



This project is funded by the European Union

Project Details

Project reference:
620400

Funded under:
CIP

Duration:
36 months
01/10/2014 -
30/09/2017

www.energic-od.eu

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ENERGIC OD Newsletter

EDITORIAL

by Stefano Nativi - CNR - IIA (Italy)

ENERGIC OD is now fully engaged in its core business: the deployment and configuration of a set of Virtual Hubs (VH) developed by integrating an existing and successful broker framework with other effective technologies to provide users with a single point of access to geospatial datasets. These data are supplied by new or existing platforms and infrastructures, including INSPIRE-compliant systems, Copernicus services and GEOSS Flagships.

In the last months, a significant step forward was the end of the first Reporting Period (30th of Sep 2015) and the consequential requirement to submit the Periodic Report to the European Commission, followed by the Technical Review that was held in Luxembourg on December 3rd, 2015.

According to the Project Officer, the project made excellent progress and, in agreement with the reviewers' comments, the project will continue without modifications. Feedback from users and comments and suggestions from the Technical Review were included in the second release of two key deliverables, D5.1 (Virtual hubs - system architecture) and D6.1 (Application based requirements and standards catalogue).

In this Newsletter issue, the in-depth analysis of the 10 applications, under development within the project, leads to the discovery of three innovative Apps: Eye2Eye (AED SICAD), GEOdemos (SRP) and GeoPan Atl@s (POLIMI).

Besides, in this third number, we focus on the legal challenges around open data, specifically in France, and how ENERGIC OD tackles these challenges and moves beyond barriers.

Finally, a two-days Workshop was held in Potsdam to plan the important deliverables expected by the Workpackage 6 in this second year of the project.

Deliverables and more information are present on our Website: <http://www.energic-od.eu/>

For now we hope you will enjoy reading this Newsletter. In case you have additional questions or you would like to receive further information, please feel free to contact us!!



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HIGHLIGHTS

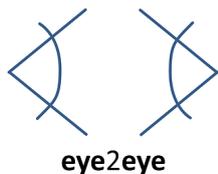
- **Open data challenges to ENERGIC OD**
- **Open data in France: from emergence to legislation**

Applications in the spotlight

EYE2EYE : A MOBILE APP FOR SMART GOVERNMENT IN THE PROCESS OF LAND CONSOLIDATION IN EUROPE

by Michael Muller & Ralph Pfannkuche - AED SICAD (Germany)

AED - SICAD app will support communication among citizens and administration in the context of land consolidation ...



Scope

eye2eye, the mobile app developed by AED-SICAD AG, will support communication among citizens and administration in the context of land consolidation. Citizens and affected landowners

will be able to use their mobile devices to participate in the formal land consolidation process.

Land consolidation is a significant planning process in Europe, in which land and its use are key resources. Beyond farming, society needs land parcels also for regenerative energy, traffic networks, tourism, water and flood management, habitat networks and other needs. Performance in processes and open government are significant aspects for balancing diverse claim managements in land use.

The goal is to shorten long processing times and to optimize citizens' participation. This is necessary to avoid legal proceedings against land consolidation plans. **eye2eye** will be a tool for brainstorming and discussion by georeferenced comments on the basis of map-based apps. This will complement the existing traditional participation methods based on providing and exchanging paper documents.

Users and Use Cases

The app **eye2eye** will be integrated in the solution environment available at the "Ministerium für Ländliche Entwicklung, Umwelt und Landwirtschaft des Landes Brandenburg" (Ministry of Rural Development, Environment and Agriculture of the Federal State of Brandenburg) and the "Verband für Landentwicklung und Flurneuordnung Brandenburg" (Association for Rural Development and Land Consolidation Brandenburg).

In Germany and several other member states of the EU land consolidation is a legally regulated and well defined process established since decades. **eye2eye** will be able to enrich these government processes by methods of Open Government and Smart Government.

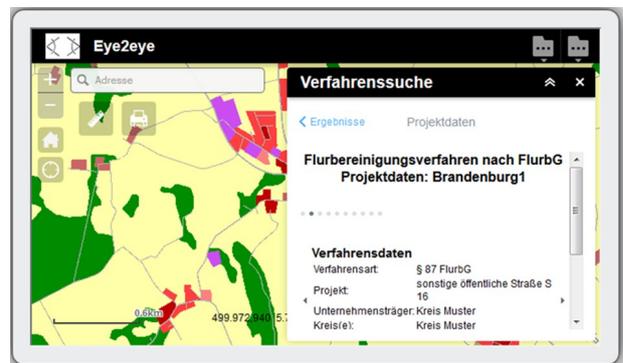
Smart Government

Improving government for high quality and open citizen services needs a revision of business processes and underlying information technology. Transcending open government to smart government is a focus in citizens' needs for acceptance of government solutions. In smart government the administration establishes better connections to their customers. 24/7 services, mobile web support, integration of spatial data infrastructure and open data are core technologies for smart government.

eye2eye App

eye2eye is intended as a mobile App for webmapping, information, digitizing of notes or drawings and communication:

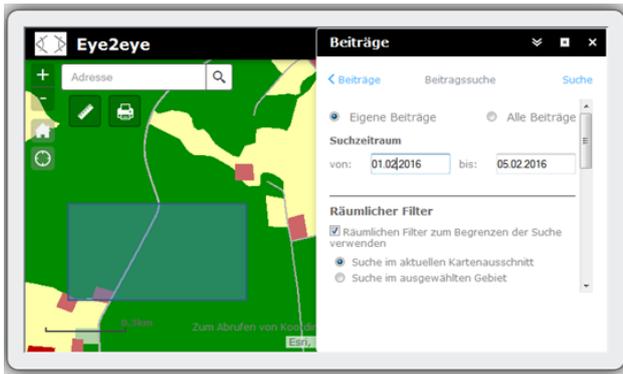
- As a webmap app it enables to navigate easily in maps.
- Users can request information on (real world) objects from maps.
- The input of georeferenced text notes will be a major function for participation.
- Likes help to easy comment details of plans.
- Digitizing drawings for change management will be an optional feature in sense of redlining or drawing on top of a map.



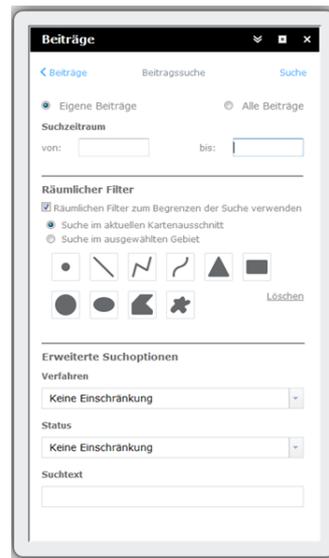
eye2eye will bring added value to the already existing land management solution LEFIS (LandEntwicklungsFachInformationssystem), also developed by AED-SICAD AG.

The app will finally combine lot of different data sources:

- Cadastre data (partly open data, available in the project, Esri ArcGIS Server Service)
- Land consolidation data (not open, available in the project, Esri ArcGIS Server Service)
- OSM data (open, available, WMS, WFS, Esri ArcGIS Online, ...)
- Copernicus Urban Atlas (partly open data, available in the project, WMS)
- Open Data with respect to environment, transport, landscape, ecology, ...
- Specific INSPIRE ANNEX themes (ViewService, DownloadService)
- Interface to GDI-DE (central German SDI): OGC WMS, WFS, WCS



Because of the huge variety of different data sources the app clearly will take advantage of the virtual hub infrastructure that is implemented in the ENERIG OD project. The app will be developed in HTML5. A prototype, including a part of the functionality as a native Android app, already exists. The technical architecture will combine free access to GI as well

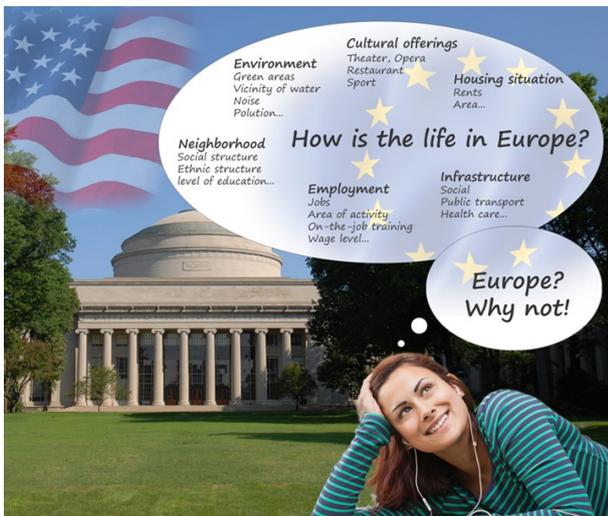


as limited access for authorized users by a role management system. The pilot will manage the ongoing permanent flow of restricted data resources to open data sources by his resource management system. In a second phase **eye2eye** will get, if demanded by business use, further enhancements (for example 3D and augmented reality) to improve the visualization of geographic information for citizens' needs.

GEODEMOS : EUROPE? - WHY NOT

by Paula Iden & Frank Iden - SRP (Germany)

The application GEOdemOS of SRP uses heterogeneous data and services based on the internationally networked infrastructures to create useful information and makes them available to citizens and administrations. ...



Internationally networked data infrastructures become more important in times of globalization and mobility, not only for enterprises, but also for each person. The ordinary citizen becomes a cosmopolitan, who is looking for new living areas and areas of activity and that far beyond continental borders. All the more important is the provision of meaningful information so that young and efficient people from other continents for her future consider a life and work in Europe. There is a lot of information. But are the citizens also able to use this data to gain the necessary information for planning their lives? For this we develop the mobile application GEOdemOS that accesses heterogeneous data and services based on internationally networked infrastructures and that gives the cosmopolitan a strong tool to use this data and services. The aim is to make it possible for the user to assess the living and housing quality of different places in Europe with the help

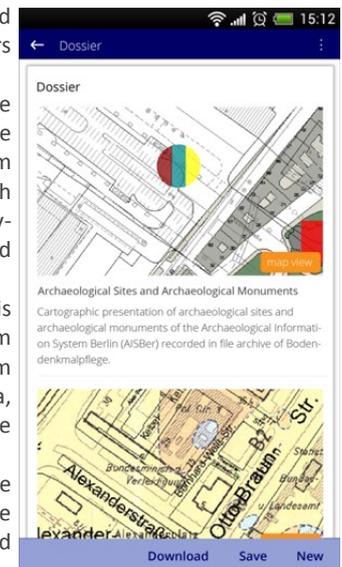
of well-chosen aspects. According to formulation of a question GEOdemOS presents the data differently in thematic maps or exportable location-based reports.

For creating special information needs we use besides standards-based information services like Web-Services and INSPIRE also the heterogeneous information services of the Open Data Initiative as well as varied additional information about locations of private and public data providers distributed in the net. The challenge consists above all in making Europe-wide comparable information from open data with heterogeneous country-specific structures and content.

The idea behind **GEODemos** is to prefabricate uniform information products from heterogeneous local data, which can be use on mobile devices in whole Europe. Currently, however, the needed data are not available in the necessary quality and not in a comparable form.

Therefore, some of these files are not directly integrated in the application via web services, but must be preprocessed first. Concretely, we realize this by accessing with GEOdemOS on the infrastructure about the Virtual Hubs which developed within the ENERIG OD project.

The Virtual Hub is used to search in the metadata to find data. To expand the database of the Virtual Hub, we use exploration bots to search for services and data on the basis of standards (OGC, HTML, ISO).



ENERGIC OD APP FOR NAVIGATION OF LANDSCAPES THROUGH TIME AND SPACE: GEOPAN ATL@S

by Branka Cuca - POLIMI (Italy)

GeoPan Atl@s will provide real-time input of panoramic images to already existing SDI's on local, regional, national level...

GeoPan Atl@s is one of the ENERGI^C OD applications that regards the territorial scale of landscapes and built environment to facilitate the navigation across time and space using multi-temporal and multi scale geospatial Open Data. In this article we reflect upon the policy context and technical advancements of this APP that is currently under development.

An extensive number of Directives and Conventions in Europe that interest geospatial information but also specific features of the landscape create a complex and dynamic policy context for this APP. To name a few, such Directives and communications are: INSPIRE Directive; Common Agriculture Policy (CAP); Habitat Directive (Natura2000); European Landscape Convention (Florence Convention); European Convention on the Protection of the Archaeological Heritage (Valetta Convention) and World Heritage Convention (with focus on Cultural Landscapes).

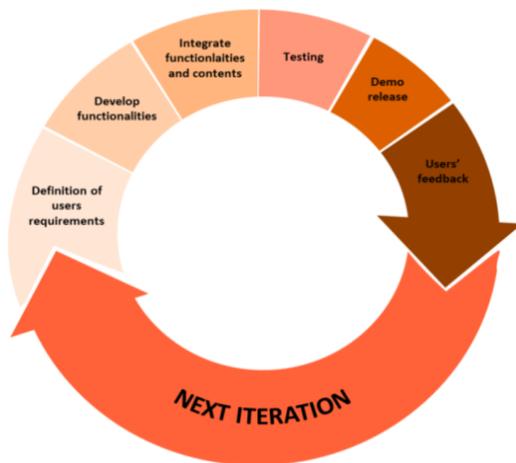


Figure 1. Process of Functionalities development

Regarding National Italian Policy framework three specific instruments of interest were identified on national and regional levels:

- National Policy Framework: Codice dei Beni culturali e del paesaggio (Codice Urbani). Translation: Codex on Culturale Heritage and Landscape (Urbani Codex) - Legislative Deree Jan 22 2004, n. 42;
- Regional Policy Framework (Lombardy region): Piano Paesaggistico Regionale - Piano Territoriale Regionale (PTR) Translation: Regional Plan for Landscape - section of Regional Territorial Plan of Lombardy Region;
- Regional Policy Framework (Lombardy region): Programma di Sviluppo Rurale (PSR) 2014 – 2020. Translation: Rural Development Program 2014 (in particular under the Axis 2, 4 and Axis 6).

A previously conducted exercise (WP4) has enabled the developers to consolidate the ground of this APP in terms of Thematic fields of interest such as agriculture, biodiversity, ecosystems and so forth. Such topics will be explored through direct engagement of end-users communities such as – in the

case of **GeoPan Atl@s** - geologists, planners, public and private bodies involved with landscape monitoring, protection and management. This direct contact with users will enable the developers to collect specific requirements and translate them in technological solutions and functionalities. Such process will be cyclic in order to allow a high number of possible iterations in respect to the user-needs (Figure 1).

The **GeoPan Atl@s** APP aims to facilitate by multiple users the access to different multi-temporal data sets, coming from different sources (historical maps from national archives, satellite imagery from ground segments data distributors , national and regional geoportals, etc.). A combined use of such data is often not fully exploited in the activities of planning or risk management, due to different factors. Once the dataset are made available following the Open Data protocol (e.g. historical map series), users should be enabled to geospatially relate, combine and use such data sets in a faster way. Multi-temporal geospatial open data set will consider historic topographic and cadaster maps, available current raster and vector information on regional level, but also the satellite sample imagery that will be experimented to demonstrate the geographic coverage potential.

From a technical perspective, **GeoPan Atl@s** is built on the basis of the well-known HTML/CSS/JS structure. This way **GeoPan Atl@s** can be accessed by all browsers supporting HTML5 (e.g., Safari iOS, Google Chrome, Firefox, Internet Explorer, Opera) both from desktop and mobile (e.g. tablets and smartphones). In addition, the solution is also released as an .apk file (which is the package format used by Android for distribution and installation of mobile Apps). **GeoPan Atl@s** will allow to retrieve open available datasets either starting from a free search and a “profile search”. This second functionality, which will be implemented in the next release of the APP, will enable to provide the definition of a user profile (e.g. a geologist, a landscape planner, other specialists, etc.) for which it will be possible to identify a set of semantic keywords. Once a profile is associated to a set of predefined keywords, it will be used by the different subjects of the same profile in order to search for datasets connected those keywords identified. Once the data are retrieved, one of the functionalities of the **GeoPan Atl@s** regards “layer handling” (Figure 2) that allows to turn “on” and “off” the layers of Open Geo Data obtained by a specific query. Furthermore, the APP allows functionalities of digitalization and geo-referencing.



Figure 2 Screenshot of the GeoPan Atl@s APP with functionalities

WORK PACKAGES & OUTCOMES

WP5 : VIRTUAL HUBS - SYSTEM ARCHITECTURE

By Paolo Mazzetti - CNR (Italy)

ENERGIC OD has recently released a revised version of the Virtual Hub system architecture based on feedback collected in the first year of activity and from the first technical review...

The ENERGIC OD project aims to build Virtual Hubs to facilitate the use of open geospatial data. To achieve its objective the ENERGIC OD has recently released a revised version of the Virtual Hub system architecture based on feedback collected in the first year of activity and from the first technical review. The ENERGIC OD Virtual Hub concept puts its basis on past experiences in building System of Systems through a brokering approach. In brokered architectures, dedicated components provide mediation and harmonization of interfaces and data models avoiding the need of changes in the data provider systems.

As an innovation action, ENERGIC OD focuses on loosely-coupled integration of mature technologies and tools, most of them provided or under control of ENERGIC OD Consortium members. In particular, existing brokers – such as the GI-suite Brokering Framework adopted in the Global Earth Observation System of Systems – assure the basis to build advanced Virtual Hubs. The integration of tools in the Virtual Hub is based on full server-side APIs, while applications development is facilitated through simple client-side APIs based on widespread Web technologies (HTML5, Javascript

and CSS). For greater flexibility, ENERGIC OD adopts an agile methodology allowing rapid development in response to new requirements.

ENERGIC OD will deploy one regional Virtual Hub in the Berlin metropolitan area and five national Virtual Hubs in France, Germany, Italy, Poland and Spain. However, the architecture is flexible and can accommodate different topologies, to address specific requirements, such as the need of a seventh European-level Virtual Hub, or a central Virtual Hub acting as a single-point-of-access, as it could be suggested by marketing reasons for better exploitation. By a technical point-of-view, the deployment will be made possible on local infrastructures, possibly managed by one or more ENERGIC OD partners, or on private and public clouds providing Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS) functionalities.

A first version of the ENERGIC OD has been already deployed in the six test sites and accessible by project partners and sub-contractors for the development of the ten ENERGIC OD pilot applications.

WP6 : APPLICATION BASED REQUIREMENTS AND STANDARDS CATALOGUE

By Stefan Braumann & Helga Kuechly - LUP (Germany)

LUP delivered an update version of the catalogue that collects and summarizes application specific requirements ...

The development of new innovative applications making use of the Virtual Hubs (VHs) created within the ENERGIC OD project relies on certain requirements and standards. As part of the deliverable in Work package 6 the concepts, solutions, technical ideas, and expectations specific to their application were collected via two requirement questionnaires.

This document summarizes the general and application specific requirements of all ten partner applications. The scope, user classes, use cases, interfaces with other systems, assumptions and constraints, the functional requirements as well as the behaviour of the application, the non-functional requirements, the geodata used, and the development of the environment for the implementation are discussed. They were completed considering the view of the user, developer, as well as the system and unit specifications.

As the development status of each application differs widely and due to other constraints, some requirement details were not yet available.

All applications are based on a client-server architecture with common programming languages. The functional requirements are apart from application specific necessities similar in relation to the used geodata and their visualization within a geoportal. Some of these can be implemented at different points of the development stage and interfaces therefore inherit application based requirements. The non-functional requirements are less application specific and more general for all applications. Metadata of the datasets is a key requirement not only for the non-functional requirement but also to ensure quality standards within the thematic context of the application.

The spatial extent of most applications within the project is limited to a regional extent which also feeds back to the basic data requirements as well as necessary data projections. Finally, a key component of the automated data access from external data sources are established and known standards and protocols, e.g. OGC-standards, HTTPS and XML.

institutions and actors from different contexts work on removing them. Ultimately, the widespread uptake of open data will enable unrestricted and seamless access to information, and together with it the rise of informed and democratic society. ENERGIC OD consortium is proud to be a part of this movement, and is optimistic about the successful implementation of its goals.

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- Carrara, W., Chan, W.S., Fischer, S., and van Steenberg, E., (2015a). *Creating Value through Open Data*. European Data Portal Project. European Commission, Brussels.
- Carrara, W., Fischer, S., and van Steenberg, E., (2015b). *Open Data Maturity in Europe 2015. Insights into the European state of play*. European Data Portal Project – Insight Report n1. European Commission, Brussels.

For downloading the reports visit:

www.europeandataportal.eu/en/content/creating-value-through-open-data

www.europeandataportal.eu/en/content/open-data-maturity-europe

OPEN DATA IN FRANCE: FROM EMERGENCE TO LEGISLATION

by Louis Platt - AFIGEO (France)

Towards a more complete and effective legislation for regulating Open Data in France ...



Starting in the 90's, the local authorities and public institutions GIS services have been exchanging and mutualizing their data through local spatial data infrastructure (SDI). Yet, the first Open Data initiative only appeared in 2010, at the instigation of some pioneer local authorities: the City of Paris and Rennes Métropole.

In 2011, Open Data became a national stake with the creation of the inter-ministerial assignment ETALAB which mission is the promotion and development of Open Data with national administrations and local authorities, and the French Open Data portal data.gouv.fr. From then on many local Open Data portals have been deployed.

The French Open Data Actors quickly got together to create guidance documents and promote good practices. Since 2010, through its working group OGC Open Data, AFIGEO has been working to develop Open data with the geographic information professionals.

While Open Data initiatives exploded in France over the last six years, the

national legislation evolved much more slowly and now appears outdated regarding new stakes and the users' and producer's expectations.

Indeed in France the main law which regulates Open Data dates back to 17th July 1978. Called "loi CADA", it set up an independent and consultative authority whose mission was to watch the freedom of access to administrative documents. This law recognizes every person the right to obtain communication of documents held by an administration within the framework of their public service mission, whatever their form or their support.

The transcription in the French law of the INSPIRE European directives (2010) and PSI (Public Sector Information) (2015) were a step forward for French Open Data. However, if the transcription of INSPIRE represented a real leverage for geographical data opening with the creation of a shared Geoportal, the transcription at a minimum level of the PSI directive (2015) planned the free access to public data. Yet the main part of the text consists in listing the numerous exceptions, and reintroducing royalties to get the data.

Despite some remarkable measures such as the French chief data Officer nomination or taking the lead of the Open Government Partnership, and the creation of national Geoportal for urban planning documents, French Government just like Parliament members and senator seem to have

trouble setting up an ambitious law on Open Data.

However, the recent "NOTRE" law (passed on August 7th, 2015 and concerning new local authorities' organization) legitimize the regional level as relevant to set up local SDI in order "to mutualize and disseminate geographic information". This is a very important step for local SDI's effort recognition. The "République numérique" bill (also called loi Lemaire) is currently discussed by the French Parliament and should see the light of the day during the second half year 2016. Open Data is one of the four main parts of this bill and should bring a real upheaval allowing a better support and supervision for the development of the Open Data in France.

More information:

French Open Data initiatives map:



<http://www.opendata-map.org/map>

Chief data officers:

<https://www.etalab.gouv.fr/la-france-se-dote-dun-administrateur-general-des-donnees>

Loi CADA:

<http://www.cada.fr/>

Internal meetings



1ST TECHNICAL REVIEW Luxembourg, 3 Dec. 2015

by Mariella Liberti, CNR - IIA (Italy)

The Commission held the first annual review meeting of the ENERGIC OD Project on Dec. 3rd at the Euroforum building in Luxembourg at the presence of the Project Officer and two independent experts. This technical review covers the period 01/10/2014 – 30/09/2015.

The aim of the review was to verify that the project was carried out in accordance with the Grant Agreement, by evaluating the project reports and deliverables, the proper use of resources, the management of the project and the expected impact.

During this 1-day review, the experts held in-depth and fruitful discussions with the ENERGIC OD Consortium in a constructive atmosphere.

At the end of the review a discussion on innovation was also held with the aim to find high potential innovators and innovations within EU funded research projects and to identify their specific "go to market" needs. This is a new initiative of DG CONNECT that has been undertaking to collect structured data about the innovation profile of projects by completing innovation questionnaires in annual project reviews during a session to discuss/challenge/understand the innovation aspects and strategies of a project and its individual partners while helping them define the best innovation path to be followed.

The innovation aspects of ENERGIC OD that the reviewers consider of particular interest are:

- a) the brokering approach,
- b) some of the 10 applications deployed in the project.

The PO stated that the project made excellent progresses.

The experts have then finalised their detailed report. The main conclusions and recommendations will guide the implementation of the next steps of the ENERGIC OD project.

The purpose of this two-day meeting was the presentation of the implementation plans of the ten new applications and the discussion about the handling of open issues and risks related to the implementation plans. Furthermore, the coordination and monitoring of the tasks, which are provided by the implementation plans, were discussed.

Another objective of this meeting was the introduction of the use of the Virtual Hub APIs. In addition, the current status of WP 7 including the stakeholder action plan and dissemination issues was presented.



WORKSHOP W6.2 Potsdam, 11 - 12 Feb. 2016

by Helga Kuechly & Stefan Braumann, LUP (Germany)

The first session on Day 1 started with an update of general management issues. The morning session focused on the current status of applications. It started with a presentation of the current status of the revision of D 6.1, a summary and discussion of open issues of D6.3 and D6.4. Then each application owner presented their implementation plan including open issues and risks of the app development and VH implementation. The main aim of the afternoon session was to report the current status of the VHS by WP 5 and providing a hand-on training and tutorial for the API.

Day 2 aimed to give a detailed look at the current status of WP7 with information about the stakeholder action plan including the exploitation, application and VH perspective and the discussion of a draft action plan. Further, dissemination issues concerning the website cooperation, forum activity, scientific conference and publications, press release, social media and newsletter. The workshop was closed with a conclusion on results and activities and upcoming actions of WP6.

Project publications

VIRTUAL HUBS FOR FACILITATING ACCESS TO OPEN DATA



An article by Miguel Ángel Latre et al. was published in the magazine "Revista mapping". The article, entitled "Hubs virtuales para facilitar el acceso a Datos Abiertos", was also presented during the JIIDE 2015 conference in Sevilla.

URL (Spanish language version)

<http://www.mappinginteractivo.es/images/revistas/REVISTA%20MAPPING%20176/files/assets/basic-html/page28.html>

ENERGIC OD PROJECT ON THE PRESTIGIOUS MAGAZINE PLATINUM!!

ENERGIC OD appears in the section "Research & Innovation" on Platinum, the prestigious quarterly magazine published along with the financial newspaper "Sole24Ore".



READ THE COMPLETE ARTICLE IN ENGLISH

<http://www.calameo.com/read/003272336c8c54767b846>

READ THE COMPLETE ARTICLE IN ITALIAN

<http://ita.calameo.com/read/003272336b651a6c65c85>

ENERGIC OD PRESENTED IN "LEITFADEN MOBILE GIS"



AED-SICAD presented an article "Zugriff auf (Open) Geodaten für Entwickler und Anwender von Mobile Apps" in the Leitfaden Mobile GIS - Hardware, Software, IT-Sicherheit, Indoor-Positionierung magazine V2.1.

To read the article:

[http://media.wix.com/](http://media.wix.com/ugd/4f5bdd_2af3847fdadb40d29e294beaf4bfdc37.pdf)

[ugd/4f5bdd_2af3847fdadb40d29e294beaf4bfdc37.pdf](http://media.wix.com/ugd/4f5bdd_2af3847fdadb40d29e294beaf4bfdc37.pdf)

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