



## ENERGIC OD Newsletter

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[www.energic-od.eu](http://www.energic-od.eu)

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### EDITORIAL

*by Stefano Nativi - CNR - IIA (Italy)*

The past few months have been full of activities as ENERGIC OD project comes to an end in September.

Therefore, this is a good time to reflect and look back on our achievements, challenges and ahead to future plans.

First, our achievements. At the start of ENERGIC OD, we promised to:

1. Implement a network of servers, called Virtual Hubs (VH), to provide access and disseminate distributed geospatial data under the format best suited to their needs.
2. Develop ten applications that use the data accessed via the Virtual Hubs and offer valuable information to their users.

Indeed, the ENERGIC OD project has deployed 5 national Virtual Hubs in France, Germany, Italy, Poland and Spain, and one regional VH for Berlin area. On top of that, during the third year of the project, a 6th instance has been deployed to create a pan-European VH (pEVH) acting as a gateway towards the national instances and as a collector of pan-European geographical information. The pan-European VH will be maintained and operated by the ENERGIC OD Consortium beyond the end of the project.

Four applications out of ten have been selected as a proof of concept to the people and organisations considering using VHs. In particular, the NoiseCapture application, developed by CNRS, is going viral in France and attracting users all over the world. NoiseCapture is now available in 4 languages (French, English, Italian and Spanish) and soon also in German... and it has already recorded more than a million measure points!

The ENERGIC-OD consortium has agreed a continuity plan to ensure the sustained and long-term functioning of the pan-European Virtual Hub (pEVH) for the European Union, as well as to promote the expansion of the pEVH with new GIS data. ENERGIC-OD pEVH, Virtual Hubs (VHs) and applications will continue to be supported after the close of the project until at least 31<sup>st</sup> of December 2020. That continuity plan is underpinned by a business model, marketing strategy and revenue analysis to ensure a stable, trustworthy and sustainable (both financially as well as technologically) pEVH and apps.

Results, remaining challenges and future perspectives have been discussed in the final conference collocated within the INSPIRE 2017 Conference held this year in Kehl (Germany) and in Strasbourg (France). entitled «Open Data Access and Harmonisation by a Virtual Hub – ENERGIC OD solutions».

Keep following us at: <https://www.energic-od.eu/>



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### HIGHLIGHTS

- Pan European Virtual Hub
- ENERGIC OD applications
- Introducing a new business model

### SUCCESS STORY

- NoiseCapture App

# Highlights

## THE PAN-EUROPEAN VIRTUAL HUB: A SINGLE POINT OF ENTRY TO ALLOW ACCESS TO ALL DATA OF ENERGIC-OD

by Paolo Mazzetti - CNR-IIA (IT)

A 6<sup>th</sup> instance has been deployed to create a pan-European VH (pEVH) acting as a gateway towards the national instances...

On June 2017, ENERGIC OD has started the pan-European Virtual Hub. The pan-European Virtual Hub is the seventh instance of the ENERGIC OD Virtual Hub (VH) after the five national VHs in France, Germany, Italy, Poland and Spain, and the regional VH serving the Berlin metropolitan area.

The pan-European Virtual Hub aims to be the single point of access to the open data available through the VHs. It connects the other VHs, and other information systems serving datasets with a pan-European scope and coverage, like Sentinel-1, Sentinel-2, Landsat-8, Corine land cover, etc.

The pan-European Virtual Hub is accessible through a Web portal (<http://www.vh.energic-od.eu/>) which gives access to relevant information for different stakeholder categories: end-users, developers and providers.

End-users can search and download datasets through a data portal developed by ESA-ESRIN based on the technology developed for the GEO Community Portals. The data portal support queries based on multiple keywords and on geographical/temporal constraints, response filters, map visualization, data download, etc.



The screenshot displays the European Virtual Hub (VH) website. The top navigation bar includes links for Home, Search Data, About, Guide for Developers, Terms & Conditions, Contacts, and Links. The main header features the ENERGIC logo and the text "European Virtual Hub - Open geospatial data at your fingertips". Below this, there are two maps: a world map and a zoomed-in map of Europe. A "READ MORE" button is visible. The main content area is divided into three sections for different user roles: "I'm a user!" (I want to use your applications), "I'm a developer!" (I want to create my application), and "I'm a provider!" (I want to provide my own data). The bottom section shows the "Guide for Developers" with four sub-sections: "Connecting to the VH", "Developing with a Virtual Hub", "Developing with Standard Geospatial Interfaces", and "Developing with the Restful API". The footer includes social media links for Facebook, Twitter, and LinkedIn, and the European Union flag.

## ENERGIC OD APPLICATIONS: ACHIEVEMENTS AND PERSPECTIVES

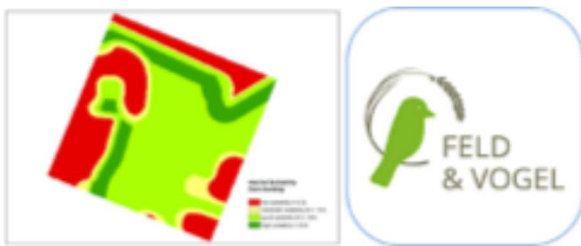
Olivier BEDEL – Alkante (France), Stefan BRAUMANN – LUP (Germany), Blandine DEWYNTER – AFIGEO (France), Frédérique MOJON LUMIER – BRGM (France), Gwendall PETIT – CNRS (France), Mattia PREVITALI – POLIMI (Italy) / UNIZAR (Spain)

*Developed within the frame of ENERGIC-OD, four applications were selected by the Consortium to test and validate the Pan-European Virtual Hub capacities and functionalities. Close-up zoom on these applications, with 3 questions: objectives, achievements, perspectives of evolution in the coming years...*

### Biodiversity Bird Indicator – LUP (Germany)

The Biodiversity Bird Indicator application developed by LUP is providing the public with an interactive platform to look at the habitat quality of indicator bird species in agricultural landscapes over time.

Time series of habitat suitability maps can show changes of the past but also predict future development of environmental change. With these interactive maps the objective is to foster



communication between different end users & stakeholders, such as government agencies, farmers & NGOs. The pEVH is used to access Sentinel-Satellite data. These are analysed to derive important habitat parameters.

The status of habitat structures is illustrated in form of habitat suitability maps for each species (corn bunting, skylark, whinchat) with a traffic light colouring (red = unsuitable, green = suitable) and enables a detailed view of individual areas and the derivation of possible recommendations for habitat improvements. For a better visualisation at smaller scale, we then created maps of the mean habitat suitability per square kilometer. The user can select time series and trend charts can be exported.

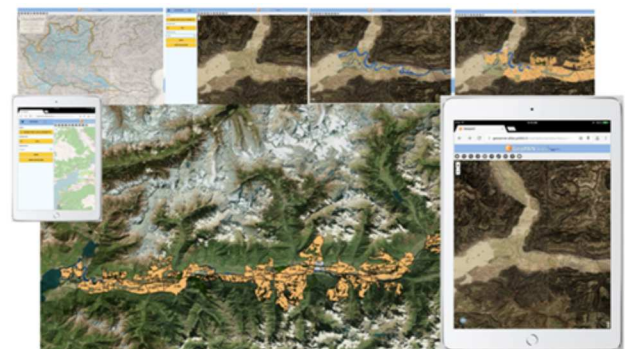
The objective is to extend the application to other European states and further implement habitat suitability models for other bird species and butterflies.

### GeoPan APP – POLIMI (Italy) / UNIZAR (Spain)

GeoPan APP is a newly conceived service focusing on valorization of digital historic cartographic documentation. Indeed, integration of multi-temporal Open Data, retrieved by the pEVH, can contribute to a more informed planning process, a more sustainable use of land and to a better management of the Built Environment.

GeoPan APP is delivered in two different versions: GeoPan Pro allows the access to multi-temporal geographical data and enhanced functionalities (e.g. geolocation of photos and itineraries) to be used in professional environments, while GeoPan Light allows an easy visualization of historical maps by end users with basic IT skills.

GeoPan evolution will follow two main directions: on one hand the concept developed by GeoPan will be replicated in different areas across Europe following user recommendation, on the other hand new integration of digital historic cartography and multi-spectral data (e.g. Sentinel data) will be tested.

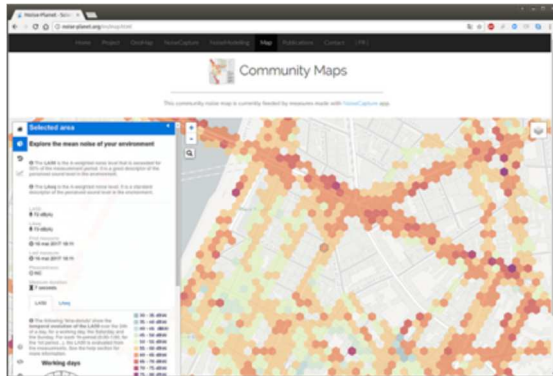


### NoiseCapture – CNRS / IFSTTAR (France)

The NoiseCapture Android app allows citizens to measure noise in their environment in a participative way. The resulting information, collected by users is then uploaded and processed

on our server. An interactive map (available on both the app and the Noise-Planet.org website) shows these results in a dynamic way. In the meantime, raw data (and extracted indicators) are transferred to the pEVH, thanks to standardized streams (WMS, WFS...).

The NoiseCapture app is fully operational. The global chain (acquisition of noise, pre-processing on the Smartphone, upload on our server, cleaning and processing steps, publishing results on the map and compiling raw data as .zip files) works perfectly. The app – available in French, English, Spanish and Italian – is already in



production. Over 1 500 000 points of measures, 10 000 tracks and more than 4000 active installations were recently achieved.

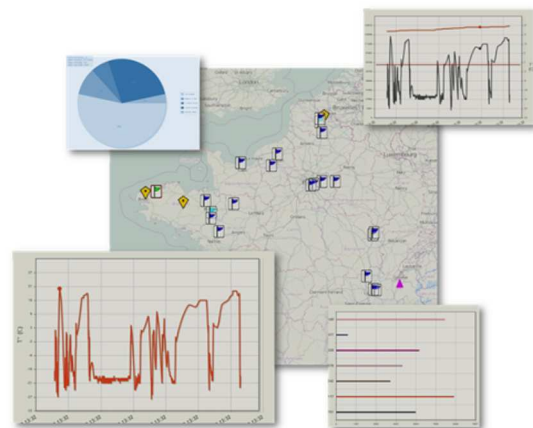
For the future, the plan is to work on the following items :

- improve the calibration part, in order to have a simpler process for users;
- optimize the data cleaning part (remove errors, filter strange measures...);
- develop the app for iPhone (a great demand);
- Continue translations in other languages (German is in progress);
- use the collected data to produce noise maps.

## Sensor Open Data Portal (ODP) – Alkante (France)

The Sensor ODP collects sensor data from various sources (environment, smart metering...) and delivers it in various forms (OGC web services, Rest API...). The application is composed of two modules: (1) the core component in charge of collecting, processing, storing and delivering sensor data; (2) the SmartCity web portal which allows the visualization of sensor data in graphical views (charts, maps, tables) and thematic dashboards. The pEVH integrates the core component of Sensor ODP as an additional module and sensor OGC web services are accessible through the pEVH.

The application is fully operational and is connected with existing sensor networks that fuels the platform with real time data daily. The indicators provided in the dashboards of the SmartCity web portal are regularly used by partners to monitor the power and water consumption as part of the running experiments.



During the project, two experiments have been successfully led: the smart metering of a small municipality and the monitoring of environmental data that has enabled to test and validate the full data delivery chain, from sensor data collection to open data publication. The web portal is available in French and English languages and is for now collecting sensor data coming from France and Germany.

The application is alive. In the next months, Alkante plan to enrich it with new functionalities. In particular concerning: the integration of new sensor models, the addition of support for other languages (Spanish, German, Chinese, Arab...), the integration of new widgets in the portal. Several Proofs of concepts have also been initiated...



# NOISECAPTURE : THE SUCCESS STORY OF A PARTICIPATIVE APPLICATION

by Gwendall PETIT & Erwan BOCHER – CNRS (France) & Judicaël PICAUT & Nicolas FORTIN – Ifsttar (France)

The NoiseCapture application, linked to the Pan-European Virtual Hub of ENERGIC OD, is going viral in France and attracting users all over the world. Let's take a look at the sequence of events leading to this international success...

Research) and the [Ifsttar](#) (The French Institute of science and technology for transport, development and networks) within the framework of the ENERGIC OD project, the NoiseCapture application (v1.0) was officially launched on August 31st, 2017 on Google Play Store. Downloadable on Android Smartphones (from 4.0.3 and later), NoiseCapture is now available in 4 languages (French, English, Italian and Spanish) and soon also in German... and it has already recorded more than a million measure points!

A common [press release](#) issued by both institutions on September 1st, has triggered a series of articles and interviews on NoiseCapture, putting highlight on ENERGIC-OD.

The press (*Le Monde*, section *Science & Médecine*, Sept 6, 2017) as the French public radio ([10 min interview in the famous France Inter scientific programme, « la Tête au carré »](#)) rapidly spread the news greatly enhancing the echo on this open-source participative application, which has been publicised by many other media since.



Two week later, the statistics on the use of NoiseCapture speak for themselves : contributions exceed the million measure points and nearly 9000 tracks have been recorded. The application has been downloaded over 2550 times by users in more than 60 different countries.

In the meantime, the [Noise capture interactive map](#) (accessible on the [Noise-Planet](#) website) has been upgraded with first, the possibility for

users to easily visualize an history of the last contributions and their geographical origin (countries illustrated by their flag which once clicked, displays these measures) ; the second improvement is the access to a statistic widget that enables visitors to check real time statistics on the use of the website (number of contributions, duration of measures, contributors' countries of origin...).

To animate this international community and recruit new contributors , two « NoiseCapture Party » will be organised : one during the Nantes « [Digital Week](#) », with a venue in Pornichet (Sept. 20<sup>th</sup> 2017) and the other on the occasion of the Paris « [8th National meetings for noise environment quality](#) », a national event for experts in acoustics (Nov. 27<sup>th</sup> 2017).

Both these events will be following a predetermined pattern :

- Attendees' welcome and introduction to noise pollution issues
- Installation of the NoiseCapture application
- Smartphone's calibration using the dedicated system, developed by the NoiseCapture team, relying on a reference sonometer and wireless system able to calibrate several smartphones at the same time
- Short demo of the application (how to record, qualify and upload measures?)
- Presentation of the « NoiseCapture party » area (zone to cover / to stay in)
- Beginning of the measurements (attendees are free to go where they want, within the limit of the specified area)
- Once the recording step is finished with, presentation of the results on the interactive map and as raw data

In the light of its recent success, it is can be expected there will not be the last ones...

	8 septembre 2017 09:22	37 s
	8 septembre 2017 09:16	108 s
	8 septembre 2017 08:56	60 s
	7 septembre 2017 23:55	63 s
	7 septembre 2017 23:52	46 s

## Scientific production in open access

- Erwan BOCHER, Gwendall PETIT, Judicaël PICAUT, Nicolas FORTIN, Gwenaël GUILLAUME ; [Collaborative noise data collected from smartphones](#) ; Data in Brief, Volume 14, October 2017, Pages 498-503, ISSN 2352-3409
- Gwenaël GUILLAUME, Arnaud CAN, Gwendall PETIT, Nicolas FORTIN, Sylvain PALOMINOS, Benoit GAUVREAU, Erwan BOCHER and Judicaël PICAUT ; [Noise mapping based on participative measurements](#) ; Noise Mapp. 2016 ; 3:140–156
- Judicaël PICAUT, Pierre AUMOND, Arnaud CAN, Nicolas FORTIN, Benoit GAUVREAU, Erwan BOCHER, Sylvain PALOMINOS, Gwendall PETIT, Gwenaël GUILLAUME ; [Noise mapping based on participative measurements with a smartphone](#) ; *Acoustics '17 Boston*, 25–29 June 2017, Boston (United States) – [Acoustical Society of America](#) and the European Acoustics Association, 141 (5), pp.3808, 2017 ; The Journal of the Acoustical Society of America.

## To go further...

Application: [https://play.google.com/store/apps/details?id=org.noise\\_planet.noisecapture](https://play.google.com/store/apps/details?id=org.noise_planet.noisecapture)

Project: <http://noise-planet.org>

## INTRODUCING A NEW BUSINESS MODEL

by Jędrzej Czarnota - Trilateral Research Ltd. (UK)

The consortium has developed a sustainability plan, according to which the partners will ensure a stable, trustworthy and sustainable (both financially as well as technologically) pEVH...

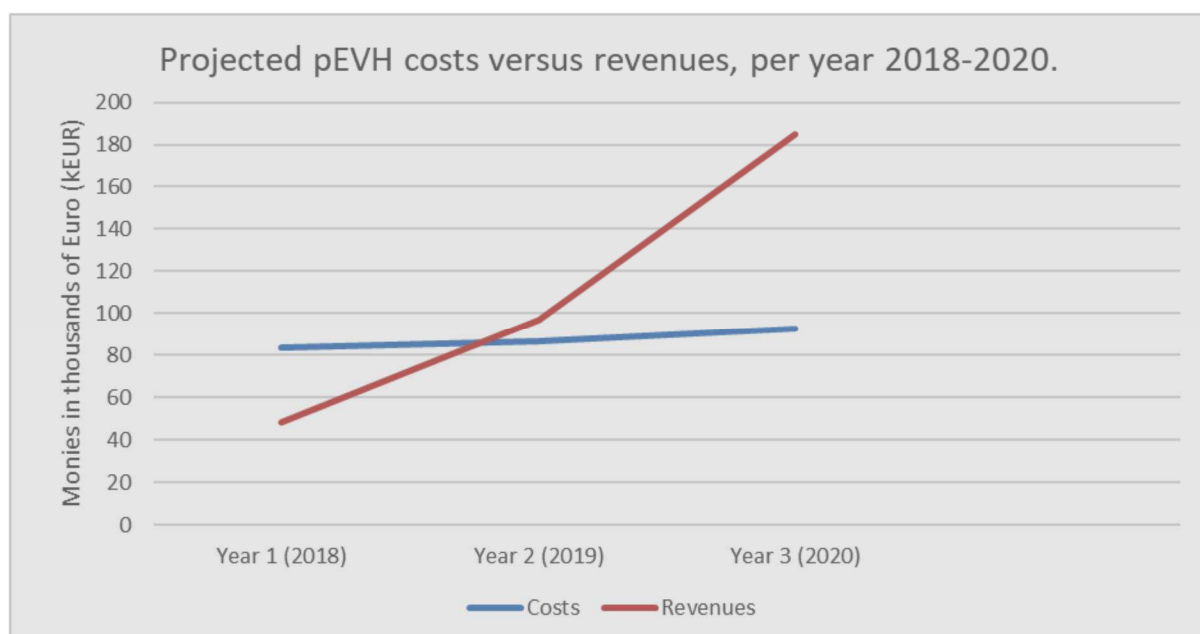
The ENERGIC-OD consortium is committed to ensure the sustained and long-term functioning of the pan-European Virtual Hub (pEVH) for the European Union, as well as to promote the expansion of the pEVH with new GIS data. ENERGIC-OD pEVH, Virtual Hubs (VHs), and applications will continue to be supported after the close of the project until at least 31<sup>st</sup> of December 2020. The consortium has developed a sustainability plan, according to which the partners will ensure a stable, trustworthy and sustainable (both financially as well as technologically) pEVH.

The consortium has decided to adopt a freemium business model in order to generate revenue for cost recovery during the years 2018-2020. ENERGIC-OD users will have free access to geospatial data brokered and harmonised by the pEVH. Subsequently, customers interested in having expanded access to the data and/or in utilising the advanced features of the VH, such as crowdsourcing and sensor platforms, will be able to access those services and/or data through a payment and an upgrade to either the silver or gold service. The three pEVH

levels of service are outlined below:

- Free** users have free access to all the data through the data portals and the APIs.
- Silver** users can publish their own datasets, enabling them to create simple crowdsourcing apps or enrich apps with their own datasets.
- Gold** users can utilise sensor and crowdsourcing platforms, allowing them to create complex crowdsourcing and sensor applications.

A freemium business model was chosen as it not only facilitates knowledge exchange for innovation among the different actors in the ENERGIC-OD ecosystem, but it also enables them to extract value from such exchanges and from their products and services. It also is flexible in terms of resources (with low overheads) and remains profitable with varied demand. The graph below shows the projected pEVH costs and revenues from 2018 till 2020.

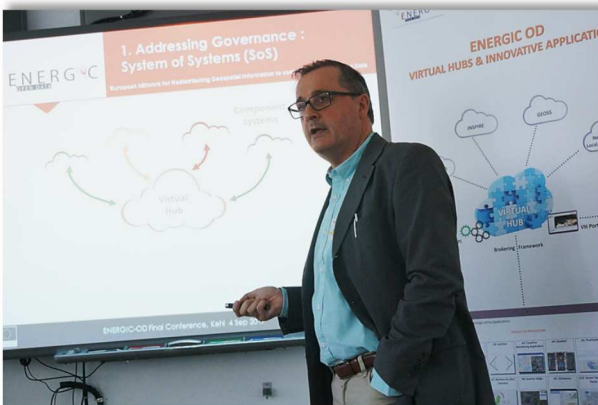


# Events

## FINAL CONFERENCE OF THE ENERGIC OD PROJECT IN KEHL, 4 SEPTEMBER 2017

by Marek Baranowski - IGIK (Poland)

In the last month of the ENERGIC OD project realisation, the final conference wrapping up three years of work was organised by the consortium partners. It was collocated within the INSPIRE 2017 Conference – a major annual event of the European spatial information infrastructure held this year in Kehl (Germany) and in Strasbourg (France). The final conference has been accepted as an INSPIRE 2017 Conference's workshop titled «Open Data Access and Harmonisation by a Virtual Hub – ENERGIC OD solutions».



*Stefano Nativi, Coordinator of the ENERGIC OD project*

The workshop consisted of two sessions and has been composed of three major parts, namely: keynote speeches, project's results presentations and panel discussion.

Two keynote speakers, Dr Thomas Usländer of Fraunhofer IOSB (Germany) and Dirk Frigne of GEOSPARC company (Belgium) addressed to the final conference their thoughts on the broader context of the open data and their access issues. They delivered their observations coming from academia and SME's communities.



*Thomas Usländer, Keynote speaker*

The project's results have been firstly provided by Dr Stefano Nativi, project coordinator, who presented the overall philosophy and organisation of the ENERGIC OD project. Then the following author presented:

- Paolo Mazzetti – Virtual Hub solution;
- Dr Jędrzej Czarnota – ENERGIC OD business model;
- Stefan Braumann – ENERGIC OD applications proving the Virtual Hub's use;
- Gwendall Petit – OnoMaP ENERGIC OD European Application

The panel discussion focused on the key issue "Virtual Hubs to leverage Open Data Catalogues and INSPIRE". Five panellists, namely Dr Thomas Usländer (IOSB), Dirk Frigne (GEOSPARC), Guido Colangeli (ESA), Prof. Massimo De Marchi (Univ. Padova) and Silvano De Zorzi (NEREUS) provided their feedback to the role and potential use of the Virtual Hub solutions in the effective access to open data. The panel was moderated by Dr Jędrzej Czarnota. The workshop was chaired by Prof. Marek Baranowski.



*Panel members*

All presentations are available to the public at the ENERGIC OD website (specific link: <https://www.energic-od.eu/news-1-cxcp/j5dyj7k19/Workshop-on-Open-Data-Access-and-Harmonisation-by-a-Virtual-Hub>).

The final conference met with fairly big interest. 44 participants attended the workshop, coming from European institutions, public authorities, business companies, non-governmental organisations and academia.

# Project Dissemination

## A NEW VERSION OF THE WEBSITE AND AN INNOVATIVE AND INSPIRING TOOL : A CARTOON VIDEO!

by Marek Baranowski - IGIK (Poland)

With the development of the project, it was desirable to modify the main source of information about the project and to highlight the most important outcomes. For this purpose a new version of the ENERGIC OD website was created.



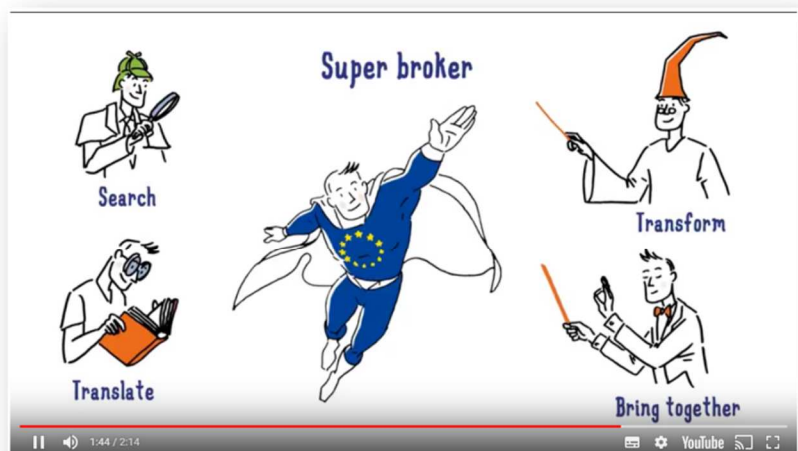
The main changes concerned new definition and functionality of the home page as well as several relevant pages. We hope you find it more transparent, attractive and easier to navigate.

It seems to be more rational to provide to users an access to the important results of the ENERGIC OD directly through the home page. They can move instantly to PanEuropean and 5 regional Virtual Hubs for open data access, to 10 innovative applications demonstrating use of VH and business opportunities as well as to the latest news about the project.

As a part of the project dissemination activities, an animated video has been developed by our French partner BRGM in collaboration with the Neologis company. It is a graphical presentation of the key results of the project. In a brief and comprehensive way, it outlines the assumptions of the project and its main goals.

The full version of the animation is available both from the home page of the project website as well as on the YouTube [https://youtu.be/ILhZQF\\_kjOM](https://youtu.be/ILhZQF_kjOM).

We hope you'll enjoy browsing it.





## ENERGIC-OD VIDEO-TELLING : THE MAKING OF




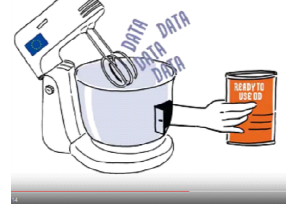


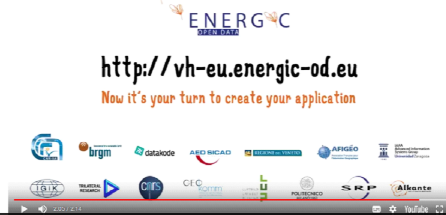
by Frédérique Mjon Lumier - BRGM (France)

**How could we support exploitation and dissemination efforts after the ENERGIC OD project ends?** A question raised by the Consortium in the light of recent conferences and exhibitions. At **GeoBusiness 2017**, it had been an evidence an attractive communication tool would help. A video film to present the project and perspectives offered by the pan european VH, to geospatial application developers and event or website visitors appeared to be the solution. All agreed it had to be informative but also short, attractive and teasing to induce viewers to go further and make a try to **ENERGIC-OD** solutions.

Unfortunately, the team had no equipment or technical skills to shoot a professional-looking film. So why not a cartoon or hand-drawn video to tell the story ? BRGM knew a French firm specialized in video-telling to contact, and collaboration with a Neologis graphic designer was soon initiated.

On the first meeting , the team exposed the project and needs, indicating a time constraint of 3 weeks since the video had to be ready for **Foss4G Europe 2017** conference (July 18-22, 2017). Neologis was quite responsive and provided a tight schedule, each step requiring consortium validation:

1. Meeting and discussion to build the scenario
2. Proposition of a script and spoken voice
3. First drawing of 7 to 9 scenes
4. Animated storyboard (between 1.30 to 2 min)
5. Recording of the English voice with free of right background music
6. Editing and mixing the final version
7. Providing the links of the final drawn video for posting on website and YouTube.

 <p>Open geospatial data</p> <p>1. <i>The story thread is starting from the need, with the image of a developer and users in a setting and with difficulties faced</i></p>	<p>2. <i>Energic-OD is the solution</i></p>  <p>DEVELOPER</p> <p>Energic OD, it's easy</p>
 <p>3. <i>An example of a very complex application combining a number of data and requirements and geolocalisation is presented</i></p>	<p>4. <i>Why can ENERGIC OD VH can do it ? A unique point of acces to Open Data</i></p>  <p>DATA DATA DATA DATA</p> <p>READY TO USE</p>
 <p>Search</p> <p>Translate</p> <p>Super broker</p> <p>5. <i>The VH is represented as the SuperBroker with lots of skills and powers</i></p>	<p>6. <i>Making the creation of a large number of applications possible</i></p>  <p>New markets New prospects</p>
<p>7. <i>The final view is a call for action and presents the consortium logos as well the the EC's and usual acknowledgements</i></p>	 <p>ENERGIC-OD</p> <p><a href="http://vh-eu.energic-od.eu">http://vh-eu.energic-od.eu</a></p> <p>Now it's your turn to create your application</p>

The mix of convivial images and funny characters such as the Super broker enhance the important messages (e.g. Europe, capacities and functionalities of the broker, users...) the Consortium wanted to convey.

The other challenges faced : making a selection among the collected messages to build a convincing but teasing scenario, matching texts and key-words to emphasize the illustrated board, and telling in less than 2 minutes a more than 3 year technical and human adventure !

# Internal meetings

## PROJECT MEETING, FLORENCE (ITALY) 20–21 JUNE 2017

by Maria A. Liberti - CNR-IIA (IT)



exploitation framework of ENERGIC-OD in the post-funding phase, and the agreement reached will be reported in the final version of Deliverable 8.3. In particular, licensing arrangements for VH technology were discussed. Consortium partners reported on and planned their remaining exploitation activities. TRI reported on the GEO Business participation fallout.

The technical sessions included: a) demonstration of status and presentation of planned activities towards the establishment of a pan European Virtual Hub as requested by the reviewers and PO, and the integration with the crawler module; and b) demonstration of current status and presentation of planned activities for the finalization of the selected cross-border and pan European apps.

Attention was devoted to the organization of the final conference and to all future dissemination activities. To ensure the highest project visibility and impact, a list of particularly important events that the Consortium should attend was examined.

Some time was also devoted to management (including a review of the Key Performance Indicators) and financial issues and to the execution of activities within the different Work packages taking into account comments and recommendations made during the 2nd review.

A new meeting was called at the final stage of our project for reporting on its current state and next steps to be taken in light of the final review.

This project meeting focused on the final business plan and model for ENERGIC-OD, the Virtual Hubs and applications. All partners have been involved in determining the final

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