i-Scope

interoperable Smart City services through an Open Platform for urban Ecosystems

Type of project
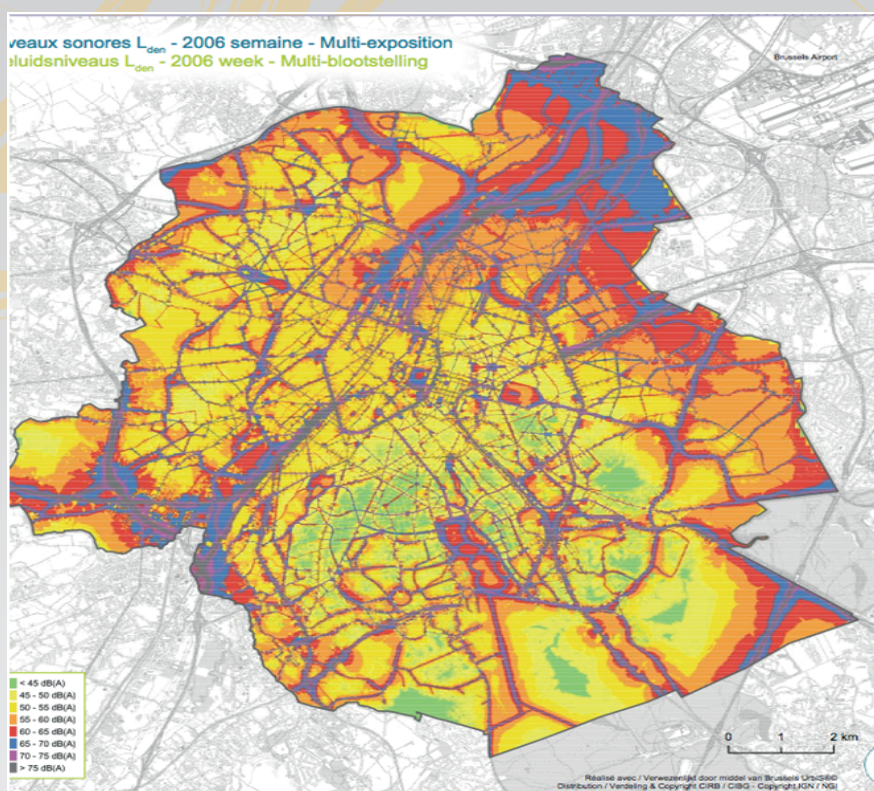*Competitiveness and Innovation FP ICT PSP*
Pilot Type B

RELEVANCE OF THE PROJECT OBJECTIVES

● The largest generation of 3D Urban Information Models (UIM), created from accurate urban-scale geospatial information, can be used to create smart web services based on geometric, semantic, morphological and structural information at urban scale level.

● Based on interoperable 3D UIMs, i-SCOPE delivers an open platform on top of wich it develops, within different domains, various 'smart city' services. These will be piloted and validated, within a number of EU cities involved in i-SCOPE.


THE OBJECTIVES OF THE PROPOSED SERVICE/SOLUTION

● Develop an open toolkit based on 3D UIMs according to the principles of SOA using open standards (OGC). This includes services capable to create CityGML models from data such as surface models (e.g. LIDAR), terrain models and building floor plans.

● Develop smart services to improve decision-making in planning processes and policy design at city- regions management levels, with regard to issues related to energy efficiency and noise levels, based on urban pattern and its morphology.

● Develop smart services to promote inclusion and mobility of differently-abled people and elderly users through technology that help them overcome barriers at city level and that support them during their daily urban trips.

Niveaux sonores L$_{den}$ - 2006 semaine - Multi-exposition
Geluidsniveaus L$_{den}$ - 2006 week - Multi-blootstelling

| < 45 dB(A) |
| 45 - 50 dB(A) |
| 50 - 55 dB(A) |
| 55 - 60 dB(A) |
| 60 - 65 dB(A) |
| 65 - 70 dB(A) |
| 70 - 75 dB(A) |
| > 75 dB(A) |

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● Develop smart services that can involve citizens at wider scale by collecting real-time location-based information at urban scale.

● Test smart services within a variety of network ecosystems ranging from city-wide sensor networks (Velletri, Italy), to large scale regional optic fibre networks (city of Trento and Lazio Region, Italy), to mobile location based services.

● Develop trustable, secure privacy schemes to ensure the highest level of protection of users' information. This is necessary since such a set of real-time, location-based mobility services poses significant security and privacy issues (due to traceability of people's location, actions, travel plans etc).

TECHNOLOGY

● i-SCOPE integrates a number existing technologies as federation of interoperable web-services which will ensure interoperability through support of OGC standards. The project is based on use of CityGML as Urban Information Model on top of which 3D smart city services are created. Smart services will be accessible via a web-based 3D client as well as through mobile applications that is used to crowdsource environmental (noise) data from the citizens.
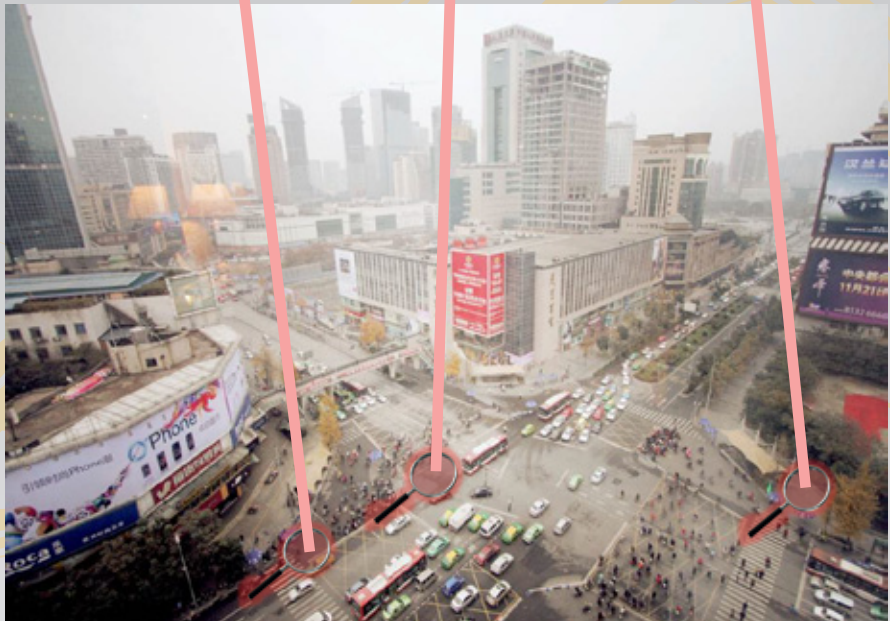
USAGE

1 - An App for smartphone and apps will be used by citizens to guide them through the city along barrier-free routes. Directions are provided as

    a) augmented reality on mobile devices
    b) spoken semantically rich instructions (describing the surrounding context in detailed manner)
    c) via portable Braille displays

2 - A 3D web application is used by city administrators and professionals to create very high-resolution solar potential maps based on interoperable 3D models of city. Professionals can also select the 3D building and attach information (thermo images) on energy loss of a building, including certification information.

3 - A 3D web application is used by city administrators and professionals to

    a) create detailed noise maps;
    b) visualise in 3D real-time noise mapping data;
    c) access historical data regarding noise maps. Citizens can use the App to provide real-time measurements of noise levels in parts of the cities (e.g. to file an official complaint for excessive noise exposure e.g. due to vicinity of roadwork or entertainment venues).

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OWNERSHIP

● The i-SCOPE toolkit will be open source, so will be the specifications created during the project, i.e. extension of current CityGML standard and creation of three Application Domain.
● Extensions for the three project scenarios. The EEIG will be responsible for future development and maintenance of i-SCOPE toolkit.

INVOLVEMENT OF CITY ADMINISTRATIONS

● The geographical distribution of partners is such that each city administration can closely cooperate with a technical partner at all stages of the project, creating an experimentation environment where users and producers co-create innovations within a Public-Private-People Partnerships (PPPP) for user-driven open innovation typical of Living Labs.

CityGML

THE CONSORTIUM:

 Project Coordinator

CONTACT US

For more information on the project visit www.iscopeproject.net or contact the coordinator:

**Dr. Raffaele De Amicis,
Fondazione Graphitech, Director
Via della cascata,56/c
38050- Trento, Italy
Office: +39 0461 283395
Fax: +39 0461 283398
Mobile ++39 331 610 45 69
http://www.graphitech.it/
Email: raffaele.de.amicis@graphitech.it
skype: rda_gt**

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