



United Nations
Educational, Scientific and
Cultural Organization



Intergovernmental
Oceanographic
Commission

IEO Spatial Data Infrastructure: IDEO

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**WORKSHOP ON “UPDATE OF METADATA, DATA
AVAILABILITY AND
APPLICATION NEEDS FOR A CCLME ECO-GIS VIEWER”**





Since 1914 the IEO performs multidisciplinary studies of marine environment

- Specific studies for concrete projects or special requirements (El Hierro submarine volcanic episode, spill Prestige, etc.)
- Systematic studies
 - “Radiales surveys” Studies of pelagic system and oceanographic variables
 - Surveys of biological samples
 - Marine pollution monitoring, according to MEDPOL; OSPAR or Barcelona convention
 - Currents and tidal studies
 - Other

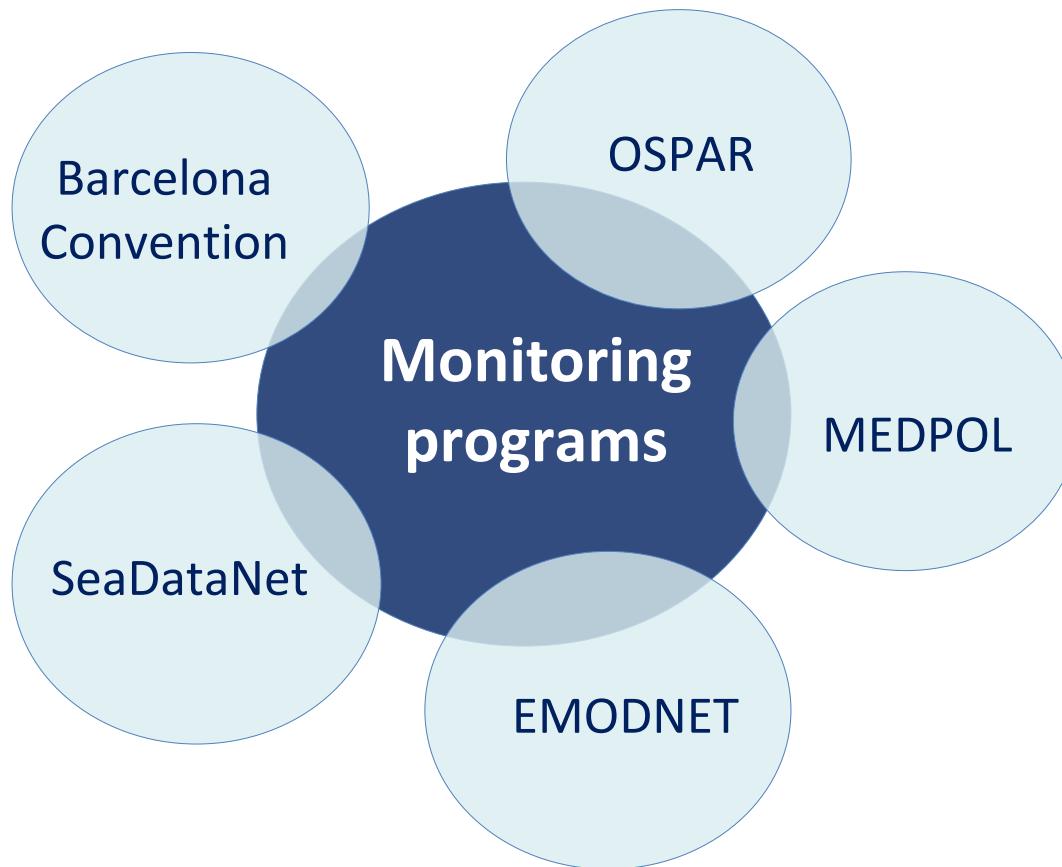


The IEO currently participates in projects and initiative as:

- Framework Directives related to biodiversity as
 - Water Framework Directive, Habitat 2000 Directive
 - Marine Strategy Framework Directive: requires European states to maintain their marine waters in 'Good Environmental Status'. This involves a continuous evaluation of marine environmental status.
- Studies to declare Marine Protected Areas
- Taking part in various projects related to fishing resources and ecosystems, working in collaboration with several African countries.



- On the other hand IEO is involved in several national and international monitoring and data assembly programs.





- In these studies different methodologies and data collection techniques are used depending on the studied variables
- The result of these researchs is the collection of multidisciplinary data, providing high knowledge of marine environment, which is so critical to ensure a sustainable use of their resources

Oceanographic variables

Biological data

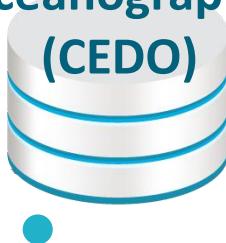
Sea bottom data

- The obtained data are organised in different formats



- The data are organized into different databases according to the subject and the represented variables (geology, fisheries, aquaculture, pollution, habitats, etc.).

**Physical and chemical
oceanography
(CEDO)**



**Fisheries
SIRENO**



Geology



Habitats/Ecosystems



Aquaculture



Pollution



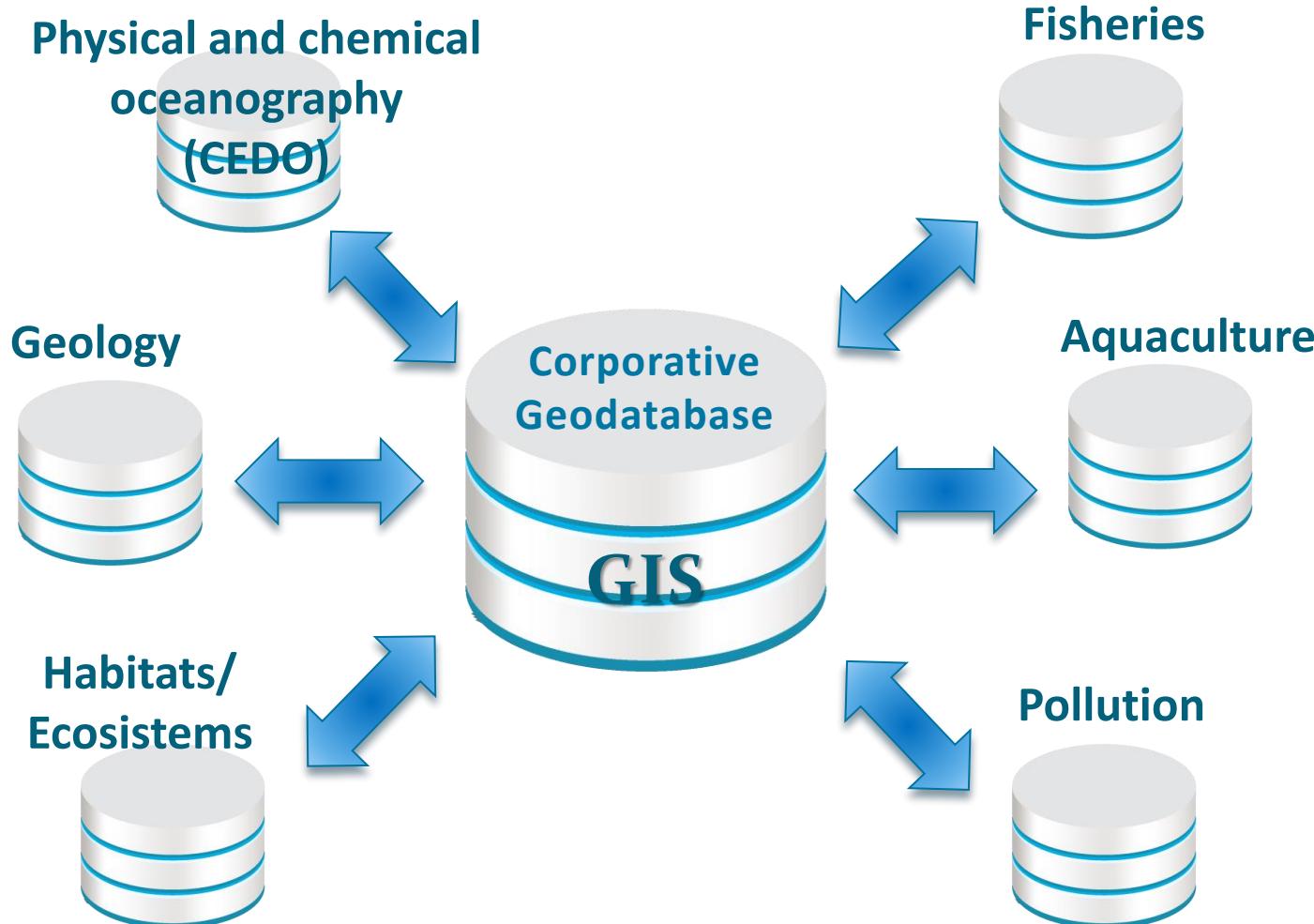


IEO Marine GIS

- With the aim to harmonize, standardize and organize the data distributed in these databases into a consistent database, in 1997 in the IEO began the developed of a Geographical Information System

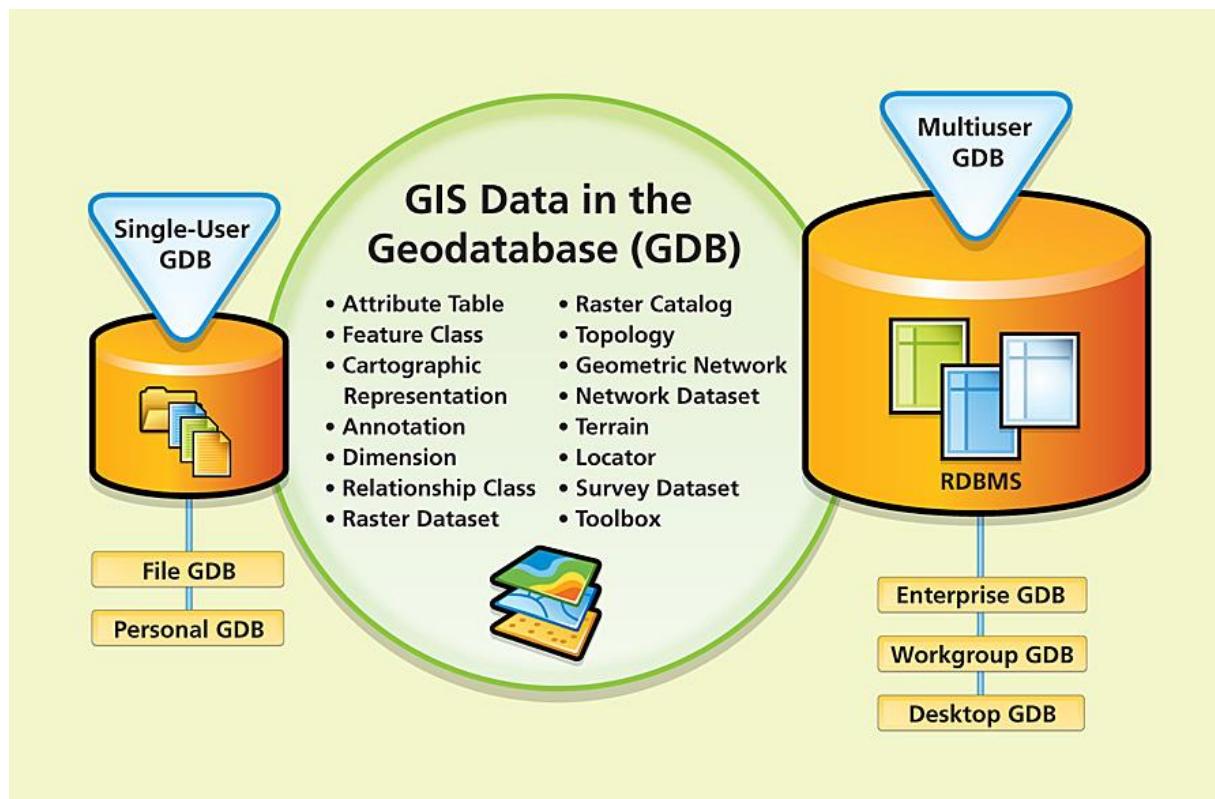


The different databases provide information to institutional GIS





➤ The information from different IEO databases is integrated into a corporate Geodatabase (Esri format). The Geodatabase is one of the most advanced systems of geo-information storage and management.



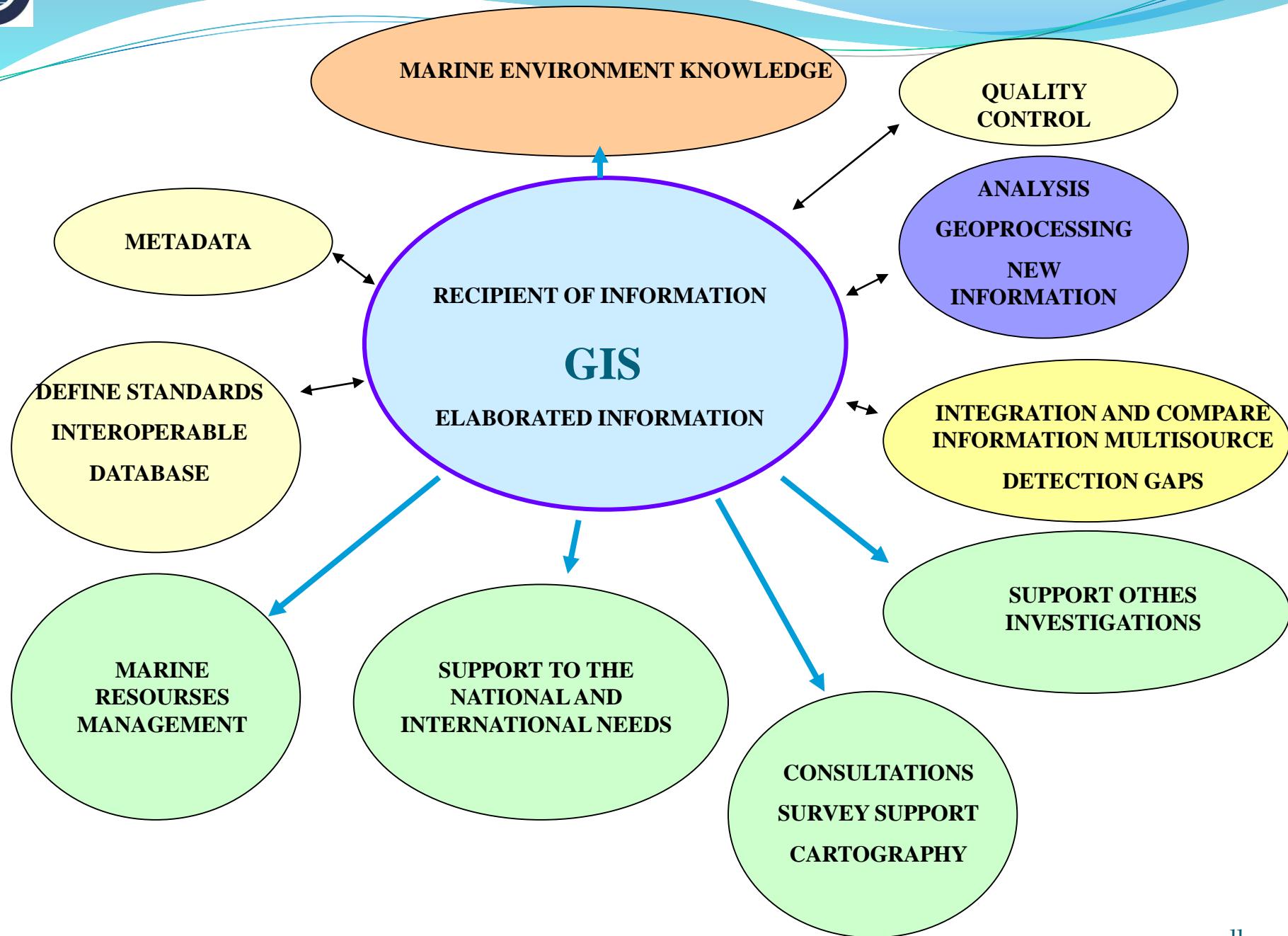


Metadata

Metadata (information about a data file/dataset) must accompany all geographical data.

All layers included in Geodatabase have their corresponding metadata

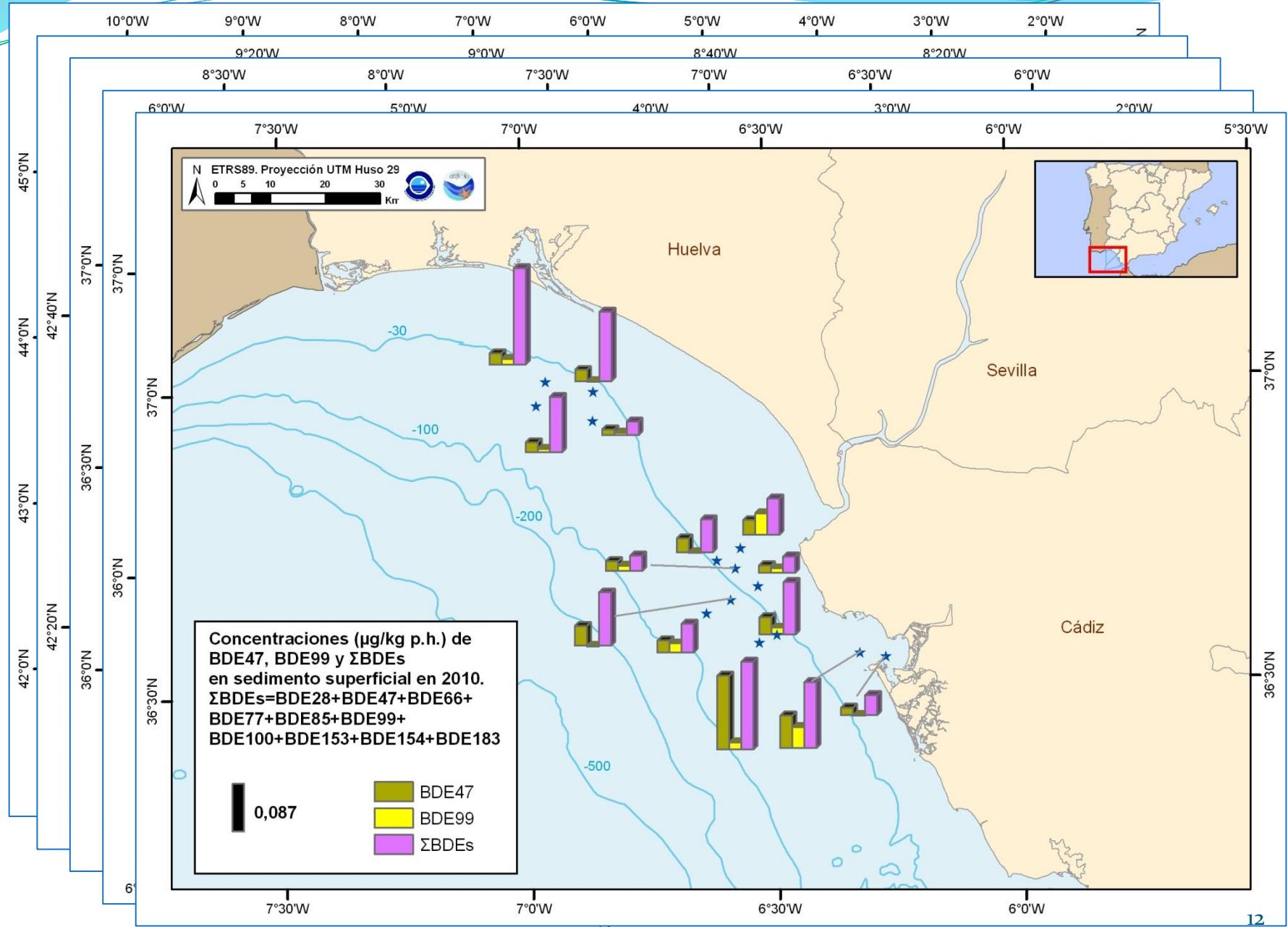
Following metadata standards set by INSPIRE Directive 2007/2/CE based on ISO19115 standard for geographic metadata.





Marine Strategy Framework Directive

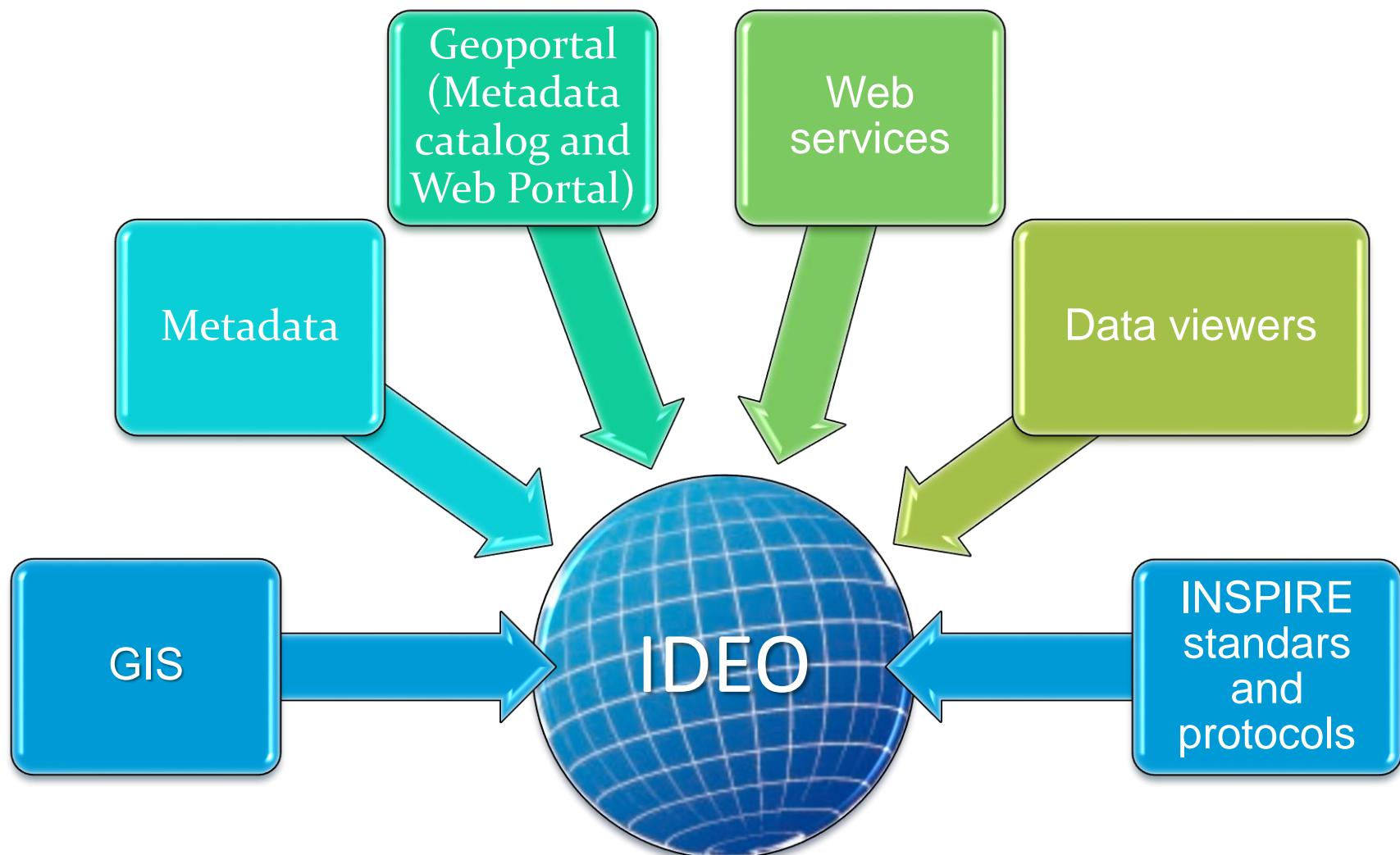
Mapping





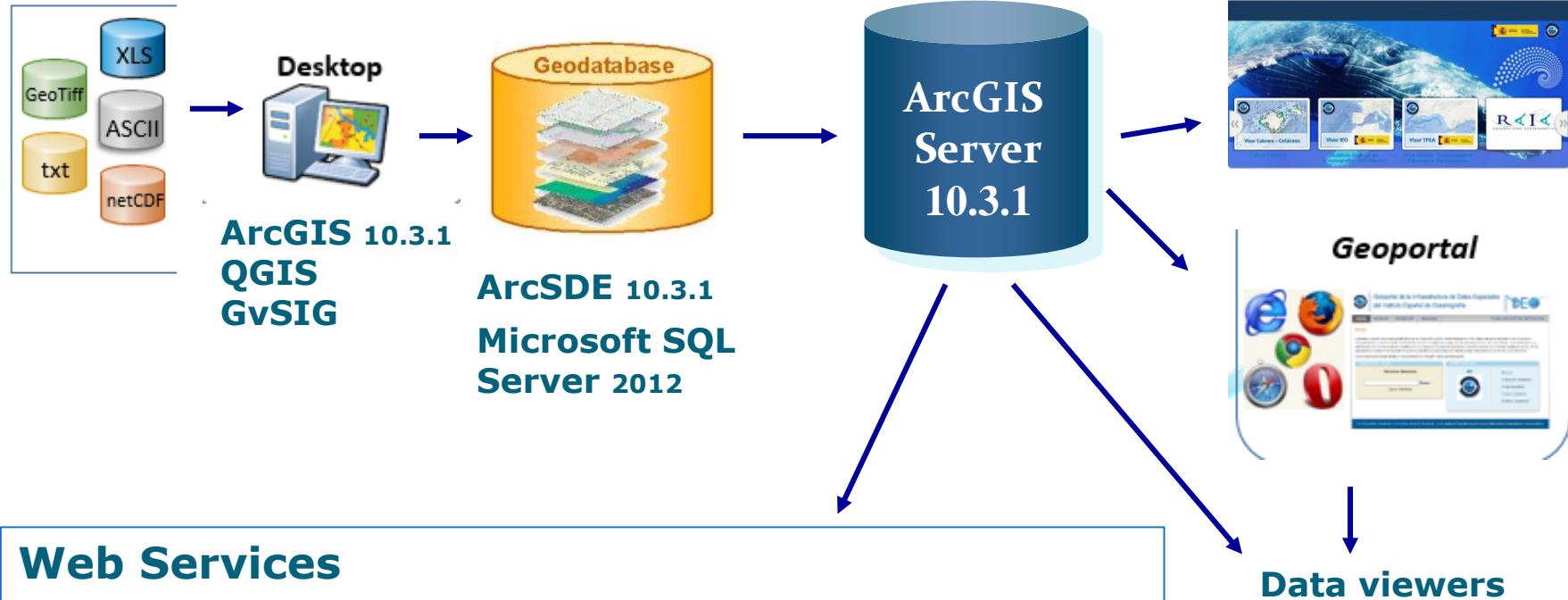
IEO Spatial Data Infrastructure

- In 2009 in order to provide visibility, accessibility and to share the information included in institutional GIS of IEO, the Director and Subdirector decided to begin the develop of **Spatial Data Infrastructure “IDEO”**
- IDEO is based on WebGis and at present is composed of a Web portal, metadata catalog, Web Services and Data Viewers
- In this sense, the UE elaborated the **INSPIRE DIRECTIVE 2007/2/CE**, which provides guidelines and standards to share the information through Spatial Data Infrastructure
- In the IDEO we try to follow-up these guidelines and standars





Technological Framework



Web Services

Services OGC:

WMS – Web Map Service (visualization)

WFS - Web Feature Service (consult & edition & download)

CSW – Catalog Service Web (metadata)

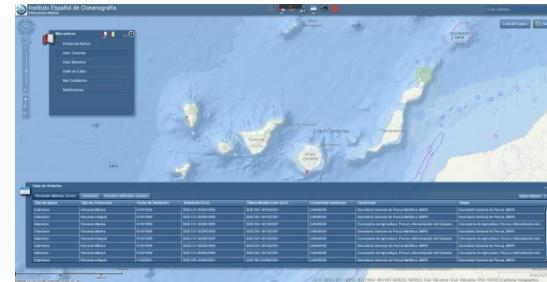
REST Services



Data viewers developed with API FLEX of Esri

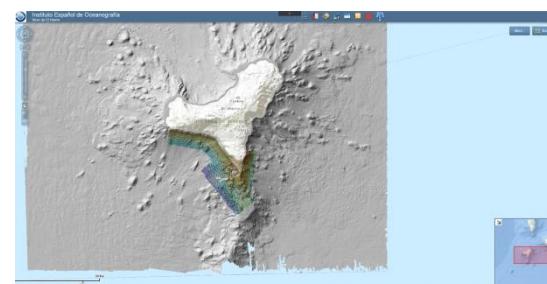
➤ Marine reference information

- <http://www.ideo-base.ieo.es/>



➤ El Hierro eruption

- <http://www.ideo-el hierro.ieo.es/>



➤ Cabrera natural park

- <http://www.ideo-cabrera.ieo.es/>

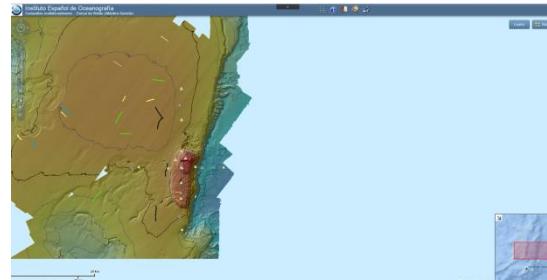




Data viewers developed with API FLEX of Esri

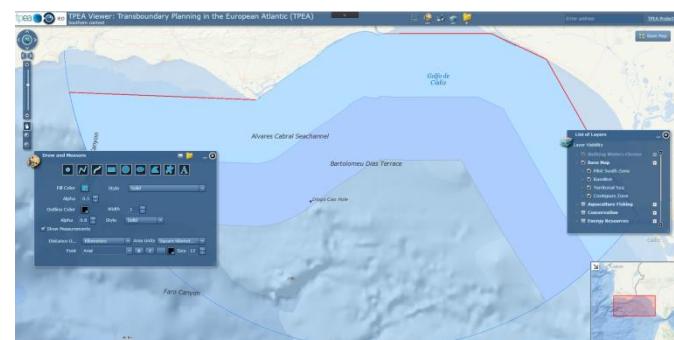
➤ Namibia dorsal

<http://www.ideo-namibia.ieo.es/>



➤ Transboundary Spatial Planning in the European Atlantic TPEA

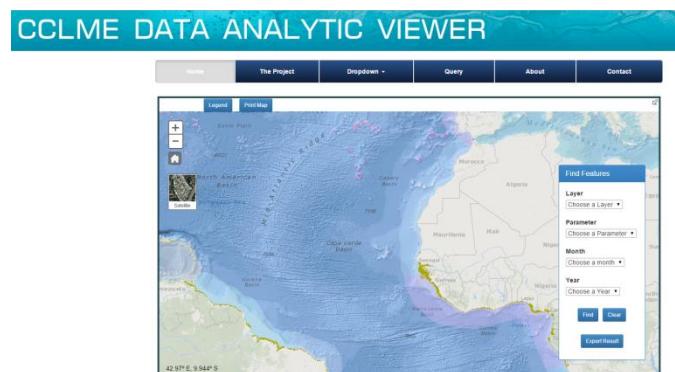
<http://barreto.md.ieo.es/tpeaviewer/>





CCLME PROJECT products: CCLM GIS and Dataviewer in developing by Luis Miguel Agudo are hosting in spatial data infrastruture of IEO

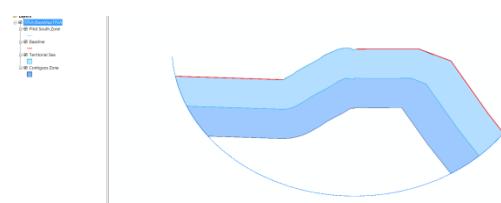
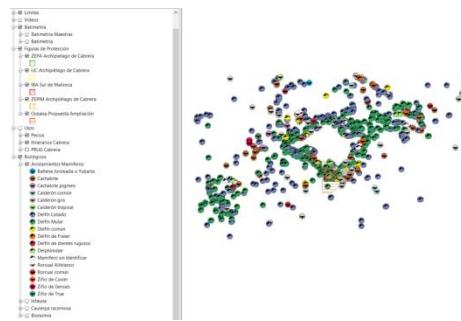
<http://www.ideo-cclme.ieo.es/>





Web Map Service

- **Interoperability Services OGC-WMS**
 - Cabrera Natural Park
 - TPEA
 - UNESCO CCLM
 - Information Reference Data





Geoportal 1.2.2

Metadata service based on Open Source of ESRI was released under the [Apache 2.0 licens](#)

Iniciar sesión Ayuda Acerca de 

Geoportal de la Infraestructura de Datos Espaciales del Instituto Español de Oceanografía

INICIO **BUSCAR** **EXAMINAR** **ENLACES** **ABRIR EL VISOR PRINCIPAL**

Inicio

El Instituto Español de Oceanografía (IEO) es un organismo público de investigación (OPI), dependiente del Ministerio de Economía y Competitividad, a través de la Secretaría de Estado de Investigación, dedicado a la investigación en ciencias del mar, especialmente en lo relacionado con el conocimiento científico de los océanos, la sostenibilidad de los recursos pesqueros y el medio ambiente marino. El IEO representa a España en la mayoría de los foros científicos y tecnológicos internacionales relacionados con el mar y sus recursos.

Geoportal ofrece formas fáciles y convenientes de compartir datos geoespaciales.

Simplemente, puede...

Encontrar Metadatos

Buscar

Buscar Metadatos

Puede hacer más...

IEO

INSTITUTO ESPAÑOL DE OCEANOGRÁFICO 1954

Visores

Compartir metadatos

Crear metadatos

Cargar metadatos

Publicar metadatos

Este Geoportal es construido a través del servidor del Geoportal. Las las páginas [Cláusula de protección y Privacidad o Comunicarse con nosotros](#).



We can create and edit metadata

 Geoportal de la Infraestructura de Datos Espaciales
del Instituto Español de Oceanografía

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HOME SEARCH ADMINISTRATION LINKS LAUNCH MAP VIEWER

[Manage](#) [Add](#)

Create Metadata

To create a new metadata record, select the Metadata Standard to which the record will adhere. After clicking 'proceed', a custom form is displayed for you to complete for the Metadata standard you selected.

On behalf of: ▾

Metadata standard:

- FGDC
- Dublin Core
- North American Profile (Data)
- North American Profile (Services)
- GEMINI (Data)
- GEMINI (Services)
- ISO 19115 (Data)
- ISO 19119 (Services)
- ISO 19115-2 (Imagery and Gridded Data)

Proceed

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del Instituto Español de Oceanografía

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HOME SEARCH ADMINISTRATION LINKS LAUNCH MAP VIEWER

Manage Add

Metadata Editor

Save as Draft Save

ISO 19115 (Data)

Metadata Identification Distribution Quality

Identifier Contact Date Standard Reference

File Identifier
[488415A6-5E4A-4C2C-8BB4-A28CFF91C653]

Metadata Language
en

Hierarchy Level [+/-] [◀] [▶]

* *Bold-Italic* labels indicate a required field

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Besides we use other open source metadata editor:

- GeoNetwork
- ArcCatalog of ArcGis
- Inspire metadata editor



Geoportal provides access to Data Viewer

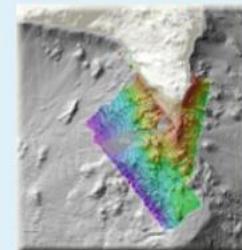
Enlaces de Interés

Visor Información Marina Base



El Visor de información marina muestra información de la naturaleza del fondo, batimetría, límites de reservas, información ambiental, caladeros de pesca, arrecifes artificiales y límites administrativos, (a título informativo y sin validez legal).

Visor de El Hierro



El Visor de El Hierro muestra los primeros resultados de las Campañas Bimbache, realizadas por el IEO entre los meses de Octubre de 2011 y Febrero de 2012, a bordo del B/O Ramón Margalef.

Visor del Parque Nacional del Archipiélago de Cabrera



Visor que muestra diferentes aspectos físicos y biológicos del medio marino de este Espacio Protegido

Dorsal de Walvis / Walvis Ridge



Datos y resultados de tres campañas de investigación multidisciplinares realizadas en 2008 2009 y 2010, a bordo del B/O Vizconde de Eza en las montañas submarinas de Ewing y el banco de Valdivia.



Oceanographic center of Santander

➤ Information acquired from buoy oceanographic

- Water temperature
- Waves direction
- Air temperature

➤ Mareograph

➤ Satelital station in land



Boya AGL

La Boya Océano-Meteorológica Augusto González de Linares (Boya AGL) fue fondeada el 27 de junio de 2007 a 22 millas al norte de Cabo Mayor (Santander) para el muestreo de parámetros oceanográficos de interés.

Envía cada hora a nuestra estación terrestre valores de Temperatura del agua y del aire, Dirección del viento y del oleaje, Velocidad del viento y del oleaje, Salinidad, Oxígeno disuelto, Presión atmosférica, etc.

Más Info



Mareógrafo de Santander

En 1943, el IEO estableció una red mareográfica e instaló un mareógrafo (de fabricación alemana) en el Puerto de Santander, en un pozo situado en Molinedo junto a la entrada de la Dársena de Puertochico.

Mide la altura del nivel del mar con increíble precisión y, en la actualidad, la serie histórica es de más de 70 años. Se encuentra ubicado en la Bahía de Santander, frente a la Escuela Superior de Náutica.

Más Info



Estación Terrestre de Satélite

Nos dedicamos a la **Teledetección Oceanográfica** desde el año 1998, recibiendo datos de los satélites meteorológicos de la serie NOAA. En 2010, se actualizó completamente el sistema y se reciben datos de los satélites de las series NOAA y Metop.

Estos datos son procesados y se implementan imágenes de Temperatura Superficial del Mar (SST) de 5 zonas geográficas de interés a nivel mesoescalal.

Más Info

<http://www.ieo-santander.net/datosoceanograficos/>



Centro Oceanográfico de Baleares

- Biodiversity Marine Atlas:

- Data viewer developed with API JavaScript (Esri)
- Working with WMS services of ArcGIS Server from IEO
-

The screenshot shows the homepage of the 'Atlas de Biodiversidad Marina del Mar Balear'. The top navigation bar includes links for Inicio, Proyecto, Inventory, Maps, Índices de biodiversidad, Galería de imágenes, Metadatos, Enlaces, and Contacto. The main content area features a map of the Balearic Islands with numerous yellow dots representing marine species locations. A sidebar on the right contains sections for 'Proyecto', 'Mapas', 'Índices de biodiversidad', and 'Metadatos'. At the bottom, there are sections for 'Bienvenidos al Atlas de Biodiversidad Marina', 'Realizado por:' (listing Centro Oceanográfico de les Illes Balears, Instituto Español de Oceanografía, and UIB), and 'Con la colaboración de:' (Fundación Biodiversidad). The footer includes a copyright notice: '© 2015 Proyecto del Atlas de Biodiversidad Marina del Mar Balear.'

<http://www.ba.ieo.es/bioatlasmarino/>



ArcGis Online platform: sharing information

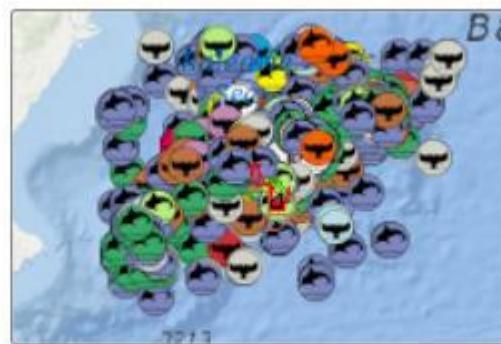
The screenshot displays a large background image of a whale's head and upper body. Overlaid on the bottom are four smaller map viewer windows and their corresponding labels:

- Visor Cabrera - Cetáceos**: Shows a map of the Iberian Peninsula and surrounding seas.
- Instituto Español de Oceanografía - IEO Viewer**: Shows a map of the same region.
- Visor TPEA**: Shows a map of the same region.
- TPEA Viewer: Transboundary Planning in the European**: Shows a map of the same region.

At the top right of the main image are the Spanish flag, the European Union flag, and the logo for the Observatorio Oceánográfico (RAI).



TPEA Map



Cabrera



IEO Información Marina Map



Thank you very much

www.ieo.es

ideo@ieo.es

olvido.tello@md.ieo.es

Esquemas e imágenes: N. Hermida, J. Rivera, O. Tello, F. Sánchez, M. Gómez, E. Tel, A, Lavín, J. Acosta, J. L. Sanz, G. Bruque. E. Fraile. E. Pastor. IEO.



SIRENO: Monitoring of oceanic natural resources

Since 1999 all data about marine species collected in oceanographic surveys carried out by researchers of IEO, and data from observers on fishing vessels are incorporated in SIRENO database.

In this database is stored catch data, biomass, abundance, etc., and data about water column as temperature, salinity, oxygen, etc.

This system is based on architecture ORACLE and to consult the information included in SIRENO has been created an application in Developer Forms.

Currently all information collected in oceanographic surveys carried out for IEO in CCLME zone is stored in SIRENO



DATA CENTER of IEO (CEDO)

In 1964 the DATA CENTER of IEO (CEDO) (<http://indamar.ieo.es>) was created in order to organize the data about physical and chemical oceanography, to standardize this information and to serve the international data network SeaDataNet.

www.seadatanet.org

This database integrates about temperature, salinity, nutrients, etc, and tidal data. CEDO allows consult and download the data.

