

Carlo Cipolloni | Roma, Italy 4-5 October 2018

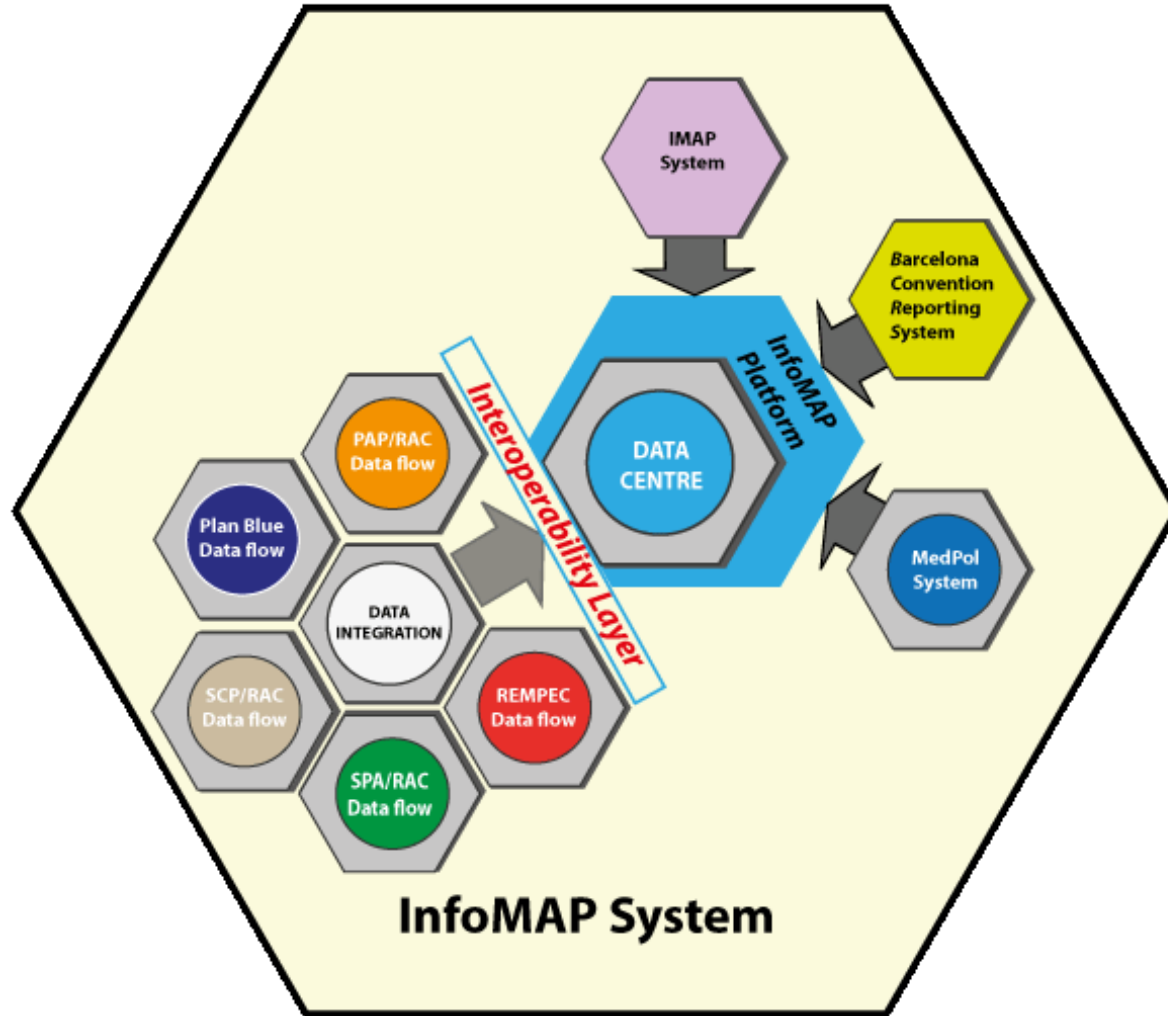
# InfoMAP System and tools



European Environment Agency



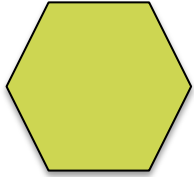
# InfoMAP short overview



*InfoMAP* represents the Information System to archive, manage and share Environmental data and information in the Mediterranean Sea area, and also to support the Barcelona Convention, based on the SEIS principles.

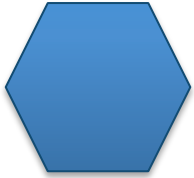
# InfoMAP short overview

Data flow Reporting components



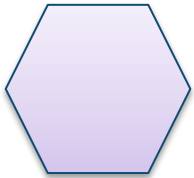
## **Barcelona Convention Report System**

*Data relate to protocol of Barcelona Convention, pollution from Land Based Sources, Hazardous Wastes, Dumping, Specially Protect Area & Biodiversity, Integrated Costal Zone Management, Prevention and emergency, offshore.*



## **MED POL Info System**

*Data relate to protocol of Pollution Monitoring and National Budget Baseline.*

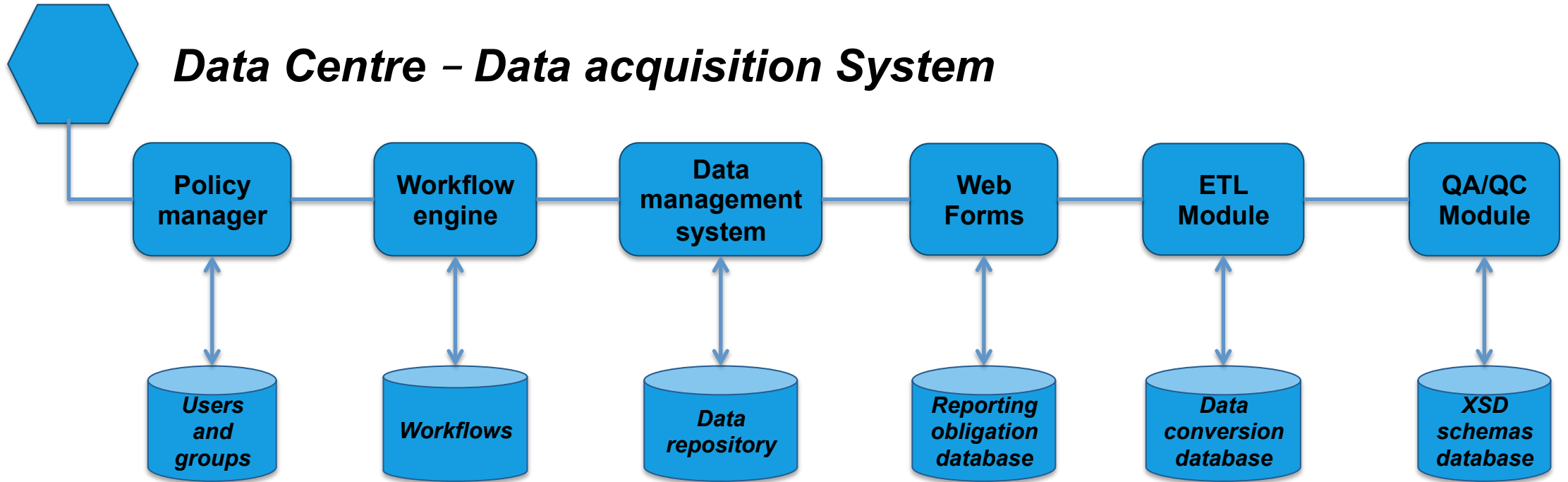


## **IMAP Pilot System**

*Data relate to protocol of Indicators on Monitoring to support Integrated Monitoring Assessment.*

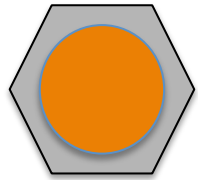
# InfoMAP short overview

Data Centre components

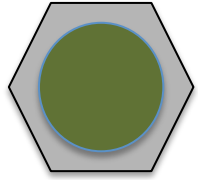


# InfoMAP short overview

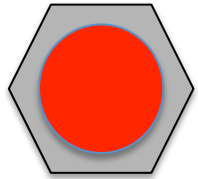
**Data services of MAP components**



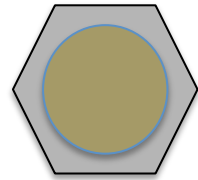
**PAP/RAC Data services**



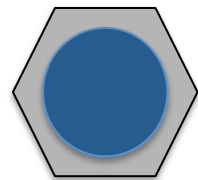
**SPA/RAC Data services**



**REMPEC Data services**



**SCP/RAC Data services**



**PB/RAC Data services**

**Data Integration based on the Interoperability layer**



**MD Catalogue**



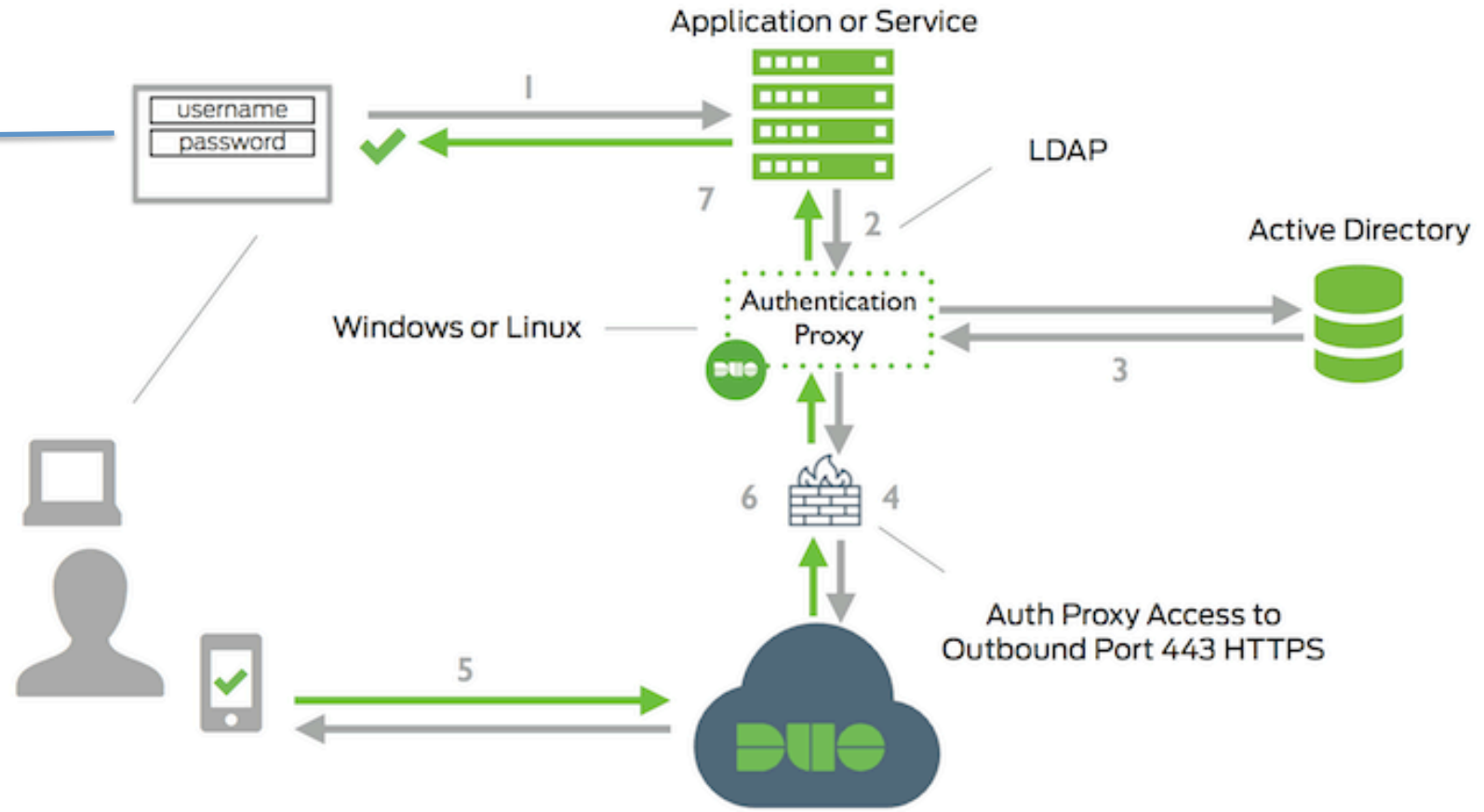
**[Using international standard]**

# InfoMAP Security Service

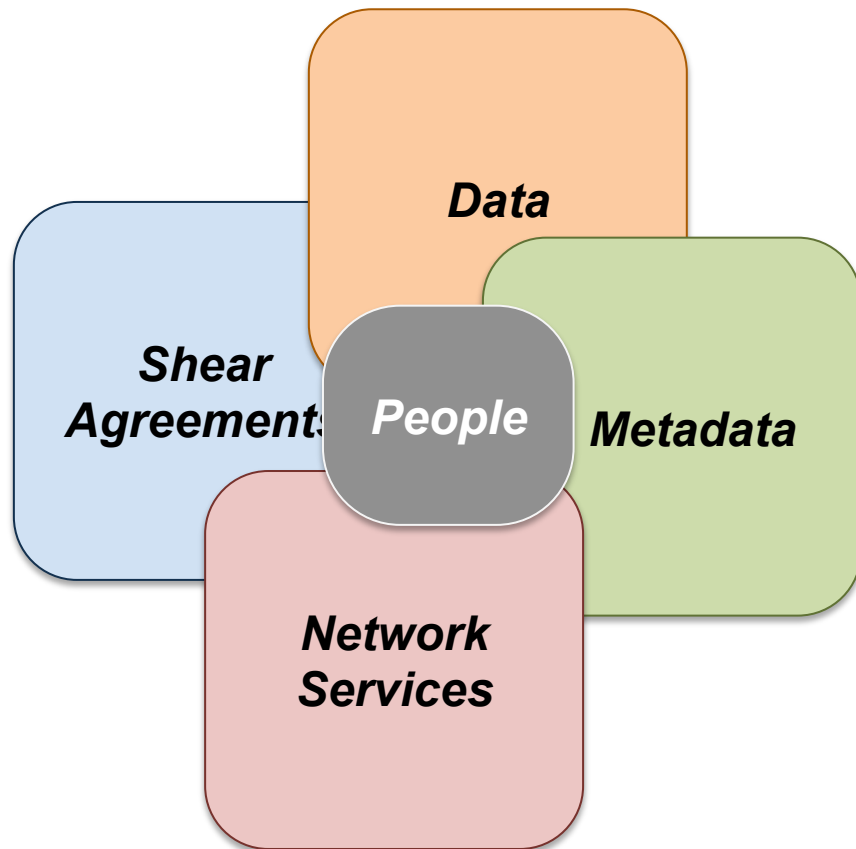
*A security system with a single-sign-on authentication system.*



*A unique Account database for all applications.*



# Spatial Data Infrastructure – main concept



*SDI (Spatial Data Infrastructure) is a framework of technologies, policies, and institutional arrangements that together facilitate the creation, exchange, and use of geospatial data and related information resources across an information-sharing community.*

# Spatial Data Infrastructure – component

*People*

*The Human resources to support the process*

*Data*

**Data** component involves different elements related to the data store system, normally the database software and applications to manage and ingest these, as well as the standardization, harmonization and validation processes tools that permit to have an high semantic interoperability, a quality check and an integration on data

*Metadata*

**Metadata** component is composed by software application that provides a system to compile or charge metadata in a standard template and also define the rules how to fill in the template, but also the application to provide network service to access to this information



# Spatial Data Infrastructure – component

## **Network Services**

**Network service** component represents the software applications and rules to make data, metadata and information in general approach available, accessible and interoperable in different systems.

## **Share Agreements**

**Share Agreements** is the legal framework that define Data policy for share data and information among the SDI.

# Spatial Data Infrastructure – Middleware layer

Application and Portal layer

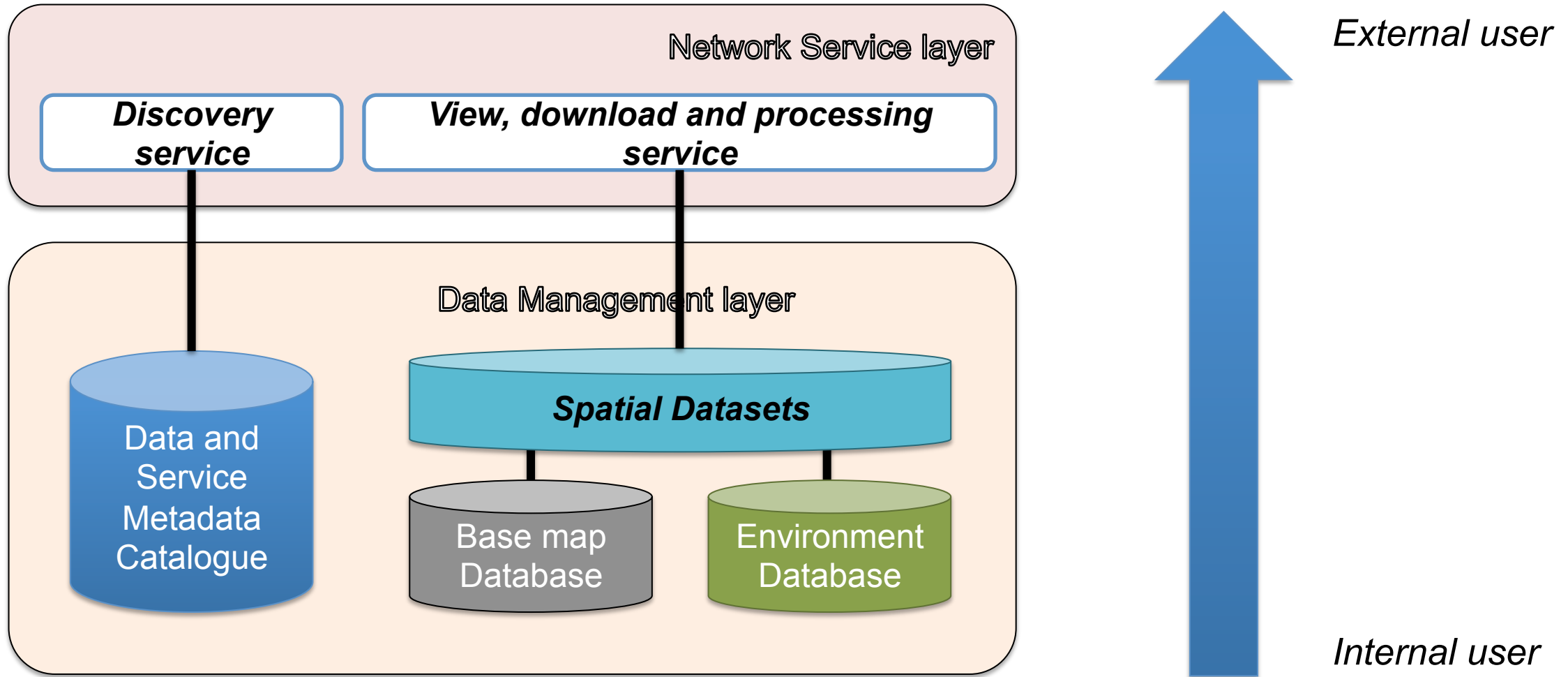
Network Service layer

Data Management layer

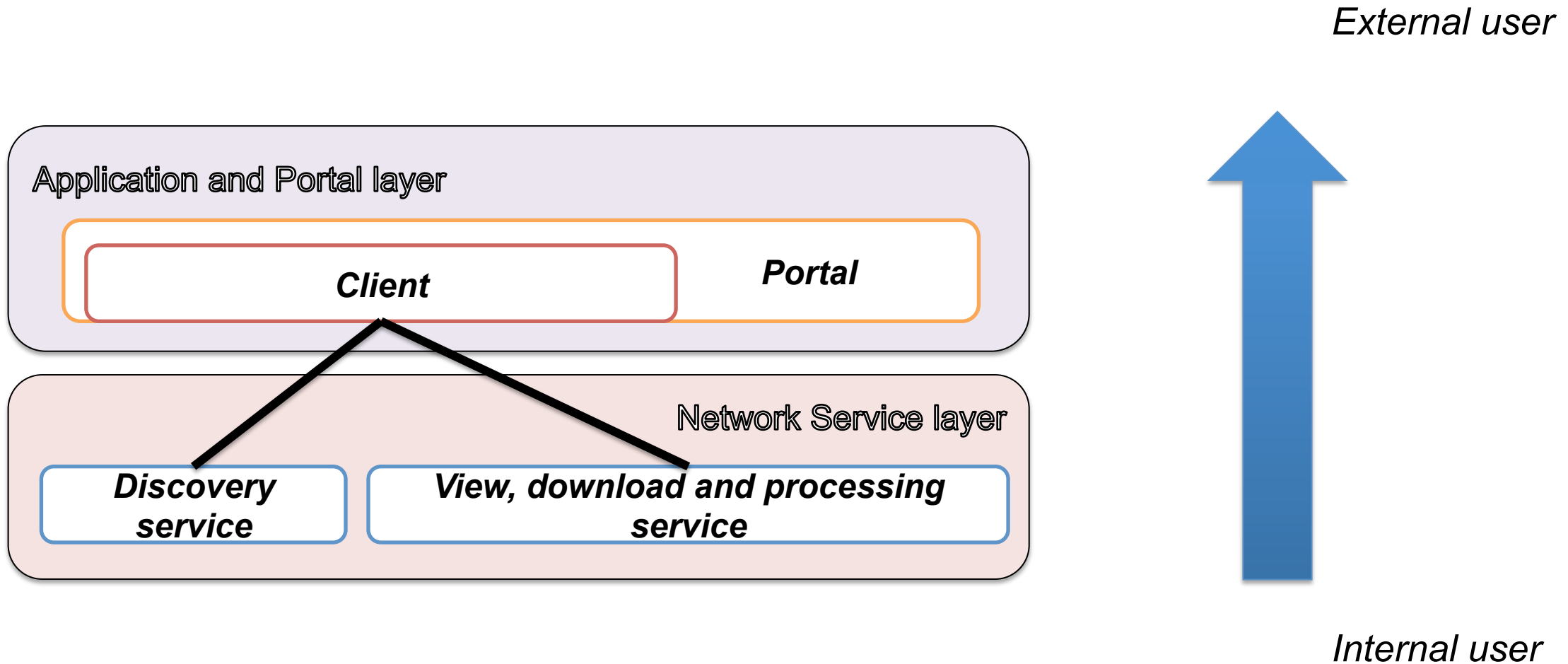
**Middleware layer** is the software architecture that provides services to software applications and provides main functionality for the users:

- Data Management and geocoding;
- Searching and view of data and metadata;
- Downloading datasets (in accord with their data policy);
- Publish and share documents, maps and layers.

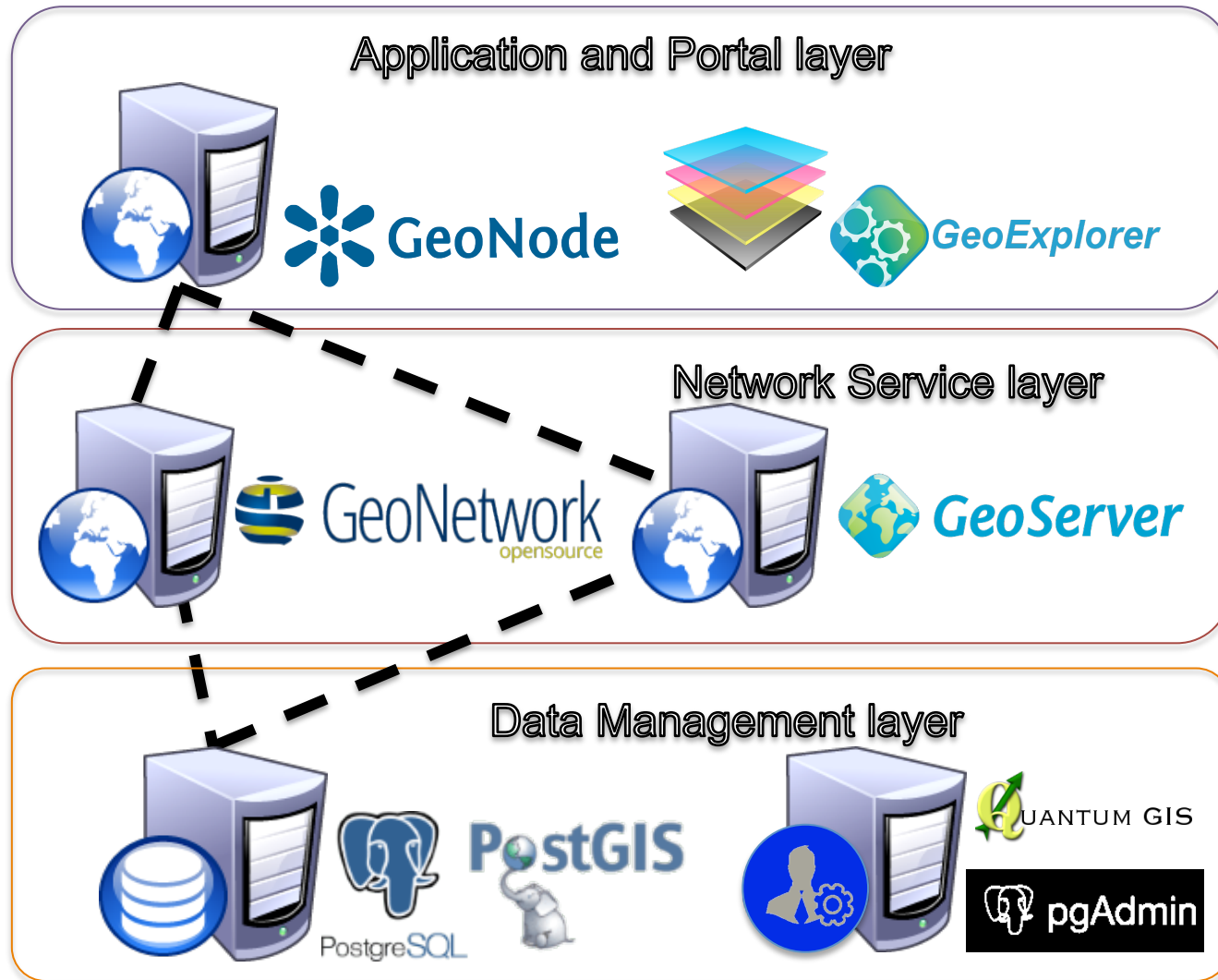
# Spatial Data Infrastructure – Middleware layer



# Spatial Data Infrastructure – Middleware layer



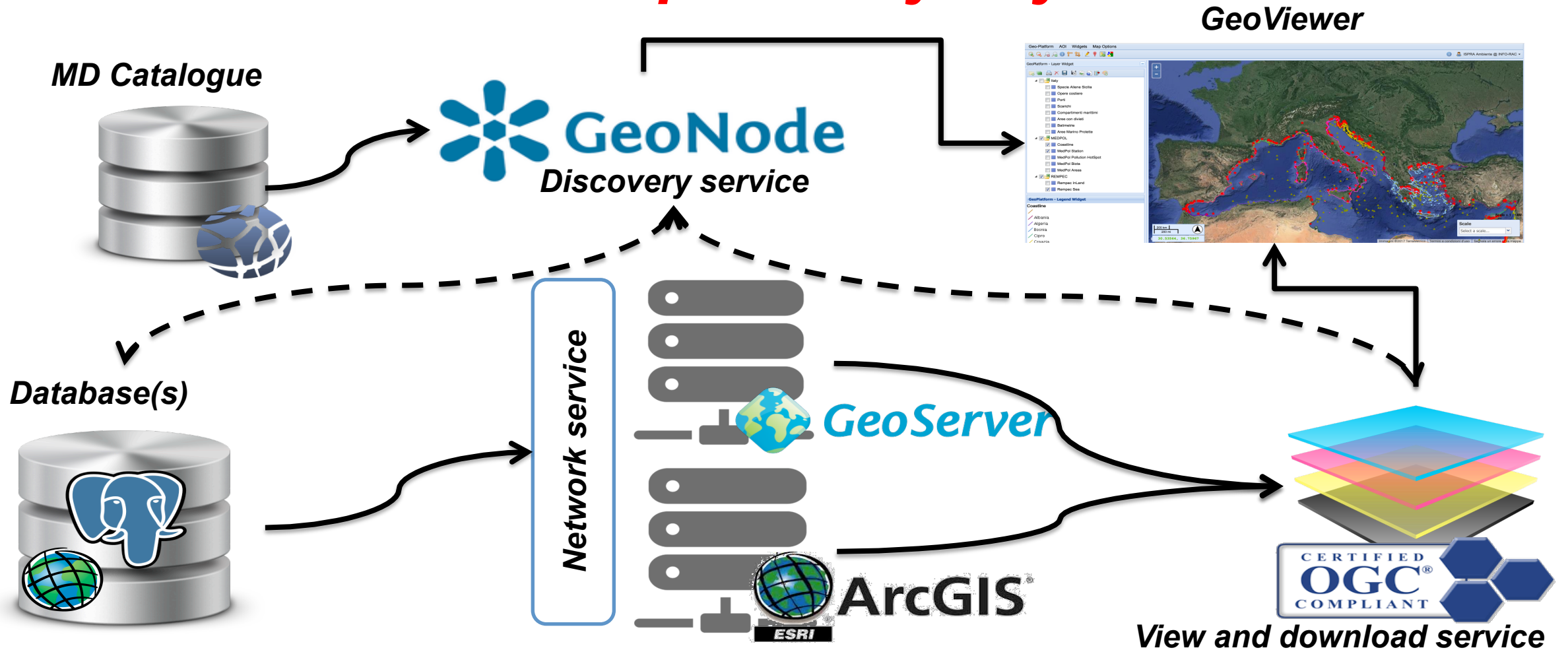
# Spatial Data Infrastructure – Middleware system



The software architecture used in **InfoMapNode** SDI that is the InfoMAP interoperability layer

# Spatial Data Infrastructure orchestration

## Interoperability Layer



# InfoMapNode – INFO/RAC SDI

UN environment  
United Nations Environment Programme

Mediterranean Action Plan  
Barcelona Convention

info RAC

InfoMapNode

Data ▾ Maps ▾ About ▾

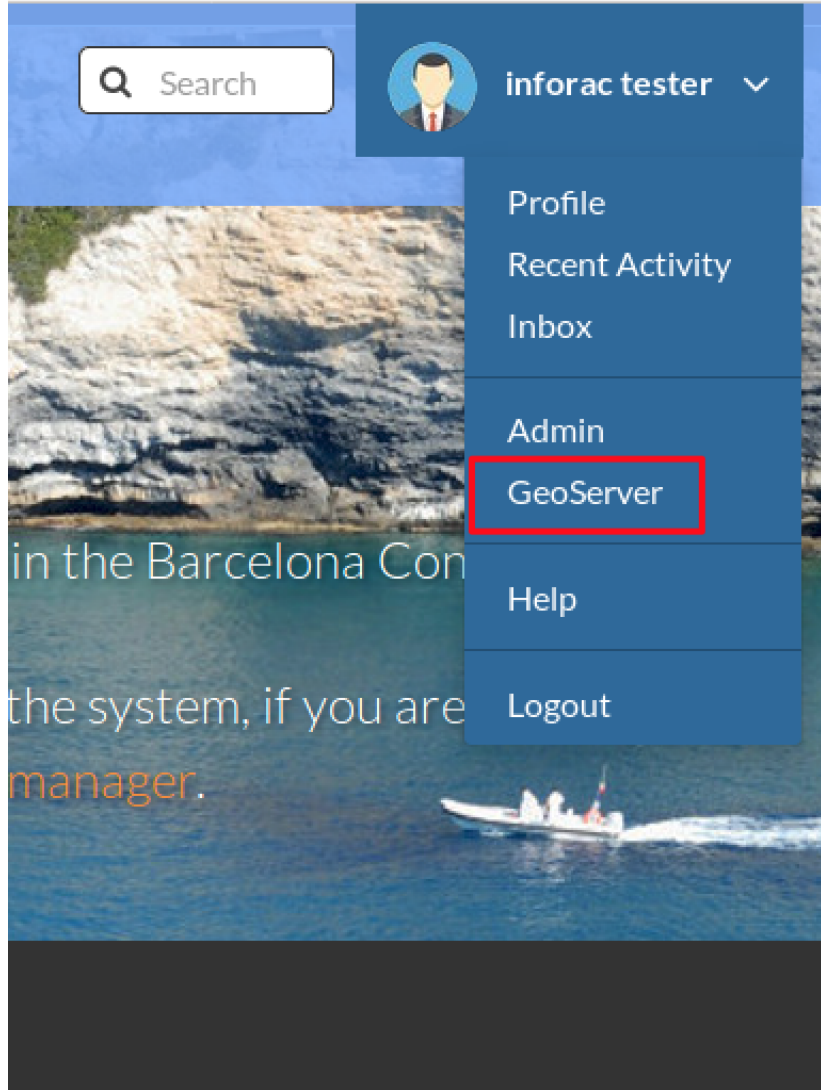
Search

# Welcome

this is InfoMapNode the geoportal for sharing geospatial data and maps within the Barcelona Conv among the Mediterranean area.

If you are a user can navigate and view metadata, data and maps available in the system, if you are a provider in order to have the right credential and account writing to **System manager**.

# InfoMapNode – INFO/RAC SDI



Network Service ebbed on InfoMapNode administration panel



# InfoMapNode – INFO/RAC SDI

**GeoServer**

username password Remember me  Login

## Welcome

Welcome

This GeoServer belongs to [INFO/RAC UNEP-MAP](#).

This GeoServer instance is running version **2.12-SNAPSHOT**. For more information please contact the [administrator](#).

### Service Capabilities

- TMS
  - 1.0.0
- WMS-C
  - 1.1.1
- WMTS
  - 1.0.0
- WCS
  - 2.0.1
  - 1.1.0
  - 1.1.1
  - 1.1
  - 1.0.0
- WFS
  - 1.0.0
  - 1.1.0
  - 2.0.0
- WMS
  - 1.1.1
  - 1.3.0
- WPS
  - 1.0.0

*From Geoserver system there is a direct connection with GeoNode system that is the management part of SDI.*

# InfoMapNode – INFO/RAC SDI

UN environment info RAC InfoMapNode Data Maps About Search Manager System

## Metadata for Water Indicator 3.1

Completeness: 57% (Check Schema mandatory fields)

Edit Settings

Mandatory Mandatory Optional

1 Basic Metadata 2 Location and Licenses 3 Optional Metadata

Title: Water Indicator 3.1

Link to: Select an option

Date type: Publication Date: 2018-10-04 00:00

Category



# InfoMapNode – Metadata template

Mandatory	Mandatory	Optional
<b>1</b> Basic Metadata	<b>2</b> Location and Licenses	<b>3</b> Optional Metadata
<p><b>Title</b></p> <input type="text" value="Water Indicator 3.1"/>		<p>spreadsheet × water × ENI SEIS ×</p>
<p><b>Link to</b></p> <input type="text" value="Select an option"/>		<p>features</p>
<p><b>Abstract</b></p> <input type="text" value="The ENI SEIS South II Water Indicator 3.1 template"/>		<p>scambio</p>
		<p><b>Date type</b></p> <p>Publication</p>
		<p><b>Date</b></p> <p>2018-10-04 00:00</p>
		<p><b>Category</b></p> <p>Oceans</p>
		<p><b>Group</b></p> <p>INFO/RAC</p>

# InfoMapNode – Metadata template

Mandatory

Mandatory

Optional

1

2

3

Basic Metadata

Location and Licenses

Optional Metadata

Language

English

License

Public Domain

Regions

× Europe

× North Africa

Data quality statement

Template produce to collect preliminary the data for water indicator

Restrictions

otherRestrictions

Restrictions other

# InfoMapNode – Metadata template

1      2      3

**Basic Metadata**      **Location and Licenses**      **Optional Metadata**

Other, Optional, Metadata

**Edition**

**Purpose**

**Supplemental information**

No information provided

**temporal extent start**

-10-01 07:33 am

**temporal extent end**

2018-10-04 07:33

**Maintenance frequency**

there are no plans to update the data

**Spatial representation type**

vector data is used to represent geographic data

**Responsible Parties**

**Point of Contact**

CCipolloni

**Owner and Permissions**

**Owner**

admin

**Metadata Author**

admin

# InfoMapNode – Metadata management

The screenshot displays the InfoMapNode web interface. At the top, there are logos for UN environment, Mediterranean Action Plan, and InfoRAC, along with navigation links for Data, Maps, and About. A search bar and a 'Manager System' link are also present. The main content area shows a document titled 'Water Indicator 3.1' with various metadata fields and a sidebar with action buttons.

**Download the Water Indicator 3.1 document**

**Info** Share Ratings Comments

<b>Title</b>	Water Indicator 3.1
<b>License</b>	Public Domain (PD) ⓘ
<b>Abstract</b>	The ENI SEIS South II Water Indicator 3.1 template
<b>Publication Date</b>	Oct. 4, 2018, 12:33 a.m.
<b>Keywords</b>	ENI SEIS , spreadsheet , water
<b>Category</b>	Oceans ⓘ
<b>Regions</b>	North Africa , Europe
<b>Owner</b>	admin
<b>Group</b>	INFO/RAC
<b>More info</b>	-
<b>Maintenance</b>	There Are No Plans To Update The Data
<b>Frequency</b>	
<b>Restrictions</b>	otherRestrictions
<b>Language</b>	English

**Metadata Detail**

**Download Document**

**Edit Document**

**Download Metadata**

**Resources using this document**

This document is not related to any maps or layers

**Permissions**

Click the button below to change the permissions of this document.

**Change Document Permissions**

# InfoMapNode – Data management

DB Manager interface showing a table structure for 'lines'.

id_0	geom	id	roadtype
1	MULTILINES...	1	NULL
2	MULTILINES...	2	minor
3	MULTILINES...	3	NULL
4	MULTILINES...	4	major
5	MULTILINES...	5	minor
6	MULTILINES...	6	major
7	MULTILINES...	8	minor

pgAdmin 4 interface showing a SQL query and its results.

```

SELECT * FROM public.download_download
WHERE id >= 5
ORDER BY id ASC
    
```

id (PK) integer	distribution_id integer	version_id integer	active boolean	download_url character varying (250)	notes_url character varying (250)
1	5	1	3 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.0/macos/	
2	6	1	4 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.1/macos/	
3	7	1	5 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.2/macos/	
4	8	1	6 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.3/macos/	
5	9	1	7 false	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.4/macos/	
6	10	2	3 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.0/pip/	
7	11	2	4 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.1/pip/	
8	12	2	5 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.2/pip/	
9	13	2	6 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.3/pip/	
10	14	2	7 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.4/pip/	
11	15	4	3 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.0/source/	https://git.postgresql.org/gitweb/?p=pgadmin4.git;a=bl...
12	16	4	4 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.1/source/	https://git.postgresql.org/gitweb/?p=pgadmin4.git;a=bl...
13	17	4	5 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.2/source/	https://git.postgresql.org/gitweb/?p=pgadmin4.git;a=bl...
14	18	4	6 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.3/source/	https://git.postgresql.org/gitweb/?p=pgadmin4.git;a=bl...
15	19	4	7 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.4/source/	https://git.postgresql.org/gitweb/?p=pgadmin4.git;a=bl...
16	20	5	3 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.0/windows/	
17	21	5	4 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.1/windows/	
18	22	5	5 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.2/windows/	
19	23	5	6 true	https://www.postgresql.org/ftp/pgadmin/pgadmin4/v1.3/windows/	



1st ENI SEIS II South Support Mechanism Regional Workshop on Infrastructure and Data Management



This project is funded by the European Union



European Environment Agency

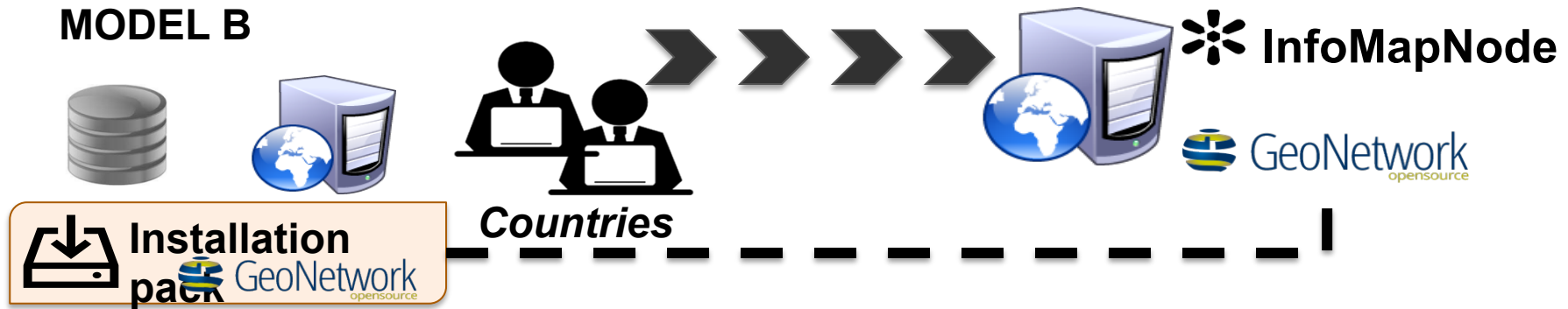


# SDI Share and technical support models

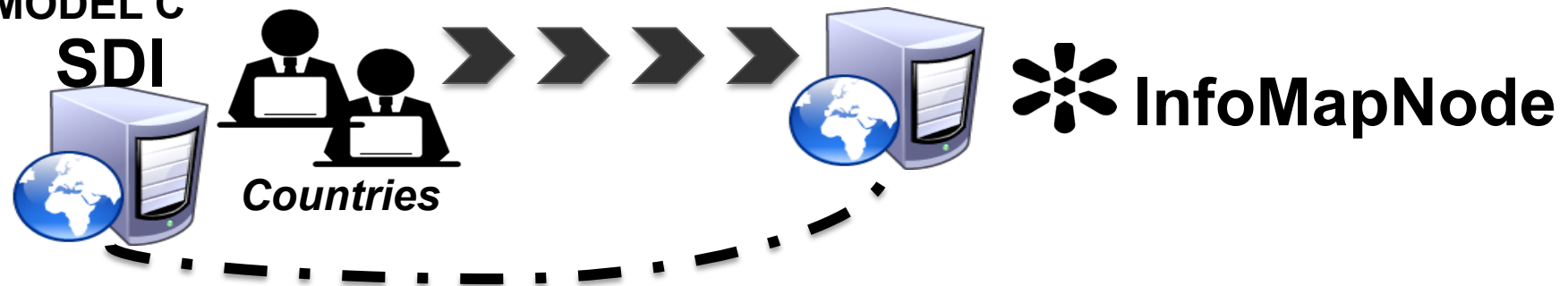
MODEL A



MODEL B



MODEL C



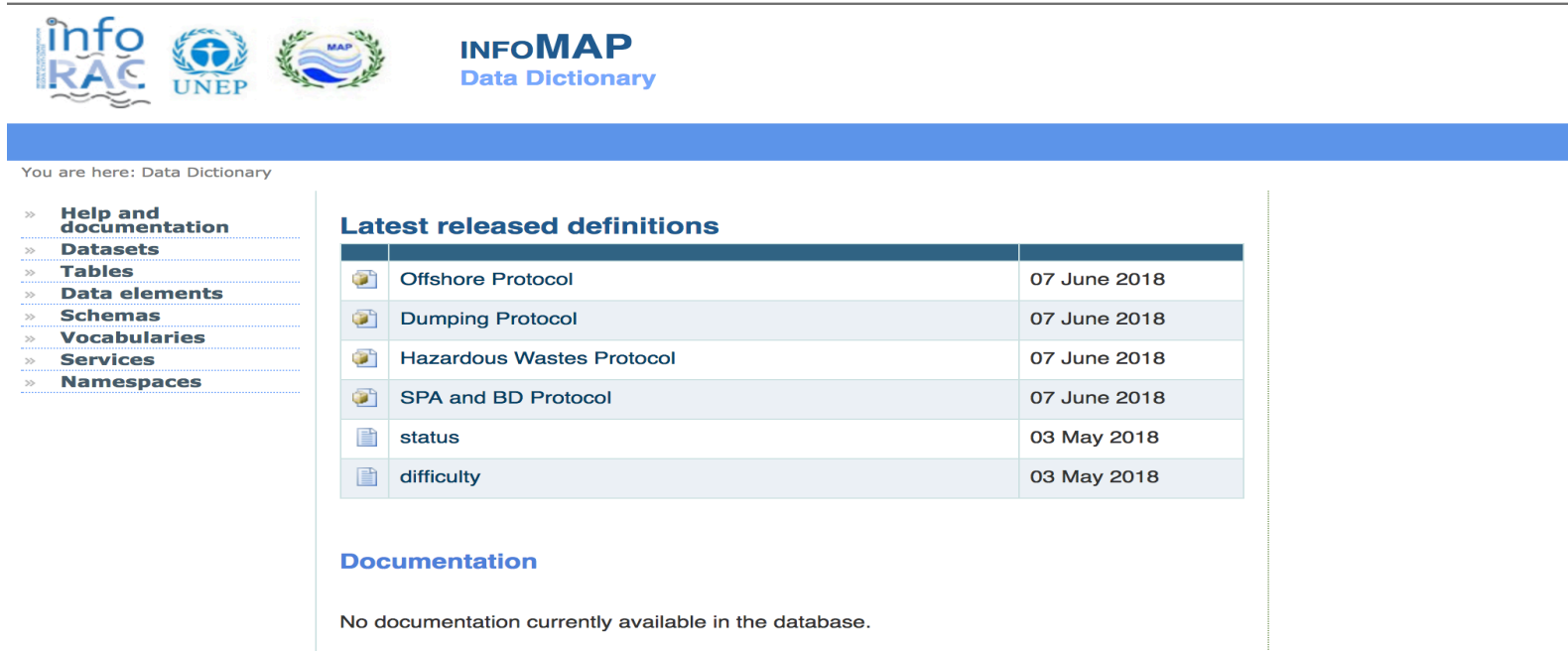


# Data Centre to support data reporting

## Data Dictionary

A component system able to manage the different data flow, defining for each one schema, Vocabularies/Code lists, quality control, etc.

<https://dd.info-rac.org/>



The screenshot shows the INFO MAP Data Dictionary website. At the top, there are logos for info RAC, UNEP, and MAP, along with the text 'INFO MAP Data Dictionary'. A navigation menu on the left lists: Help and documentation, Datasets, Tables, Data elements, Schemas, Vocabularies, Services, and Namespaces. The main content area is titled 'Latest released definitions' and contains a table with the following data:

	Offshore Protocol	07 June 2018
	Dumping Protocol	07 June 2018
	Hazardous Wastes Protocol	07 June 2018
	SPA and BD Protocol	07 June 2018
	status	03 May 2018
	difficulty	03 May 2018

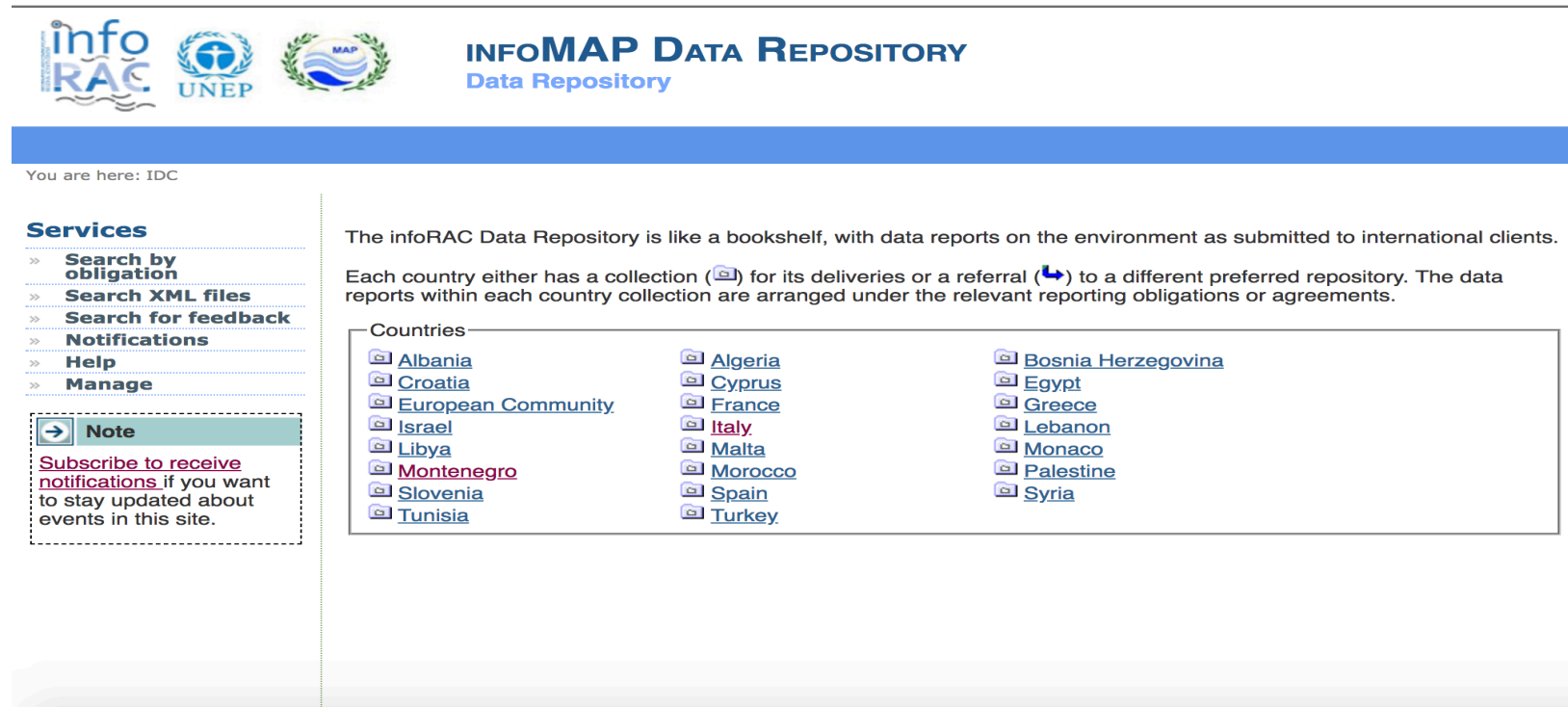
Below the table, there is a section titled 'Documentation' with the text: 'No documentation currently available in the database.'

# Data Centre to support data reporting

## Data Repository

A share directory where each country can upload their data reporting, following the different data flow procedures.

<http://idc.info-rac.org/>



The screenshot shows the homepage of the INFOMAP DATA REPOSITORY. At the top, there are logos for infoRAC, UNEP, and MAP, followed by the text "INFOMAP DATA REPOSITORY Data Repository". A navigation bar contains "Logout (cornel)" and other icons. Below the header, a breadcrumb trail reads "You are here: IDC".

**Services**

- » Search by obligation
- » Search XML files
- » Search for feedback
- » Notifications
- » Help
- » Manage

**Note**

Subscribe to receive notifications if you want to stay updated about events in this site.

The infoRAC Data Repository is like a bookshelf, with data reports on the environment as submitted to international clients. Each country either has a collection (📁) for its deliveries or a referral (🔗) to a different preferred repository. The data reports within each country collection are arranged under the relevant reporting obligations or agreements.

**Countries**

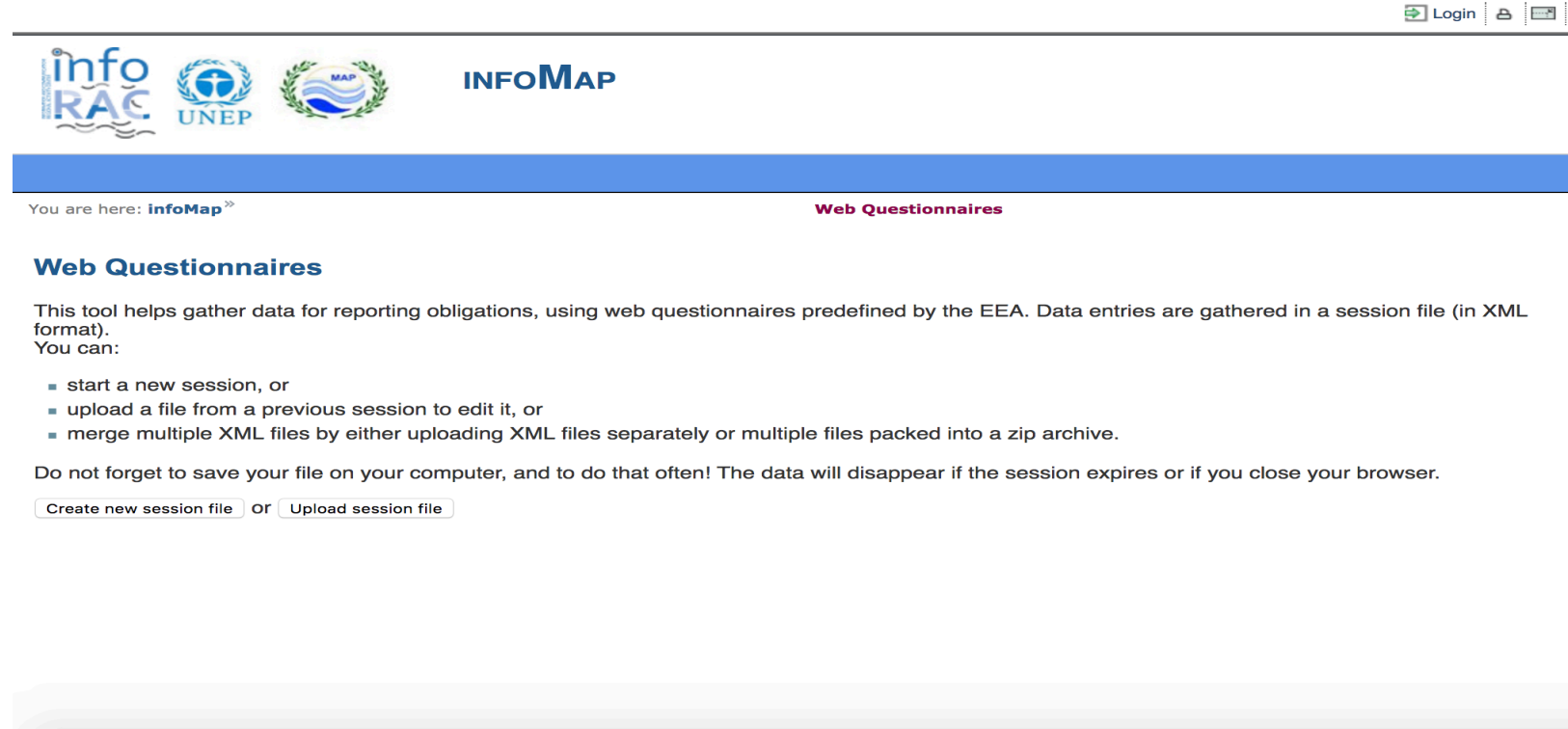
📁 Albania	📁 Algeria	📁 Bosnia Herzegovina
📁 Croatia	📁 Cyprus	📁 Egypt
📁 European Community	📁 France	📁 Greece
📁 Israel	📁 Italy	📁 Lebanon
📁 Libya	📁 Malta	📁 Monaco
📁 Montenegro	📁 Morocco	📁 Palestine
📁 Slovenia	📁 Spain	📁 Syria
📁 Tunisia	📁 Turkey	

# Data Centre to support data reporting

## Web form for reporting

A web tool to compile the reporting obligation data flow, this is able to create an empty copy of report that each country can fill using web form or other tool procedure.

<http://idc.info-rac.org/>



The screenshot shows the INFO MAP web interface. At the top, there are logos for info RAC, UNEP, and MAP, followed by the text "INFO MAP". In the top right corner, there is a "Login" button and a user profile icon. Below the header, a blue bar contains the text "You are here: infoMap >" and "Web Questionnaires". The main content area is titled "Web Questionnaires" and contains the following text: "This tool helps gather data for reporting obligations, using web questionnaires predefined by the EEA. Data entries are gathered in a session file (in XML format). You can:" followed by a list of actions: "start a new session, or", "upload a file from a previous session to edit it, or", and "merge multiple XML files by either uploading XML files separately or multiple files packed into a zip archive." Below this, a warning states: "Do not forget to save your file on your computer, and to do that often! The data will disappear if the session expires or if you close your browser." At the bottom of the content area, there are two buttons: "Create new session file" and "Upload session file", separated by the word "OR".

# Data Centre to support data reporting

## Web form for reporting

Login



INFOMap

You are here: [infoMap](#) >>

**Web Questionnaires**

### Web Questionnaires

This tool helps gather data for reporting obligations, using web questionnaires predefined by the EEA. Data entries are gathered in a session file (in XML format).

You can:

- start a new session, or
- upload a file from a previous session to edit it, or
- merge multiple XML files by either uploading XML files separately or multiple files packed into a zip archive.

Do not forget to save your file on your computer, and to do that often! The data will disappear if the session expires or if you close your browser.

OR

Select questionnaire:

# Data Centre to support data reporting

## Web form for reporting



You are here: [infoMap](#) »

**Web Questionnaires**

### Web Questionnaires

This tool helps gather data for reporting obligations, using web questionnaires predefined by the EEA. Data entries are gathered in a session file (in XML format).

You can:

- start a new session, or
- upload a file from a previous session to edit it, or
- merge multiple XML files by either uploading XML files separately or multiple files packed into a zip archive.

Do not forget to save your file on your computer, and to do that often! The data will disappear if the session expires or if you close your browser.

[Create new session file](#) OR [Upload session file](#)

### My session files

	File	Actions	File size	Last modified
<input type="checkbox"/>	<a href="#">barcelona_1.xml</a>	<a href="#">Edit with 'Barcelona convention' web form</a>	1 KB	11 giu 2018 21:30:33

[Delete selected files](#) [Merge selected files](#) [Rename](#)

# Data Centre to support data reporting

## Web form for reporting

### Barcelona Convention

Implementation of the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols (Barcelona Convention)

Reporting party

Part I

Part II

Part III

Part IV

Back to envelope

Save

#### Part III: Policy measures

Question 3: Has the Party undertaken any of the measures listed in Table III hereunder for the promotion of sustainable development and the integration of environmental protection when formulating and adopting development policies?

Table III: Policy measures

Domestic Strategy for sustainable development ▼

Regional Strategies adopted in the framework of MAP ▼

ICZM and physical planning ▼

Economic Instruments ▼

### Barcelona Convention

Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols (Barcelona Convention)

Part III

Part IV

Back to envelope

Save

#### THE REPORTING PARTY

Reporting Party by completing the following table.

Party

D/M/Y

D/M/Y

Protocol

Protocol

Address

Tel

# Thank you for your attention

[www.info-rac.org](http://www.info-rac.org)  
[info@info-rac.org](mailto:info@info-rac.org)

# Reporting implementation chain

**Factsheet**

**Data model**

- UML
- XSD Schema

**Data flow implementation**

**Data Dictionary**

- Vocabulary
- Codelist

**Schema validation generation**