

RECENT DEVELOPMENTS OF AN INTEGRATED INFORMATION SYSTEM TO SUPPORT THE IMPLEMENTATION OF THE GREEK MARINE STRATEGY FRAMEWORK DIRECTIVE

AUTHORS

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SCOPE OF MARINE STRATEGY FRAMEWORK DIRECTIVE (MSFD)

The Scope of the Project is concerted in two main objectives:

- Monitoring and Recording of the state and health of Sea Territories Reporting Units
- Upgrade the infrastructure of the existing Sea Monitoring Network

SCOPE OF INTEGRATED INFORMATION SYSTEM

One sub objective regarding the participation of Hellenic Center for Marine Research(HCMR) in the Project is the implementation of an Integrated Information System to support Monitoring and Recording the Territory of the Greek Sea Reporting Units

PRESENTATION LAYOUT

This Presentation describes:

- The Data Sources used for the System
- The Information Management in the System
- The Technologies and International Standards used in the development
- The Integration of the Information System

DATA SOURCES A

Raw data collection, which is still in progress, produces Data Sets divided according to the Directive (MSFD) into eleven (11) categories of measurements called Descriptors and named as follows:

- D1 – Biological**
- D2 – Non-indigenous species**
- D3 – Fisheries**
- D4 – Food Webs**
- D5 – Eutrophication**
- D6 – Sea-floor integrity**
- D7 – Hydrographical Conditions**
- D8 – Contaminants**
- D9 – Contaminants in seafood**
- D10 – Marine Litter**
- D11 – Energy and Noise**

These data are being collected through :

- **Sea Cruises in the framework of national monitoring program**
- **Floated stable stations (HCMR POSEIDON SYSTEM)**
- **Sea Drifting platforms (ARGO PROJECT)**

DATA SOURCES B

B. Data from other Sources of relevant Projects:

- **Water Framework Directive**
- **National Program for the Collection of Fisheries Data**
- **Natura 2020**
- **Mytimed Program**

This part is not implemented yet, the target here is the system to act as “one stop shop” point where the end user will be able to access information for more than one systems without the need to connect to these systems

INFORMATION MANAGEMENT

The information management of the effort it is divided as follows:

- The Raw Data whose the collection is still in progress
- The Data products which will be produced from the raw data collection and will be developed based on specific prototypes
- Thresholds that will follow the Data Products will produce Indicators for “Good Environmental Status” of the waters (GES)

TECHNOLOGIES – INTERNATIONAL STANDARDS

For the whole entry base on international standards and directives which have been adapted as follows:

- Prototypes which are produced in the Framework of Marine strategy
- European Directive INSPIRE
- Prototypes for development of web services from Open Geospatial Consortium (OGC)
- International Standard Vocabularies following the prototypes of other projects (e.g SEADATANET)
- International Standards on data format following relevant projects (e.g SEADATANET)
- Discoverable Web Services with INSPIRE compliance

INTEGRATION OF THE INFORMATION SYSTEM

1. COLLECTION OF RAW DATASETS

2. DESIGN AND DEVELOPMENT OF A RELATIONAL DATABASE SYSTEM FOR THE METADATA

3. INTEGRATION AND DEVELOPMENT OF WEBBASED GEOSPATIAL PLATFORM(PORTAL) FOR DATA and product visualization , DATA SEARCHING AND DOWNLOADS

Interrelation and Development of a Web-Based Geospatial Platform (Portal)

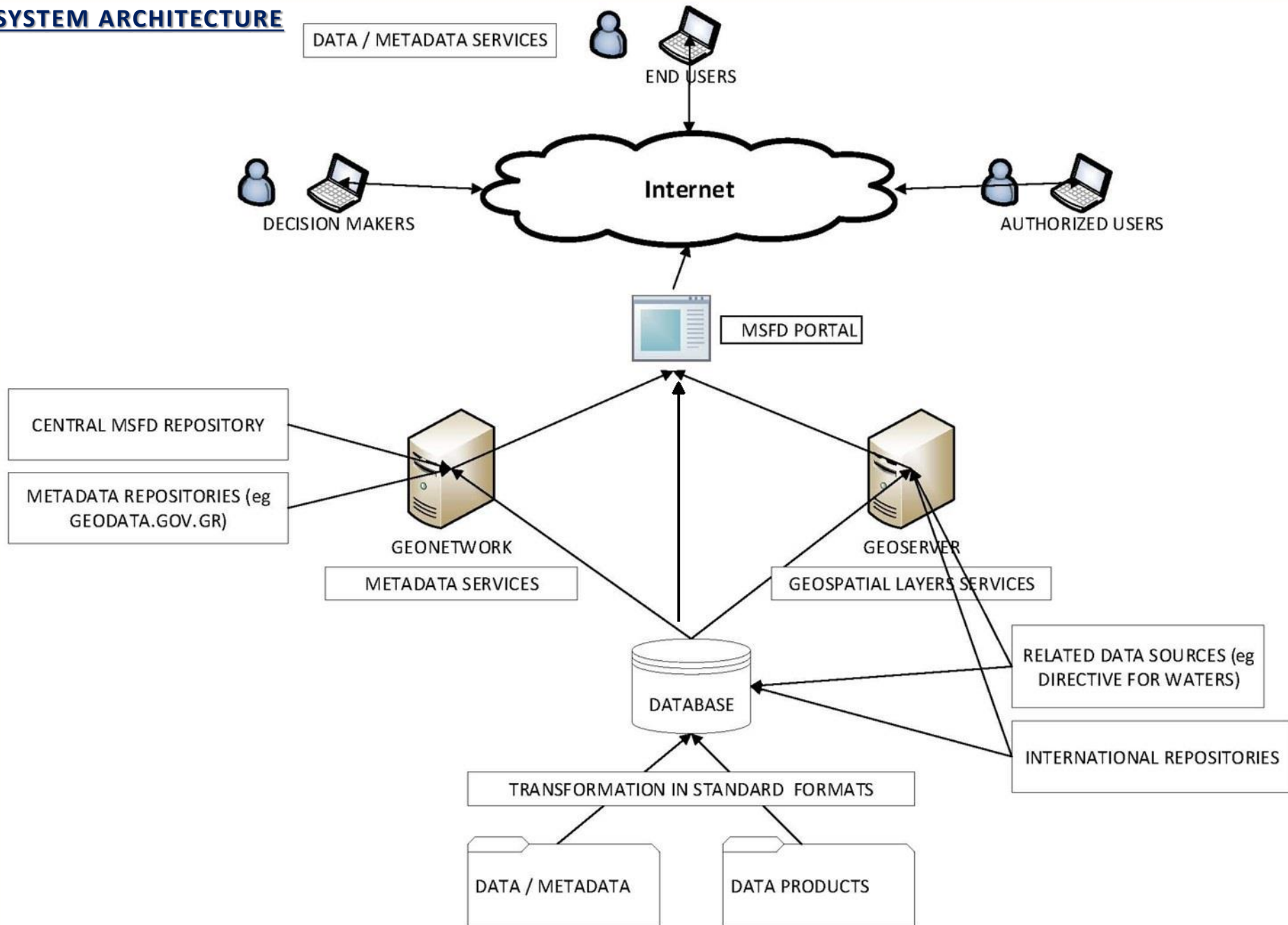
- The portal contains general information about the Project of MSFD
- The portal consists of a geospatial interactive map enforced with geospatial layers for several Sea Reporting Units of the Greek Territory on which measurements took place and taking place

Interrelation and Development of a Web-Based Geospatial Platform (Portal)

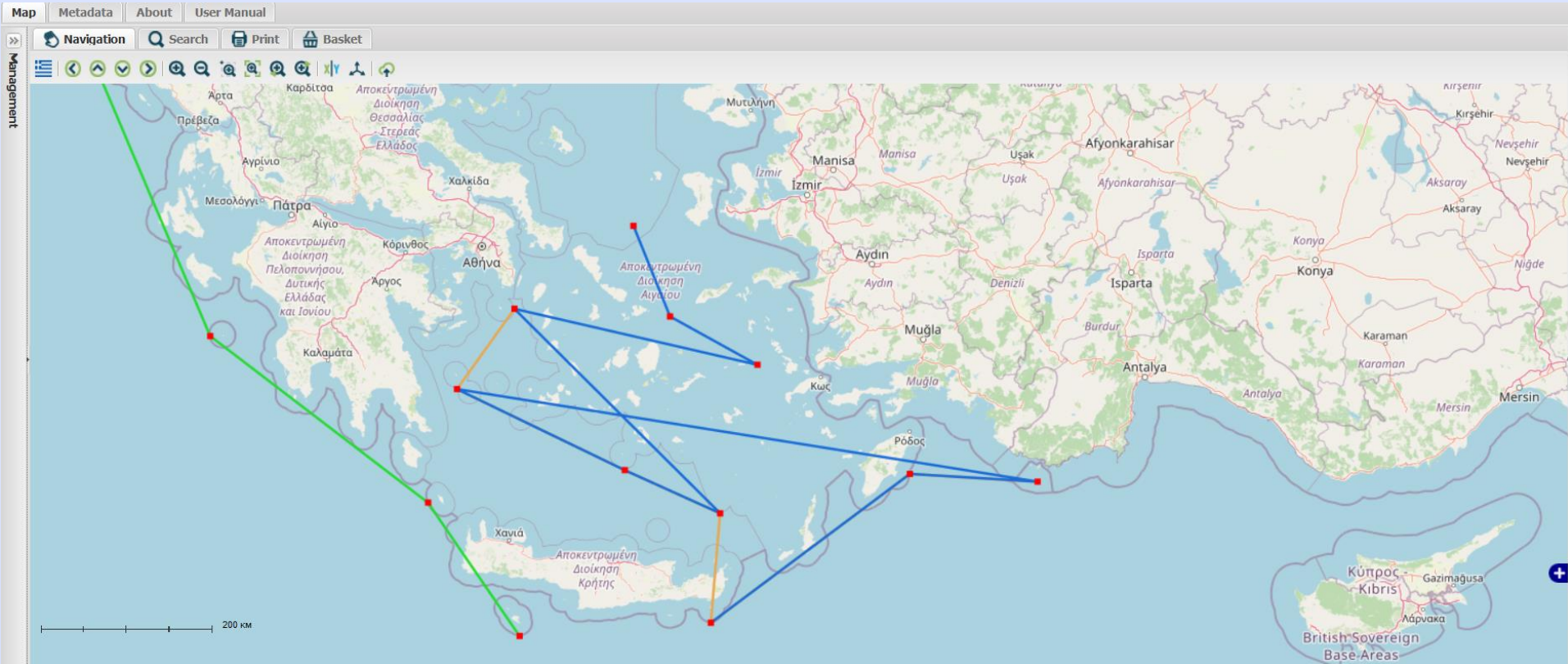
The Portal offers the end user the following capabilities:

- Search for Data by Descriptor or by Waterbody or by both
- Search for Data by Cruise or Station
- From search results download the relevant ODV files with the raw data measurements
- Search for Metadata

SYSTEM ARCHITECTURE



Entering MSFD Portal



Toggling Between Layers MSFD Portal

The screenshot displays the MSFD Portal interface. The main map shows the Eastern Mediterranean region, with several layers toggled on. The 'MEASUREMENT TYPES' layer is active, showing red squares for 'Cruise Stations' and blue lines for 'Cruises'. The 'WATER BODIES' layer is also active, showing various coastal and territorial waters. The 'Assessment Areas' layer is active, showing green shaded regions. The 'Hellenic Marine Region' layer is active, showing a blue shaded area. The 'Legend' panel on the left lists the layers and their symbols. The 'Status Bar' at the bottom shows the map center coordinates (27.0562405, 36.9224638), zoom level (6), and current scale (1:8735643).

Map Management: Map | Metadata | About | User Manual

Management: Navigation | Search | Print | Basket

Layer Tree: Add | Remove

Layers:

- Basemaps
 - OpenStreetMap
- Layers
 - MEASUREMENT TYPES
 - Cruise Stations
 - Cruises
 - WATER BODIES
 - Coastal Water Bodies
 - Coastal Water (1nm Gulfs)
 - Territorial Waters Part (Coastal to 6nm)
 - Territorial Waters (Coastline to 6nm)
 - Offshore Beyond Territorial
 - Waters
 - Assessment Areas
 - Hellenic Marine Region

Legend: Selected | General Settings

Status Bar: Zoom to scale | X | Y | Go | Map Center (WGS 84 (EPSG:4326)): 27.0562405, 36.9224638 | Zoom: 6 | Current scale: 1:8735643 | Mouse Position Coordinates (WGS 84 (EPSG:4326)): Position outside of

Search in a Layer MSFD Portal

Metadata | About | User Manual

Remove

Basemaps

- OpenStreetMap

Layers

MEASUREMENT TYPES

- Cruise Stations
- Cruises

WATER BODIES

- Coastal Water Bodies
- Coastal Water (1nm Gulfs)
- Territorial Waters Part (Coastal to 6nm)
- Territorial Waters (Coastline to 6nm)
- Offshore Beyond Territorial Waters
- Assessment Areas
- Hellenic Marine Region

Navigation | Search | Print | Basket

INTERSECTS

Map Center (MGS 84 (EPSG:4326)): 24.5293851, 37.1986263 Zoom: 71 Current scale: 1:4367821 | Mouse

Attributes on Water Body MSFD Portal

The screenshot shows a GIS application interface with a map of the Eastern Mediterranean region. A 'Feature Info Window' is open, displaying the following data:

Feature Info Window: Territorial Waters Part (Coastal to 6nm)			
Attributes	Map	Geometry	Measurements
Attribute	Value		
localid	MIC-EL-MS-IO-TeW part		
nametxtint	Hellenic Republic's MS marine waters part of the Ionian Sea and the Central Mediterranean Sea subregion - Territorial Waters from Coastal Waters (1nm to 6nm)		
mr_ms_aa	Ionian Sea and the Central Mediterranean Sea		

Search Raw Data from a Descriptor MSFD Portal

INTERSECTS

Feature Info Window: Territorial Waters Part (Coastal to 6nm)

Attributes | Map | Geometry | Measurements

Descriptors
Select...

Criteria
Select...

Criteria elements
Select...

Since:
[Date Picker]

Until:
[Date Picker]

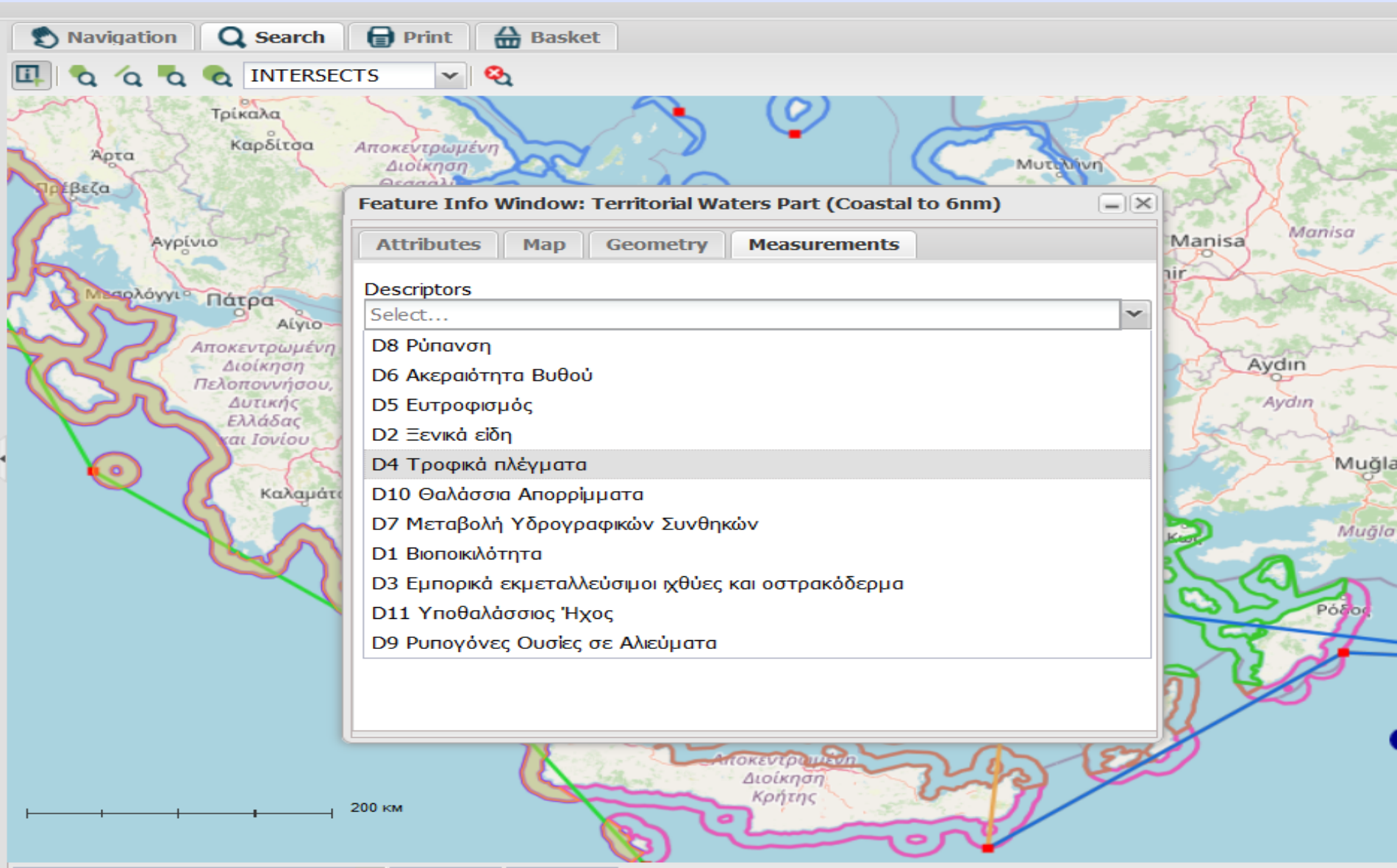
Search

Map labels: Τρίκαλα, Καρδίτσα, Αποκεντρωμένη Διοίκηση Θεσσαλίας, Μυτιλήνη, Αρτα, Πρέβεζα, Αγρίνιο, Μεσολόγγι, Πάτρα, Αίγιο, Αποκεντρωμένη Διοίκηση Πελοποννήσου, Δυτικής Ελλάδας και Ιονίου, Καλαμάτα, Manisa, Aydin, Muğla, Ρόδος, Αποκεντρωμένη Διοίκηση Κρήτης

Scale: 200 KM

Map Center (WGS 84 (EPSG:4326)): 24.5202851, 37.1086263, Zoom: 7, Cur...

Select a Layer MSFD Portal



Ready to Download Data File MSFD Portal

The screenshot displays the MSFD Portal interface. At the top, there are navigation tools: a home icon, a magnifying glass for 'Search', a printer icon for 'Print', and a shopping cart icon for 'Basket'. Below these is a toolbar with several zoom icons and a dropdown menu set to 'INTERSECTS'. The main map area shows a coastal region of Greece with various administrative boundaries and labels in Greek, including 'Αποκεντρωμένη Διοίκηση Θεσσαλίας', 'Αποκεντρωμένη Διοίκηση Πελοποννήσου, Δυτικής Ελλάδας και Ιονίου', and 'Αποκεντρωμένη Διοίκηση Κρήτης'. A red square marker is visible on the map. A 'Feature Info Window: Territorial Waters Part (Coastal to 6nm)' is open, showing the following details:

- Attributes** | **Map** | **Geometry** | **Measurements**
- Descriptors**: D8 Ρύπανση
- Criteria**: D8C1 Συγκεντρώσεις ρυπογόνων ουσκών στα θαλάσσια ύδατα, στα ιζήματα 1
- Criteria elements**: GR 8.1.1 Συγκεντρώσεις ρυπογόνων ουσκών [Βαρέα Μέταλλα (Cd, Co, Cu, P
- Since:** [Empty field]
- Until:** [Empty field]
- Search** button

A scale bar at the bottom left indicates 200 km.

Metadata Search MSFD Portal

The screenshot displays the Metadata Search MSFD Portal interface. On the left, there is a 'Metadata Search Form' with various search filters. The main area shows a map of the Mediterranean region with a yellow box highlighting a specific area in Greece. On the right, a 'Metadata Information' window is open, displaying details for a specific series.

Metadata Search Form

What?

Title:

Abstract:

Identifier:

Keyword:

Category:

Where?

Everywhere

Design on Map

Interaction with Map

When?

From:

To:

Criteria:

Type?

Service Type:

Advanced Search

Responsible Party:

Responsible Party Role:

Access and Use:

Limitation on Public Access:

Lineage:

Specification:

Scale:

Distance:

Unit:

Metadata Information

Φυτοπλαγκτόν (Περιβαλλοντικός δείκτης GR 1.7.3 και GR 5.2.4)

series Φυτοπλαγκτόν (Περιβαλλοντικός δείκτης GR 1.7.3 και GR 5.2.4)

▼ Γενικά

Αναγνωριστικό Μεταδεδομένων

- fe99683e-3c8b-11ea-b947-2e728ce88125

Γλώσσα

- eng

Κωδικός Γραμματοσειράς

- utf8

Τύπος πόρου

- series

Ημερομηνία Τελευταίας Αναθεώρησης

- 2020-01-15

Search Results

Page 1 of 1

Type	Title
series	Φυτοπλαγκτόν (Περιβαλλοντικός δείκτης GR 1.7.3 και GR 5.2.4)
series	Οργανικοί Ρύποι στα επιφανειακά ύδατα του βόθρου (Περιβαλλοντικός δείκτης GR 8.1.1)
series	Οργανικοί Ρύποι στα θαλάσσια ύδατα (Περιβαλλοντικός δείκτης GR 8.1.1)
series	Θερμικά συστατικά (ενώσεις αλάτων αζώτου, φωσφόρου και πυριτίου-NO3, NO2, NH4, PO4, SiO2) (Περιβαλλοντικός δείκτης GR 5.1.1)

Thank you very much

Questions ?