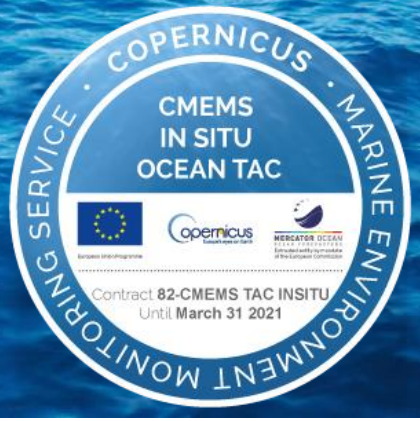


marine.copernicus.eu

CMEMS In Situ TAC

Marta de Alfonso <mar@puertos.es>
on behalf of

In Situ TAC Team

Copernicus → In Situ TAC
Where are we?

http://copernicus.eu

3 components:

- Space
- Insitu
- **Services**

- Atmosphere Monitoring
- Climate Change
- **Marine Monitoring (CMEMS)**
- Land Monitoring
- Security
- Emergency Management

Data producers

7 MFCs (Models)

- GLO MFC
- ARC MFC
- BAL MFC
- NWS MFC
- IBI MFC
- MED MFC
- BS MFC

8 TACs (Observations)

- **In Situ TAC**
- 6 Space TACs:
  - OCTAC,
  - SLTAC, …
- 1 Multi Obs.

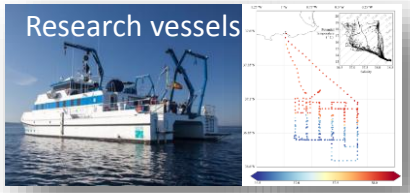
CMEMS In Situ TAC objectives

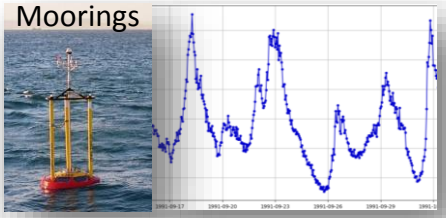
The **In Situ TAC (Thematic Assembly Center)** is a Consortium of 17 European Institutions. It is the component of the Copernicus Marine Service which ensures a consistent and reliable access to in situ data for the purpose of service production and validation.

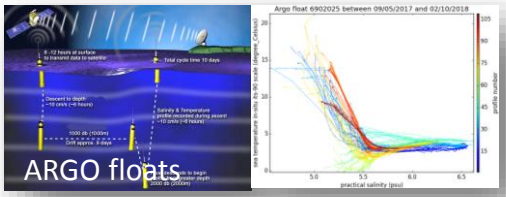
In Situ TAC (INSTAC) has two main objectives:

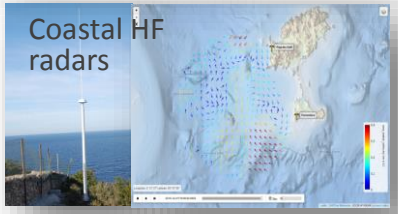
- To collect multi-source, multi-platform, heterogenous data, perform consistent quality control and distribute it in a common format (NetCDF) in near-real-time (NRT products)
- To supply the MFCs and downstream users with re-processed 25-50-year products in delayed mode after scientific validation and assessment (REP products)

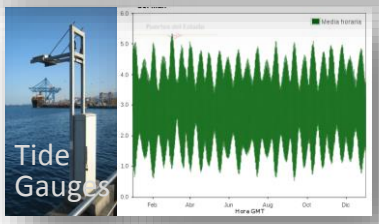
Platforms included

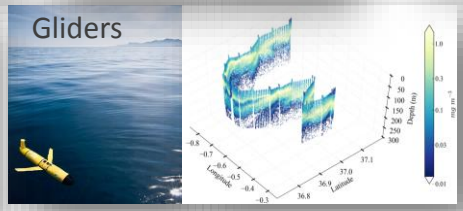








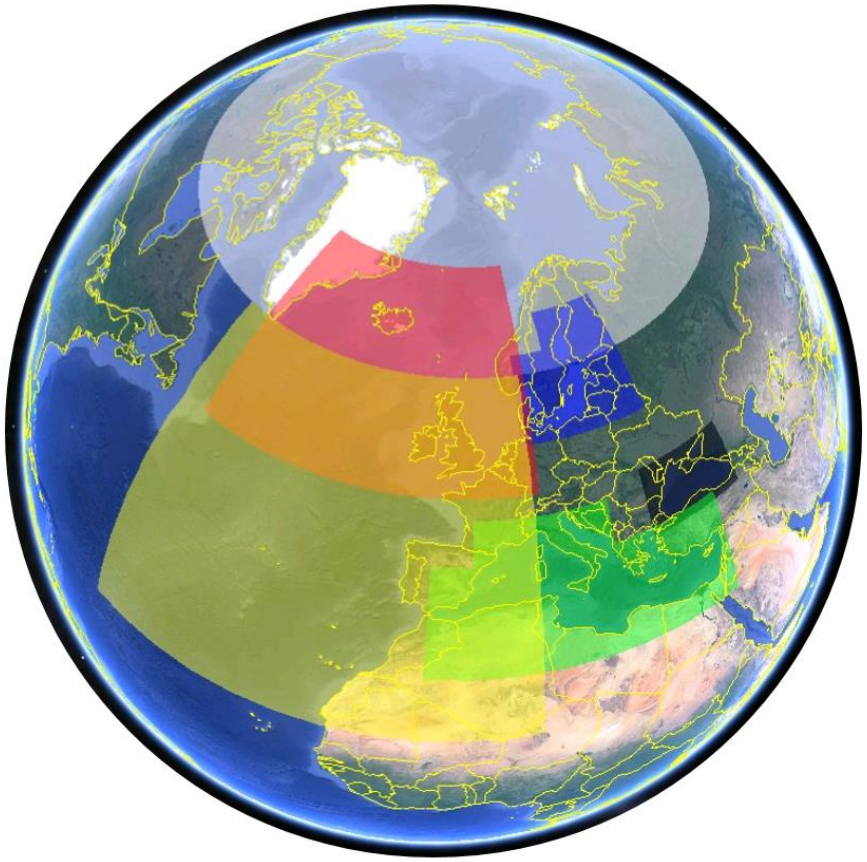




And many others:
CTD campaigns, Sea mammals, etc.

In Situ TAC Organization
CMEMS Phase 2 (2018-2021)

IN SITU TAC ORGANIZATION Leader: Ifremer / France



Management & Operations
7 Regions

- **Global:** Ifremer / France
- **Arctic:** IMR / Norway
- **Baltic:** SMHI / Sweeden
- **NWS:** BSH / Germany
- **IBI:** Puertos del Estado / Spain
- **MED:** HCMR / Greece
- **Black Sea:** IOBAS / Bulgaria

Scientific Expertise Cross Cutting

- **Product Quality:** Oceanscope-PdE-IMR
- **Multi Year:** SOCIB-OceanScope-PdE
- **BGC assim.:** IMR

System Evolution

- **HF Radar:** AZTI-CNR-SOCIB
- **Carbon Data:** UIB
- **BGC assessment:** IMR-HCMR-SYKE
- **Monitoring:** SOCIB-PdE-HCMR

Important participation of Spanish Institutions

In Situ TAC: general description

General characteristics:

- **Fully operational service** since April 2015
- **Unique data access** to all the available data: CMEMS catalogue (registration)
- **Open and free** data policy
- Strong collaboration with EuroGOOS, SeaDataNet and EMODnet
- **7 Components:** Global + 6 regions (Arctic, Baltic, NWS, IBI, MED and BlackSea)
- **Same data format** (NetCDF - OceanSites 1.2)
- **Same FTP structure** in all the regions
- **Homogeneization** of variable names, units, attributes
- **Same RTQC** & quality flagging convention
- **NRT** (Near Real Time) and **REP** (REProcessed) products

+37000 platforms integrated +7000 platforms active in Real Time

In Situ TAC: general description

Functions implemented:

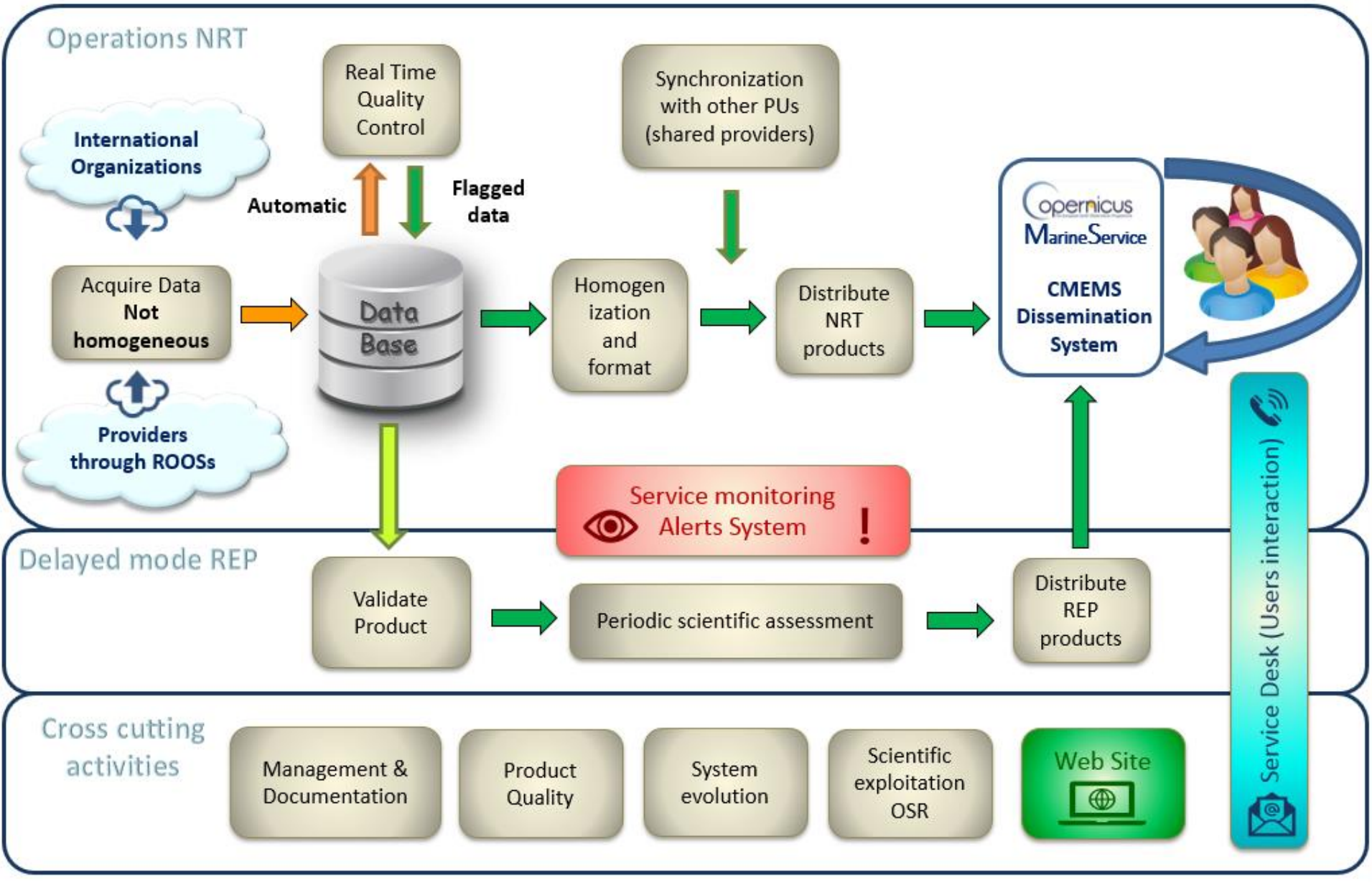
OPERATIONS (Near Real Time & Delayed Mode)

- **Acquisition** from international networks and regional providers
- **Quality control:** agreed procedures following EuroGOOS & DATA-MEQ WG recommendations in coherence with international agreements (SeaDataNet,…)
- **Product validation & assessment**: assess the consistency of the data
- **Distribution** through CMEMS DIAS
- **Service monitoring & alerts system**

CROSS-CUTTING Interaction with TACs, MFCs, MOI & users

- **Management** & documentation
- **Product Quality**
- **Scientific exploitation activities** and publications (Ocean State Report)
- **Product evolution**
- **Service Desk** (Users): Global & regional (IBI: cmems-service@puertos.es)

CMEMS In Situ TAC functions and data flow



In Situ TAC Products in 2019

- **NRT (Near Real Time) products** (automatic RTQC):
  - Hourly updates
  - Distributed in Global & Regional
  - All variables: T&S, Wave, UV(Currents), BGC, Sea level
  - Integration of HF Radar and Carbon data in April 2019
- **REProcessed products** (validated & assessed):
  - Twice a year update
  - Global
  - Variables:
    - T&S since 2015
    - UV (currents) from Drifters since 2016
    - Waves since 2018
    - BGC (O2 and Chla) since 2018
    - Carbon data new in 2019
    - HF Radar planned for 2020

Access: CMEMS Catalogue
http://marine.copernicus.eu/

OPEN AND FREE
(Registration needed)

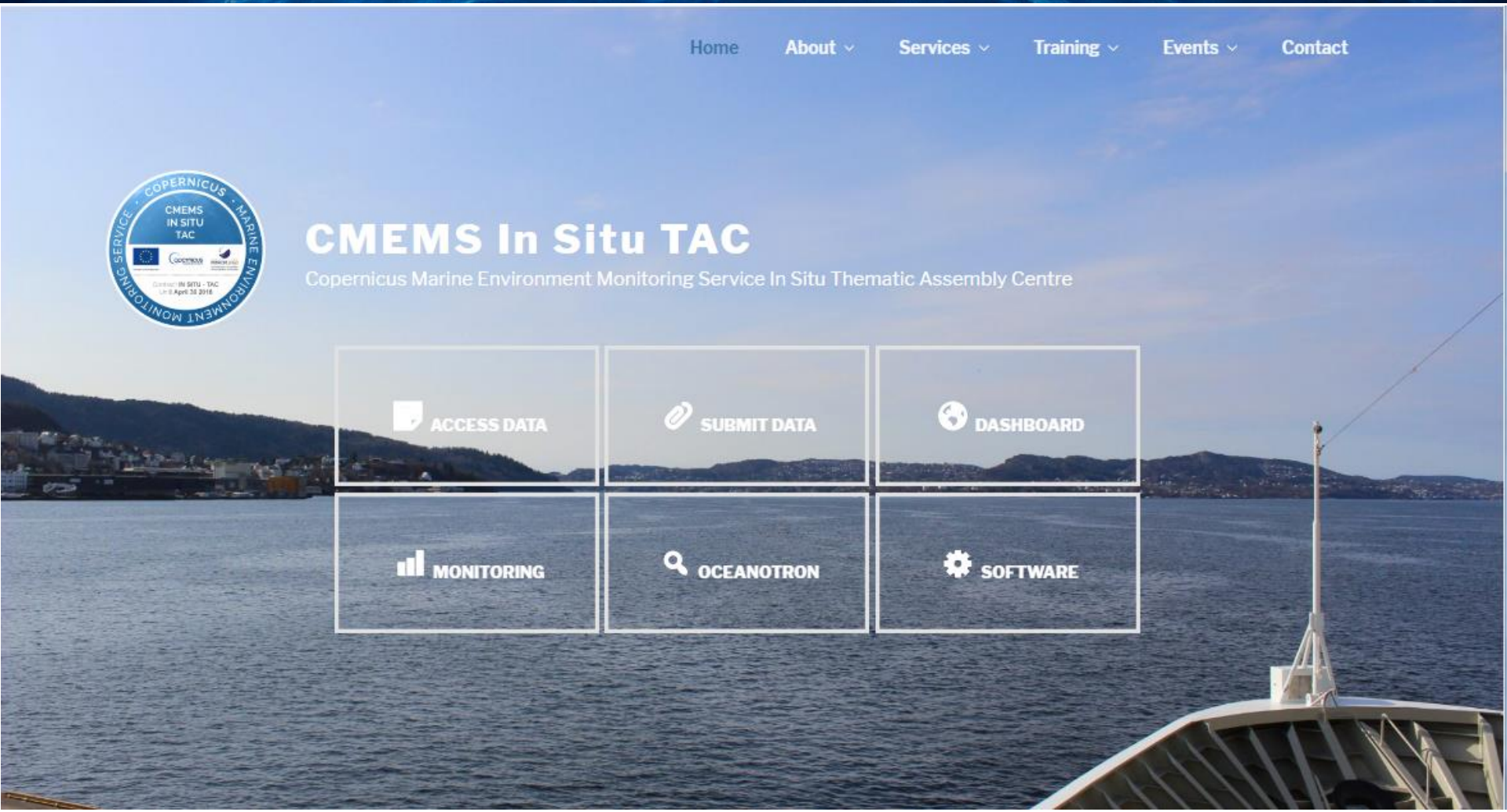
Documents associated with each product:

PUM
Product User Manual

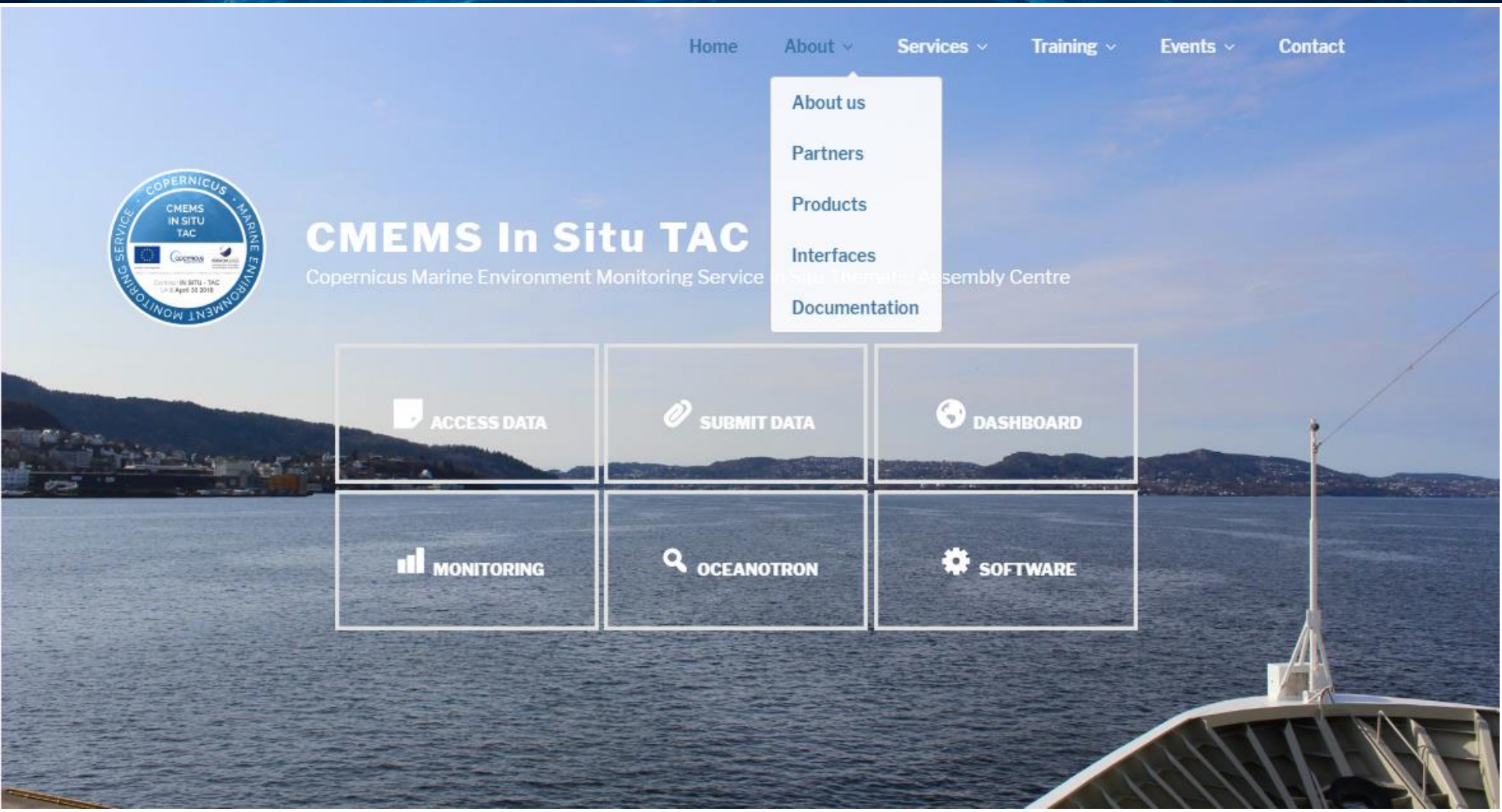
QuID
Quality Information Document

CMEMS web site: http://marine.copernicus.eu/

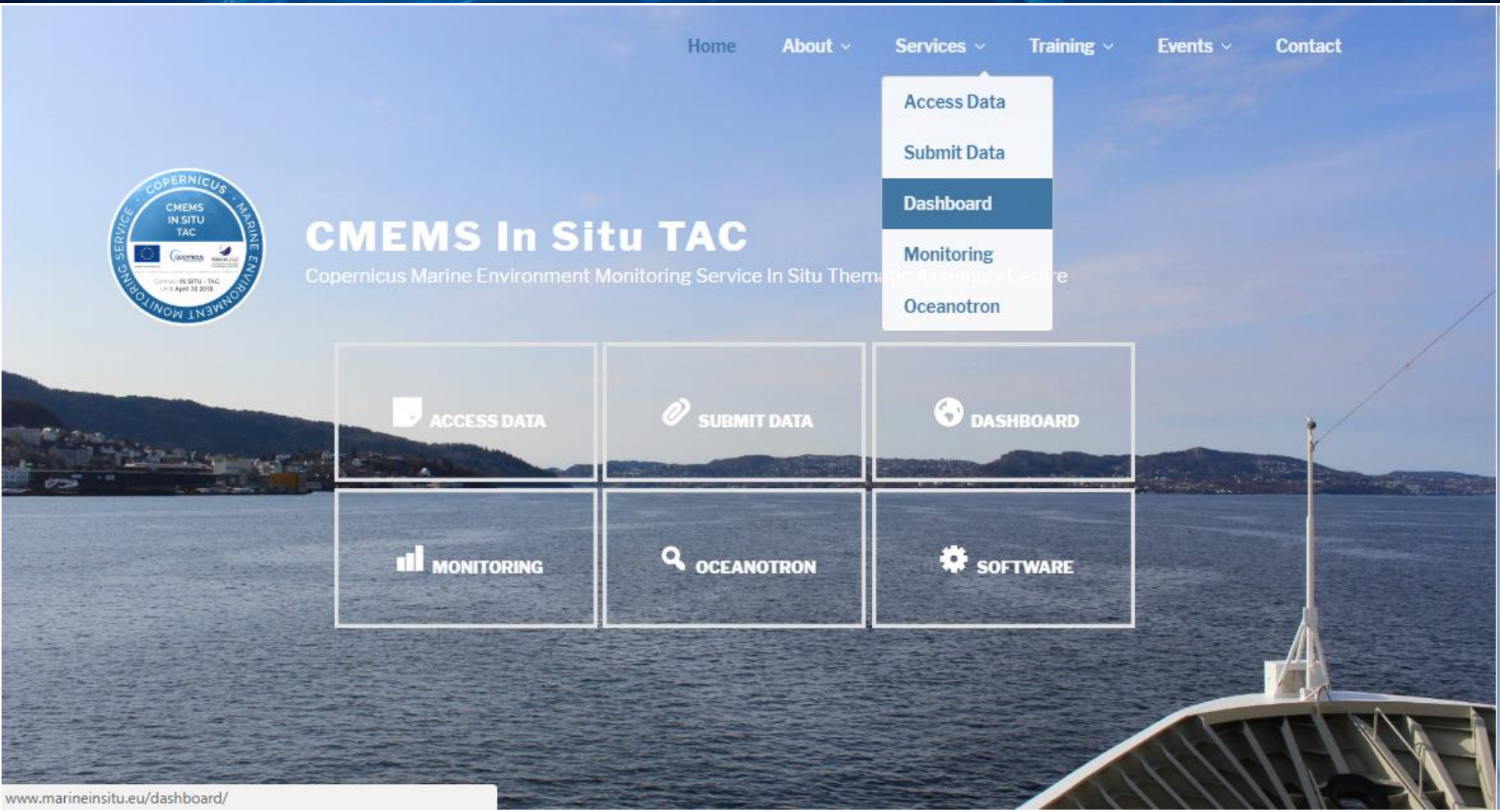
In Situ TAC web site: http://www.marineinsitu.eu/



In Situ TAC web site: http://www.marineinsitu.eu/



In Situ TAC web site: http://www.marineinsitu.eu/

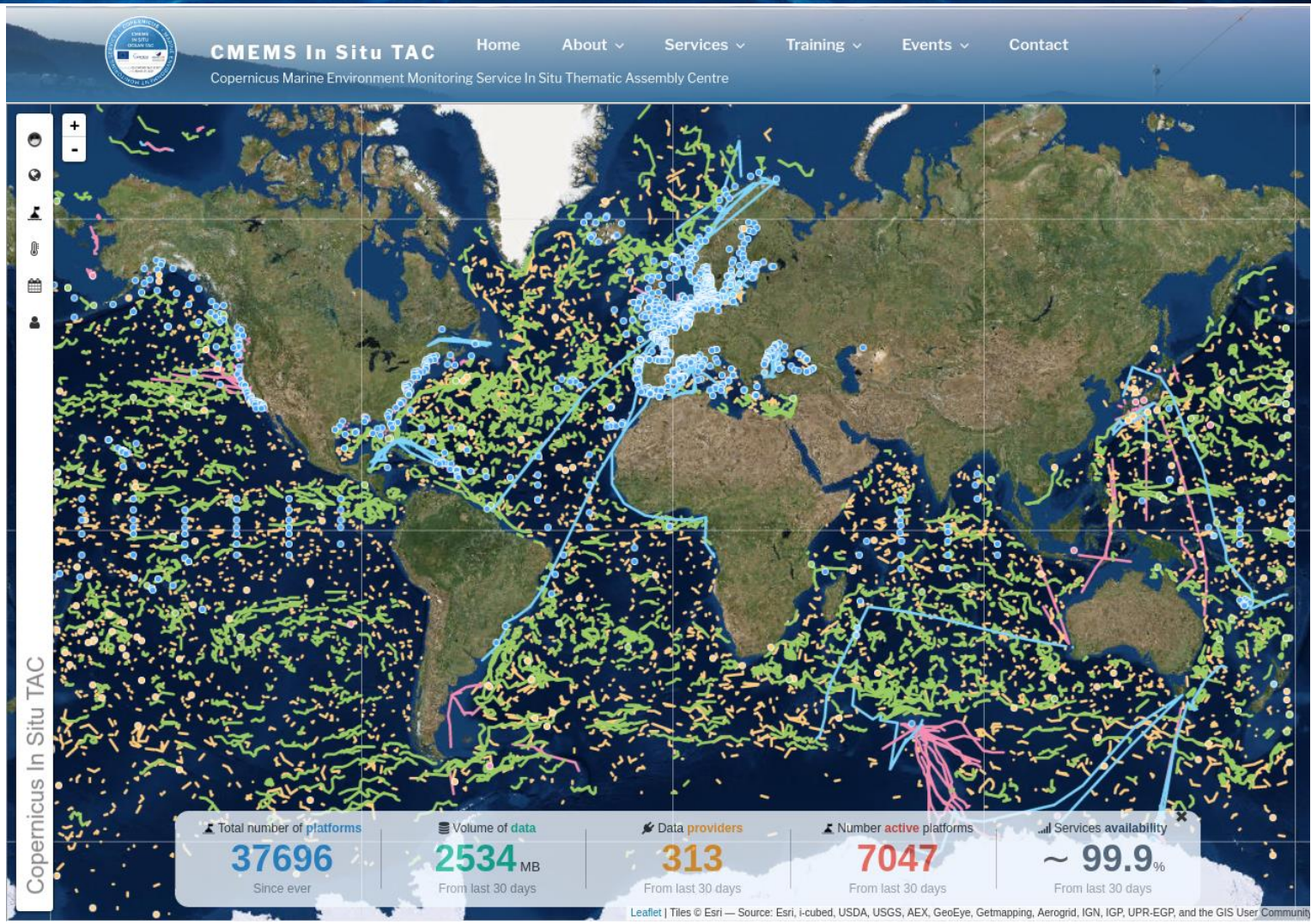


In Situ TAC web site: http://www.marineinsitu.eu/

INSTAC Dashboard

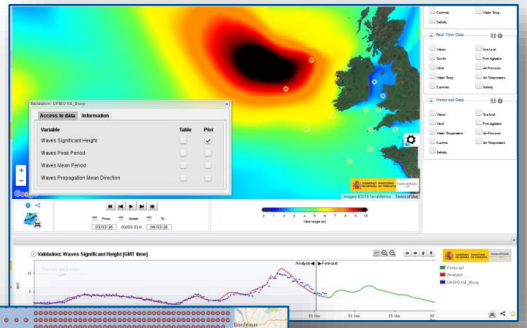
A tool to view and discover all the distributed in situ platforms.

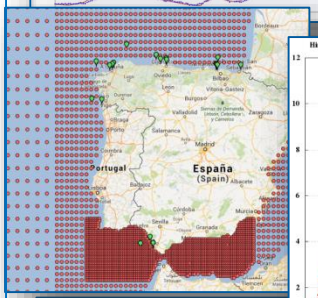
- FILTERS:
  regions
  platform type
  parameter
  time period
- Platform info
- Download
- Data view

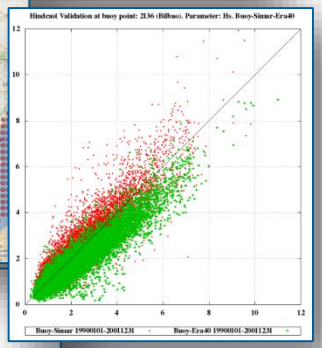


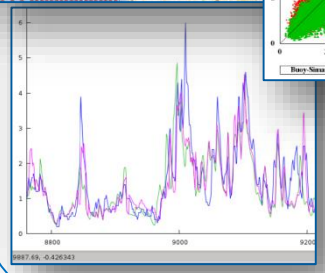
Regular and potential users

Operational models validation and assimilation. Reanalysis validation (long time series)

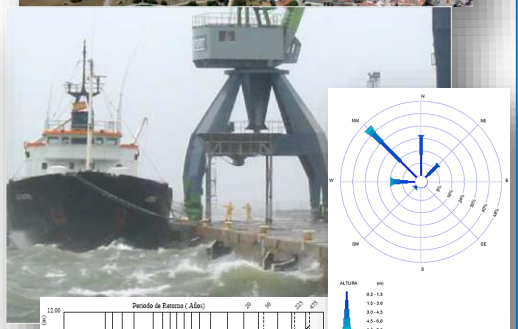


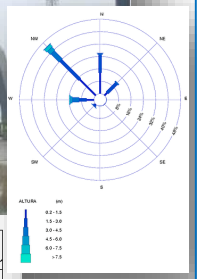


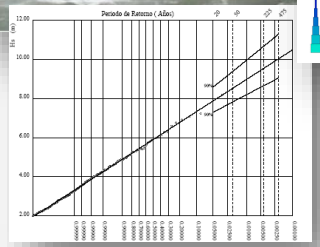




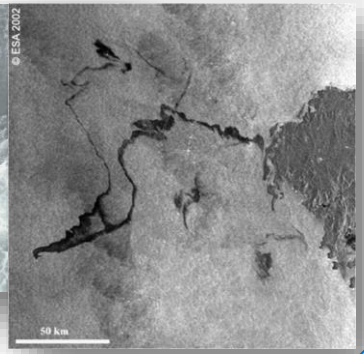
Harbour operability and safety Maritime engineering



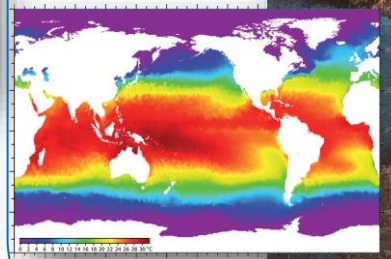


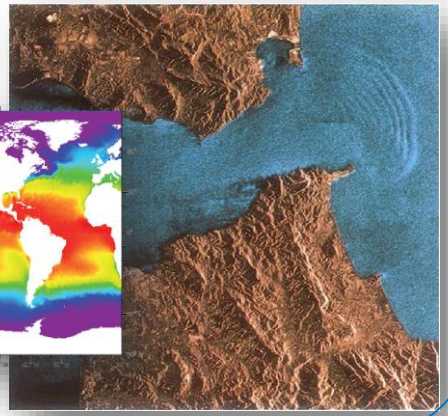


Maritime safety, search and rescue. Oil Spill.



Investigation about oceanographic fenomena & climate change.





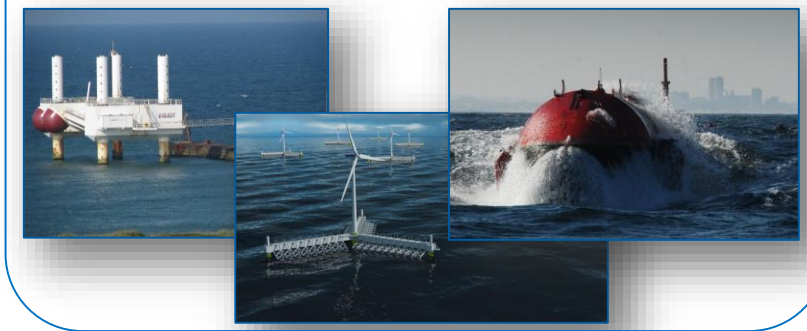
Regular and potential users

Aids to fishing activities. Aquaculture & fisheries

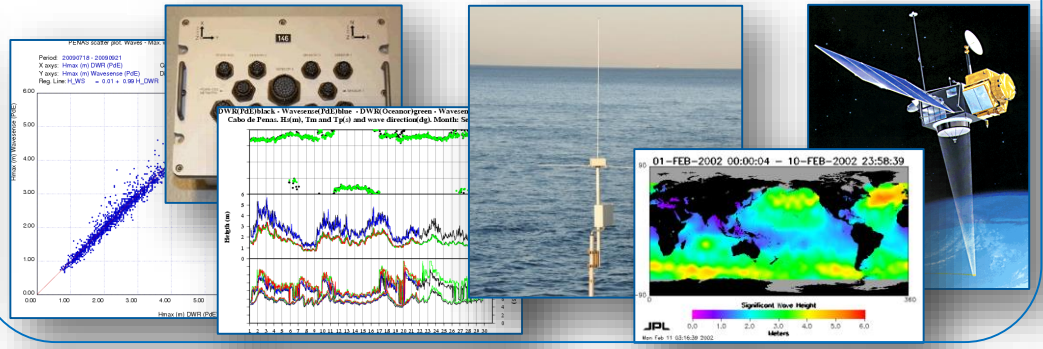
Aids to navigation, and ship routing

Tourism & maritime sports

Wave, wind and tides energy generators & converters design. Location of optimal sites



New measuring instruments & sensors calibration and validation (RadarHF, new sensors, satellite)



THANKS FOR YOUR ATTENTION!