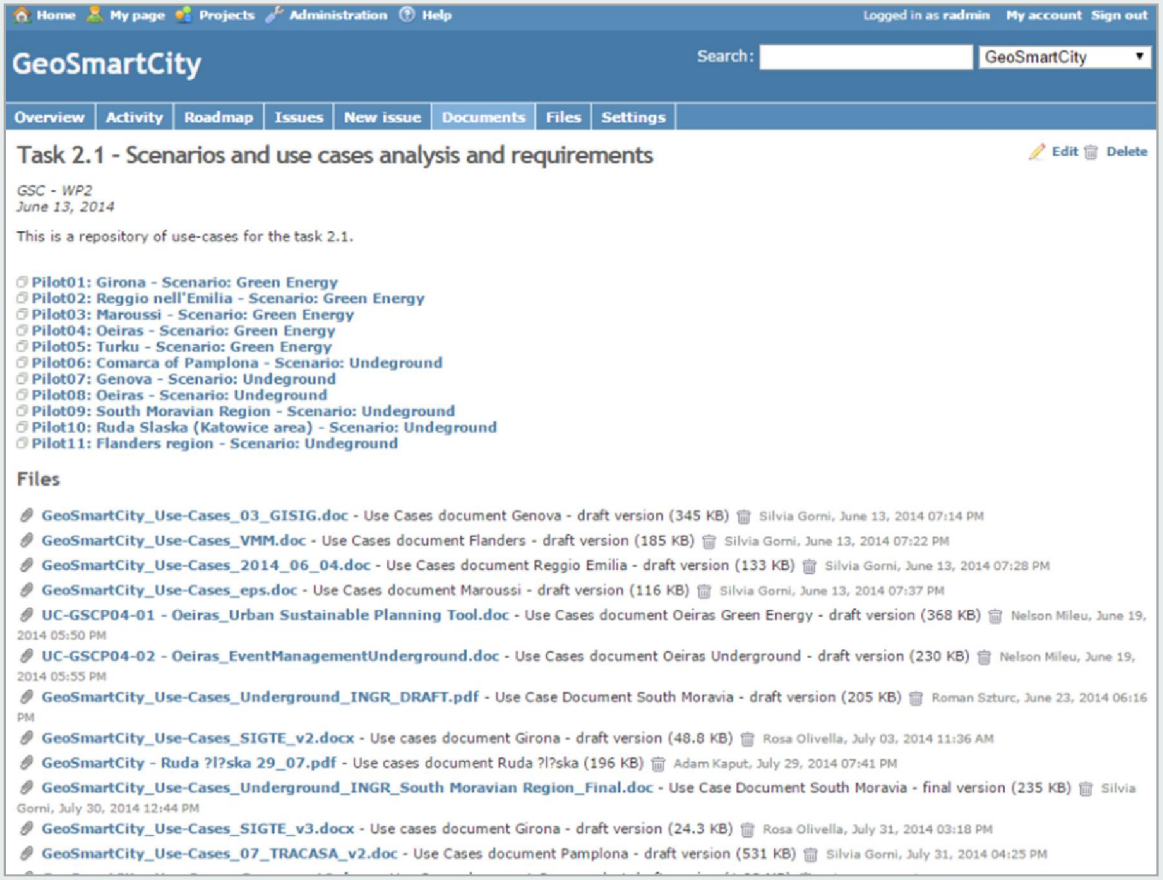
WP2 System architecture and data content
Task 2.1 – Scenarios and use cases analysis and requirements

Project co-funded by the European Commission within the ICT Policy Support Programme

- Focus on Use Case analysis and description (and also early requirements collection)
- Introduces the methodology for the second step " Functional Requirements analysis
- Based on a common use cases definition

Pilots are not immutable, some use case have been refined or better described the during technical specification phase

USE CASES AND REQUIREMENTS



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Task 2.1 - Scenarios and use cases analysis and requirements

Edit Delete

GSC - WP2
June 13, 2014

This is a repository of use-cases for the task 2.1.

- Pilot01: Girona - Scenario: Green Energy
- Pilot02: Reggio nell'Emilia - Scenario: Green Energy
- Pilot03: Maroussi - Scenario: Green Energy
- Pilot04: Oeiras - Scenario: Green Energy
- Pilot05: Turku - Scenario: Green Energy
- Pilot06: Comarca of Pamplona - Scenario: Undeground
- Pilot07: Genova - Scenario: Undeground
- Pilot08: Oeiras - Scenario: Undeground
- Pilot09: South Moravian Region - Scenario: Undeground
- Pilot10: Ruda Slaska (Katowice area) - Scenario: Undeground
- Pilot11: Flanders region - Scenario: Undeground

Files

- GeoSmartCity_Use-Cases_03_GISIG.doc - Use Cases document Genova - draft version (345 KB) Silvia Gorni, June 13, 2014 07:14 PM
- GeoSmartCity_Use-Cases_VMM.doc - Use Cases document Flanders - draft version (185 KB) Silvia Gorni, June 13, 2014 07:22 PM
- GeoSmartCity_Use-Cases_2014_06_04.doc - Use Cases document Reggio Emilia - draft version (133 KB) Silvia Gorni, June 13, 2014 07:28 PM
- GeoSmartCity_Use-Cases_eps.doc - Use Cases document Maroussi - draft version (116 KB) Silvia Gorni, June 13, 2014 07:37 PM
- UC-GSCP04-01 - Oeiras_Urban Sustainable Planning Tool.doc - Use Cases document Oeiras Green Energy - draft version (368 KB) Nelson Mileu, June 19, 2014 05:50 PM
- UC-GSCP04-02 - Oeiras_EventManagementUnderground.doc - Use Cases document Oeiras Underground - draft version (230 KB) Nelson Mileu, June 19, 2014 05:55 PM
- GeoSmartCity_Use-Cases_Underground_INGR_DRAFT.pdf - Use Case Document South Moravia - draft version (205 KB) Roman Szturc, June 23, 2014 06:16 PM
- GeoSmartCity_Use-Cases_SIGTE_v2.docx - Use cases document Girona - draft version (48.8 KB) Rosa Olivella, July 03, 2014 11:36 AM
- GeoSmartCity - Ruda ?l?ska 29_07.pdf - Use cases document Ruda ?l?ska (196 KB) Adam Kaput, July 29, 2014 07:41 PM
- GeoSmartCity_Use-Cases_Underground_INGR_South Moravian Region_Final.doc - Use Case Document South Moravia - final version (235 KB) Silvia Gorni, July 30, 2014 12:44 PM
- GeoSmartCity_Use-Cases_SIGTE_v3.docx - Use cases document Girona - draft version (24.3 KB) Rosa Olivella, July 31, 2014 03:18 PM
- GeoSmartCity_Use-Cases_07_TRACASA_v2.doc - Use Cases document Pamplona - draft version (531 KB) Silvia Gorni, July 31, 2014 04:25 PM

USE CASES AND REQUIREMENTS

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- Pilot11: Flanders region - Scenario: Undeground

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- GeoSmartCity_Use-Cases_eps.doc - Use Cases docu
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- GeoSmartCity_Use-Cases_Underground_INGR_DR
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- GeoSmartCity_Use-Cases_SIGTE_v2.docx - Use cas
- GeoSmartCity - Ruda ?l?ska 29_07.pdf - Use cases
- GeoSmartCity_Use-Cases_Underground_INGR_So
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- GeoSmartCity_Use-Cases_SIGTE_v3.docx - Use cas
- GeoSmartCity_Use-Cases_07_TRACASA_v2.doc -

GeoSmartCity

Initial conditions

List the conditions/constraints which need to be taken into account during the execution of the use case. For example the actor has to download an application for running the system locally or some configurations have to be done prior to executing the use case, etc.

Example:

- The user must be logged
- Data is available and published via OGC services…
- Data should be harmonized in…
- The user must approve license conditions first
- …

Main process

Simply imagine the operation of the system and document the steps in using it. Be short and concise in describing the interactions between the system and its external actors, related to a particular goal.

Describe the consecutive steps (Flow of Events) during the main process of the use case in the following form: *ACTOR does something.*

Example:

1. The PLANNER and/or the RESEARCHER logs in into the SYSTEM
2. The SYSTEM provides…
3. The USER can make a choice between…
4. The USER selects…
5. The SYSTEM returns…
6. …

Alternative process (Optional)

Description of the consecutive steps in an alternative process.

Example:

- Instead the steps X to Y, A to D can be chosen

Exceptional Situations (Optional)

Description of exceptional situations which can occur during the execution of the use case including the step in which the situation can occur and the handling of the exception by the SYSTEM

Example:

- Main process step 5: Online connection to web service not available
  - SYSTEM displays error message

GeoSmartCity

Use case main user/functional requirements

Based on the workflow detailed before (Main process), here we ask you to list all functions that the GeoSmartCity system is supposed to accomplish to fulfil the objective of your use case.

Example:

- The GeoSmartCity Hub should handle and process the…
- The GeoSmartCity mobile client should be able to…
- …

Final results

Description of results of the use case execution, e.g. generated datasets (persistent or not, form of data set, e.g. file, report, database) or a certain state of the system.

Example:

- Geodata in different layers are available to planners and professionals for browsing and analysis….
- WMS and/or WFS can be integrated into a Desktop GIS
- …

UML Activity diagram (Optional)

Activity diagrams are graphical representations of step-by-step workflows of activities and actions.

There are some good free open source UML tools you can choose.

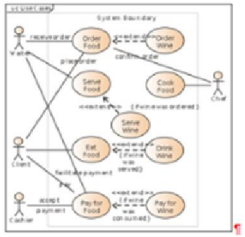
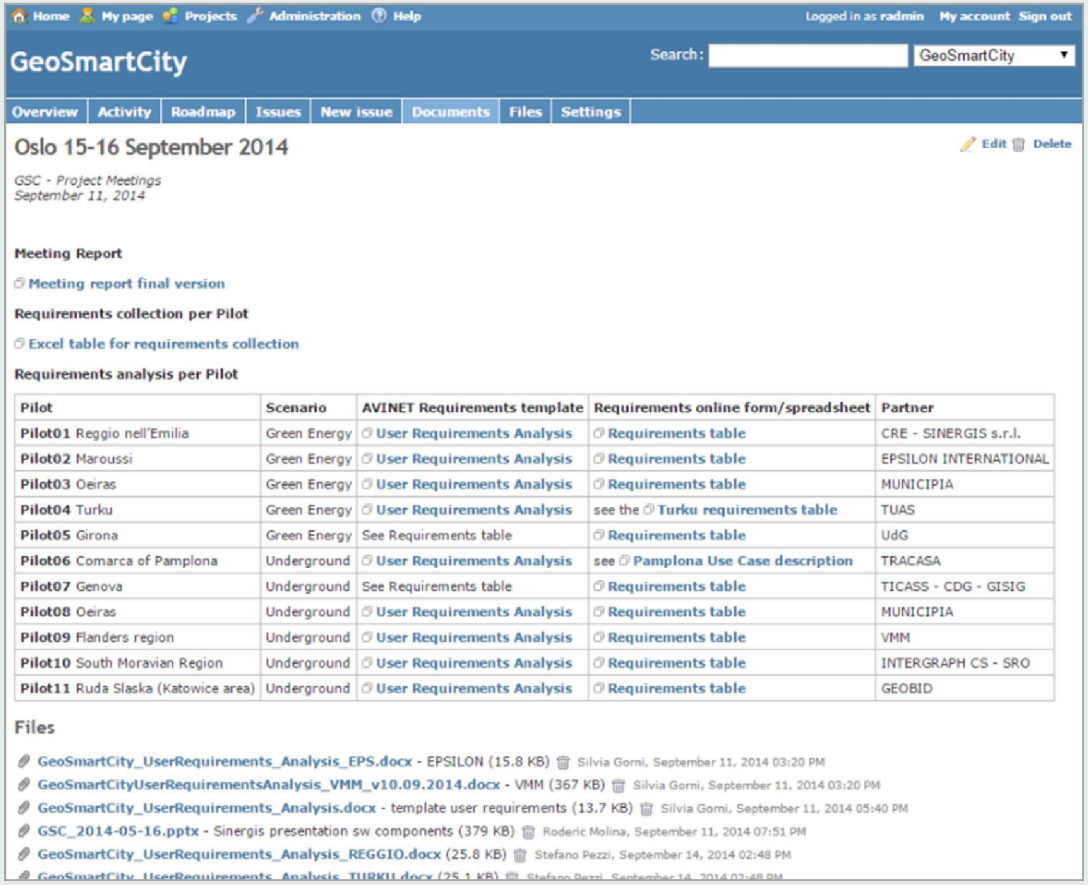


Figure 1: Use Case "XXXXXX" UML diagram

USE CASES AND REQUIREMENTS



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Oslo 15-16 September 2014

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GSC - Project Meetings
September 11, 2014

Meeting Report

Meeting report final version

Requirements collection per Pilot

Excel table for requirements collection

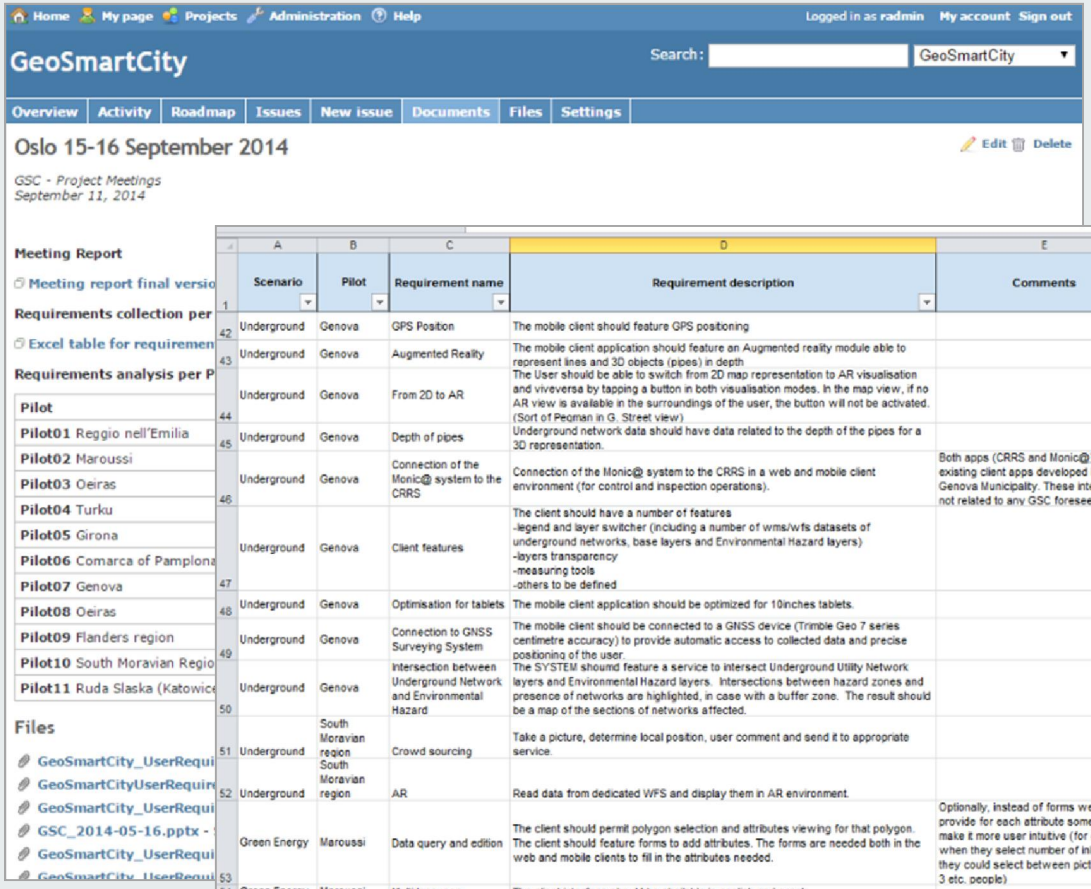
Requirements analysis per Pilot

Pilot	Scenario	AVINET Requirements template	Requirements online form/spreadsheet	Partner
Pilot01 Reggio nell'Emilia	Green Energy	User Requirements Analysis	Requirements table	CRE - SINERGIS s.r.l.
Pilot02 Maroussi	Green Energy	User Requirements Analysis	Requirements table	EPSILON INTERNATIONAL
Pilot03 Oeiras	Green Energy	User Requirements Analysis	Requirements table	MUNICIPIA
Pilot04 Turku	Green Energy	User Requirements Analysis	see the Turku requirements table	TUAS
Pilot05 Girona	Green Energy	See Requirements table	Requirements table	UdG
Pilot06 Comarca of Pamplona	Underground	User Requirements Analysis	see Pamplona Use Case description	TRACASA
Pilot07 Genova	Underground	See Requirements table	Requirements table	TICASS - CDG - GISIG
Pilot08 Oeiras	Underground	User Requirements Analysis	Requirements table	MUNICIPIA
Pilot09 Flanders region	Underground	User Requirements Analysis	Requirements table	VMM
Pilot10 South Moravian Region	Underground	User Requirements Analysis	Requirements table	INTERGRAPH CS - SRO
Pilot11 Ruda Slaska (Katowice area)	Underground	User Requirements Analysis	Requirements table	GEOBID

Files

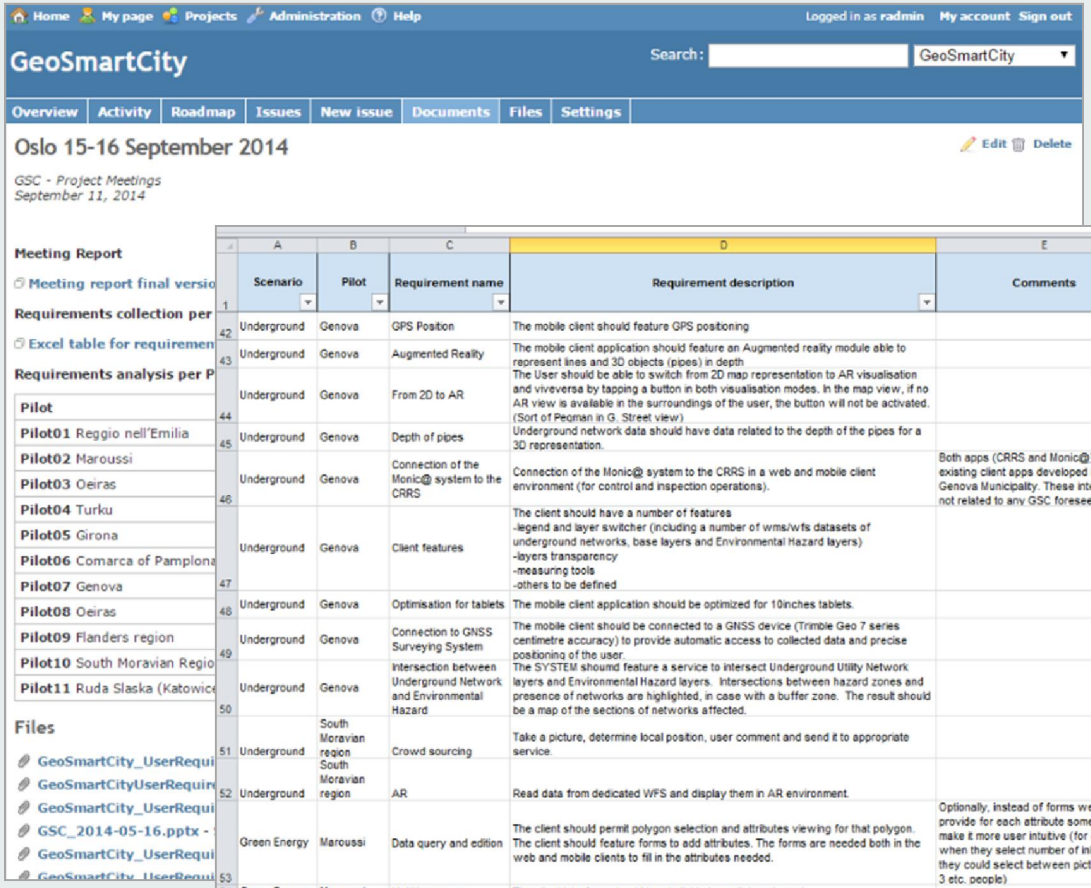
- GeoSmartCity_UserRequirements_Analysis_EPS.docx - EPSILON (15.8 KB) Silvia Gorni, September 11, 2014 03:20 PM
- GeoSmartCityUserRequirementsAnalysis_VMM_v10.09.2014.docx - VMM (367 KB) Silvia Gorni, September 11, 2014 03:20 PM
- GeoSmartCity_UserRequirements_Analysis.docx - template user requirements (13.7 KB) Silvia Gorni, September 11, 2014 05:40 PM
- GSC_2014-05-16.pptx - Sinergis presentation sw components (379 KB) Roderic Molina, September 11, 2014 07:51 PM
- GeoSmartCity_UserRequirements_Analysis_REGGIO.docx (25.8 KB) Stefano Pezzi, September 14, 2014 02:48 PM
- GeoSmartCity_UserRequirements_Analysis_TURKU.docx (25.1 KB) Stefano Pezzi, September 14, 2014 02:48 PM

USE CASES AND REQUIREMENTS



	A	B	C	D	E	F	G	H	I
1	Scenario	Pilot	Requirement name	Requirement description	Comments	Use Case	Class	Category	Requirement Type
42	Underground	Genova	GPS Position	The mobile client should feature GPS positioning		UC-GSCP07-02, UC-GSCP07-03	Generic	Functional Requirement	Hardware / Software
43	Underground	Genova	Augmented Reality	The mobile client application should feature an Augmented reality module able to represent lines and 3D objects (pipes) in depth		UC-GSCP07-02, UC-GSCP07-03	Application specific	Functional Requirement	Hardware / Software
44	Underground	Genova	From 2D to AR	The User should be able to switch from 2D map representation to AR visualisation and viveversa by tapping a button in both visualisation modes. In the map view, if no AR view is available in the surroundings of the user, the button will not be activated. (Sort of Pegman in G. Street view)		UC-GSCP07-02, UC-GSCP07-03	Application specific	Non Functional Requirement	Hardware / Software
45	Underground	Genova	Depth of pipes	Underground network data should have data related to the depth of the pipes for a 3D representation.		UC-GSCP07-02, UC-GSCP07-03	Application specific	Functional Requirement	Data / Metadata
46	Underground	Genova	Connection of the Monic@ system to the CRRS	Connection of the Monic@ system to the CRRS in a web and mobile client environment (for control and inspection operations).	Both apps (CRRS and Monic@) are existing client apps developed by the Genova Municipality. These integration is not related to any GSC foreseen activity	UC-GSCP07-02	Application specific	Functional Requirement	Hardware / Software
47	Underground	Genova	Client features	The client should have a number of features -legend and layer switcher (including a number of wms/wfs datasets of underground networks, base layers and Environmental Hazard layers) -layers transparency -measuring tools -others to be defined		All	Generic	Functional Requirement	Hardware / Software
48	Underground	Genova	Optimisation for tablets	The mobile client application should be optimized for 10inches tablets.		UC-GSCP07-02, UC-GSCP07-03	Application specific	Functional Requirement	Hardware / Software
49	Underground	Genova	Connection to GNSS Surveying System	The mobile client should be connected to a GNSS device (Trimble Geo 7 series centimetre accuracy) to provide automatic access to collected data and precise positioning of the user.		UC-GSCP07-03	Application specific	Functional Requirement	Hardware / Software
50	Underground	Genova	Intersection between Underground Network and Environmental Hazard	The SYSTEM shoumd feature a service to intersect Underground Utility Network layers and Environmental Hazard layers. Intersections between hazard zones and presence of networks are highlighted, in case with a buffer zone. The result should be a map of the sections of networks affected.		UC-GSCP07-04	Application specific	Functional Requirement	Services
51	Underground	South Moravian region	Crowd sourcing	Take a picture, determine local position, user comment and send it to appropriate service.		UC-GSCP09-01	Generic	Functional Requirement	Services
52	Underground	South Moravian region	AR	Read data from dedicated WFS and display them in AR environment.		UC-GSCP09-01	Application specific	Functional Requirement	Data / Metadata
53	Green Energy	Maroussi	Data query and edition	The client should permit polygon selection and attributes viewing for that polygon. The client should feature forms to add attributes. The forms are needed both in the web and mobile clients to fill in the attributes needed.	Optionally, instead of forms we could provide for each attribute some pictures to make it more user intuitive (for example when they select number of inhabitants, they could select between pictures of 1-2-3 etc. people)				
54	Green Energy	Maroussi	Multi language	The client interface should be abailable in english and greek.	Moreover, if you think it is possible, we could make available an option for using				

USE CASES AND REQUIREMENTS



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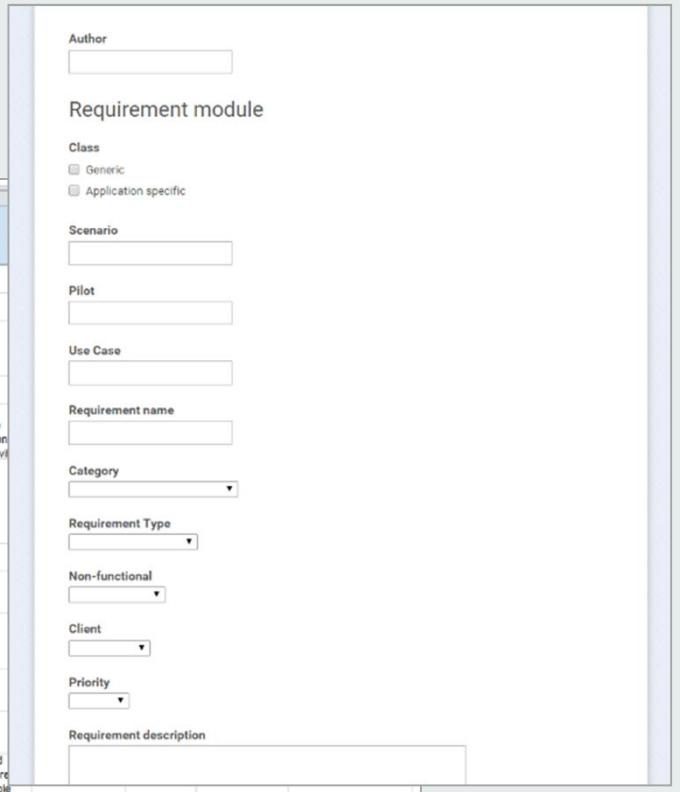
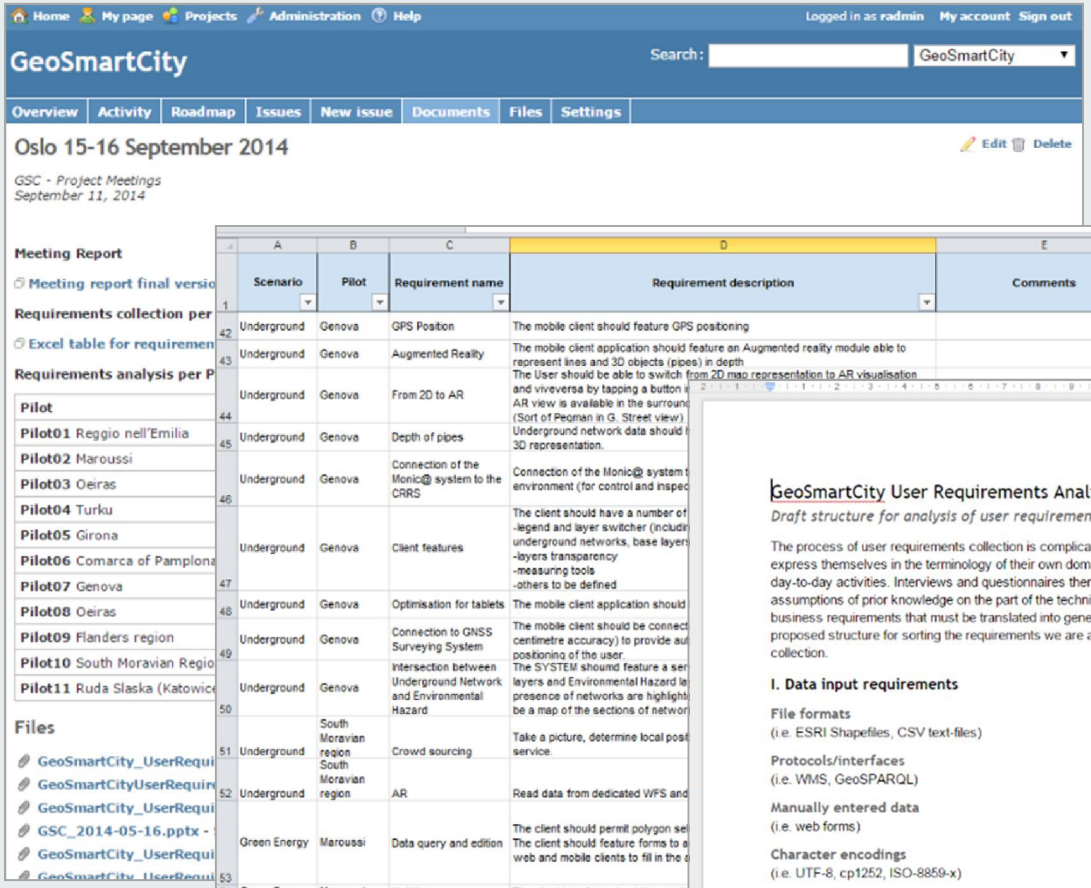


USE CASES AND REQUIREMENTS



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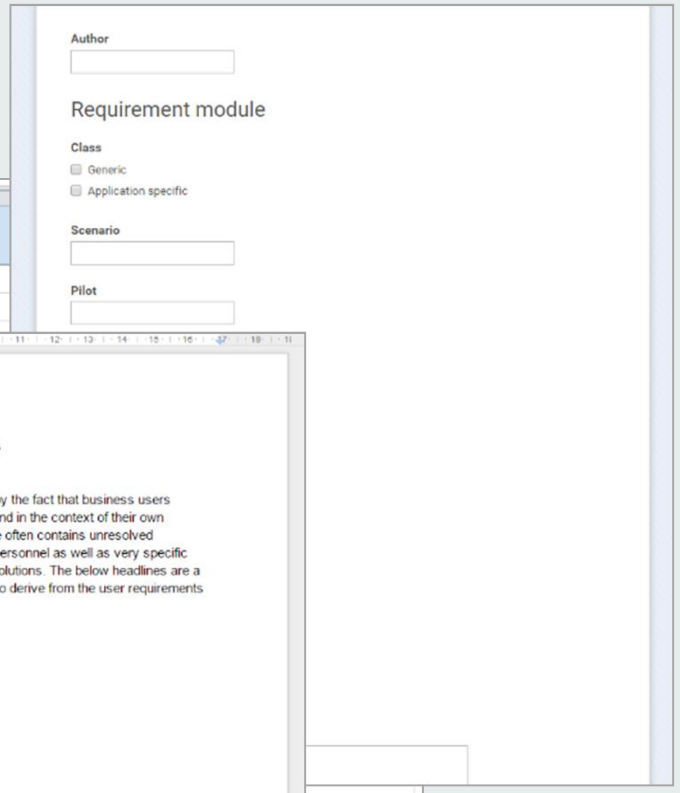

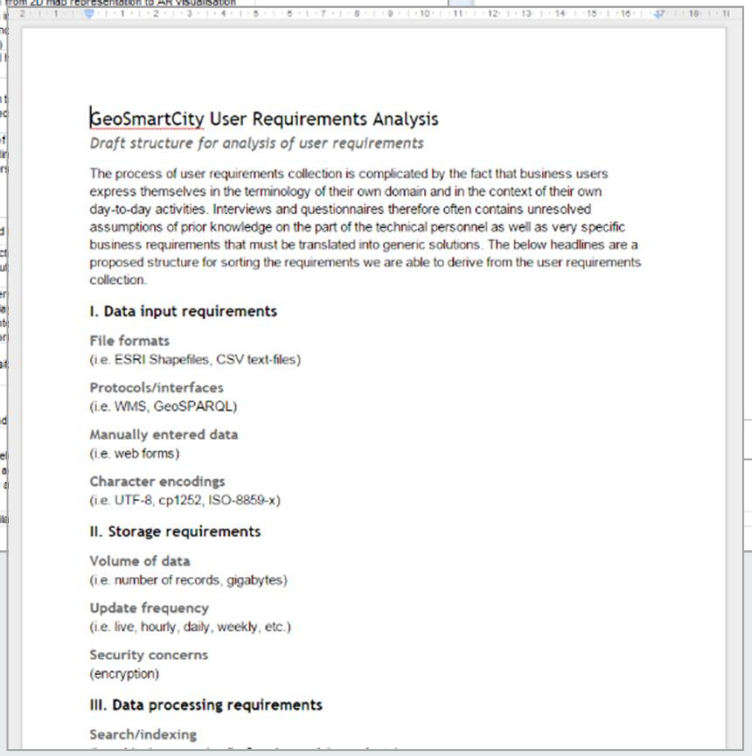

GeoSmartCity User Requirements Analysis

Draft structure for analysis of user requirements

The process of user requirements collection is complicated by the fact that business users express themselves in the terminology of their own domain and in the context of their own day-to-day activities. Interviews and questionnaires therefore often contains unresolved assumptions of prior knowledge on the part of the technical personnel as well as very specific business requirements that must be translated into generic solutions. The below headlines are a proposed structure for sorting the requirements we are able to derive from the user requirements collection.

I. Data input requirements

File formats
(i.e. ESRI Shapefiles, CSV text-files)

Protocols/interfaces
(i.e. WMS, GeoSPARQL)

Manually entered data
(i.e. web forms)

Character encodings
(i.e. UTF-8, cp1252, ISO-8859-x)

II. Storage requirements

Volume of data
(i.e. number of records, gigabytes)

Update frequency
(i.e. live, hourly, daily, weekly, etc.)

Security concerns
(encryption)

III. Data processing requirements

Search/indexing

GREEN ENERGY SCENARIO

GeoSmartCity

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

Virtual hub

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

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

Innovative services

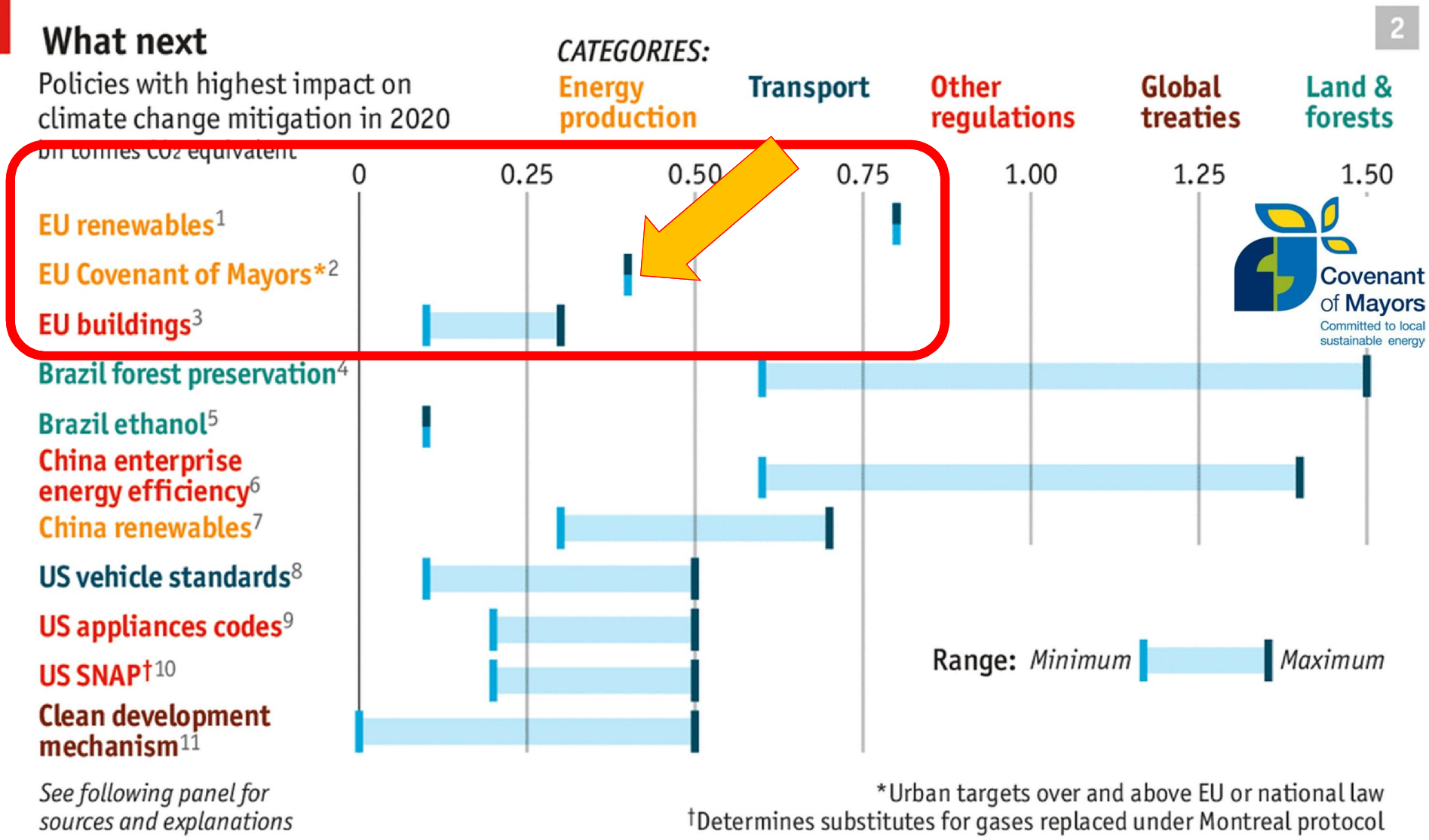
To facilitate the day-to-day operation and management of key municipal infrastructure sectors and public utilities activities. Learn more

SINERGIS

Commonalities

- Pilots to consider not only their “own” requirements and needs, but share with other pilots possible use cases
- From the EU point of view all 5 pilots have something in common (a “fil rouge”)
- In the case of “Green Energy” scenario the fil rouge is definitely represented by the Covenant of Mayor (CoM)
- CoM may cover all use cases and requirements expressed by each pilot on
  - energy performance of buildings (municipal, residential, …)
  - transportation

http://www.eumayors.eu/IMG/pdf/seap_guidelines_en.pdf



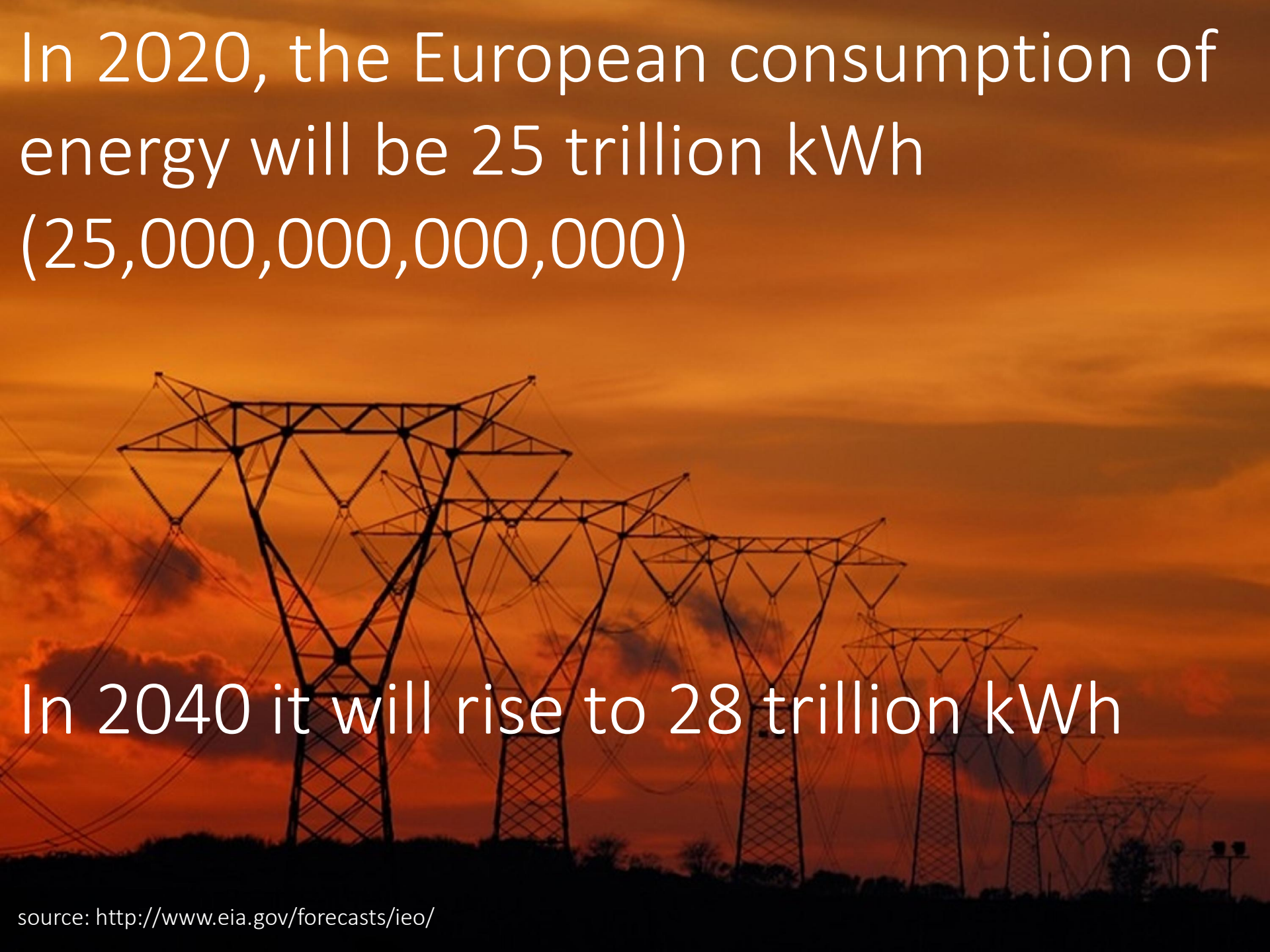
http://www.economist.com/news/briefing/21618680-our-guide-actions-have-done-most-slow-global-warming-deepest-cuts

Few (big) numbers
with focus on “buildings”

Europe 2011 - Energy Flow (MTOE)

source: http://ec.europa.eu/energy/publications/doc/2013_pocketbook.pdf

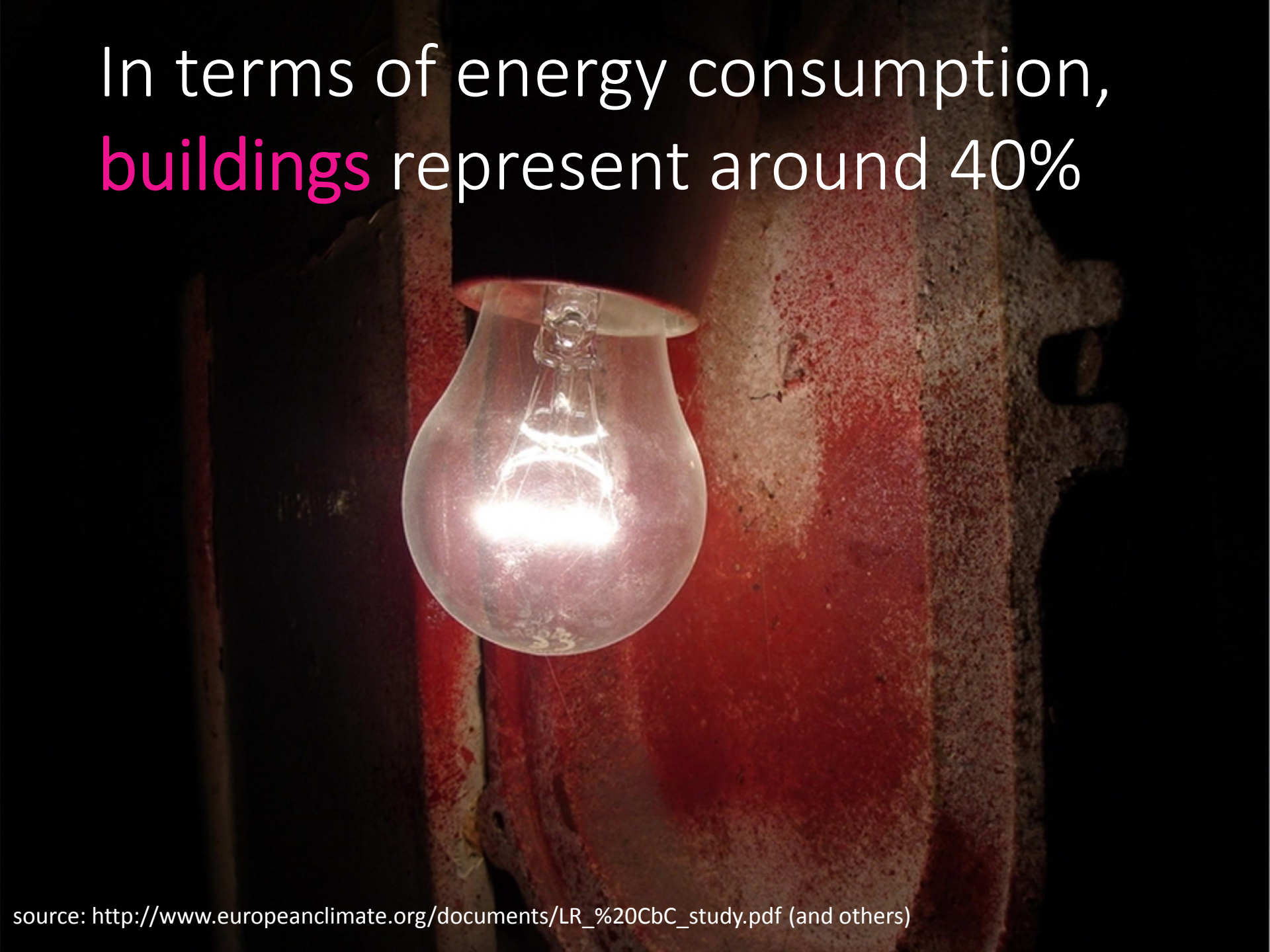
In 2020, the European consumption of energy will be 25 trillion kWh (25,000,000,000,000)



In 2040 it will rise to 28 trillion kWh

source: http://www.eia.gov/forecasts/ieo/

In terms of energy consumption, buildings represent around 40%

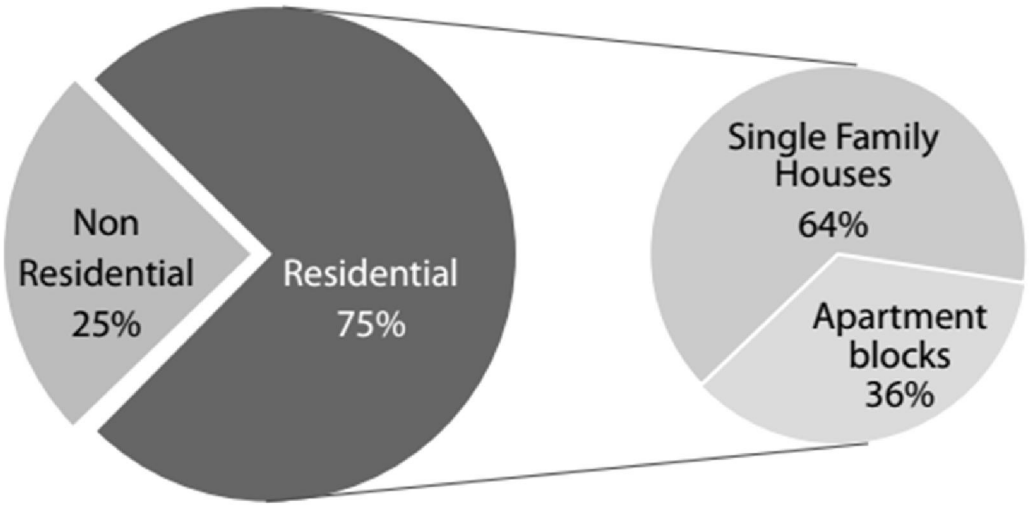


source: http://www.europeanclimate.org/documents/LR_%20CbC_study.pdf (and others)

In EU, the gross floor space could be concentrated in a land area equivalent to that of Belgium (30,528 km2).

Source: BPIE survey

Residential building stock (m²)



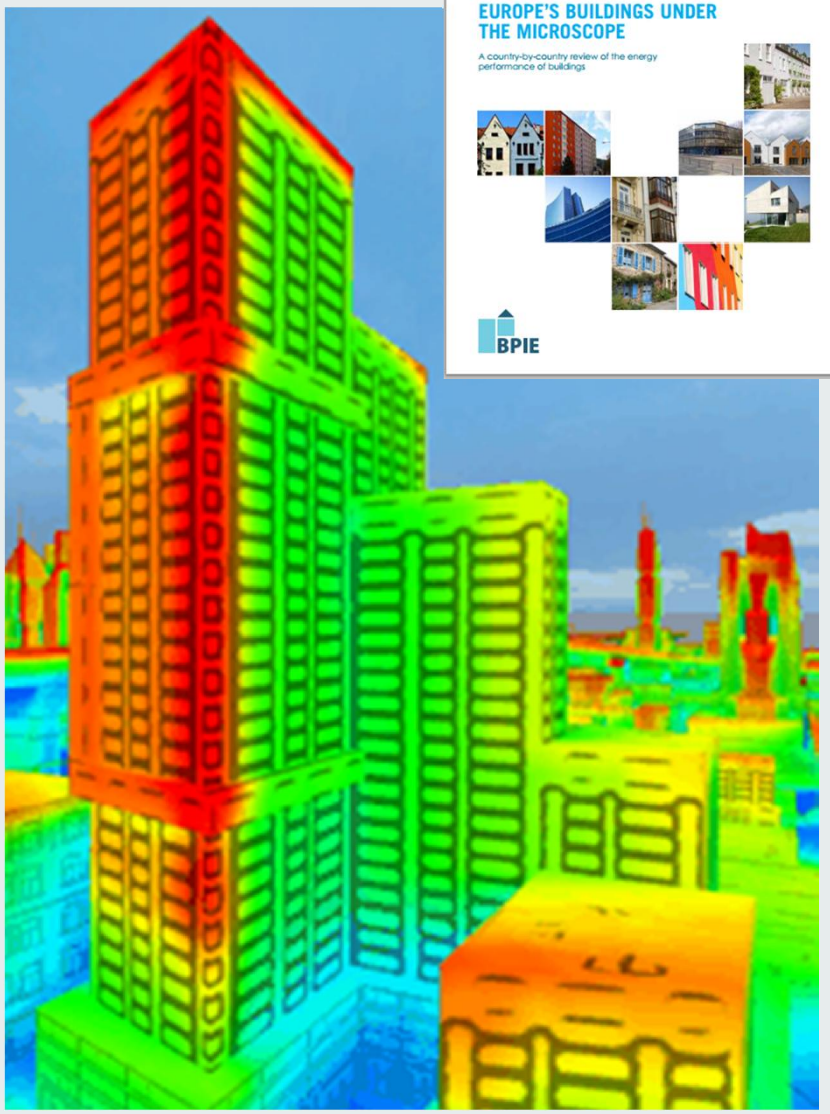
Non-residential building stock (m²)

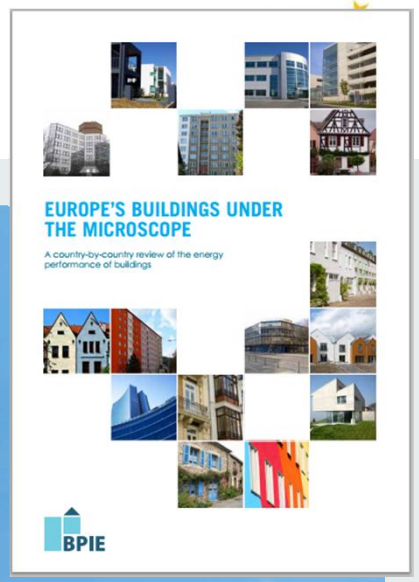
source: http://www.europeanclimate.org/documents/LR_%20CbC_study.pdf

European **households** are responsible for **68%** of the total final energy use in buildings, for:

- heating (**70%**)
- cooling
- hot water
- cooking
- appliances

The most used fuel is gas.





source: http://www.europeanclimate.org/documents/LR_%20CbC_study.pdf

PILOTS GREEN ENERGY

Applications Showcase

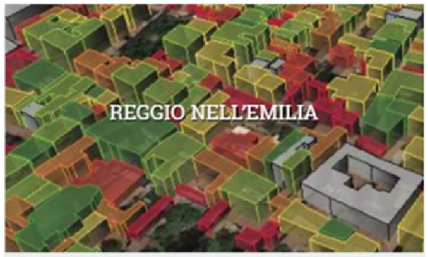
11 Smart City operative applications demonstrating the added value services of the Hub.

Apps Showcase

GeoSmartCity Showcase

Project website | Contact Us

Green Energy applications



Reggio nell'Emilia | Italy

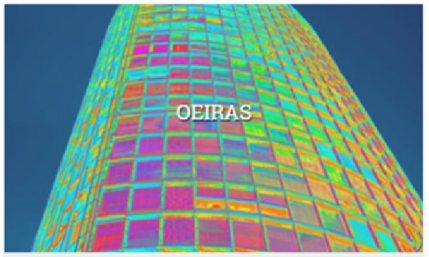
Specialized services for integration and harmonization of buildings energy consumption data.

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

Turku | Finland

Supporting the reduction of traffic emissions trough "green" routing and parking applications.

View details

Girona | Spain

Supporting and promoting bicicle mobility trough open data provission and routing functionalities.

View details

- 5 pilot cities involved in this scenario
  - Reggio Emilia (Italy)
  - Maroussi (Greece)
  - Oeiras (Portugal)
  - Turku (Finland)
  - Girona (Spain)

- 13 Use Cases collected

- 61 requirements (functional, non-functional, generic)

Data will mainly regard:

- Buildings (municipal, residential, …)
- Transport (focus on bike)

Buildings and transport represent GHG emission sources.

All five pilot cities are indeed signatories of the **Covenant of Mayors** and need to:

- monitor GHG emission sources
- provide information to stakeholders

Reggio Emilia (Italy)

Use cases

- Publication of **energy performance and consumption** of municipal buildings
- Publication of energy performance of other buildings

General objectives

- Integrate geodata and energy data for strategic purposes
- Provide integrated open geodata

Main requirements

- Estimate energy performance and CO2 emissions
- Energy maps and reports, interoperable access to data

Maroussi (Greece)

Use cases

- Data collection via field survey and crowdsourcing
- Energy map creation
- Data publication

General objectives

- Enable citizens and SMEs to make valuable comments and enhance their energy consumption behavior

Main requirements

- Mobile app for editing buildings' properties
- Searching capabilities for buildings
- Provide open geodata through the hub

Oeiras (Portugal)

Use cases

- Urban sustainable planning tool
- Zero-balance calculation
- Calculation of energy performance of buildings

General objectives

- Monitor energy consumption in public buildings
- Achieve a balance between various urban areas

Main requirements

- Calculate solar potential and electric balance
- Reports, statistics

Turku (Finland)

Use cases

- Selecting green route
- Green driving
- Green parking

General objectives

- Shift from private to public transportation in commuter traffic
- Acquire real-life information that can be utilized in city planning and decision making

Main requirements

- Bike routing, bus timetables, paths for commuters
- Estimation of fuel consumption, collect stats

Girona (Spain)

Use cases

- “I want to ride my bicycle, I want to ride it where I like”
- Find healthy bike route

General objectives

- Encourage alternative/light transportation
- Involve city users and stakeholders in data integration

Main requirements

- Provide updates to OpenStreetMap
- Estimate pollution, calculate bike routing

Conclusions

The relationship with Covenant of Mayors can be basically found in the definition of the Baseline Emissions Inventory (BEI) and the Monitoring Emissions Inventory (MEI) as two pillars of the Sustainable Energy Action Plan (SEAP).

BEI is a prerequisite to SEAP elaboration, as it will provide knowledge of the nature of the entities emitting CO2 on the municipality's territory, and will thus help select the appropriate actions. Inventories conducted in later years will allow determining if the actions provide sufficient CO2 reductions and if further actions are necessary.

http://www.eumayors.eu/IMG/pdf/seap_guidelines_en.pdf

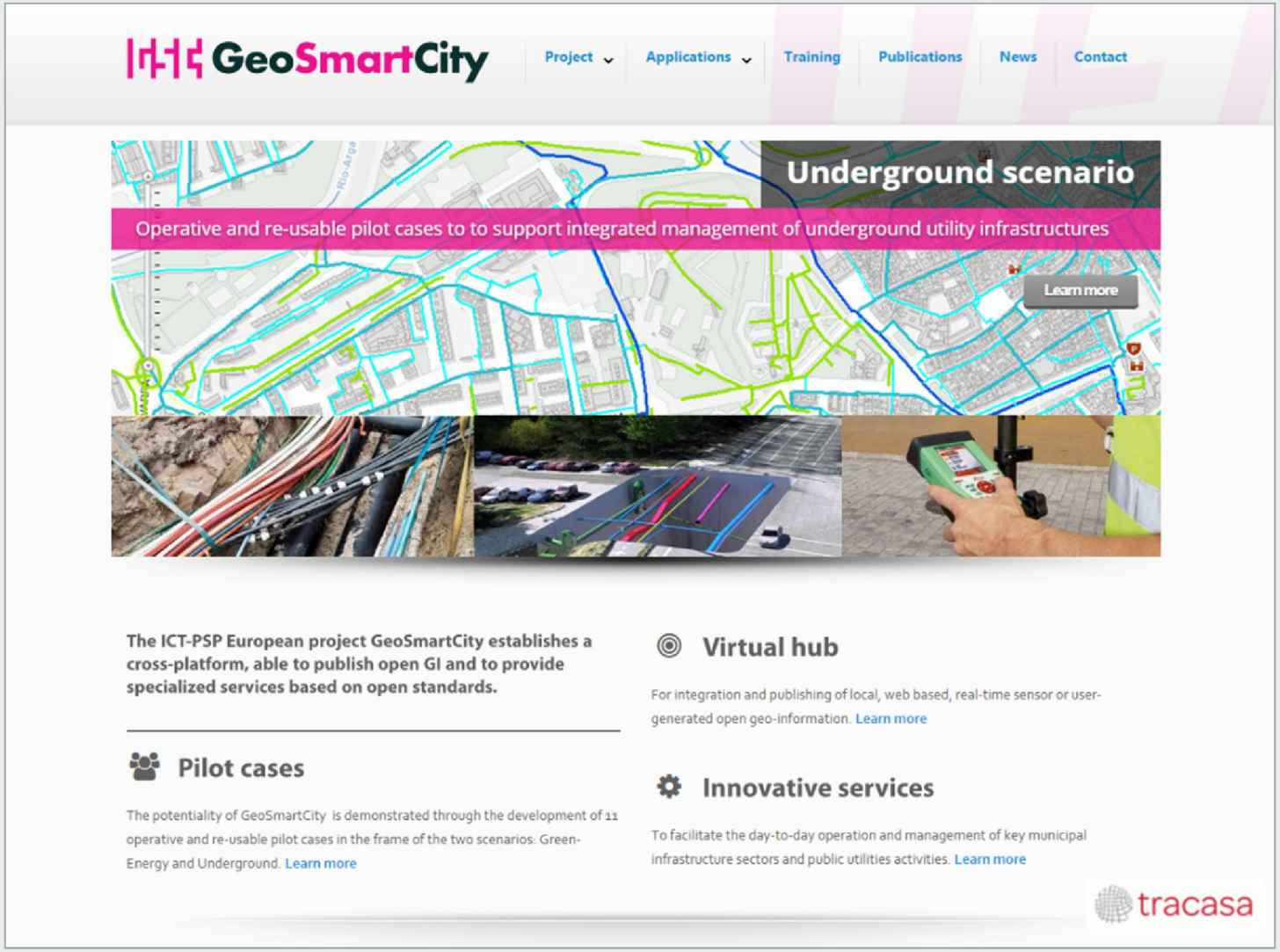
Here are some specific points of attention:

- The BEI has to be relevant to the local situation, i.e. based on energy consumption/production data, mobility data etc within the territory of the local authority. Estimates based on national/regional averages would not be appropriate in most cases, as they do not allow to capture the efforts made by the local authority to reach its CO_2 targets.
- The methodology and data sources should be consistent through the years.
- The BEI must cover at least the sectors in which the local authority intends to take action to meet the emission reduction target, i.e. all sectors that represent significant CO_2 emission sources: residential, municipal and tertiary buildings and facilities, and transport.
- The BEI should be accurate, or at least represent a reasonable vision of the reality.
- The data collection process, data sources and methodology for calculating the BEI should be well documented (if not in the SEAP then at least in the local authority's records).

unit at his/her disposal, with several staff. Depending on the size of the local authority, one person dedicated to data collection and CO_2 inventory may also be necessary.

http://www.eumayors.eu/IMG/pdf/seap_guidelines_en.pdf

Underground Scenario



UNDERGROUND SCENARIO

Status

- 6 pilot sites in EU
- 12 Use cases
- 61 User/System Requirements

Commonalities

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

PILOTS UNDERGROUND

Applications Showcase

11 Smart City operative applications demonstrating the added value services of the Hub.

Apps Showcase

GeoSmartCity *Showcase*

Project website | Contact Us

Underground Management applications

Comarca de Pamplona | Spain

Improving GIS existing platform with real-time information provided by smart sensors through a SCADA system.

View details

Genova | Italy

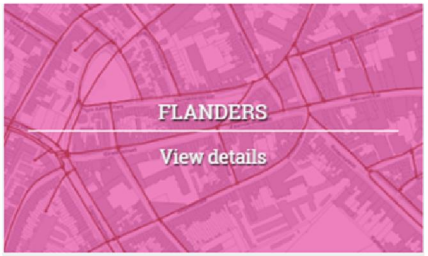
Integrated management of the utility networks and use of mobile client for data management and field works.

View details

Oeiras | Portugal

Implementing an event management platform (ruptures in water network) based on a mobile crowdsourcing app.

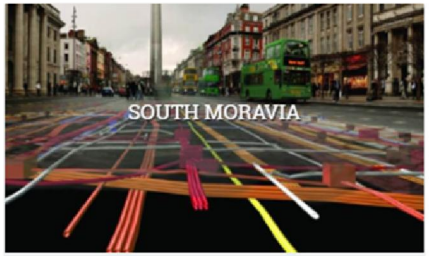
View details



Flanders region

Mobile application for the management of the sewage database and crowdsourcing tool.

View details



South Moravian region

Mobile crowdsourcing app to report a problems on the underground infrastructure and Augmented Reality.

View details

Ruda Śląska | Poland

integrated WebGIS platform giving the ability to verify/update basic information on the underground networks.

View details

Pamplona (Spain)

Use cases:

- Consulting real-time data of the water supply and sanitation systems in a GIS viewer.
- Check smart sensor values or incidents in networks

General Objectives:

- They want to improve the water and sewage GIS existing platform:
- Integrating **real-time information** provided by smart sensors through a SCADA system (a computer system for gathering and analyzing real time data)
- Consult a map with values from sensors or incidents from SCADA

Main requirements:

- The SCADA system should be linked to the GIS through standardized protocols
- An interface should enable the user to communicate with the SCADA system to consult the real-time data
- The platform should enable the user to generate thematic maps (geoprocessing)

Genova (Italy)

Use cases:

- Underground Cadastre
- Excavation procedure
- Field works
- Underground networks and environmental hazards

General Objectives:

- **Integrate different underground information** layers from different actors (mainly Municipality and Multi-utilities)
- Include **INSPIRE** compliant data in the city underground data management workflow (Harmonisation of gas, water and sewer datasets)
- Use of mobile client for data management
- Use of advanced visualization techniques such as **Augmented Reality**
- Use of a high precision positioning (**GNSS**) device integrated with mobile client for field works
- Intersection between Underground Network and **Environmental Hazard information**

Oeiras (Portugal)

Use cases:

- Underground Event Management

General Objectives:

- As in the case of the Oeiras Pilot in the Green Energy scenario, the Municipality wants to implement an event management platform.
- This platform will take shape in a mobile **crowdsourcing** app for characterization and location of **ruptures in water network**.
- The System shall serve as a Metadata and Open Data provider through Web Services (WMS, WCS, ...).

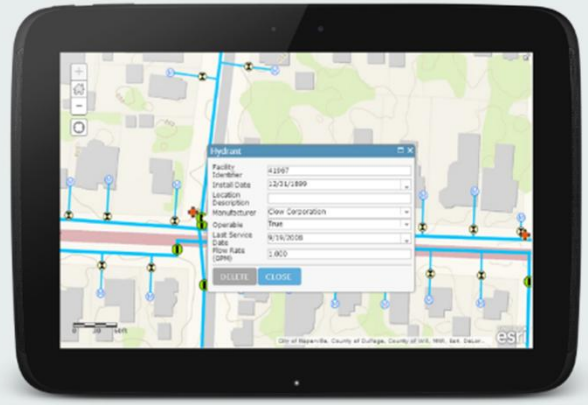
Main requirements:

- An authenticated user must approve the crowdsourcing inputs to appear on the map.
- The web client should ensure different authentication levels depending on user roles.
- Open data: All information must be available to be used by applications from other stakeholders.

Flanders Region (Belgium)

Use cases:

- Mobile application for the management of the sewage database
- Crowd-sourcing tool



General Objectives:

- Focus on the conformance of the Flanders sewer network data to **INSPIRE** specifications
- Manage sewage network from a **mobile/web client** application
- Integrate in the system a **crowdsourcing** component so the sewage database can be consulted by the public in order to report possible anomalies or remarks.

Main requirements:

- The application must give the opportunity to professionals to enter data, upload different files and to propose changes to geodata.
- The updates (by the users) are live but will only be implemented in the sewage database after validation.

South Moravian Region (CZ)

Use cases:

•Mobile application

General Objectives:

•Focus the provision or **volunteered geographic information** (VGI) trough a mobile app to report a problems on the public underground infrastructure.
•Use of mobile clients by municipalities and companies technicians (equipped with innovative visualization features such as **Augmented Reality**) to support the management and update of existing data on the field.

Main requirements:

•Take a picture, determine local position, user comment and send it to appropriate service.
•Read data from dedicated WFS and display them in AR environment.

Ruda Śląska (Poland)

Use cases:

•An integrated WebGIS platform giving the ability to verify/update basic information on the underground networks and to share the data in order to clarify the ownership issues.

General Objectives:

•Similar to the Genova case, this pilot also focuses on the **integration and harmonization of the underground network** data coming from the municipality and the Utility companies.
•Data and specialized services will be integrated in existing GIS platform supporting an integrated approach on the management and maintenance of the networks.

Main requirements:

•Mobile and web clients
•Authenticated access to information and permission roles

Thank you
Gràcies
Gracias

Green Energy scenario
Piergiorgio Cipriano (Sinergis)

Underground Scenario
Maria Cabello (Tracasa)