

Infraestructura de datos geocientíficos del futuro Servicio Geológico Europeo

EGDI. Plataforma europea de datos geológicos



J. Román Hernández Manchado - CN IGME

Conexión Geociencias - Universidad de Zaragoza 19 febrero de 2025

Por qué un Servicio geológico europeo?

There is a Critical Need for High-Quality Subsurface Data!



Pan-European problems require a pan-EU efforts and solutions!



Pasado... Presente... Futuro....





The Geological Surveys of Europe



European Geological Service

Joint Research
with Impact at
EU Policy Level

Applied and
policy oriented

Demand driven

Harmonizing
and Sharing
pan-European
Geological Data
(EGDI)

Raw data,
derived data, models

Standards &
harmonization
(INSPIRE)

Sharing
Knowledge,
Capacities and
Infrastructure

Capacity building
& exchange

De-fragmentation
& smart
specialisation

The Geological Surveys of Europe



466
Data layers



+25
Contributing projects



68
Team members

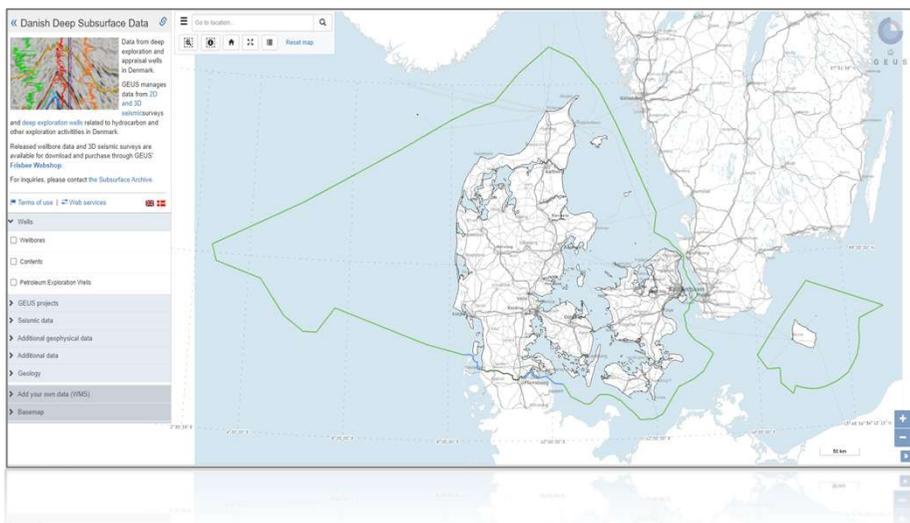
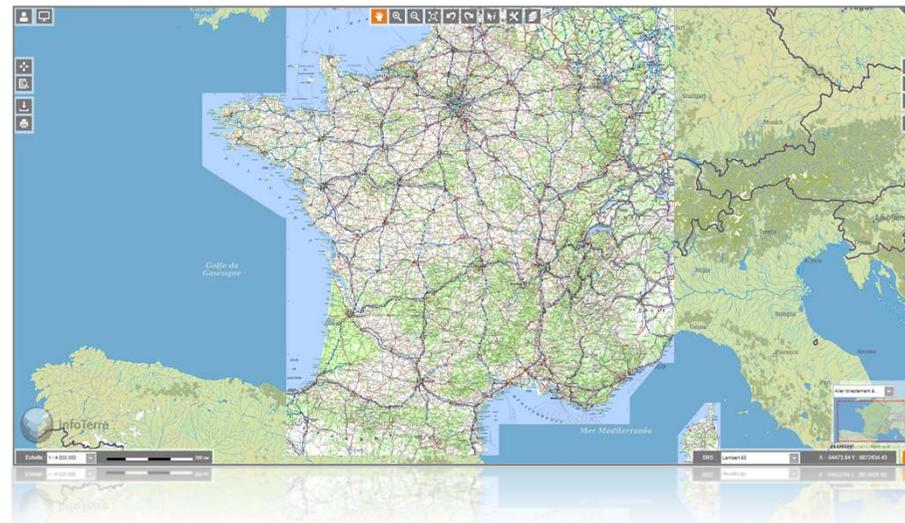
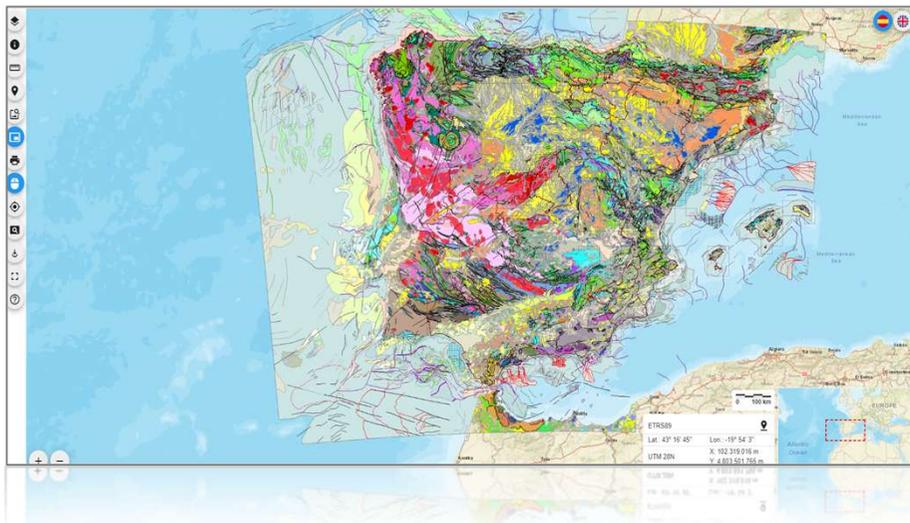


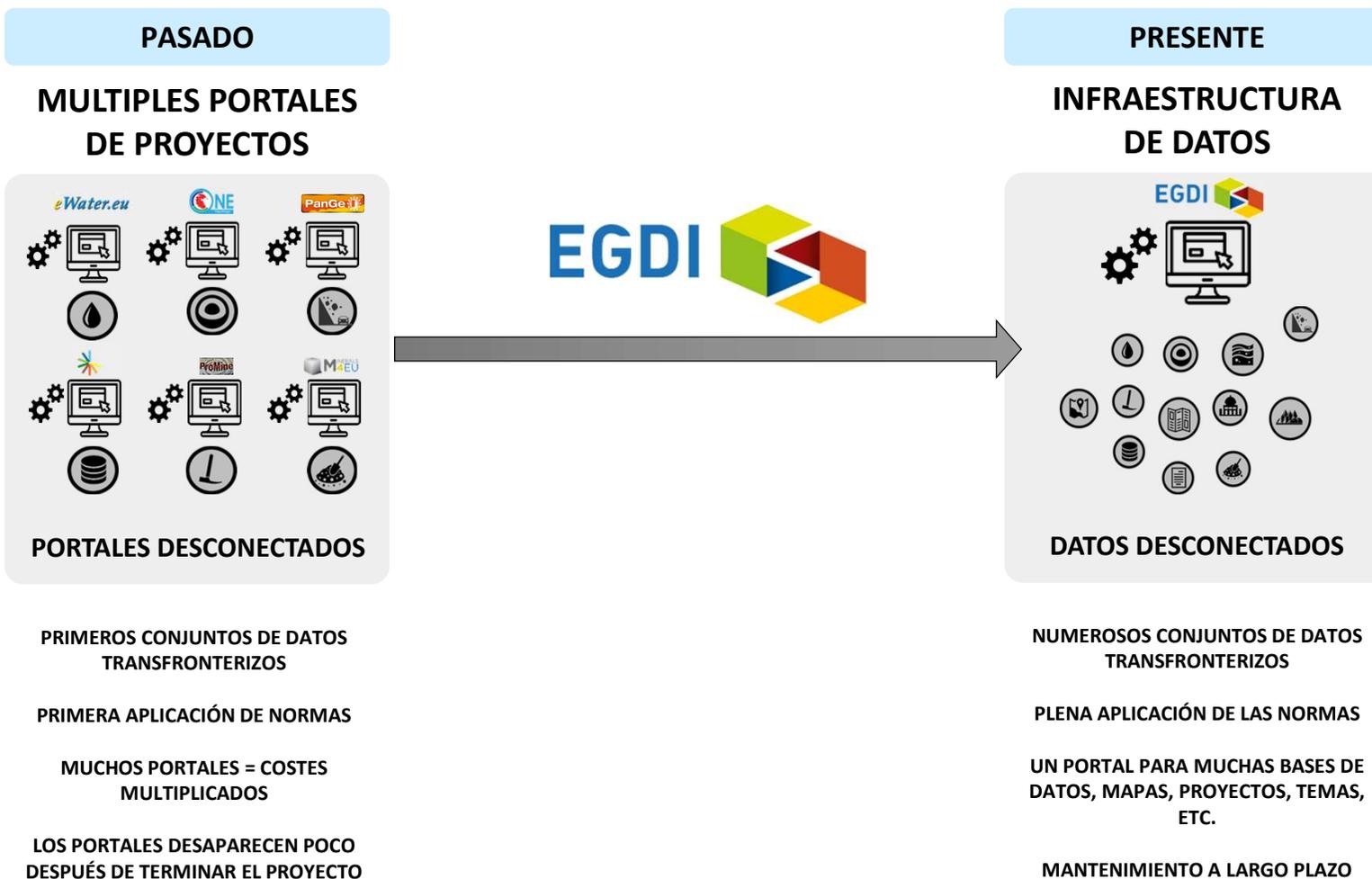
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Partners



| | | | | | |
|--|--|---|--|--|--|
| 3DGEO-EU 3D geomodelling for Europe This project demonstrates cross-border harmonization methods, focusing on uncertainty, fault data modeling, and consistency in 3D models, crucial for... | GeoConnect'd Cross-border, cross-thematic, multiscale framework for combining geological models and data for needs... The GeoConnect'd project developed and tested a new methodological approach to prepare and disclose geological information in a more useful and understandable... | EuroLithos European Ornamental stone resources European Ornamental stone resources (EUrolithos) project increased knowledge of the geology, quality and history of use of natural stone in Europe... | DGE-ROLLOUT Roll-out of Deep Geothermal Energy in North-West Europe DGE-ROLLOUT facilitates the use of deep geothermal energy as climate-friendly energy resource to reduce CO2 emissions and to protect the environment... | SCREEN Synergic Circular Economy across European Regions SCREEN was a Horizon 2020 funded project (2016 - 2019) which aimed at bringing together European initiatives, associations, clusters, and projects work... | IGME 5000 The 1:5 Million International Geological Map of Europe and Adjacent Areas It shows the pre-Quaternary geology of the entire Europe embrace and - first time at this scale - offshore. |
| FRAME Forecasting and Assessing Europe's Strategic Raw Materials needs Non-energy minerals undergo our modern economy and are essential for manufacturing and renewable "green" energy supply technologies. | GARAH Geological Analysis and Resource Assessment of selected Hydrocarbon systems The GARAH project main result was a harmonized, scientific based geological analysis and assessment of the conventional and unconventional hydrocarbons... | HIKE Hazard and Impact Knowledge for Europe The HIKE project aimed at stimulating the development of common information repositories and a knowledge sharing infrastructure in order to support... | TACTIC Tools for Assessment of Climate Change Impact on groundwater and adaptation Strategies Activities TACTIC furthermore contributed to easy access of information relevant to climate change assessments, which can be used directly or integrated into full... | VoGERA Vulnerability of Shallow Groundwater Resources to Deep Subsurface Energy-Related Activities Gather scientific evidence to investigate the relationship between industrial activity in the deep subsurface and shallow groundwater resources, in a... | |

| | | | | | |
|---|---|---|---|---|---|
| Minerals4EU Minerals Intelligence Network for Europe A minerals intelligence network with a database providing access to an overview of European raw materials and a European Minerals Yearbook was created... | SCREEN2 Networking to secure rare earth elements Launched to develop the SCREEN expert network to cover all rare materials. Specifically, SCREEN2 will develop the network and publish sector-oriented... | ONE OneGeology-Europe A harmonized dataset (based on existing international standards) for 1:1 million geological map data. | HOVER Hydrological processes and Geological settings over Europe controlling dissolved geogenic and anthro... Gain new understanding of the controls on both natural and polluted groundwater quality across Europe using the combined expertise and data held by members. | MUSE Managing Urban Shallow geothermal Energy MUSE investigated resources and possible conflicts of use associated with the use of shallow geothermal energy (SGE) in European urban areas. | HotLime Mapping and Assessment of Geothermal Plays in Deep Carbonate Rocks - Cross-domain Implications and... Explore the HotLime project, which maps and assesses geothermal plays in deep carbonate rocks across Europe to de-risk exploration and enhance low-em... |
| ORAMA Optimising data collection for Primary and Secondary raw materials ORAMA project enhanced raw materials data collection, tackling challenges of availability, coverage, accessibility, standardization, quality, and them... | ProSUM Prospecting Secondary raw materials in the Urban mine and Mining wastes The project delivered the first Urban Mine Knowledge Data Platform with information on secondary raw materials. The platform was linked to the M4EU da... | RESOURCE Resources of groundwater harmonized at cross-border and pan-European scale Demonstrate the potentials of the harmonization of information about Europe's groundwater resources through cross-border projects. | MINDeSEA Metallurgical and Geological Potential for Strategic and Critical Raw Materials Project MINDeSEA (Metallurgical and Geological Potential for Strategic and Critical Raw Materials) focused on surface mineral deposits. | Mintell4EU Mineral Intelligence for Europe The location of (potential) European mineral resources is of increasing interest to policy makers and stakeholders as the need for raw materials for... | RESEERVE Mineral Potential of the ESEE Region The RESEERVE project mapped the mineral resources of the six ESEE countries: Albania, BiH, Croatia, Serbia, Montenegro and Northern Macedonia. |





Objetivos



Ser elemento consultivo geocientífico para la Comisión Europea.



Ahorrar recursos a los usuarios (empresas, investigadores) que necesiten la información geocientífica a nivel europeo o nacional de detalle



Servicios Geológicos financieramente sostenibles.



Difundir la información Geocientífica y la necesidad de un servicio geológico europeo

¿Cómo cumplir los objetivos?

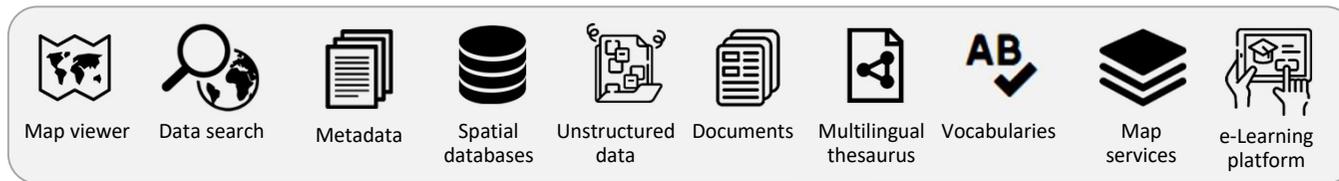
| |  |  |  |  |
|---|---|---|---|---|
| Información Armonizada y estandarizada | ✓ | ✓ | | |
| Referencias información nacional de detalle | | ✓ | | |
| Información Europea y agrupada | ✓ | | | ✓ |
| Principios FAIR | | ✓ | | |
| Herramientas de usuario adecuadas | | ✓ | | ✓ |
| Información ajustada a la necesidad | | ✓ | | |
| Obtener financiación europea | | | ✓ | |

- 
Elemento consultivo CE
- 
Ahorrar recursos a los usuarios
- 
Servicios Geológicos financieramente sostenibles.
- 
Difundir la información Geocientífica

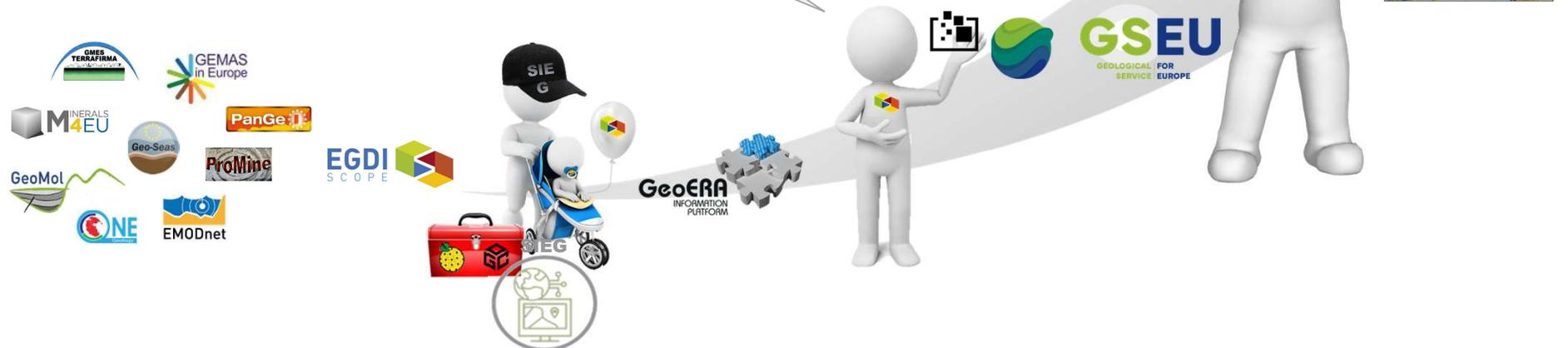
EGDI delivering FAIR data to support EU policy

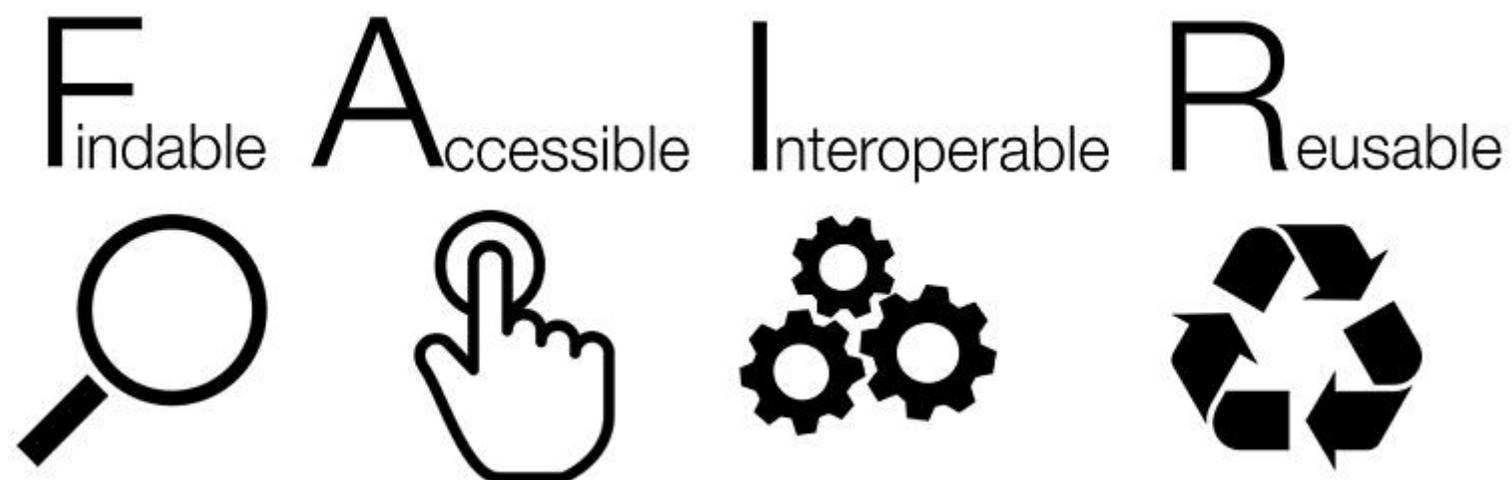
Objetivo: una plataforma sólida y sostenible

Requiere un esfuerzo colectivo de recopilación de datos sobre toda la geología - datos temáticos proporcionados por los científicos, consolidación, normalización, armonización, descripción adecuada mediante metadatos y accesibilidad para su reutilización ().



- Map viewer
- Data search
- Metadata
- Spatial databases
- Unstructured data
- Documents
- Multilingual thesaurus
- Vocabularies
- Map services
- e-Learning platform





PRINCIPIOS FAIR



datos.gob.es
reutiliza la información pública

FINDABLE

Tiene que poder ser fácil encontrar los datos

ACCESIBLE

Tiene que ser fácil poder acceder a los datos para utilizarlos

INTEROPERABLE

Tiene que ser fácil poder interoperar con ellos

REUSABLE

Los datos tienen que poder ser reutilizados

FAIR Principles

Compliance



Findability

Resource and its metadata are easy to find by both, humans and computer systems. Basic machine readable descriptive metadata allows the discovery of interesting data sets and services.

- ✓ **F1.** Resource is uploaded to a public repository.
- ✓ **F2.** Metadata are assigned a globally unique and persistent identifier.



Accessibility

Resource and metadata are stored for the long term such that they can be easily accessed and downloaded or locally used by humans and ideally also machines using standard communication protocols.

- ✓ **A1.** Resource is accessible for download or manipulation by humans and is ideally also machine readable.
- ✓ **A2.** Publications and data repositories have contingency plans to assure that metadata remain accessible, even when the resource or the repository are no longer available.



Interoperability

Metadata should be ready to be exchanged, interpreted and combined in a (semi)automated way with other data sets by humans as well as computer systems.

- ✓ **I1.** Resource is uploaded to a repository that is interoperable with other platforms.
- ✓ **I2.** Repository meta- data schema maps to or implements the CG Core metadata schema.
- ✓ **I3.** Metadata use standard vocabularies and/or ontologies.



Reusability

Data and metadata are sufficiently well-described to allow data to be reused in future research, allowing for integration with other compatible data sources. Proper citation must be facilitated, and the conditions under which the data can be used should be clear to machines and humans.

- ✓ **R1.** Metadata are released with a clear and accessible usage license.
- ✓ **R2.** Metadata about data and datasets are richly described with a plurality of accurate and relevant attributes.

Información en la plataforma EGDI



CARTOGRAFÍA

Geológica, hidrogeológica, etc.

Vectorial - Ráster



DOCUMENTOS

Artículos de revistas, informes, etc



DATOS

BBDD geoquímicos, piezometría, geotermia,



IMÁGENES

Satélite, etc.



GeoEnergía

Aguas Subterráneas

Materias Primas



Geotermia y almacenamiento subterráneo

Agua Subterránea

Vulnerabilidad costera y granjas eólicas

Marco geológico europeo

Geología

Riesgos geológicos

Suelo



Basic Geology

Multiscale space-related datasets and data products are the fundamental components of geological baseline information delivered by national geological survey organisations. These datasets and products show and explain the geological architecture of the surface and subsurface of the Earth's crust.



Boreholes

EGDI contains data on different sets of boreholes. Currently a WMS services is available.



Earth Observations and Geohazards

The systematic observation of the Earth's surface and the monitoring of ground deformation allows the precise mapping and assessment of geohazards. Geohazards can have severe impacts on human lives and properties and may lead to serious socio-economic consequences.



Geochemistry

Chemical elements are the Earth's building blocks. Geochemistry is the study of the distribution and concentration of Earth's elements.



GeoEnergy

Energy is vital to the functioning of our society. We need energy to heat our homes, to produce food, for transport, and much more. But energy consumption poses two major challenges. First, our huge dependency on fossil fuels. Second, domestic energy production is decreasing.



Geoheritage

Earth's geological processes are happening around us all the time. The results are often distinctive geological sites (geosites) that can be unique, visually appealing or have scientific value.



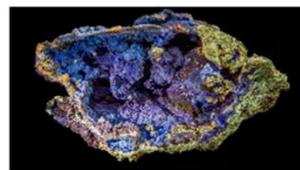
Geophysics

Geophysics studies the Earth's interior using physical properties measured at or above its surface and produces mathematical models to predict those properties.



Marine Geology

About two-thirds of the Earth's surface is covered by water. In line with this, Europe's seas total about fifteen million square kilometres, fifty percent more than its land area.



Mineral Resources

We live in a mineral-based world. It has been said that "if you can't grow it, you have to mine it". Indeed, virtually everything we use on a daily basis is manufactured from the Earth's mineral resources. Mineral raw materials provide us with our basic needs – energy, infrastructure, transportation, technology and more.



Urban Geology

Geological and geotechnical information about the subsurface of cities are of paramount importance and of high socio-economic value for their development and the maintenance of critical infrastructure.



Water Resources

Groundwater, present almost everywhere beneath our feet, is by far (99%) the largest freshwater resource on earth. As rain falls, it recharge and continuously feeds, rivers, lakes, wetlands and coastal waters.

EGDI: Los inicios y el Sistema actual



• Antecedentes

- 2012: Proyectos por encima de 300 M€ financiados por la CE han producido datos y wbds . Solo unos pocos permanecen activos 3 años despues
- EGDI se desarrola en 2016 por EGS para crear una plataforma que mantenga estos proyectos
- El Sistema fue desarrollado bajo la financiación del proyecto GeoEREA
- Y ahora se desarrola en el proyecto GSEU

• El Sistema actual

- Consta de una base de datos central, un sitio web, un SIG web, un sistema de búsqueda, un repositorio de documentos, un catálogo de metadatos, vocabularios, un sistema de aprendizaje electrónico, ...
- Contiene ~800 capas de datos, documentos, de más de 30 proyectos
- Se le reconoce como la espina dorsal de un Servicio Geológico para Europa

Componentes de la plataforma EGDI

Sitios web



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Acceso a la información



Visor WEB SIG



Visor de metadatos



Servicios WEB



Visor PDF



Acceso a los portales nacionales



Sistemas de búsqueda

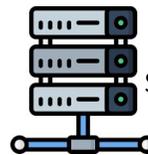


Tesoro Geocientífico Multilingüe



Vocabularios de proyectos

Almacenamiento



Servidores



Base de datos espacial



Catalogo de metadatos



Repositorio documental



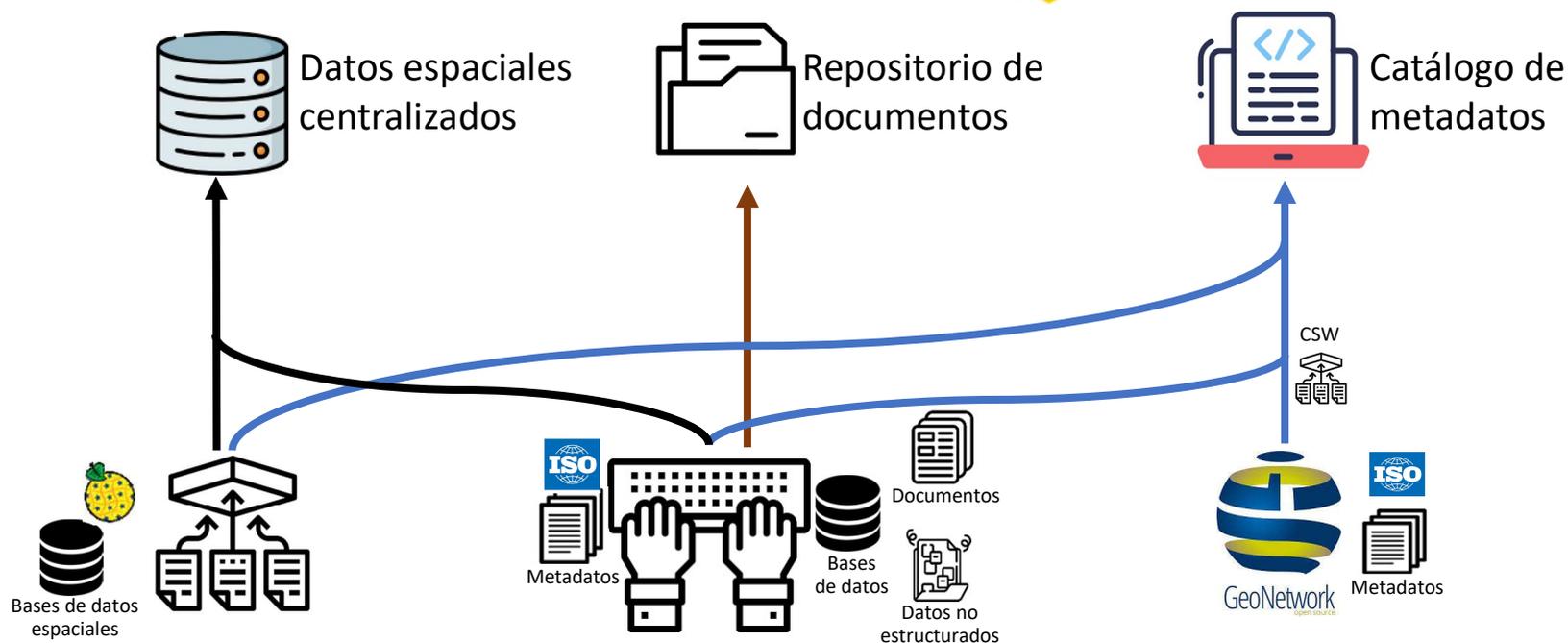
Triple stores

Nivel nacional



Información en la plataforma EGDI

Almacenamiento en **EGDI** 



Nivel nacional





[Map Viewer](#)

[Data Search](#)

[Get Involved](#)

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[EN](#)

European Geological Data Infrastructure

A collaborative initiative aimed at facilitating the sharing, integration, and accessibility of geological information across Europe.

[Map Viewer](#)

[Data Search](#)

About EGDI

466

Data layers

[Info](#)

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EuroLithos

European Ornamental stone resources

European Ornamental stone resources (EuroLithos) project increased knowledge of the geology, quality and history of use of natural stone in Europe



FRAME

Forecasting and Assessing Europe's Strategic Raw Materials needs



GARAH

Geological Analysis and Resource Assessment of selected Hydrocarbon systems



HIKE

Hazard and Impact Knowledge for Europe

Latest News



Watch the video on what is EGDI



New version of the EGDI website now available



EGDI at the Spanish Geological Congress



EGDI Data Search presentation at the Spanish Geological Congress



The big EGDI test



EGDI Factsheet

Discover More

Descubrimiento y acceso a la información

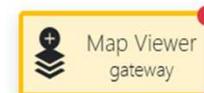


geología españa 🔍 Buscar ?

[Búsqueda avanzada >](#)

 Hemos encontrado un texto que puede corresponder a un lugar. Haga clic en cualquiera de los enlaces siguientes para limitar los resultados a los límites del lugar correspondiente:

[España \(Pais\)](#)



Lista de resultados

Mostrar sólo los resultados de las capas alojadas en EGDI para las que se pueden seleccionar registros dentro del conjunto de datos. [¿Por qué estos resultados?](#)

No

4183 resultados

1 siguiente ▶

 Mapa  

Mapa Geológico de España y Portugal a escala 1:1.000.000

Accede a estos datos Metadatos Información sobre el ranking ⓘ

Sitio web Web Map Service Metadata at IGME-CSIC

Información adicional ▾

Descripción: Mapa geológico de España y Portugal a escala 1:1 000 000 del año 2015 es una versión cartográfica actualizada de la Península Ibérica así como de Ceuta y Melilla y ...

 Mapa  

Mapa Geológico de España Escala 1:50.000, MAGNA

Accede a estos datos Metadatos Información sobre el ranking ⓘ

Web Map Service Metadata at IGME-CSIC

Información adicional ▾

Descripción: El Mapa Geológico Nacional (MAGNA), realizado entre 1972 y 2003 por el Instituto Geológico y Minero de España se distribuye en hojas 1:50.000 (1:25.000 en los cas...

Descubrimiento y acceso a la información



[Visor de mapas](#)
[Búsqueda de datos](#)
[Cón](#)

geología españa

[Búsqueda avanzada >](#)

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Búsqueda avanzada

Usar intersección espacial en la búsqueda

Sí



Disciplinas

Seleccionar: [Todo](#) | [Ninguno](#)

- Aguas subterráneas
- Energía
 - Geothermal (shallow)
 - Geothermal (deep)
 - Energy storage
 - Carbon Capture and Storage
- Geología
- Geología en tierra firme
- Recursos minerales
- Riesgos geológicos
- Suelo

Tipo

Seleccionar: [Todo](#) | [Ninguno](#)

- Base de datos
- Capa alojada en EGD
- Documentos
- Mapa

Formatos

Seleccionar: [Todo](#) | [Ninguno](#)

Descubrimiento y acceso a la información

Mapa

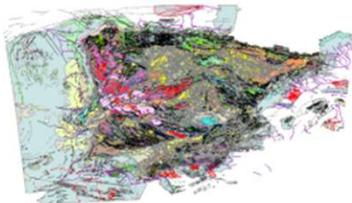

Mapa Geológico de España y Portugal a escala 1:1.000.000

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Información sobre el ranking 

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[Web Map Service](#)
[Metadatos al IGME-CSIC](#)

Información adicional 

DESCRIPCIÓN



Mapa geológico de España y Portugal a escala 1:1 000 000 del año 2015 es una versión cartográfica actualizada de la Península Ibérica así como de Ceuta y Melilla y de todo el territorio insular de España y Portugal: Islas Baleares, Canarias, Azores y Madeira, editada de forma periódica por el IGME en colaboración con el Servicio Geológico de Portugal (LNEG). En esta nueva versión se incluye por primera vez la cartografía geológica de la plataforma continental y de las islas atlánticas de Portugal. En este mapa se recoge todo el nuevo conocimiento geológico que ha supuesto la finalización de la serie MADINA de cartografía geológica escala 1:50.000 del IGME, para el territorio español y de las series sistemáticas de cartografía del territorio de Portugal desarrolladas por el LNEG. La parte continental del mapa se ha compuesto a partir de síntesis previas a escala 1:400.000 desarrolladas para cada gran unidad geológica de España, concretamente, Macizo Varisco, Pirineos, C. Bética, C. Cantábrica e Ibérica y Cuencas Cenozoicas del Duero, Tago y Ebro, y en la cartografía geológica a escala 1:200.000 producida en Portugal.

CONTACTO

[IGME - Instituto Geológico y Minero de España](#)

SCALE

1:1.000.000

LÍMITE O RECUADRO DELIMITADOR



RESTRICCIONES DE USO

LICENCIA DE USO: Condiciones de uso público y difusión de la información para la reutilización de los datos IGME <http://www.igme.es/Ayuda/CondiUso.htm>

RESTRICCIONES DE ACCESO

<http://inspire.ec.europa.eu/metadata-codelist/LimitationsOnPublicAccess/noLimitations>

LIMITACIÓN DE USO

LICENCIA DE USO: Condiciones de uso público y difusión de la información para la reutilización de los datos IGME <http://www.igme.es/Ayuda/CondiUso.htm>

INFORMACIÓN ADICIONAL

Fecha de creación 17/12/2015

Fecha de publicación 17/12/2015

PALABRAS CLAVE

ANTHROPIC ENVIRONMENT MEDIO ANTRÓPICO geological processes(procesos geológicos) Ages Balearic Islands Boundary Canarias Cartografía Geológica Oficial Cenozoic Cenozoico Chronostratigraphy Contacto Cronoestratigrafía Crystalline rock Cuaternario EGDÍ Edades España Estratigrafía Falla Fallas Fault Faults General geology Geological Map Geological units Geology Geología Geología estructural Geología general IGME Igneous rock Islas Baleares LITHOSPHERE (soil) LITOSFERA (suelo) UNEG Lithology Lithostratigraphy Litoestratigrafía Litología MEDIO NATURAL Mapa Geológico Mesozoic Mesozoico Metamorphic rock NATURAL ENVIRONMENT Nacional National Official Geological Cartography Paleozoic Paleozoico Portugal Precambrian Precámbrico Quaternary Região Autónoma da Madeira Região Autónoma dos Açores Roca Roca cristalina Roca metamórfica Roca sedimentaria Roca ignea Sedimentary rock Sistemática de Estratigrafía Sistemática de Geografía Sistemática de rocas metamórficas Spain Stratigraphy Stratigraphy Systematics Structural geology Systematic Geography Systematics of metamorphic rocks Unidades geológicas infoMapAccessService lithosphere litosfera rocas rock rocks

DISCIPLINAS

Geología en tierra firme Geología Suelo

TIPO

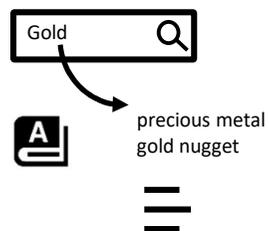
Mapa

Principales características

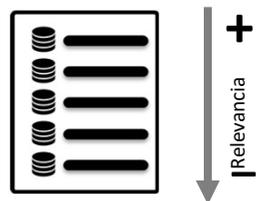
Data Search



Búsqueda en datos y metadatos

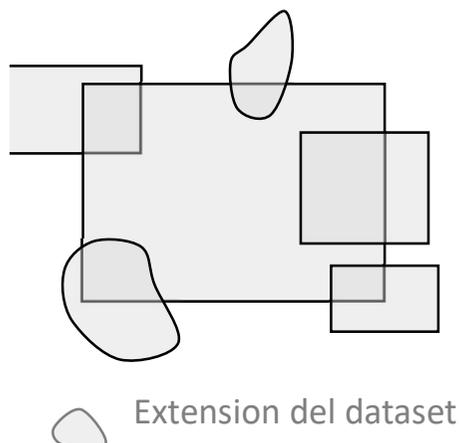


Enriquecimiento del texto de búsqueda



Resultados ordenados por relevancia

Datasets disponibles



Criterios de búsqueda

Texto libre:

Intersección espacial:



Filtros adicionales:

Temática



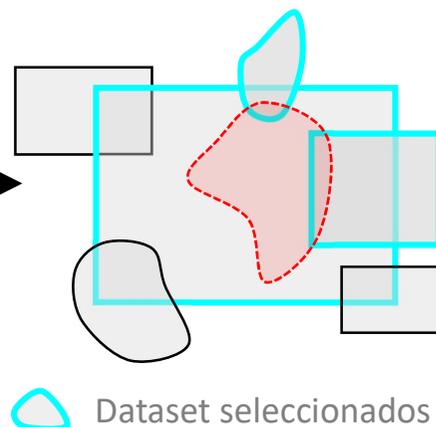
Tipo de recurso



Formato

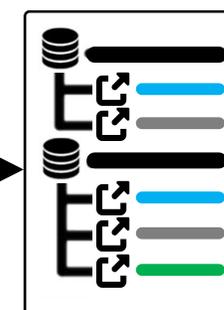


Selected datasets



Lists de resultados

Dataset encontrados y recursos online asociados



Ranked
 Datasets
 ordenados
 relevancia

- Recursos online
- Selección de elementos
- Acceso al metadato

En resumen:



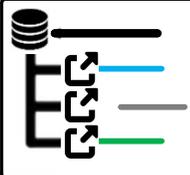
Diferentes criterios de búsqueda

Free text search, spatial delimitation, filter by topic category, format, etc.



Multilingue

User interface, search, codelist, metadata, etc.
 Currently UI in 22 languages.



Acceso a datos

Access to full metadata and available online resources (services, data download, viewer, etc) for the dataset



Enriquecimiento
De la búsqueda



Tesouro
multilingüe

Terminos usados en la búsqueda

Termino de búsqueda:

gold 

Traducción del termino:

or 

guld 

oro 

:

Terminos más genéricos y traducciones:

precious metal 

métal précieux 

ædelmetal 

metal precioso 

:

Terminos más específicos y traducciones :

gold nugget 

:

Terminos relacionados y traducciones:

calaverite 

:



Para resumir:



precious metal
gold nugget

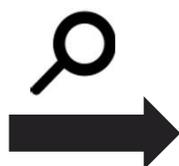


Avoids losing results
Text search is enriched with related terms and translations from a **multilingual thesaurus**



Full-text search
The semantic vector of words is what matters (“map”, “maps” and “mapping” provide the same result)

Resultados ordenados por relevancia

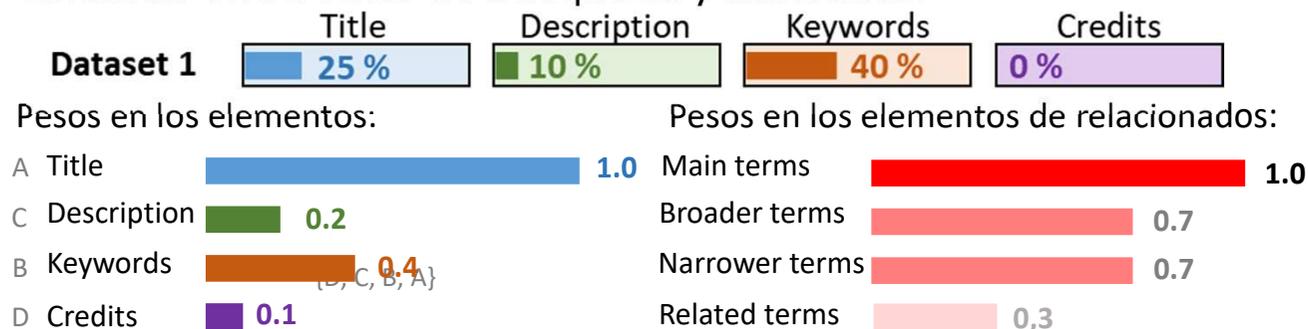


-  **Dataset 1.** 1 book with title 'De l'or en France' 
-  **Dataset 2.** Keywords: Mine, **Guld**, ... 
-  **Dataset 3.** 2 images about 'extraction of **gold**' 
-  **Dataset 4.** A map with title '**Precious metals** map'. 
-  **Dataset 5.** 5 records with **Oro** in their attributes 

Ranked

Cálculo de relevancia. Formula compleja que tiene en cuenta:

- Similitud entre texto de búsqueda y metadato:

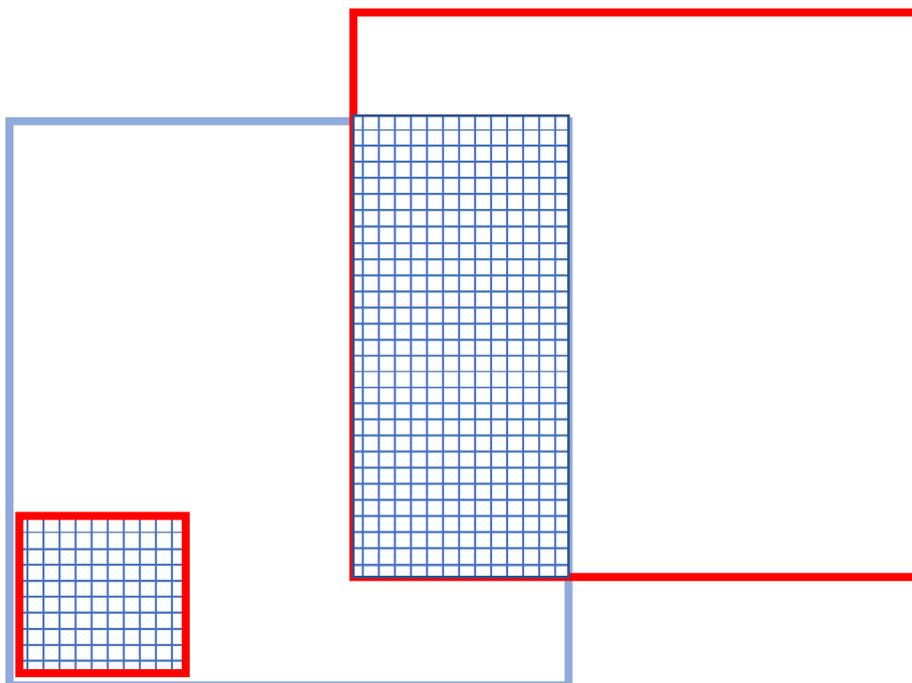


- Relevancia del dataset.
- Relevancia del dataset según los temas seleccionados.
- Relevancia espacial.



Resultados ordenados por relevancia

- Relevancia espacial:



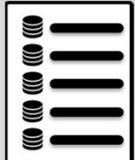
$$P1 = I/BB \text{ (de 0 a 1)}$$

$$P2 = I/Ex \text{ (de 0 a 1)}$$

$$P3 = 2Ex/(Ex+BB) * 2BB/(Ex+BB) \text{ (de 0 a 1)}$$

$$Rel = (P1 * P2 * P3)^{(1/3)} \text{ (de 0 a 1)}$$

To summarize:



+

Relevance

■

Ranked list of results

Results ordered by relevance to the selection criteria.

P1: Importancia del recurso en términos de cuanta superficie nos resuelve el recurso.
 P2: Cuanta parte del recurso podemos usar.
 P3: Similitud de escala.

Busca en metadatos y en datos



Metadatos



A



Datos






Metadatos



B



Datos






- A veces, el texto de búsqueda se encuentra en los atributos del conjunto de datos y no en los metadatos.
- A veces, para saber si los datos son útiles, tenemos que verlos en un mapa y echar un vistazo a su tabla de atributos

En resumen:



Doble búsqueda
Busca en los metadatos, pero también en los datos, ya que el texto buscado puede estar en cualquiera de los atributos de los datos.

Repositorio de metadatos Inspire, ISO, ...

Catálogo de metadatos

EGDI Metadata Map Help Cookies Contact

[Home](#)



Search text

Everywhere
 Title
 Title + Abstract

Resource type

select

INSPIRE theme

select

GeoERA keywords

select

Project name

select

Data contact (custodian)

select

Country (custodian)

select

Spatial scope

select

Metadata language

select

Harvested from

Metadata 1122 ← Basic / Full metadata

British Geological 02/08/1976

Report: Deegan, SE. 1968. Navigation: Magnavox Navigator Mk 12. Equi-EG&G 9 candle spark : The first objective was t

British Geological

Report: Brett, CP. 1980 (IGS Report No 106) M and Arma Brown Mk I Atlas Deso 10 echo sc Romberg S75 air-sea g

Continuous Geolog

This map represents ti Geological Cartograph process involved in the terms of criteria for assi sheets, coding and sym

GEODE - Continuo

This map represents ti Geological Cartograph process involved in the terms of criteria for assi sheets, coding and sym

Geologic Map of S

The National Geologic

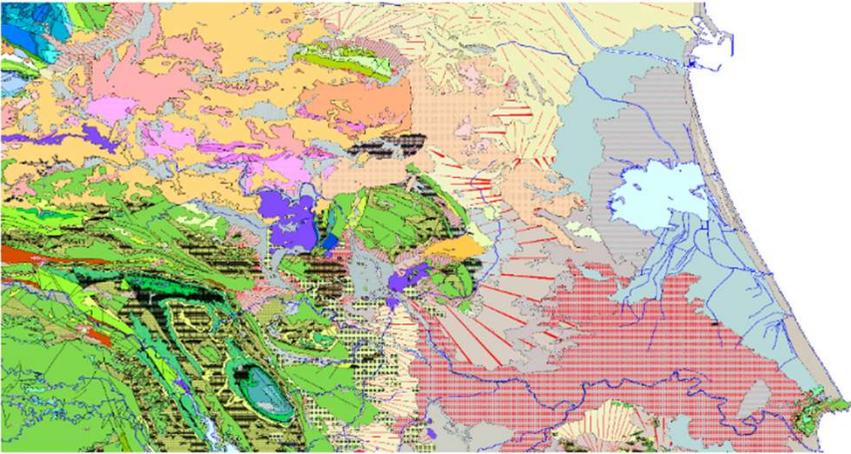
Continuous Geological Mapping Scale 1:50,000, GEODE

Metadata language 🇪🇸 🇬🇧

Abstract

This map represents the result of the cartographic homogenisation of the MAGNA geological map series (National Geological Cartography at a scale of 1:50.000). Series that integrates 1143 maps. As a consequence of the long process involved in the historical execution of this series, there are differences between its initial and final phases, in terms of criteria for assigning geological units, level of detail, continuity of geological units and structures at the edges of sheets, coding and symbologies. With the aim of correcting these problems, the GEODE PLAN was initiated in 2004, which constitutes the institutional support for the generation of a continuous digital geological map at a scale of 1:50,000. The PLAN integrates 19 Regional Projects linked to their corresponding geological zones. Its fundamental objectives are threefold: - To provide cartographic continuity to the geological sheets of the MAGNA series within each region. - To generate a unified legend of geological units for each region. - To adapt the geological coverage to a uniform topographic base, generated specifically for the GEODE PLAN from the national topographic map 1:25000 of the IGN.

Browse Graphic



large_thumbnail

Términos para catalogar y facilitar la búsqueda información

Tesauro geocientífico multilingüe

European Geoscience Registry Check URI Registers Admin Sparql About Search

<https://data.geoscience.earth/ncl/geoera/> / keyword

Register: keyword experimental

GeoEra Keywords vocabulary

Tree View List Table Properties Metadata

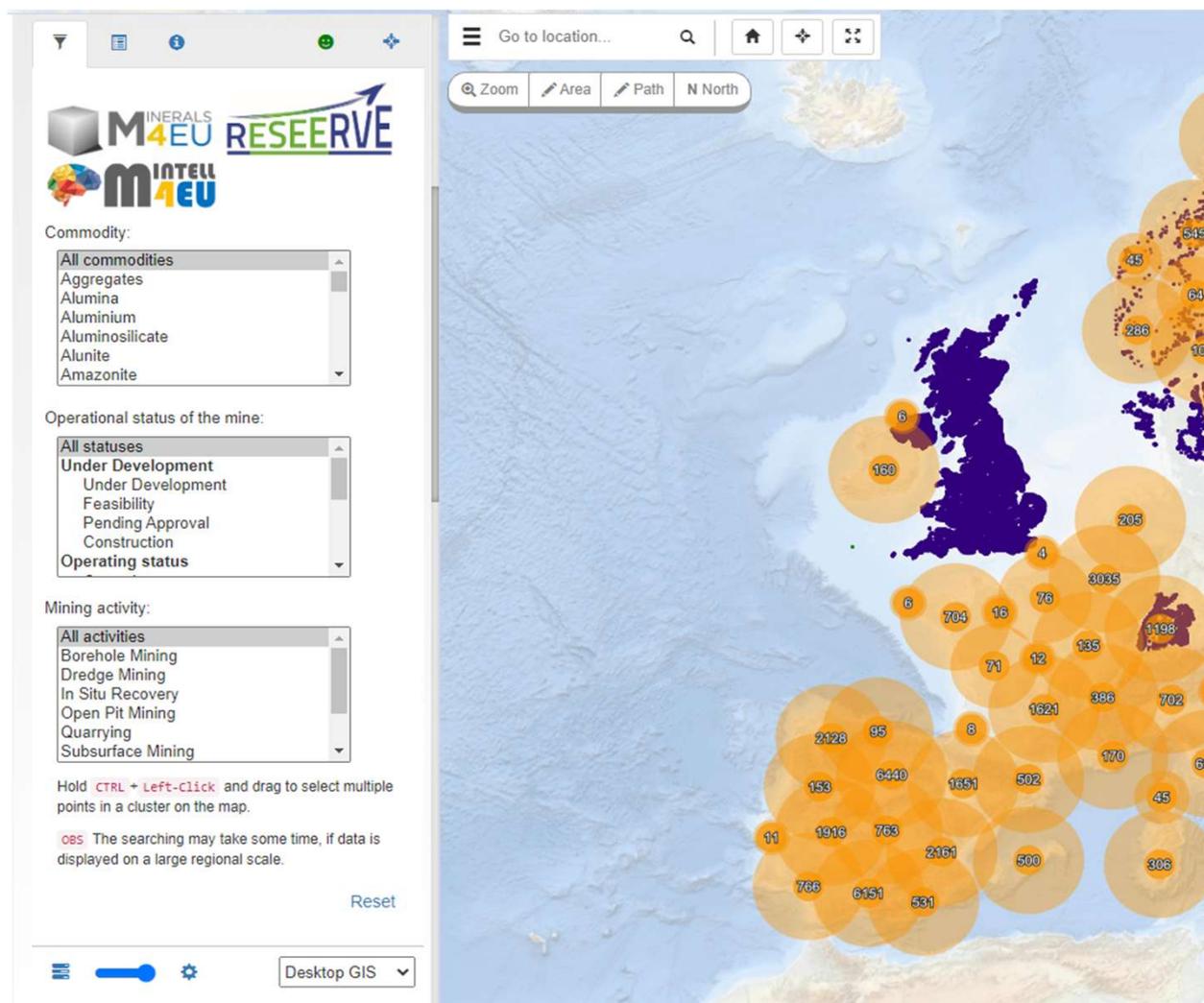
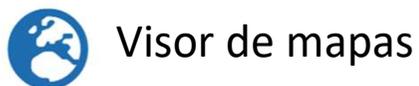
- [Geochronology, Stratigraphy \(category\)](#) This Search Category comprises keywords related to the determ... experimental
- [Subsurface Energy Storage \(category\)](#) This Search Category comprises keywords related to temporary ... experimental
- [Mineral Resources \(category\)](#) This Search Category comprises keywords related with the inve... experimental
- [Fossil Resources \(category\)](#) This Search Category comprises keywords related to the resear... experimental
- [Hazard, Risk and Impact \(category\)](#) This Search Category comprises keywords related to processes,... experimental
- [Subsurface Management \(category\)](#) This Search Category comprises keywords related to interdisci... experimental
- [Information System \(category\)](#) This Search Category comprises keywords related to methods an... experimental
- [Modelling \(category\)](#) This Search Category comprises keywords related to reconstruc... experimental
- [Lithology \(category\)](#) This Search Category comprises keywords related with Earth ma... experimental
- [Linked Terms \(category\)](#) This Search Category comprises general geologic concepts rela... experimental
- [Geological Processes \(category\)](#) This Search Category comprises keywords related to the dynami... experimental
- [Structural Geology \(category\)](#) This Search Category comprises keywords related to the three-... experimental
- [Applied Geophysics \(category\)](#) This Search Category comprises keywords related to the use of... experimental
- [Geochemistry \(category\)](#) This Search Category comprises keywords related to uses of to... experimental
- [Hydrogeology \(category\)](#) This Search Category comprises keywords related to movement a... experimental
- [Geothermal Energy \(category\)](#) This Search Category comprises keywords related to resources ... experimental

| | |
|----------------|---|
| plain: | ttl rdf/xml json-id |
| with metadata: | ttl rdf/xml json-id |
| CSV | plain: csv |
| with metadata: | csv |
| Export | all: nquads |

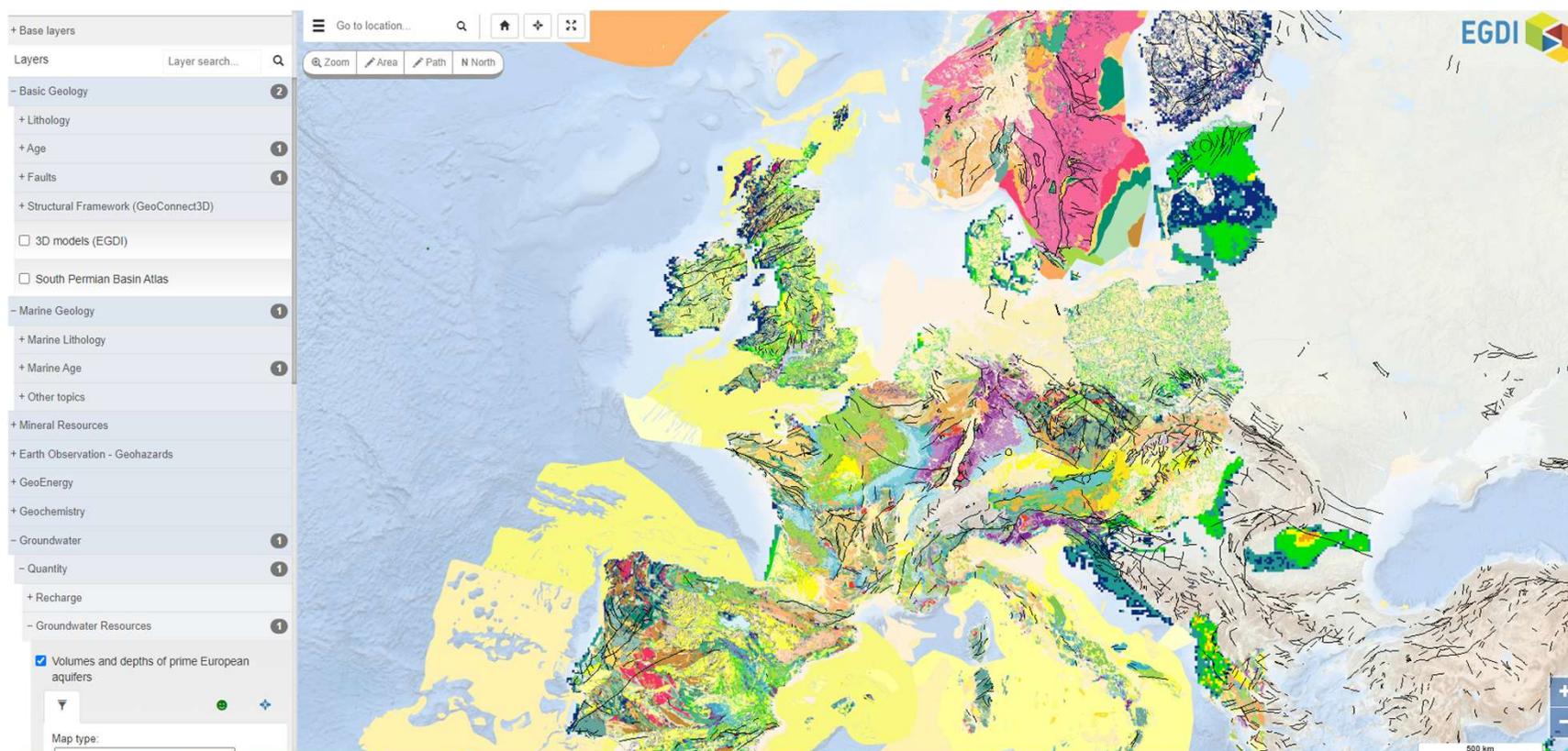
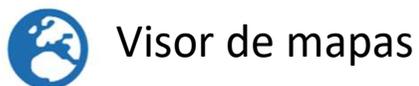
About the Register

| | |
|-----------------|--------------------------------|
| last changed on | 13 mars 2020 11:57:44.045 |
| submitted on | 13 mars 2020 11:28:22.954 |
| submitted by | Abdel FELIACHI |
| accepted on | 13 mars 2020 11:28:29.396 |

Visualizar y consultar información espacial de múltiples fuentes



Visualizar y consultar información espacial de múltiples fuentes



El futuro de EGDI

PRESENTE

INFRAESTRUCTURA DE DATOS



NUMEROSOS CONJUNTOS DE DATOS TRANSFRONTERIZOS

PLENA APLICACIÓN DE LAS NORMAS

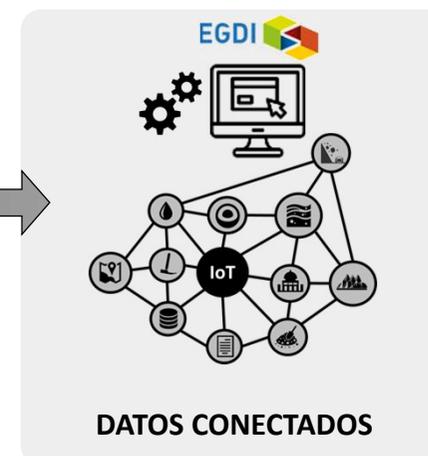
UN PORTAL PARA MUCHAS BASES DE DATOS, MAPAS, PROYECTOS, TEMAS, ETC.

MANTENIMIENTO A LARGO PLAZO



FUTURO

INFRAESTRUCTURA DE CONOCIMIENTO



NUMEROSOS CONJUNTOS DE DATOS TRANSFRONTERIZOS

PLENA APLICACIÓN DE LAS NORMAS Y FAIR

UN PORTAL PARA MUCHAS BASES DE DATOS, MAPAS, PROYECTOS, TEMAS, ETC.

MANTENIMIENTO A LARGO PLAZO

El futuro de EGDI

Información conectada mediante tesauros o vocabularios

Asistentes, para la selección dirigida de la información



Machine Learning para devolver al usuario lo que necesita

Suministrar acceso a la información por temáticas

Información agrupada y europea para políticos

Información de detalle para empresas e investigadores

Información divulgativa para estudiantes

Información agrupada por contextos como proyectos o series cartográficas

DESCUBRIR



Toda la información relevante debe ser encontrada. Cómo?

- Incluir más y mejores metadatos.
- Mejorar el algoritmo de búsqueda.
- Mejorar la experiencia del usuario (mostrar resultados, asistentes y navegación).

MOSTRAR



La Información debe ser mostrada:

- ▶ Mejorar los visores:
 - ▶ EGDI map viewer,
 - ▶ FD viewer, etc.

ANALIZAR



Proporcionar capacidades de explotación específicas (Normalmente altamente dependientes del tipo de datos , ej. Diagrama de piper, evolución piezométrica, etc.).

- ▶ Aplicaciones temáticas.
- ▶ Ofrecer servicios API con máximas capacidades.
- ▶ Permitir descargas de datos para que los usuarios realicen analisis

Gracias por su atención

Román hernández r.hernandez@igme.es

CN IGME: <https://www.igme.es>

EGDI: <https://www.europe-geology.eu>

