



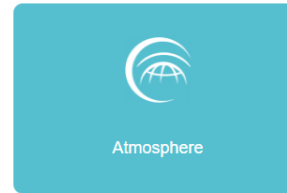
First DBCP Mediterranean Training Workshop on Ocean Observations and Data Applications

Overall Copernicus Marine In Situ data and
information services

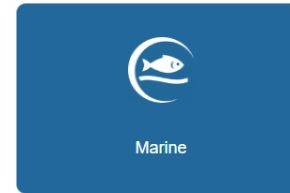
Drouineau Ludovic



Copernicus



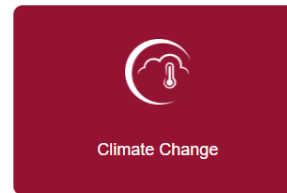
Atmosphere



Marine



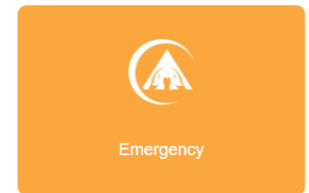
Land



Climate Change



Security



Emergency

- Copernicus is a European system for monitoring the Earth.
- Full, Free and open access to data
- Copernicus Marine Service products and services are meant to serve all marine applications: Marine resources, Maritime safety, Coastal and Marine Environment, Seasonal Forecast & Climate.



Copernicus Marine Service



Home Search Access Data User Corner Contact Us

<https://resources.marine.copernicus.eu/products>
171 ocean products

General catalogue ICE Services

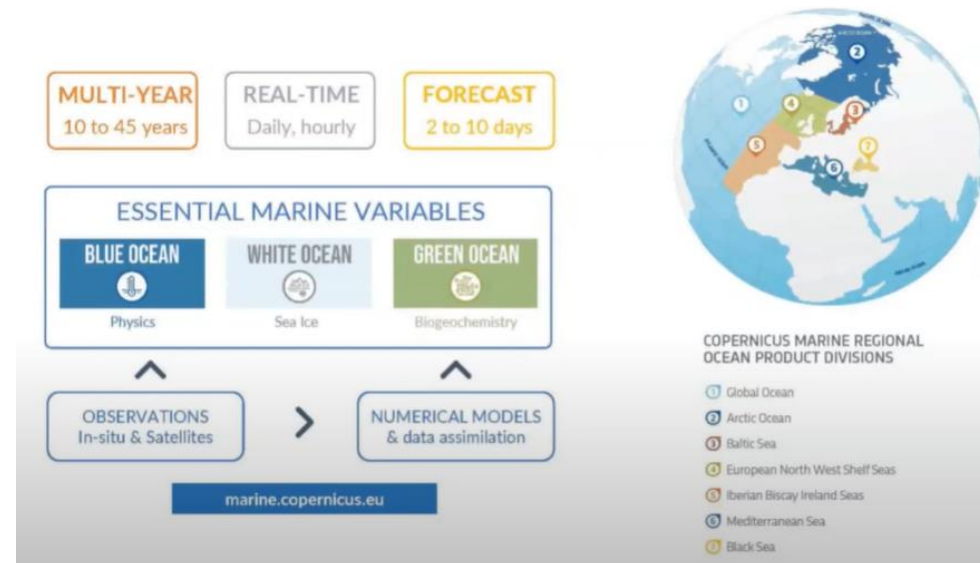
Search Regional domain From To Parameters Protocols

Only the whole selected time range Only with depth level

Full catalogue Ocean Monitoring Indicator catalogue

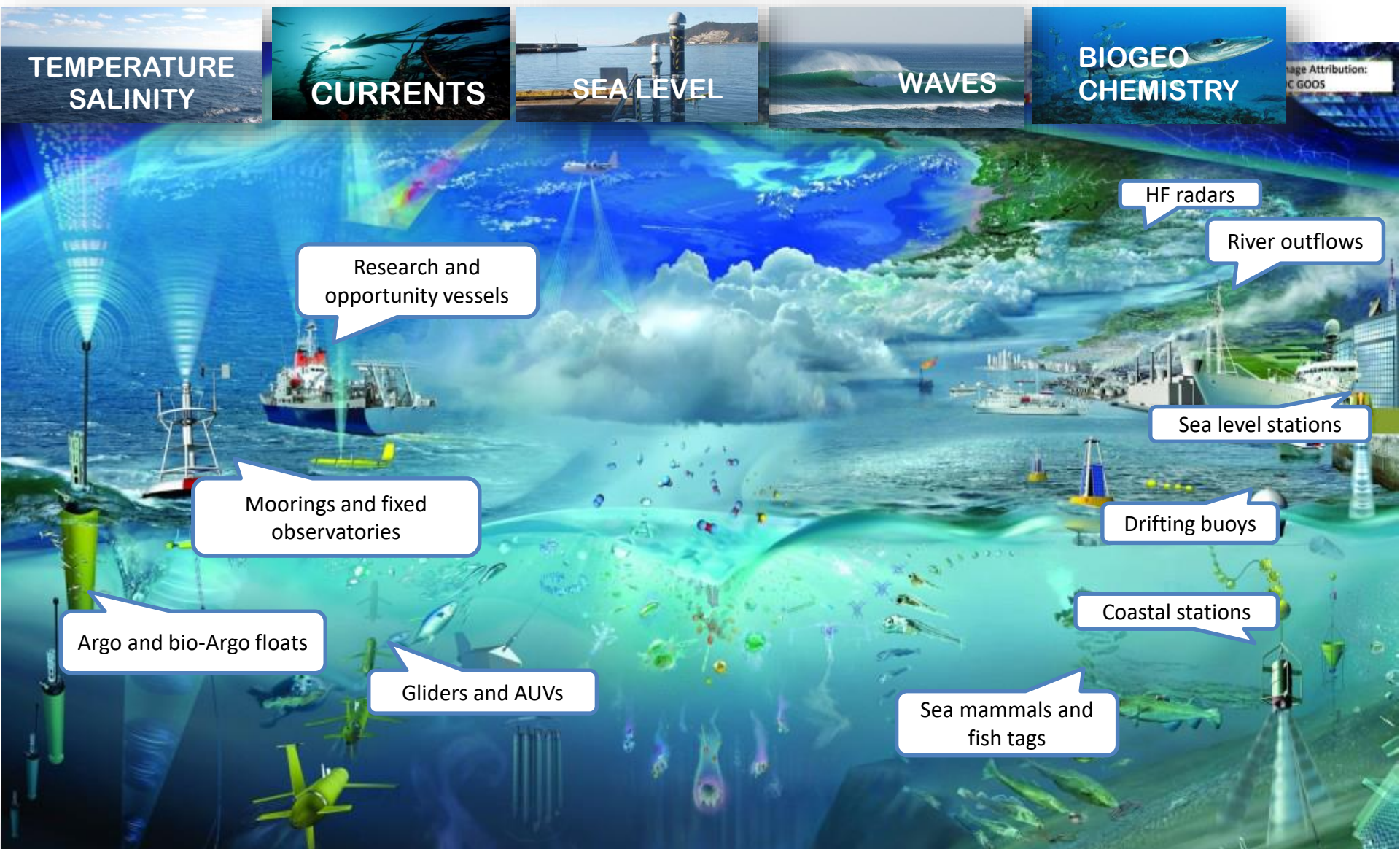
There is 171 ocean products corresponding to your criteria

- Global Ocean 1/12° Physics Analysis And Forecast Updated Daily
- Global Ocean Waves Analysis And Forecast
- Global Ocean Biogeochemistry Analysis And Forecast
- Global Ocean Physics Reanalysis
- Global Ocean Eenan Reanalysis - Low Re

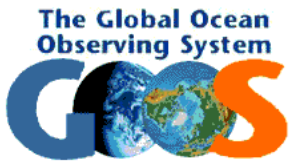


- In Situ TAC doesn't deploy any observing system and relies on data, exclusively funded by other sources

A multi-platform approach is essential



Interfaces with outside data systems



Argo GDAC
GTSP
OceanSITES
Gosud
DBCP drifters
EGO gliders
Carbon-BGC



US NCEI WOD
CCHDO- ICES



EuroGOOS
EuroGOOS
ROOSes



EU NODCs

Copernicus in situ

EU SeaDataNet

Daily/Yearly

Yearly

Daily/Yearly

Yearly

How are we organised

Management & NRT Operations in 7 Regions

Global: Ifremer / France

Arctic Ocean: IMR / Norway

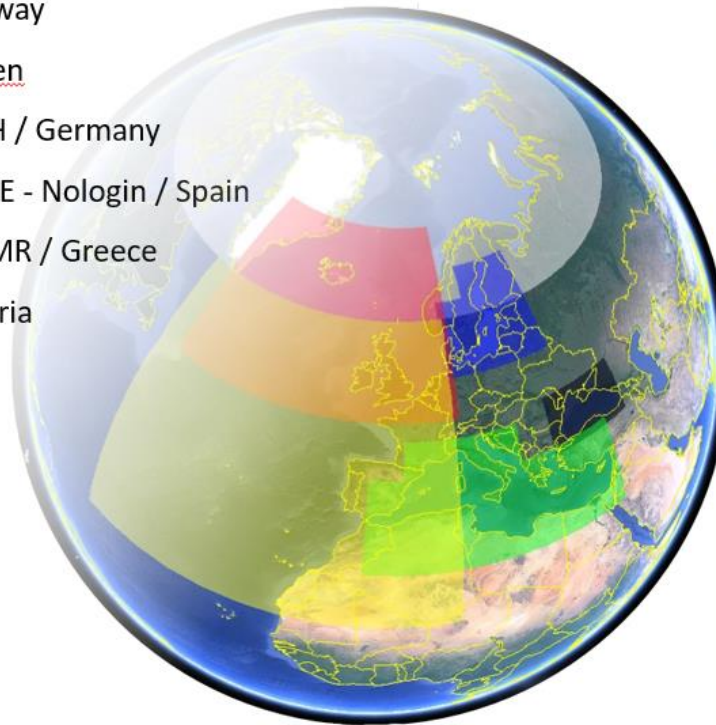
Baltic Sea: SMHI / Sweden

North West Shelves: BSH / Germany

Iberia-Biscay-Ireland: PdE - Nologin / Spain

Mediterranean Sea: HCMR / Greece

Black Sea: IOBAS / Bulgaria



Multi Year

T & S: [OceanScope](#)

Current (UV): [CLS-AZTI-Ifremer-CNR-SOCIB](#)

Waves: [PdE-Nologin](#)

BGC: [IMR-Pokapok-HCMR-SYKE](#)

Sea level: [PdE-Nologin](#)

Carbon: [UiB](#)

OSR/OMI: [SOCIB-Pokapok](#)

Cross Cutting

Product Quality: [CLS-Pokapok](#)

BGC assimilation: [Ifremer-Pokapok](#)

Technical WG: [Ifremer-PdE](#)

Communication: [SOCIB](#)

System Evolution

REP sea level: [PdE-Nologin](#)

Web & PQ Dash: [SOCIB-PdE-HCMR-Ifremer](#)

MinMax develop.: [Pokapok](#)

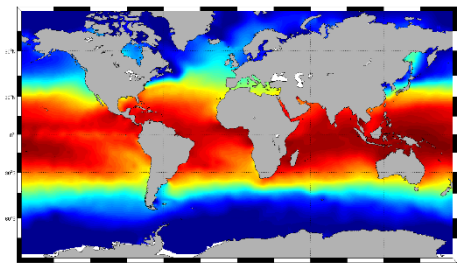
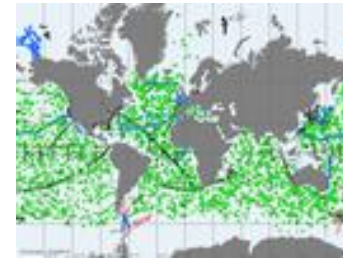
BGC enhancement: [IMR-Pokapok-UiB](#)

UV enhancement: [CLS-AZTI-CNR-Ifremer-SOCIB](#)

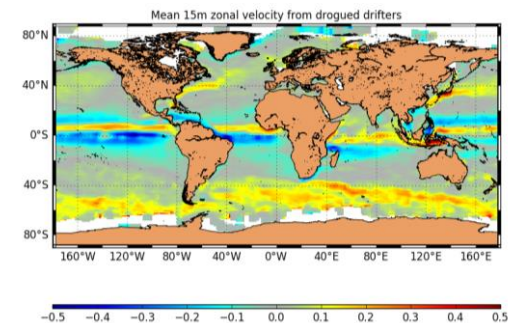
- **NRT – Near Real Time – products**
 - 7 regional multiparameter (continuously)
 - Global temp&sal OA/ISAS gridded (monthly)
 - Global currents (daily)

- **Global REProcessed products (twice a year)**
 - Temp&sal: CORA
 - Temp&sal OA/ISAS gridded
 - Currents
 - Waves
 - BGC: Oxygen, Chlorophyll, Nutrients, Carbon
 - Sea Level (2022)

- **OMI – Ocean Monitoring Indicators (yearly)**
 - Extreme events in Baltic, NWS, IBI & Med



Surface temp. from CORA and ISAS



What we have

For the Mediterranean region

High Frequency Radars (HF)

Moorings (MO)

River Flows (RF)

Tide Gauges (TG)

Profilers (PF)

Gliders (GL)

Drifters (DB)

Saildrones (SD)

Thermistor chains (TX)

Ferrybox (FB)

XBTs (XB)

Mini Loggers (ML)

CTDs (CT)

Thermosalinometer (TS)

Bottles (BO)

Sea mammals (SM)

Total number of platforms

4884

Since ever

Volume of data

~ **1002** MB

From last 30 days

Data providers

32

From last 30 days

Number active platforms

249

From last 30 days

Services availability

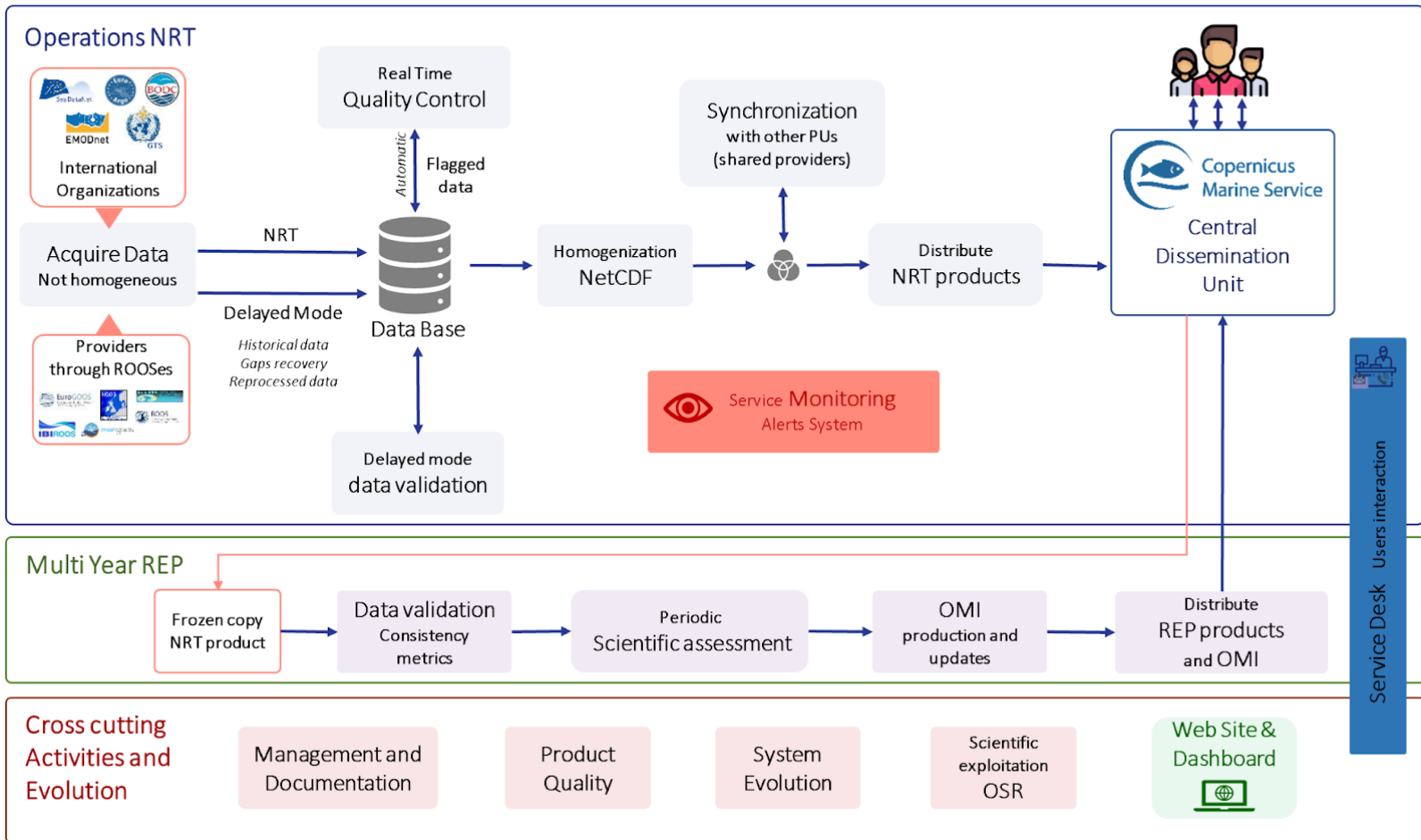
~ **99.9** %

From last 30 days

Leaflet | Tiles © Esri — Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aeroirrig, IGN, IGP, UPR-EGP

Data flow & quality control

CMEMS In Situ TAC functions



How to download the data

- Data in Mediterranean sea:
 - INSITU_MED_PHYBGCWAV_DISCRETE_MYNRT_013_035
 - cmems_obs-ins_med_phybgcwav_mynrt_na_irr
 - History => all the data from a platform organised by platform type
 - Monthly => the last 5 years organised by months
 - Latest => the last 31 days



ERDDAP > tabledap > Data Access Form

Dataset Title: Copernicus insitu multiparameter NRT INSITU_GLO_NRT_OBSERVATIONS_013_030 : drifting buoys

Institution: CMEMS In Situ Dissemination Unit (Dataset ID: copernicus_GLO_insitu_nrt_DB)

Information: Summary | License | FGDC | ISO 19115 | Metadata | Background | Subset | Make a graph

Variable	Optional Constraint #1	Optional Constraint #2	Minimum or a List of Values	Maximum
<input checked="" type="checkbox"/> PLATFORM_NAME	>=	<=	"1301515"	
<input checked="" type="checkbox"/> PLATFORM_CODE	>=	<=	"7801563"	
<input checked="" type="checkbox"/> INSTITUTION	>=	<=	"Alfred-Wegener-Ins..."	"Unknown institution"
<input checked="" type="checkbox"/> INSTITUTION_EDMO_CODE	>=	<=	"1051"	"540"
<input checked="" type="checkbox"/> time (UTC)	>= 2022-10-22T00:00:00Z	<= 2022-10-29T08:15:00Z	2022-09-28T00:00:00Z	2022-10-29T08:15:00Z
<input checked="" type="checkbox"/> TIME_OC (quality flag, 1)	>=	<=		
<input checked="" type="checkbox"/> latitude (degrees_north)	>=	<=	-72.54341	89.99495
<input checked="" type="checkbox"/> longitude (degrees_east)	>=	<=	-179.9998	180.0
<input checked="" type="checkbox"/> POSITION_OC (quality flag)	>=	<=		
<input checked="" type="checkbox"/> POSITIONING_SYSTEM	>=	<=		
<input checked="" type="checkbox"/> DC_REFERENCE	>=	<=	"2250431770"	"2265347593"
<input checked="" type="checkbox"/> DEPTH (Depth, m)	>=	<=	-12000.0	250.0
<input checked="" type="checkbox"/> DEPTH_OC (quality flag)	>=	<=		
<input checked="" type="checkbox"/> DEPTH_DM (method of data processing)	>=	<=		
<input checked="" type="checkbox"/> TEMP (Sea temperature, degrees_C)	>=	<=	-22.1	38.74
<input checked="" type="checkbox"/> TEMP_OC (quality flag)	>=	<=	1.0	4.0

FTP
ERDDAP

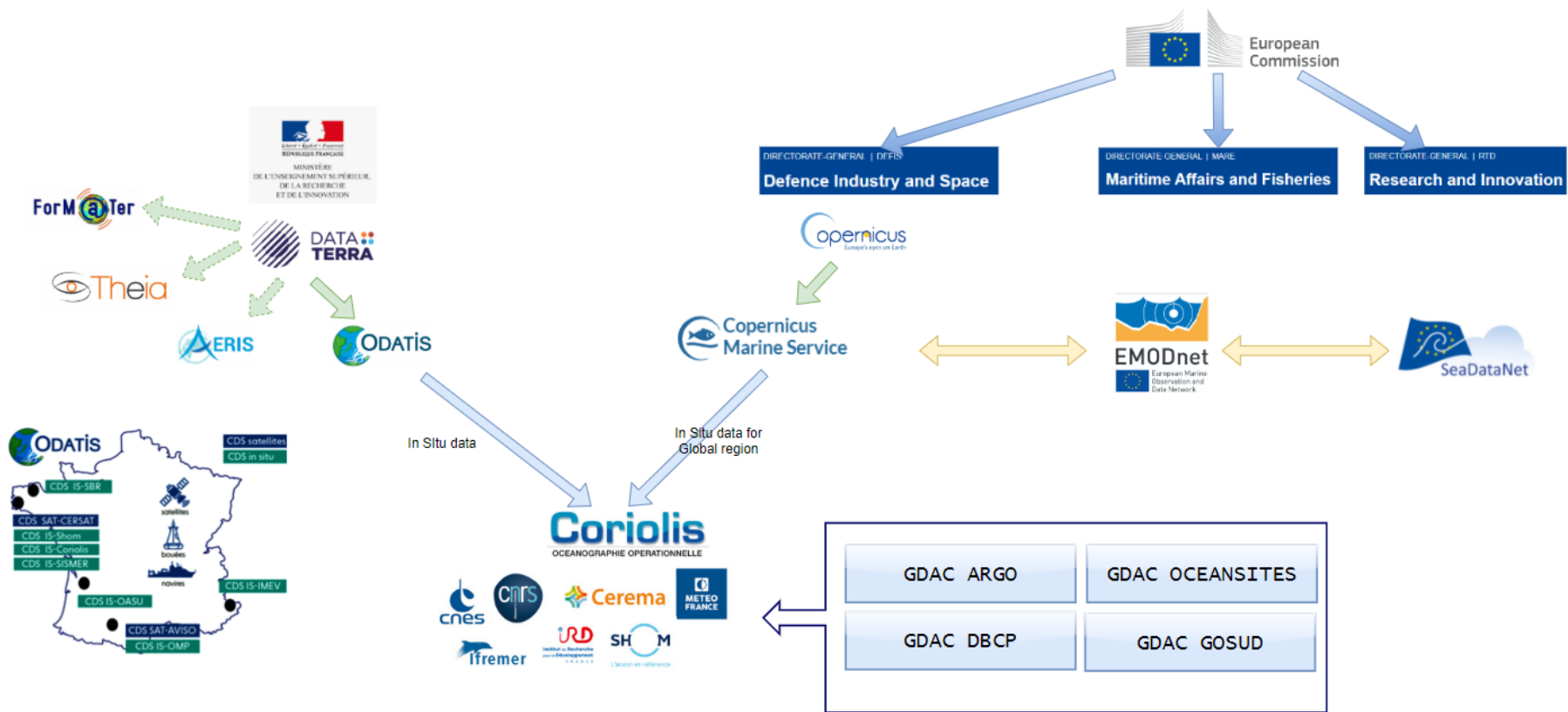
Site distant : /Core/INSITU_MED_NRT_OBSERVATIONS_013_035/med_multiparameter_nrt

- ? INSITU_GLO_TS_OA_NRT_OBSERVATIONS_013_002_a
- ? INSITU_GLO_UV_NRT_OBSERVATIONS_013_048
- ? INSITU_IBI_NRT_OBSERVATIONS_013_033
- INSITU_MED_NRT_OBSERVATIONS_013_035
 - med_multiparameter_nrt
 - ? history
 - ? latest
 - ? monthly

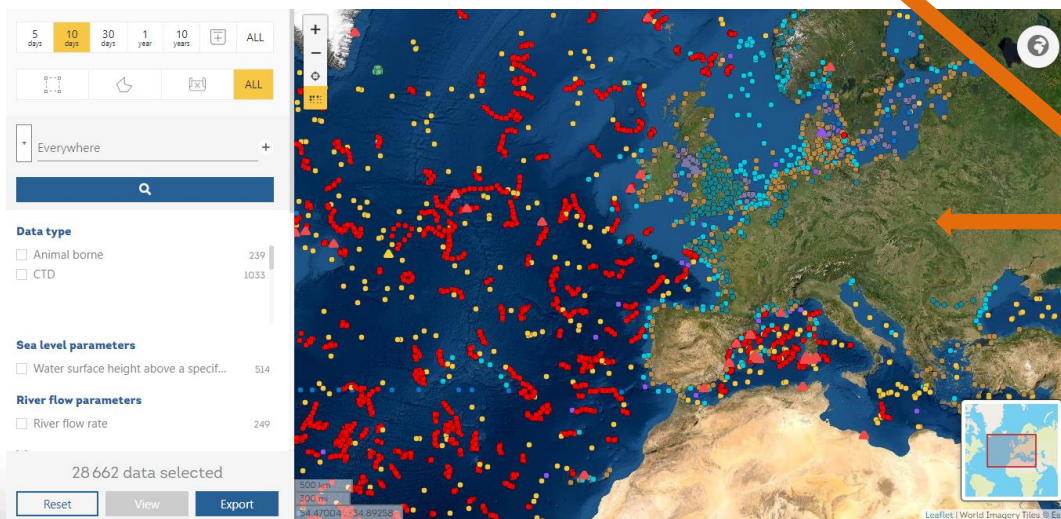
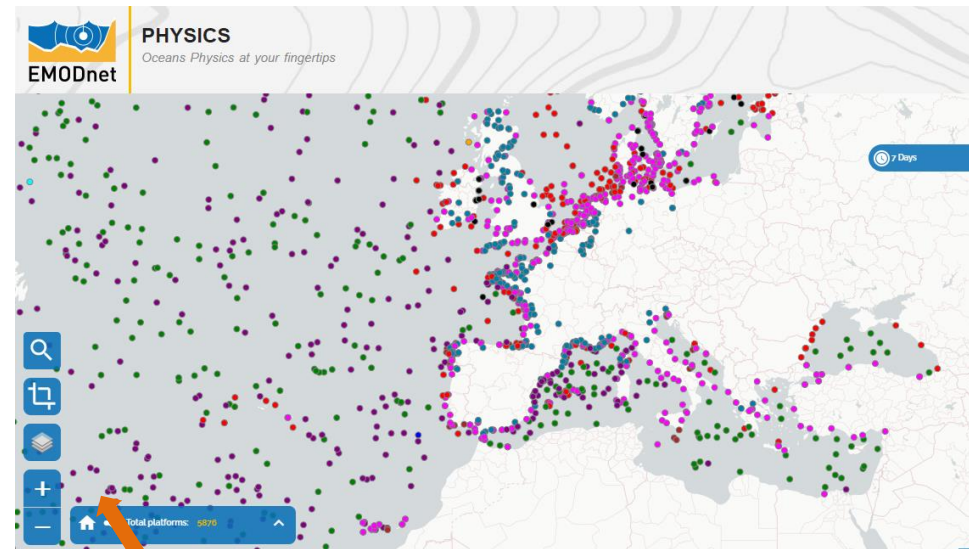
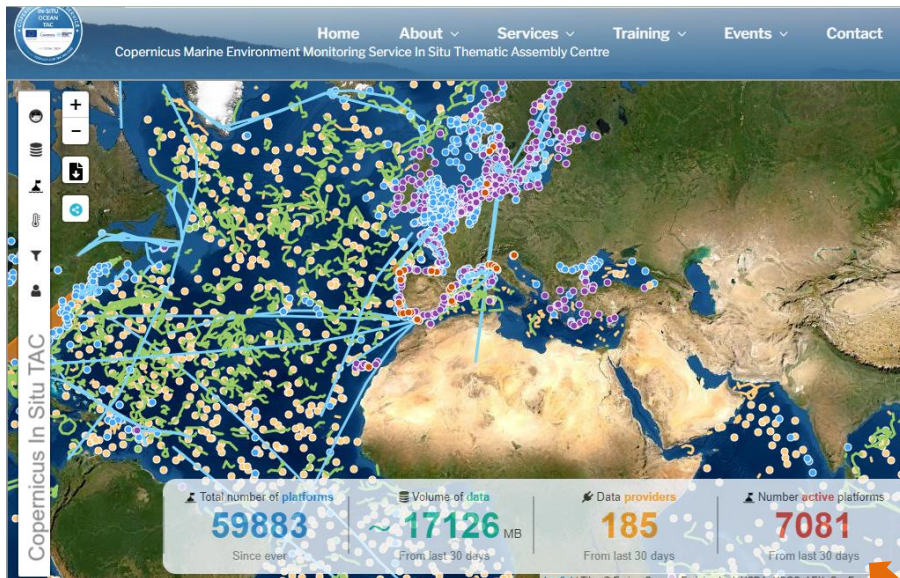
Nom de fichier	Taille de fi...	Type de f
..		
history		Dossier d
latest		Dossier d
monthly		Dossier d
index_history.txt	1 748 977	Docume
index_latest.txt	2 003 596	Docume
index_monthly.txt	7 522 762	Docume

4 fichiers et 3 dossiers. Taille totale : 12 393 203 octets

Different projects linked together



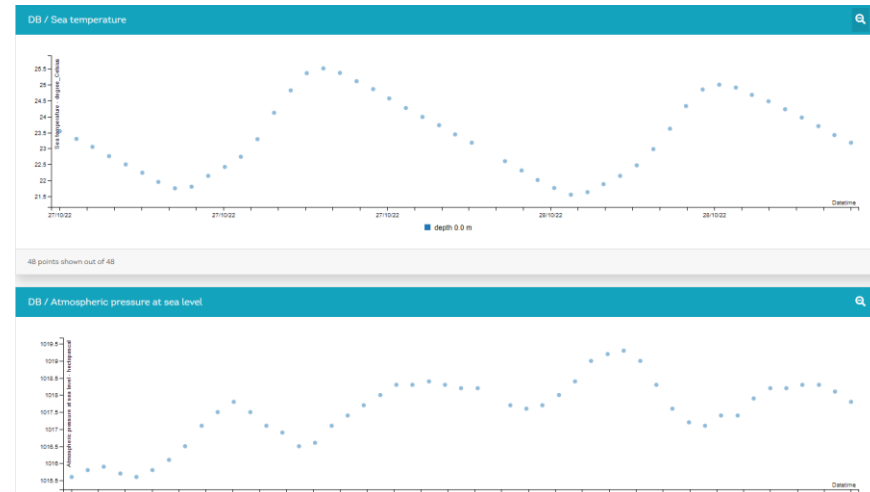
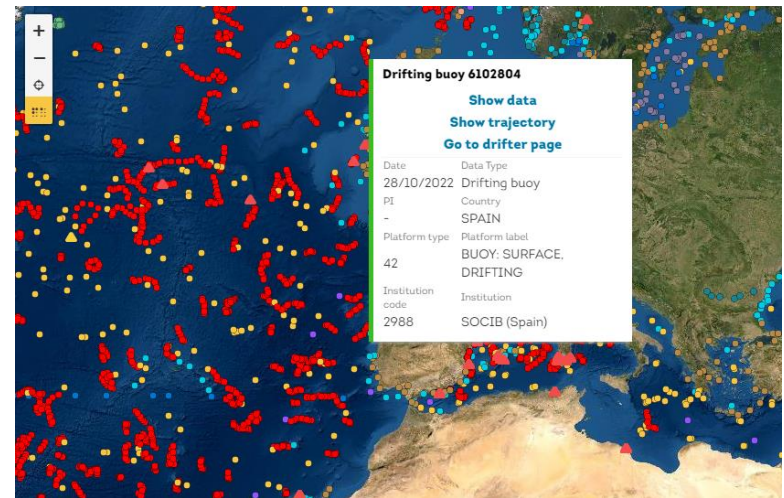
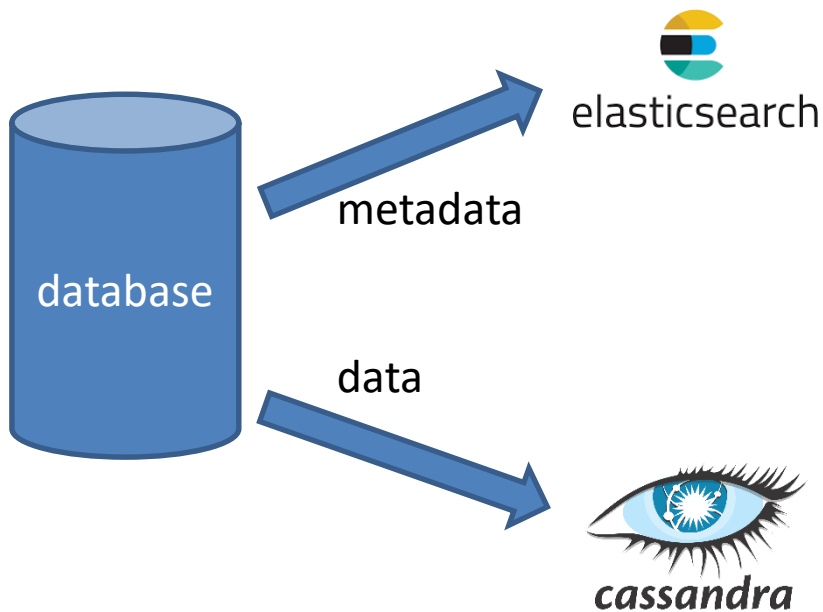
Different In Situ portals



<https://map.emodnet-physics.eu/>
<http://www.marineinsitu.eu/dashboard/>
<https://dataselection.coriolis.eu.org/>

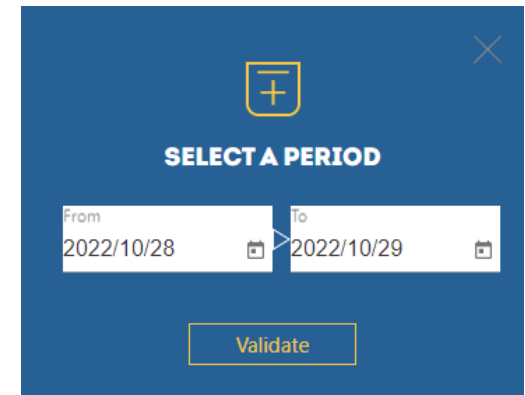
Big data technologies

Coriolis : <https://dataselection.coriolis.eu.org/>
Fast access to 30 millions of metadata
and more and more data

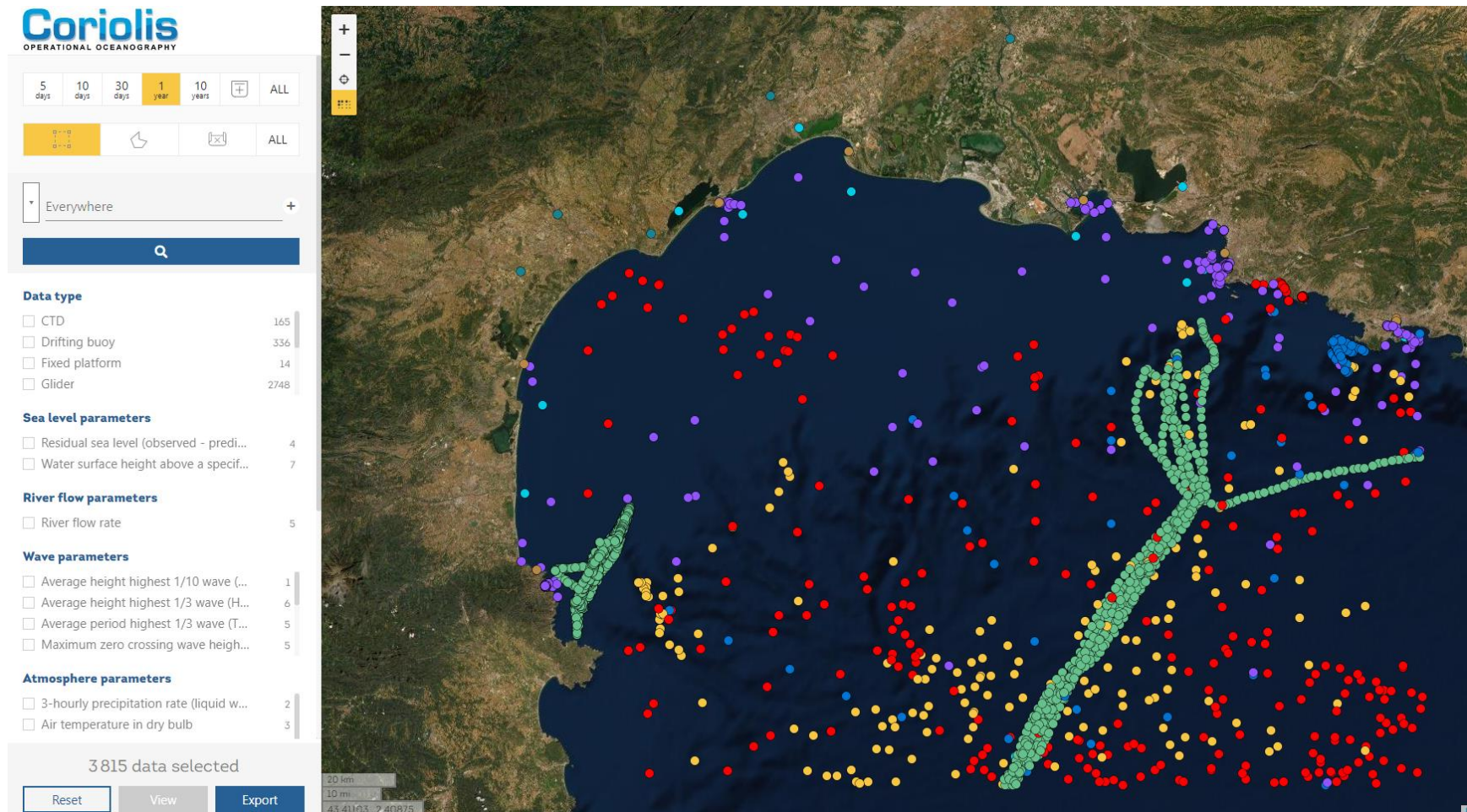


Advanced In Situ Data Portal

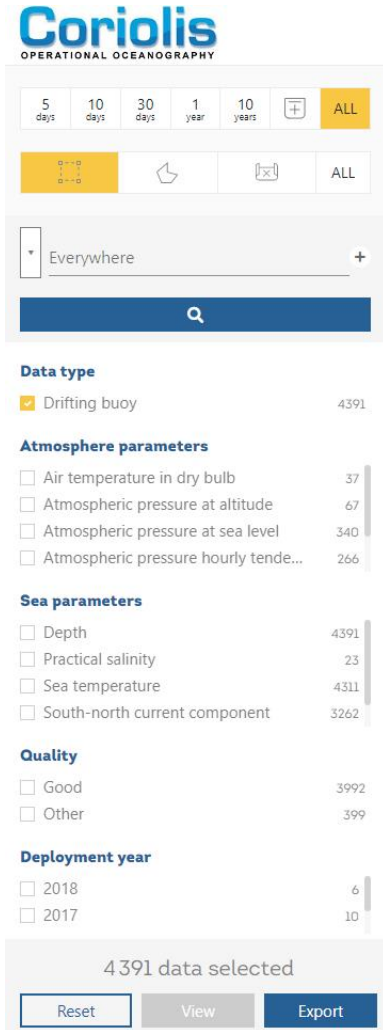
- <https://dataselection.coriolis.eu.org>
- Define an area / Define a time range



1 year - All parameters – all platforms



Download all drifting buoys data in this area



Coriolis
OPERATIONAL OCEANOGRAPHY

5 days 10 days 30 days 1 year 10 years + ALL

0-10 0-10 ALL

Everywhere +

Data type

- Drifting buoy 4391

Atmosphere parameters

- Air temperature in dry bulb 37
- Atmospheric pressure at altitude 67
- Atmospheric pressure at sea level 340
- Atmospheric pressure hourly tende... 266

Sea parameters

- Depth 4391
- Practical salinity 23
- Sea temperature 4311
- South-north current component 3262

Quality

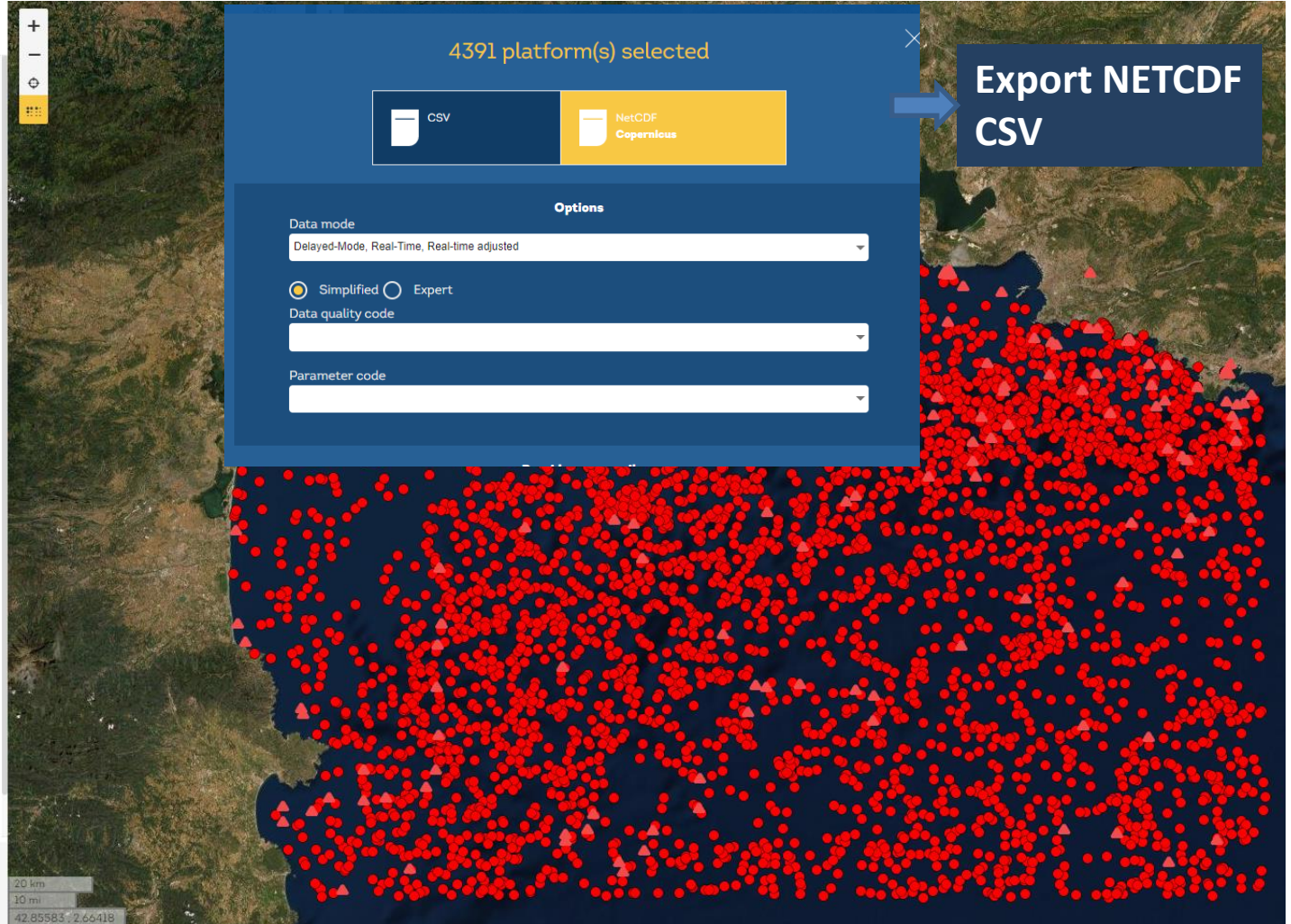
- Good 3992
- Other 399

Deployment year

- 2018 6
- 2017 10

4 391 data selected

Reset View Export



4391 platform(s) selected

CSV NetCDF Copernicus

Options

Data mode
Delayed-Mode, Real-Time, Real-time adjusted

Simplified Expert

Data quality code

Parameter code

Export NETCDF CSV

20 km
10 mi
42.85583, 2.66418

How long does it take ?

- 6h30 to retrieve all drifting buoys data in this area from Coriolis database :
142 837 positions. Data from 2005 -> 2022



+ MEDSEA_ANALYSISFORECAST_PHY_006_013

