European NEtwork for Redistributing Geospatial Information to user Communities - Open Data

ENERGIC OD Final Conference
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Open Data Access and Harmonisation by Virtual Hub – ENERGIC OD solutions

The ENERGIC OD Virtual Hub

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The Virtual Hub Concept

Upstream services
- Resource provision

Midstream services
- Interoperability, Policy harmonization, Other VAS

Downstream services
- User services

Virtual Hub
- VH APIs
- VH Portal/Applications

Application developer
- End user
The ENERGIC OD Virtual Hub

National, regional, European and global Open Data Platforms

- Brokering Framework
- Open Data platform crawler
- Sensor platform
- Crowdsourcing data publishing platform

- Standard interfaces
- Restful API
- Web API

VH APIs

VH Portal/Applications

Application developer

End user

- ESA Portal
- 10 Pilot applications
Virtual Hub main functionalities

- Harmonized data discovery
  - Discovery interface mediation
  - Metadata harmonization

- Harmonized data access
  - Access interface mediation
  - Data harmonization
    - reprojection (CRS), subsetting, interpolation, format encoding

- Data publishing
  - Crowdsourcing data, sensor and sensor network data collection

- Advanced services
  - Semantic queries, metadata multilingualism

- Ease of use
  - Data discovery and access through standard interfaces and simple APIs
**ENERGIC OD VH APIs**

Geospatial standard interfaces: well-known standard interfaces. E.g. OGC CSW, OGC WxS, OpenSearch, etc.

RESTful APIs: supporting machine-to-machine interaction with the VH through the exchange of JSON messages through HTTP requests and responses.

Web APIs: Javascript library providing easy access to the most common functionalities, and integration with other widespread libraries (e.g. openlayers)

More powerful

More user-friendly
The deployment strategy depends on the business and marketing model. The technology efficiently supports both hierarchical and single-hub models.
ENERGIC OD Virtual Hub deployment

Regional VH

National VHs

pan-European VH
Virtual Hub distribution:

- **Running instances** (for developers and end-users)
  - 1 metropolitan VH
  - 5 national VHs
  - 1 pan-European VH

- **Software packages** (for service providers and system integrators)
  - Web archives for servlet containers
  - Virtual machines for deployment on public/private clouds
ENERGIC OD Ecosystem

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Data sources

Data system managers

VH manager

VH component developers

Virtual Hub

App developers

Apps
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The ENERGIC OD pan-European Virtual Hub

This project is partially funded under the ICT Policy Support Programme (ICT PSP) as part of the Competitiveness and Innovation Framework Programme by the European Community.
The Virtual Hub Portal

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Access to the data portal

Info on APIs

Info for potential stakeholders

http://www.vh.energic-od.eu/
Guide for Developers

Connecting to the VH
The VH Web Portal
The VH is accessible through a Web Portal at a specific Internet address:
http://vh-eu.energic-od.eu

Developing with a Virtual Hub
By the developer’s point-of-view, a VH is a black box which takes care of mediating and harmonizing the information coming from multiple providers on behalf of the user.

Developing with Standard Geospatial Interfaces
Discovery and access
A VH exposes a set of standard geospatial interfaces that an application can access. The specific type of exposed interfaces is defined by the VH manager. A user can check the exposed interfaces through the VH information page. A list of geospatial data discovery interfaces is presented.

Developing with the Restful API
Discovery and access
REST (REpresentational State Transfer) is an architectural style for the implementation of resource sharing systems.
Restful API

DAB RESTful API

This RESTful API (Application Program Interface) provides simple search capabilities and resources encoded in JSON, which simplify the development of applications and clients making use of the DAB.

Sources: Retrieves the DAB sources

Operations:

- GET /search
- GET /sources
- GET /progress

Response Content Type: application/json

Try it now!
The GEOSS Discovery And Access Broker APIs
Authors: Fabrizio Papeschi, Mattia Santoro, Stefano Nativi

DAB JavaScript API
In order to simplify the development of applications and clients making use of the DAB, this high level client-side Open APIs (Application Program Interface) have been designed and developed in JavaScript along with this documentation and the following usage examples

See also the RESTful API

Click the button below to download the full minified file which includes also all the required dependencies

[DOWNLOAD FULL 1.4.3-beta]

Click the button below to download the light minified file which do not includes the required dependencies

[DOWNLOAD LIGHT 1.4.3-beta]

Important changes from version 1.2.x
There are some important changes from the previous version 1.2.x. These changes redesigns the API in order to achieve the following goals:

- to have one or more resultSet as response of a Link discover and LinkNode expand:expandNext methods instead of having one or more paginator
- update the resultSet in order provide the tools necessary to retrieve and refine its content

In particular there are the following major changes:

- DAB discover method: responseType, result (array of Paginator) is deprecated and replaced by responseType, responses, an array of ResultSet
- LinkNode expand method: expandNode:expandNext is deprecated and replaced by expandNode:expandNext, a ResultSet object having the response page in the page property
- Paginator resultSet method is deprecated since now the paginator can be retrieved in the resultSet property of the ResultSet
- ResultSet provides all the following properties:
  - Content retrieval:
    - resultSet: provided only as response of a DAB discover method
    - page: provided only as response of a LinkNode expand:expandNext method
  - Content advancement

[Image]
The Data Portal

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The Data Portal

agriculture

Search Results

Number of results: 13

Filters

Keyword

Format

Source

Protocol

Resource preview not available

Mapa de bajas de riesgo de la Comunitat Valenciana del Instituto Cartográfic de Valencia
Organization: Instituto Cartográfic de Valencia
Description: Al aspecto y detalles de la superficie terrestre y de los objetos naturales o producidos de la acción humana que se encuentran sobre ella, a escala 1:200.000 de toda la Comunitat Valenciana. Obtenido a partir de la generalización de la serie cartográfica del I.C.V. 1995 por generalización en d ...

Resource preview not available

Feldblöcke im Landkreis Oberhavel
Organization: Landkreis Oberhavel
Description: Feldblöcke des Digitalen Feldblöckkatasters im Landkreis Oberhavel von 2015.

Resource preview not available

Digitale Mittelmaßstäbige landwirtschaftliche Standortkartierung (MMK)
Organization: Landesamt für Umwelt, Naturschutz und Geologie Medeburg (EMAG), Abteilung 3 (Gewässer, Wasser und Böden, Dezernat 3/27 Bodenkartographie und Bodenschutz)
Description: Digitale Mittelmaßstäbige landwirtschaftliche Standortkartierung (MMK) - digitale Bodenkarte der landwirtschaftlich genutzten Flächen auf der Basis der gleichermaßen anliegenden Kartenwerkzeuge inkl. der wesentlichen Datensätzen aus "Dokumentationsblatt A" (z.B. Bodencharaktereinentwicklung, Substratflächen, Hydromorphoflächen, u.a.) - Maßstab 1:10 000. Zusätzliche Informationen ...

Size: 70.4 MB Start date: 1994-01-01

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Thank you for your attention!

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http://www.energic-od.eu

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