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smart webservices for mediterranean islands



Co-funded by the
European Commission
FP7/EC/ICT-PSP 270998

<http://www.smart-islands.eu>

About “Smart-Islands”

Project Overview

SMART-ISLANDS is an integration platform co-funded by the ICT/PSP EC Programme. It provides standardized webservices under a friendly 3D geo-specifically developed for this purpose.

The webservices cover aspects of every day’s life such as civil protection, environment, forest fires, tourism, retail operations, marketing, statistics, education, virtual touring, real time weather forecasting, transportation, yachting services and other.

The platform is open-ended. An API is made available to the developers’ community providing ability to developing additional webservices following standardized procedures as OGC and INSPIRE.

The project builds on past successful projects and products as EOMark for Marketing, Retailing & Statistic operations, LANDING (www.landing-eu.eu), 3D Aerodromes (www.3D-aerodromes.eu), Yachting & Tourism (www.yachting123.com, www.medisolae-3d.eu, www.yassoo.travel; Santorini), SCIER (www.scier.eu) for Civil Protection, ArcFIRE for Forest Fires (www.seixsou-forest.gr) and others.

The SMART-ISLANDS development requires 150 person-months and a costs €1,5m. It is developed by 10 partners from Greece, Cyprus, Italy, Spain, Germany and Malta. The project covers Mediterranean Islands, whilst Hydra and Malta will be two “showcases”.

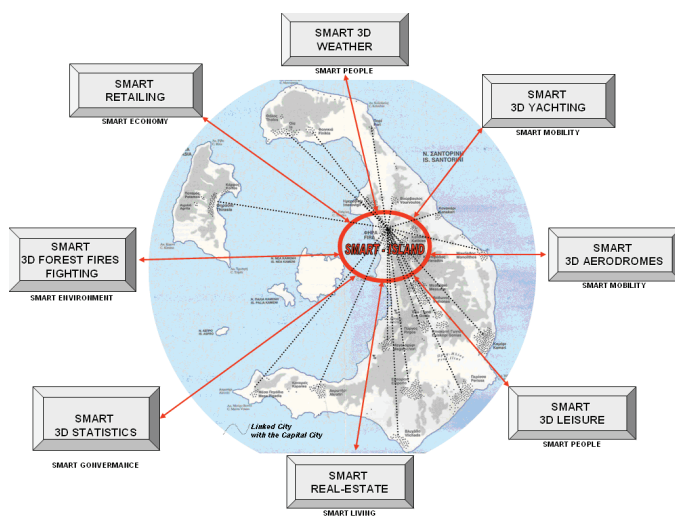


Figure 1: Smart-Islands Services

Project Profile

Objective

SMART-ISLANDS is not a research & development project in the context of a FP7, rather it capitalises on successful EU/RTD projects and provides added value services to be commercialised in 2012.

An island is an isolated self-contained territory with a capital and a network of smaller cities and villages. The poor availability of spatial data infrastructure, the lack of available services for sustainable urban environment and city management, and the special socioeconomic conditions are key factors in the Mediterranean.

Mediterranean islands are small, numerous, lacking infrastructure whilst impacted by seasonal tourism, and being far from the definition of smart cities. The infrastructure of future islands needs to support vibrant, innovative and entrepreneurial communities such as the community of an island that take advantage of the digital environment and realize their potential to become smarter. For an island involving people, efficiency and quality are necessary but not sufficient; therefore, applications focus on human dimensions & liveability.

Sustainable management & improvement of the liveability of the Mediterranean Islands can be achieved via smart webservices that schedule needs in a smart way (e.g., booking a mooring slot) whilst offer maximum safety and environmental protection (e.g., fire fighting) and service to residents (e.g., smart retailing) and to visitors (e.g., smart 3D-aerodrome).

Current spatial data infrastructures (SDIs) for islands and smart services do not cover the main characteristics of a Smart Island. The geographic datasets & databases are not integrated or harmonized according INSPIRE procedures. Thus SMART-ISLANDS provides to all levels of users full user friendly 3D internet enabled standardized services.

In summary, web-services designed via current technologies on INSPIRE principles and operationally open to accommodating any island & service on a standardized platform, do not exist for Mediterranean Islands; SMART-ISLANDS offers such services on multiple mobile and non-mobile devices.

Webservices

SMART-ISLANDS delivers a Geoplatform/Globe with 8 integrated smart webservices specifically addressed to Mediterranean Islands that are small and have unique characteristics. However, the SMART-ISLANDS platform can have EU-wide and international applicability once delivered to the market in 2012.

The SMART-ISLANDS webservices cover the wide range of the 8 applications: 3D Smart-Yachting; 3D Smart-Aerodrome; 3D Smart-Leisure; Smart Real-Estate; Smart Statistics for Planning (Infrastructure); 3D Forest Fire Fighting; Smart-Retailing; and 3D-Weather.

Webservices are smart as of the input data retrieval and the user friendly interfaces by PC/Web and mobiles phones (PDA/iPhone/iPAD/Android). SMART-ISLANDS features “plugs-in” to accommodating additional services in 2012. SMART-ISLANDS offers integrated webservices to the public, the private sector, the citizens and the universities. SMART-ISLANDS is a “product” for profit, based on a Marketing Plan to be released in 2012.

Tag users and their needs

Public Sector & Administrations can extract from the “Smart Retailing” Module extensive information on the city patterns of residential segregation and people profiles, in order to have clear view of the city and island needs taking into account peoples profile and wealth indicators. It is essential to be linked to census and population data so to deliver targeted urban planning.

Users of the “Smart 3D Statistics Services” Module will have access to updated information of population statistics in the urban areas of an island. Conversely the “3D-Forest Fire Fighting” Module provides to administrations & public authorities a dynamic tool supporting the dominant phases of a fire.

The Private sector shareholders & businessmen will be able to: (i) Invoke to accurate city patterns of residential segregation and peoples profile & wealth indicators in order to make decisions for localizing businesses and focus on customers, (ii) Access to accurate calculation of islands population, (iii) Location based information on the context of real estate, (iv) Sectoral access to marine data for doing business with a powerful renting mechanism for yachts & marinas, (v) Register their business information & products as POIs.

Citizens & tourists can invoke to detailed information of the urban area of an island extracting information on: (i) Island leisure, spatial information and POIs, (ii) Yachting on Mediterranean Islands, available services on marinas

& ports, and booking a yacht, (iii) Aviation information on transportation from-and-to an island with dynamic 2D webnavigation air maps, (iv) Location based information on real estate, and (v) Dynamic 3D weather forecasting.

University & Research Centres, students & researchers can use the available spatial data infrastructure & POIs for research, invoke accurate city patterns of residential segregation, and work with people’s profiles, wealth indicators, and other.

Usage

SMART-ISLANDS utilizes the Smart City Model www.smart-cities.eu/model.html and delivers 8 use-cases. As such, it builds on the smart combination of endowments & activities of self-decisive, independent & aware citizens in the context of:

- Smart Economy: Use case Smart Real Estate (based on www.EoMARK.eu/ESA);
- Smart Mobility: Use cases Smart 3D yachting and Smart 3D aerodromes (based on www.medisolae-3d.eu, www.yassoo.travel, www.yachtin123.com, www.landing-eu.eu);
- Smart Environment: Use case Smart Forest-Fire Fighting (based on www.scier.eu www.ArcFIRE.eu);
- Smart Government: Use Case Smart 3D Statistics (based on www.EoMARK.eu & EPSILON/FP7);
- Smart Living: Use Case Smart retailing (EoMARK/ESA);
- Smart People: Use cases Smart 3D Leisure and Smart 3D Weather (based on Medisolae-3D/FP7, MeteoGRID, SIGYM-3) and other.

Content

The webservices require availability of 3D city models & datasets. We have available 3D datasets that will be converted to the CityGML. For any area of the pilot not covered with existing 3D information partners will contribute to the development of missing data.

The Product

SMART-ISLANDS delivers a 3D INSPIRE based geoplatform (a product ready for the market) to simultaneously delivering eight multiple smart web-services linked to the needs of the Mediterranean Islands, with a dynamic 3D user interface for interactive visualization & data management. Webservices are integrated onto the www.briseide.eu geoplatform that accomodates:

1. 3D yachting (transport)
2. 3D aerodrome (transport)
3. 3D leisure (citizens)
4. 3D real estate (business)
5. Statistics for Planning (infrastructure)
6. 3D forest fire management (environment)
7. 3D smart retailing (commercial)
8. 3D weather (citizens, government).

Sustainability & Marketing

The Industrial Partners of the Project interested into its exploitation will first (during the project life) establish an EEIG (European Economic Interest Grouping). The Industrial Partners interested into further commercial marketing of the Project will then establish a Limited Liability Company (Ltd/GmbH) that will be improving & selling the Platform as a market product/webservice.

The final product will be available to the above EEIG and Ltd/GmbH as an open source toolkit.

Existing Prototype Services

SMART-ISLANDS integrates under the www.briseide.eu technology the modules and services:

- 3D Geobrowser www.briseide.eu to access and manage geographical information according to OGC standards, developed by www.Graphitech.it
- Mediasolae www.medisolae.eu and www.medisolae-3d.eu web platforms, a commercial portal with SDI of 100 Mediterranean Islands, Google Map technology & ESRI ArcGIS Server by EPSILON, EPSIT, EPSCY, Paragon, & HSIN.
- LANDING www.landing-eu.eu state-of-technology 3D aerodromes and in air-ways technology in aviation by EPSILON & PSU.
- Medisolae www.yassoo.travel outcome of ISO procedures to developing islands-sustainability plans and utilize INSPIRE standards for SDI developed by the Municipality of Thira/Santorini and contribution of Epsilon Greece and Epsilon Italia.
- EOMARK geomarketing technology by EPSILON-GIM, www.eomark.eu
- EPSILON-NUTS output on environmental policy via sustainability indicators on EU-wide NUTSIII/II web statistics platform for NUTS-II/III data of Eurostat, developed by EPSILON.
- SCIER www.scier.eu integrated system of sensors, networking and computing infrastructure, by EPSILON and other partners
- Arcfire www.arcfire.eu application based on ESRI ArcGIS technology developed by Epsilon-GR, Epsilon-IT & Meteogrid
- Yachting123 www.yachting123.com webservices platform developed using the Google Maps API developed by EPSILON as extension of www.yassoo.travel and as sponsored by the Hellenic Infosociety Programme.
- Meteogrid SIGYM-3 platform providing weather forecast and applied solutions for forest fire management as available by www.meteogrid.com
- Existing libraries of VRML are currently being used by Meteogrid for the representation of smoke plumes of forest fires among other 3D objects for a 3D web services. Other prototypes and services to be linked to during the project.

Number of users and locations

The SMART-ISLANDS Platform will be piloted by 30+ operators working at island's administration and public authorities level and by 2450 users (citizens, students, businessmen) piloting 8 modules/services. Locations:

1. Lefkosia (Nicosia, Cyprus): 2 operators, 150 users
2. Malta (Malta): 2 operators, 200 users
3. Santorini: 2 operators, 200 users
4. Skiathos (Greece): 2 operators, 100 users
5. Agkistri (Greece): 3 operators, 150 users
6. Majorca (Spain): 3 operators, 300 users
7. Sardinia (Italy): 2 operators, 300 users
8. Ithaki (Greece): 2 operators, 150 users
9. Kalamos (Greece): 2 operators, 150 users
10. Kastos (Greece): 2 operators, 150 users
11. Kithnos (Greece): 2 operators, 150 users
12. Meganisi (Greece): 2 operators, 150 users
13. Tilos (Greece): 2 operators, 150 users
14. Hydra (Greece): 2 operators, 150 users

The EU Dimension

SMART-ISLANDS is relevant to policies at European & national levels and compliant with EU Directives and projects related to geographic information and island issues as the:

- INSPIRE Directive (2007/2/EC) on use of geospatial information for environmental applications and to the wide range of standardisation activities deriving from the directive.
- EU activities on ICT for Government and Public Services about using the tools and systems made possible by Information and Communication Technologies (ICTs) to provide better public services to citizens and businesses.
- BEACHMED-e Strategic management of beach protection for sustainable development of Mediterranean coastal zones, for the Littorals Adaptation to Climate Change.
- PoFers 2007/2013 (European funding for regional developing) that produces particular directive in Sicily in order to develop the touristic harbour in minor island.

Specific projects on use of geographic information that involve the Consortium, as:

- ICT/PSP project www.briseide.eu on spatio-temporal interoperable web services (which involves Graphitech, EPSILON).
- FP7 project i-Tour www.itourproject.com with regard to location based services and augmented reality mobile players (which involves Graphitech).
- eContentplus ECP-2007-GEO-317007 NATURE-SDI www.nature-sdi.eu plus project establishing a Best Practice Network dealing with a cluster of the data themes listed in the Annexes I and III of the INSPIRE Directive and focused on the nature conservation issues (which involves EPSILON, GISIG).
- FP7 MEDISOLAE-3D www.medisolae-3d.eu that involves EPSIT, EPSCY, EPSGR, PSU, PARA.
- FP6 LANDING www.landing-eu.eu that involves EPSGR, PSU, ESRI, and others.
- EoMARK that involves EPSGR and EPSIT.

- FP6 SCIER www.scier.eu that involves EPSGR, PSU/PBS, and others.
- YACHTING123.com www.yachting123.com that involves EPSGR, EPSIT, EPSCY and others and has been a spin-off of www.yassoo.travel of www.medisolae-3d.eu.

Full scale applications for Hydra & Malta (show island) will account for the:

- National ICT Strategy for Malta 2008-2010 – Building upon the achievements of the previous ICT Strategy 2004-2006, the National ICT Strategy for Malta 2008-2010 sets out a vision for Malta by 2010, that of the 'The Smart Island', one of the top 10 information societies in the world. According our vision, the application of information and communication technology will be ubiquitous, the Internet will be a social equalizer and the ICT industry will be a main pillar of the economy.
- Smart CityMalta: SmartCity@Malta.mt is projected to be the largest ever ICT private sector project and foreign direct investment as well as the largest ever new source of knowledge-based jobs to be secured by Malta. The Maltese Government foresees the fact that the new SmartCity@Malta.mt will be a first for the entire European Union; it will be the ideal European outpost for global ICT/Media companies wishing to establish a presence in Europe.

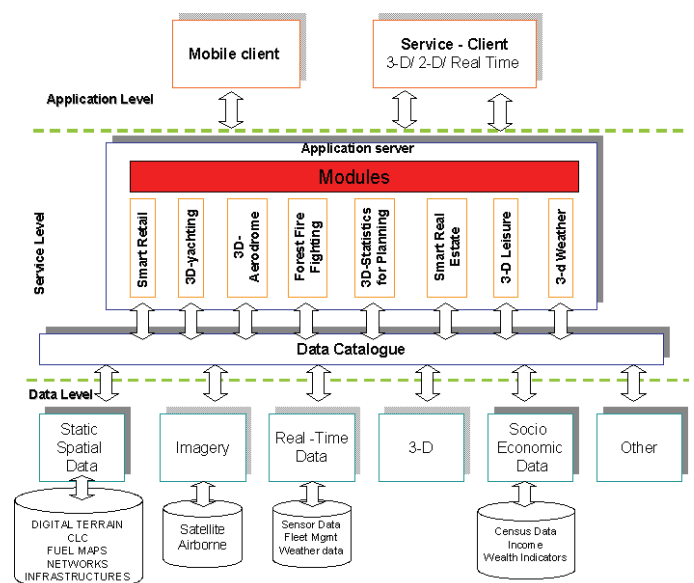


Figure 2: System Architecture

Smart-Islands website

The website www.smart-islands.eu (also available at www.smart-islands.com and www.smart-islands.gr) has been set up where the project is presented. This website will promote SMART-ISLANDS in diverse directions as:

- The prime online access point to the project.
- The project outcomes public showcase to external users and institutions.

The website will be used as a main public dissemination tool, making available the following information:

- Content derived from the development output such as: Presentations, publications (newsletters, brochures, posters, etc.) conference/workshops' proceedings and demonstrations.
- Information on the technological and application aspects of SMART-ISLANDS and describing the project aims and objectives.
- Information related to consortium Partners and a contact section to receive direct feedback from visitors.
- Links to a news feed and the SMART-ISLANDS group page in LinkedIn.
- Updated news on relevant events and the progress of work packages and related tasks.
- Point of access to the web-based applications and services developed throughout the project.

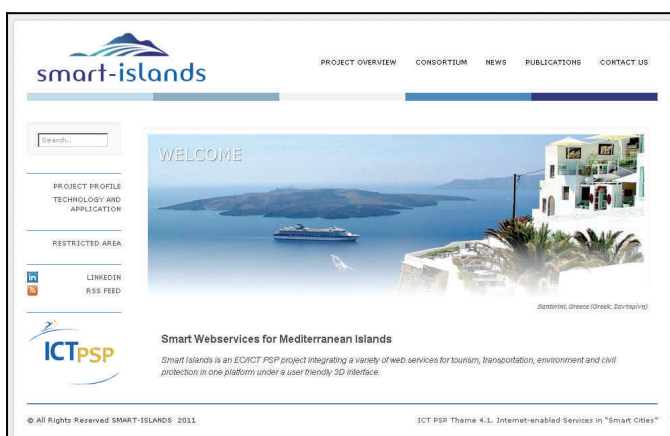


Figure 3: A screenshot of the public section of the website

The SMART-ISLANDS webpage provides private access to a collaborative work environment where members of the consortium will access relevant project documents. This environment consists of a Restricted Area/ Document Repository (accessible to partners) representing a tool to improve the communication among the Consortium and exchange of updated information.

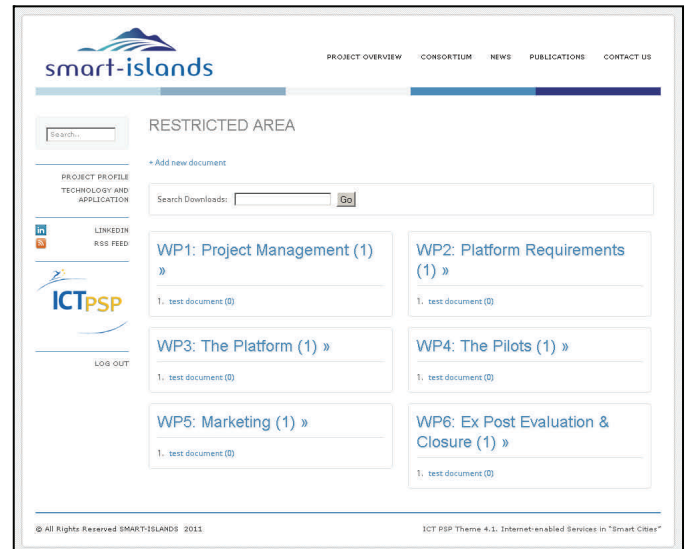


Figure 4: A screenshot of the "Reserved Area" of the website

- The website is the primary tool for the SMART-ISLANDS online Marketing Strategy. This will result in multiple actions.
- Included into the SMART-ISLANDS web site are addresses to literature and project publications.
- Announcing major changes to the site in printed materials and highlighting additions or new resources on the website in newsletters.
- Placing SMART-ISLANDS website address in any publication related to partner work .

To keep visitors coming back to SMART-ISLANDS website will be essential to:

- Keep the site up to date (updating the website at least once a month).
- Make sure that all partners are using the website (specially the Reserved Area) to communicate and share the relevant documentation.
- Offering place on the website for announcements, upcoming events, links etc. so that a visitor can immediately see what's new.

Consortium partners



Epsilon International SA



Epsilon Italia srl



Epsilon Consulting Ltd



Paragon Europe Ltd



Graphitech



Hellenic Small Islands Network



GISIG



Prof. Schaller Umweltconsult



MeteoGRID



iSYS, Ltd



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