



# SeaDataNet

## Management of the glider data in SeaDataNet RI

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# SeaDataNet

- European RI created by several EU projects and managed by the NODCs of 35 countries bordering the European seas



**90s**

*EDMED*

*Euronodim*

*MEDATLAS*

**2002-2005**

*Sea-Search*

**2006-2011**

*SeaDataNet*

**2011-2015**

*SeaDataNet II*

**2016-2021**

*SeaDataCloud*

EU – MAST

EU –MASTII

EU-FP5

EU-FP6

EU-FP7

H2020

# SeaDataNet - Objectives

- Federation of the oceanographic data centres of 35 countries bordering the European seas
- Creation of a single virtual data centre, allowing a user searching for oceanographic data to connect to all 35 countries from a single user interface
- Distribute complete datasets in specific sea basins to privileged users (modellers)
- Creation and dissemination of products (climatologies and aggregated datasets) made from the data put into the infrastructure

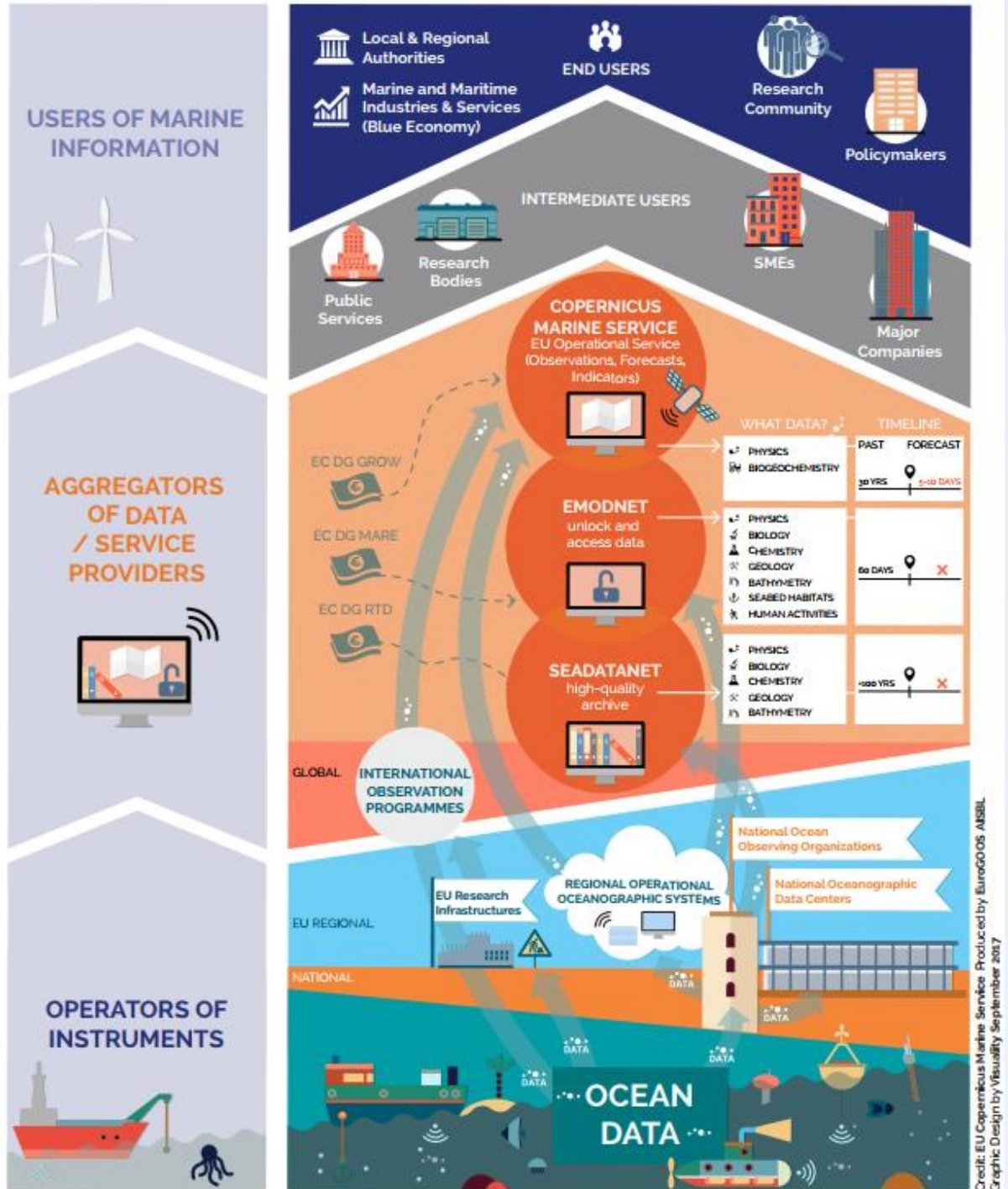
## SeaDataNet Status



- SeaDataNet is managed by:
  - All the partners, for data input
  - Core partners for the maintenance and upgrade of the SeaDataNet services and tools (Ifremer, NOC-BODC, MARIS, ULiège, AWI)
- Legal Status : SeaDataNet is an AISBL (Non-profit International association), under Belgian Law, with its headquarters in Brussels (RBINS)
- Funded by European projects related directly to SDN infrastructure or EMODnet projects or other project (ENVRI-FAIR, BLUECLOUD, ...) where members of the AISBL are involved.



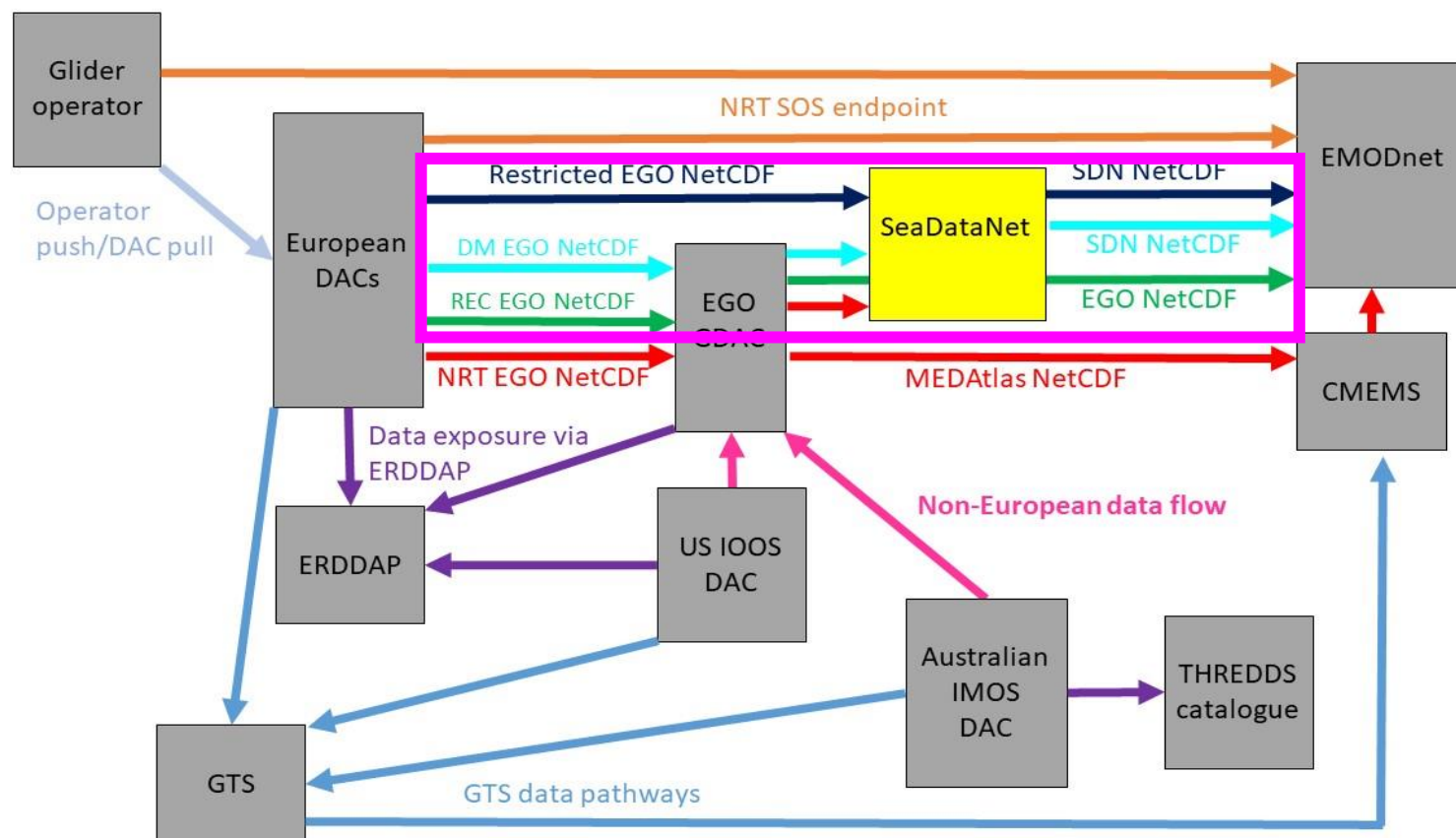
# European landscape in terms of Marine Data management: 3 main components



# Mandate for Glider data

- In the frame of the H2020 SeaDataCloud project (2016-2021), one task (led by NOC-BODC) was to expand the data types handled by SeaDataNet to include HF-Radar, Flow Cytometer and **Glider** data
  - *SeaDataCloud partners ingesting, validating and storing glider data will be expected to align their operation with the glider data management protocols established and being developed under the EU EGO (Everyone's Gliding Observatories) initiative....*
- One deliverable:
  - **D9.14:** *SeaDataNet data management protocols for glider data → Describing how to map EGO file to SDN format*

# Glider data integration in SeaDataNet



## Processing of the EGO data files

- Development of a converter from EGO format to SeaDataNet netCDF format → implemented in OCTOPUS software



**OCTOPUS** is a multi-format Checker, Converter and Splitter tool.

- OCTOPUS checks the compliance of a file to the [SeaDataNet ODV](#), [netCDF](#) and [MedAtlas standard formats](#) The checks for ODV and netCDF are described in the [FAQ section](#).
- OCTOPUS converts files in a given SeaDataNet format to another SeaDataNet format (e.g.: ODV to netCDF, netCDF to ODV, MedAtlas to NetCDF, MedAtlas to ODV)
- OCTOPUS checks the [ODV SDN variant formats](#) for biology, microlitter and flow cytometry, it can converts them from ODV variant to ODV variant
- OCTOPUS checks the [SeaDataNet netCDF format for HF-Radar](#), no conversion are possible for this format.
- OCTOPUS has also additional functions such as:
  - Split a multi-station SeaDataNet file into mono-station SeaDataNet files
  - Extract station(s) from SeaDataNet files
  - Convert MGD v81 and v98 to SeaDataNet ODV files
  - Convert EGO glider files to netCDF (CFPOINT) format



# Which data files?

- EGO files from the GDAC-Coriolis managed at IFREMER

Organisation	Country	NB glider
DFO	Canada	65
Memorial University of Newfoundland (MUN)	Canada	3
Cyprus Oceanography Center (OC)	Cyprus	4
Tallin	Estonia	7
Finnish Meteorological Institute	Finland	2
DT INSU	France	190
Alseamar-Alcen	France	7
GEOMAR	Germany	99
AWI	Germany	3
Helmholtz-Zentrum Geesthacht (HZG)	Germany	10
HCMR	Greece	2
Marine Institute	Ireland	3
CMRE	Italy	11
OGS	Italy	11
University of Bergen	Norway	8
PLOCAN	Spain	27
SOCIB	Spain	108
BODC	UK	45
University of Gothenburg (UoG)	Sweden	1
		<b>606</b>

# Converting the EGO data files to SDN format

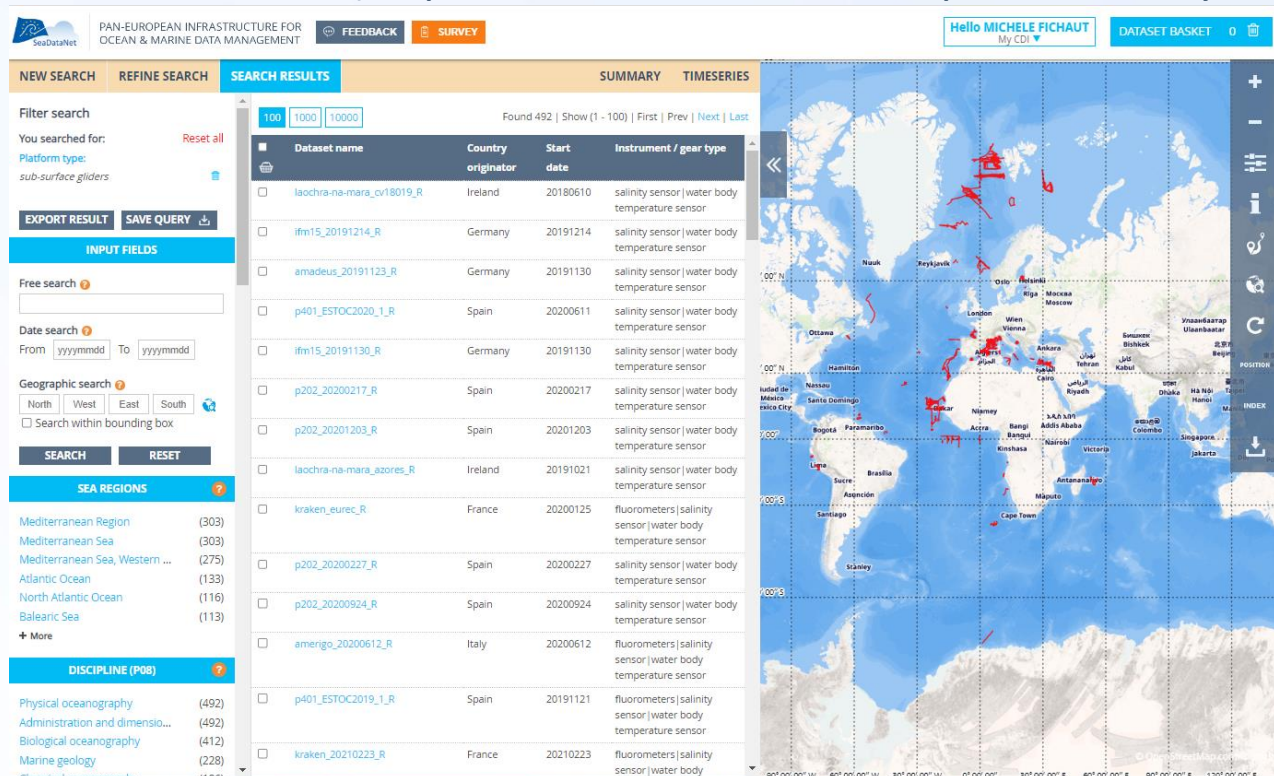
- Conversion detected many errors in the EGO files (only 58 files could be directly converted)
  - Global attributes missing (:title) or containing wrong (:platform\_code) values
  - Missing PRES:positive attribute
  - Wrong values for the flags declared as bytes (:flag\_values= 0., 1., 2 → :flag\_values= 0b, 1b, 2b)
  - Inconsistencies between flag and values → Flag 9 on values
  - Shift between values and QC on longitude
  - Wrong or missing mapping to P01 (BODC parameter codes) and P06 (BODC vocabs for units)
  - Missing mappings in P01 and C17 (ICES platform vocabulary)

# Correcting the EGO data when possible

- Error corrected **on a copy** of the GDAC files
- Conversion detected many errors in the EGO files
  - Global attributes missing (:title) or containing wrong (:platform\_code) values
  - Missing PRES:positive attribute
  - Wrong values for the flags declared as bytes (:flag\_values= 0., 1., 2 → :flag\_values= 0b, 1b, 2b)
  - Inconsistencies between flag and values → Flag 9 on values
  - Shift between values and QC on longitude
  - Wrong or missing mapping to P01 (BODC parameter codes) and P06 (BODC vocabs for units)
  - Missing mappings in P01 and C17 (ICES platform vocabulary)
- Errors reported back to the data providers: corrections on-going at DFO and CSIC

# Glider data in SeaDataNet

- From October 2021 to April 2022 => 492 glider files uploaded in SeaDataNet (81% of the GDAC-Coriolis content). Updated with new datafiles planned every 3 months



The screenshot displays the SeaDataNet search results page. The top navigation bar includes the SeaDataNet logo, the text "PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT", and buttons for "FEEDBACK" and "SURVEY". The user is logged in as "Hello MICHELE FICHAUT" with a "My CDI" dropdown and a "DATASET BASKET" showing 0 items.

The main content area is divided into several sections:

- Filter search:** Includes a "You searched for:" field, a "Platform type:" dropdown set to "sub-surface gliders", and buttons for "EXPORT RESULT" and "SAVE QUERY".
- INPUT FIELDS:** Includes a "Free search" text box, a "Date search" section with "From" and "To" date pickers, and a "Geographic search" section with "North", "West", "East", and "South" buttons, and a checkbox for "Search within bounding box".
- SEA REGIONS:** A list of regions with their respective counts: Mediterranean Region (303), Mediterranean Sea (303), Mediterranean Sea, Western ... (275), Atlantic Ocean (133), North Atlantic Ocean (116), and Balearic Sea (113).
- DISCIPLINE (POB):** A list of disciplines with their respective counts: Physical oceanography (492), Administration and dimension... (492), Biological oceanography (412), and Marine geology (228).
- SEARCH RESULTS:** A table showing the results of the search. The table has columns for "Dataset name", "Country originator", "Start date", and "Instrument / gear type". The results are sorted by "Start date" in descending order.
- Map:** A map of the Mediterranean region showing the locations of the glider datasets. The map includes a grid of latitude and longitude lines and a "POB INDEX" button.

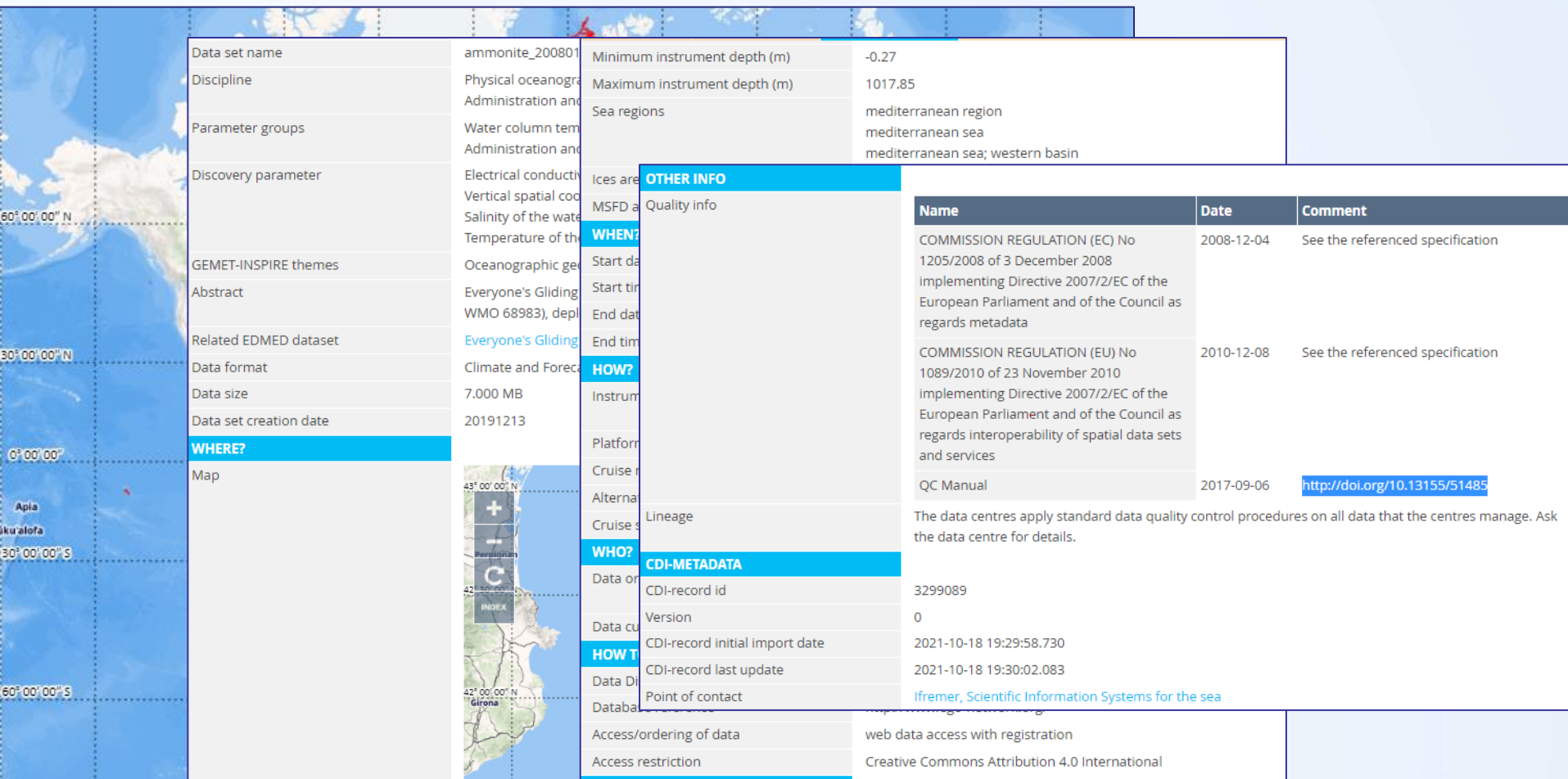
The search results table contains the following data:

Dataset name	Country originator	Start date	Instrument / gear type
laochra-na-mara_cv18019_R	Ireland	20180610	salinity sensor   water body temperature sensor
ifm15_20191214_R	Germany	20191214	salinity sensor   water body temperature sensor
amadeus_20191123_R	Germany	20191130	salinity sensor   water body temperature sensor
p401_ESTOC2020_1_R	Spain	20200611	salinity sensor   water body temperature sensor
ifm15_20191130_R	Germany	20191130	salinity sensor   water body temperature sensor
p202_20200217_R	Spain	20200217	salinity sensor   water body temperature sensor
p202_20201203_R	Spain	20201203	salinity sensor   water body temperature sensor
laochra-na-mara_azores_R	Ireland	20191021	salinity sensor   water body temperature sensor
kraken_eurec_R	France	20200125	fluorimeters   salinity sensor   water body temperature sensor
p202_20200227_R	Spain	20200227	salinity sensor   water body temperature sensor
p202_20200924_R	Spain	20200924	salinity sensor   water body temperature sensor
amerigo_20200612_R	Italy	20200612	fluorimeters   salinity sensor   water body temperature sensor
p401_ESTOC2019_1_R	Spain	20191121	fluorimeters   salinity sensor   water body temperature sensor
kraken_20210223_R	France	20210223	fluorimeters   salinity sensor   water body temperature sensor

- Data available [here](#)

# Glider data in SeaDataNet

- For each file metadata is available



The screenshot displays the SeaDataNet interface for the dataset 'ammonite\_200801'. The left sidebar shows a map of the Mediterranean region with a red pin indicating the location of the dataset. The main content area is divided into two sections: 'OTHER INFO' and 'CDI-METADATA'.

OTHER INFO	
Data set name	ammonite_200801
Discipline	Physical oceanography
Administration and Sea regions	mediterranean region mediterranean sea mediterranean sea; western basin
Parameter groups	Water column temperature Administration and Sea regions
Discovery parameter	Electrical conductivity Vertical spatial coordinate Salinity of the water Temperature of the water
GEMET-INSPIRE themes	Oceanographic geology
Abstract	Everyone's Gliding (WMO 68983), deployment
Related EDMED dataset	Everyone's Gliding
Data format	Climate and Forecast
Data size	7.000 MB
Data set creation date	20191213

Name	Date	Comment
COMMISSION REGULATION (EC) No 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata	2008-12-04	See the referenced specification
COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services	2010-12-08	See the referenced specification
QC Manual	2017-09-06	<a href="http://doi.org/10.13155/51485">http://doi.org/10.13155/51485</a>

CDI-METADATA	
CDI-record id	3299089
Version	0
CDI-record initial import date	2021-10-18 19:29:58.730
CDI-record last update	2021-10-18 19:30:02.083
Point of contact	Ifremer, Scientific Information Systems for the sea

HOW TO	
Access/ordering of data	web data access with registration
Access restriction	Creative Commons Attribution 4.0 International



# Glider data in SeaDataNet

- Glider data download from SeaDataNet since October 2021 : 1,560 files, bigger downloads for modellers

