EuroGOOS
European Global Ocean Observing System

EuroGOOS Annual General Assembly Meeting

21-23 May 2024

Agenda – Day 2

EuroGOOS Annual General Assembly Meeting
22 May 2024
Open session

Meeting document O1.1

Open session on EuroGOOS activities
Wednesday 22 May 2024, 09:00-17:30

09:00 - 10:00	**6. Activity updates from EuroGOOS Working Groups (5 min each followed by panel discussion):** Mauro Celussi (BIOWG), Ghada El Serafy (Coastal WG), Thierry Carval (Data MEQ WG), Angela Pomaro (OLWG), Lucie Cocquempot (SAWG), Urmas Lips (TPWG), *moderated by Carlos S. Fernandes*
10:00 - 11:00	**7. Activity updates from EuroGOOS Task Teams (5 min each followed by panel discussion):** Antonio Miguel Piecho-Santos (Argo TT), Henning Wehde (FB TT), Marcello G. Magaldi (FP TT), Carlos Barrera (Glider TT), Lorenzo Corgnati (HFR TT), Angela Hibbert (Tide Gauges TT), *moderated by Enrique Alvarez*
11:00 - 11:30	Coffee break
11:30 - 12:30	**8. Activity updates from EuroGOOS ROOS (5 min each followed by panel discussion):** Vidar Lien (Arctic ROOS), Jun She (BOOS), Manuel Ruiz Villareal (IBIROOS), Sebastien Legrand (NOOS), Vanessa Cardin (MONGOOS), *moderated by Henning Wehde*
12:30-13:00	**9. Discussion** *Moderated by Holger Brix*
13:00-14:00	Lunch

14:00 - 16:00	**10. EuroGOOS integration and forward-looking actions – World Café** 1. How to progress collaborative EuroGOOS activities – incentives and challenges? (*moderated by Holger Brix*) 2. How can EuroGOOS functioning be improved to maximise benefits for all Members? (*moderated by Lucie Cocquempot*) 3. What are the next steps in your country (organisation) to secure the sustainability of operational observations? What from this could be taken forward at the EuroGOOS level (in a collaborative way by several Members) to achieve the goal? (*moderated by Urmas Lips*) 4. How to ensure there are enough observations and data for developing Digital Twins at different scales (local, regional, European, etc)? How can EuroGOOS contribute and improve the observing system for this purpose? (*moderated by Sebastien Legrand*) 5. What role can EuroGOOS play in strengthening ocean forecasting at all temporal and spatial scales? (*moderated by Enrique Alvarez*) 6. How can EuroGOOS contribute to and benefit from the Decade? (*moderated by Ghada El Serafy*)
16:00 - 16:30	Coffee break
16:30 - 17:20	**11. Reports** from moderators, discussion and agreement on EuroGOOS actions on continuous and emerging priority areas in EuroGOOS evolution for the coming years, *moderated Henning Wehde*
17:20 - 17:30	**Close of Day 2** Henning Wehde
19:30	**Dinner** (cruise along Tagus River)

EuroGOOS
European Global Ocean Observing System

Activity updates EuroGOOS Working Groups

EuroGOOS GA, 21-23 May 2024

Activity updates Biological Observations WG

Mauro Celussi
OGS

EuroGOOS GA, 21-23 May 2024

What has been done?

From the terms of reference…

	04/21	05/21	06/21	07/21	08/21	09/21	03/22	06/22
Terms of Reference	X							
Selection of Chair / Co-Chair						X		
Approval by Exec. Board		X						
Approval by General Assembly		X						
Call for member nominations			X					
Kick-off meeting						X		
Report 1 - *Recommendations for use of molecular tools - eDNA & genomics*							X	
Protocol 1 - *Molecular Tools, Protocols & Standard Operating Procedures*								X
Report 2 - *Recommendations for use of imaging observation techniques and platforms*								TBC
Protocols 2 - *Imaging Tools, Protocls & Standard Operating Procedures*								TBC

12/22

Meeting held in Paris: good attendance both in person and remote; Report 1 and Report 2 outlined

… long inactivity…

03/24

Meeting held in Villefranche-sur-Mer: poor attendance both in person and remote; decisions taken to speed up things. New co-chair elected

What has been done?

From the terms of reference…

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Protocol 1 - *Molecular Tools, Protocols & Standard Operating Procedures*								X
Report 2 - *Recommendations for use of imaging observation techniques and platforms*								TBC
Protocols 2 - *Imaging Tools, Protocls & Standard Operating Procedures*								TBC

From the Villefranche-sur-Mer meeting:

Merging into one single document (white paper): draft ready by June 24; finalized by September 24

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How to accomplish this?

- Survey on the will/possibility of members to still be part of the WG: approximately 66% provided positive feedback
- Monthly online meetings are held to work together on the document, share ideas, appoint coordinators for specific subsections, etc.: very good attendance of meetings

Report at 50% completeness

What's next?

- Report completed by September 2024
- … from the current implementation plan

  - Barriers to the use of biological data in Modelling of Marine Systems (Sept 25)
  - Test-case for integration of broad biological information in an established Marine Model (Sept 25)
  - Recommendations for new sensors for biological observation (TBD)

  Get in touch with other WGs e.g. Coastal, Data, Technology…

  Bottle neck: financial support would grease the wheels…

Activity updates Coastal WG

Ghada El Serafy
Deltares

EuroGOOS GA, 21-23 May 2024

HIGHLIGHTS

Whitepaper “EuroGOOS roadmap for operational coastal downstream services (July 2023)”

Policy and Practice Reviews, Frontier in Marine Sciences. - Coastal Ocean Processes

1,659

TOTAL VIEWS AND DOWNLOADS

frontiers | Frontiers in Marine Science

TYPE Policy and Practice Reviews
PUBLISHED 11 July 2023
DOI 10.3389/fmars.2023.1177615

Check for updates

OPEN ACCESS

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El Serafy G, Mészáros L, Fernández V, Capet A, She J, Sotillo MG, Melet A, Legrand S, Mourre B, Campuzano F, Federico I, Guarnieri A, Rubio A, Dabrowski T, Umgiesser G, Staneva J, Ursella L, Pairaud I, Bruschi A, Frigstad H, Baetens K, Creach V, Charria G and Alvarez Fanjul E (2023) EuroGOOS roadmap for operational coastal downstream services. *Front. Mar. Sci.* 10:1177615. doi: 10.3389/fmars.2023.1177615

EuroGOOS roadmap for operational coastal downstream services

Ghada El Serafy[1,2*], Lőrinc Mészáros[1,2], Vicente Fernández[3], Arthur Capet[4], Jun She[5], Marcos Garcia Sotillo[6], Angelique Melet[7], Sebastien Legrand[4], Baptiste Mourre[8], Francisco Campuzano[9], Ivan Federico[10], Antonio Guarnieri[11], Anna Rubio[12], Tomasz Dabrowski[13], Georg Umgiesser[14], Joanna Staneva[15], Laura Ursella[16], Ivane Pairaud[17], Antonello Bruschi[18], Helen Frigstad[19], Katrijn Baetens[4], Veronique Creach[20], Guillaume Charria[17] and Enrique Alvarez Fanjul[7]

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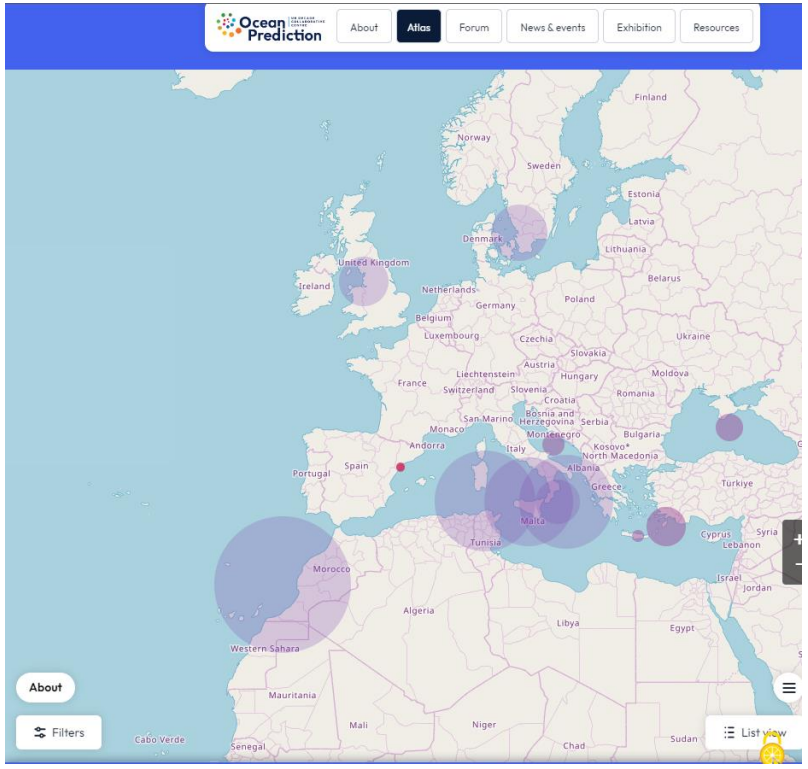
The EuroGOOS Coastal working group examines the entire coastal value chain from coastal observations to services for coastal users. The main objective of the working group is to review the status quo, identify gaps and future steps needed to secure and improve the sustainability of the European coastal service provision. Within this framework, our white paper defines a EuroGOOS roadmap for sustained “community coastal downstream service” provision, provided by a broad EuroGOOS community with focus on the national and local scale services. After defining the coastal services in this context, we describe the main components of coastal service provision and explore community benefits and requirements through sectoral examples (aquaculture, coastal tourism, renewable energy, port, cross-sectoral) together with the main challenges and barriers to user uptake. Technology integration challenges are outlined with respect to multiparameter observations, multi-platform observations, the land-coast-ocean continuum, and multidisciplinary

https://doi.org/10.3389/fmars.2023.1177615

HIGHLIGHTS

Coastal WG acting as a focal point for the **OceanPrediction DCC NE Atlantic Regional Team**

Atlas



HIGHLIGHTS

River Datasets

The EMODnet Physics River runoff operational product is developed in collaboration with CoLabAtlantic+, as part of the EuroGOOS Coastal Working Group activities

Contact: Francisco Campuzano

Status as of May 2024

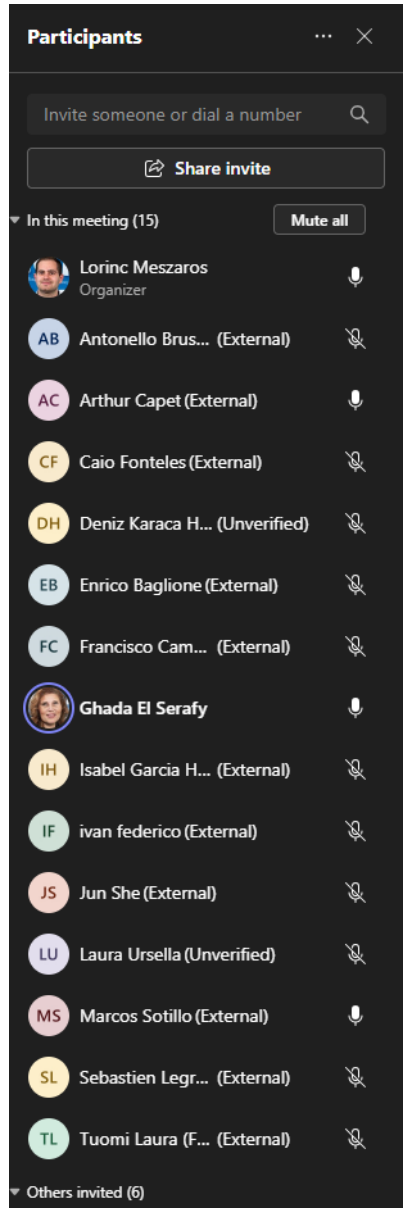
HIGHLIGHTS

Launching ‘Data Sciences’ action

- White paper
- Pilots linked to projects
- Link to Digital Twins
- Capacity building: Webinars / Hackaton / Summer school

White Paper Structure:

- The challenges in the coastal zone
  - Physical / computational
- The use of machine learning in coastal applications
  - highlighting the benefit (computational effort, fast answers)
  - Lessons learnt and techniques widely used so far based on successful applications
- Digital twining of the land-ocean continuum (zoom down to coastal)
  - Sources to Sea concept, etc.
  - Digital representation of the coast
- Recommendations
  - When to use ML/AI
  - Proposed workflow / cook-book / best practices
  - include well-known applied techniques AI techniques (advantages and disadvantages)
  - Synthesis readable for non-technical people



HIGHLIGHTS

Active participation in shaping the:

→ Coastal extension of the Copernicus Marine Service

→ European Digital Twin Ocean coastal modelling capabilities

→ Observing networks of the land-sea interface

European Digital Twin Ocean

EDITO ModelLab

FOCCUS

Forecasting and observing the open-to-coastal ocean for Copernicus users

LOT

LAND SEA

FUTURE LOOK

Priority areas for 2024-2025

Action 1: **Data Sciences**
- White paper
- Pilots linked to projects
- Link to Digital Twins
- Capacity building: Webinars / Hackaton / Summer school

Action 2: **River Datasets**
- Build a database of estuarine features that can serve to include rivers into the regional ocean models with more realistic features by using simple proxy models.

Action 3: **Catalogue of Coastal Stories (products)**
- In link with OceanPrediction DCC Atlas

Action 4: **Users**
- Document End-user requirements, based on this action and the work of ForCOAST, including the methodology used to engage and exchange with users.

Action 5: **Characterise EOV Accuracy/Precision Requirements**
- In link with WMO RRR Oceanic Application Area

Action 6: **International Capacity Building**
- Document international framework of grants, training, and capacity building opportunities in General in relation with operational coastal science.

Action 7: **Citizen Science/low cost sensors/…**

Action 8: **Coordination** + Connections within EuroGOOS and beyond (international collaboration)

FUTURE LOOK

Joint collaboration on funding opportunities

- Horizon Europe 2025 calls
- COST Action (with the help of Deniz): Autumn 2024 and/or 2025

Activity updates Data MEQ WG

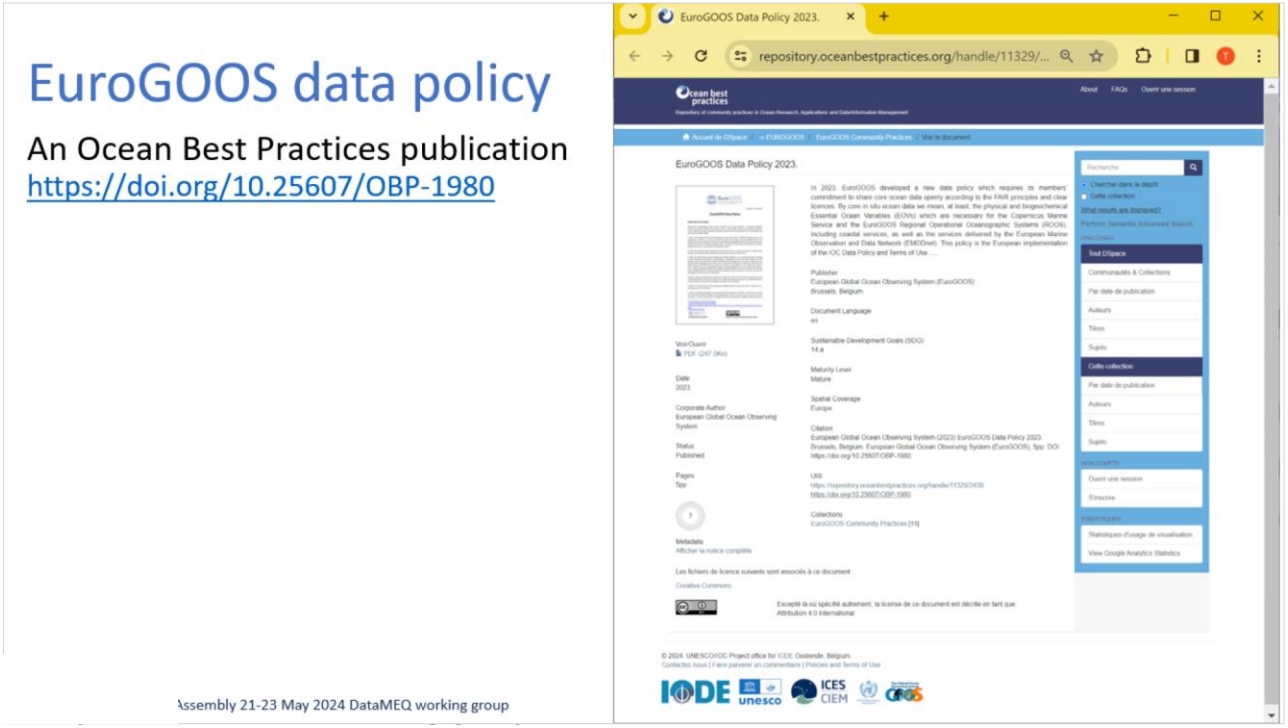
Thierry Carval
Ifremer

EuroGOOS GA, 21-23 May 2024

Highlights

Adoption of the EuroGOOS data policy by its members

- The implementation of *IOC Oceanographic Data Exchange Policy* and *EU directive on High Value Datasets*
- Our commitment for the free circulation of Essential Ocean Variables observations
- Presented at IODE International Ocean Data Conference, EuroGOOS Conference and next week at IMDIS conference



Highlights

Links and synergies with major EU activities

- Contribution to ENVRI-FAIR EU project (2019 – 2023)
  - Coordination of the Marine Research Infrastructures fairness improvement (D9.9)
  - Marine research Infrastructures whitepaper for sustainability roadmap (D9.10)

- Contribution to Eurosea data handbook (D3.13)

- Contribution to Copernicus Marine in situ NetCDF CF 2.0 format https://doi.org/10.13155/59938

- HF-Radar NetCDF format improvement (global attributes, compression), a Copernicus and SeaDataNet joint data format

- BGC-Argo synthetic profiles for Copernicus Marine in situ NetCDF, One format for Core-Argo and BGC-Argo data

Challenges

Major priority (2024-2025)

- FAIR data : improve citations and credits to data providers through DOI best practices (Digital Object Identifier), SeaDataNet vocabularies (EDMO codes for institutions), ORCIDs for individual scientists

Links and synergies with other EuroGOOS ROOS/Working Groups/Task Teams

- OceanGliders NetCDF format implementation, an international GOOS – OceanOPS activity

- SeaDatanet NetCDF and vocabularies for Ship-ADCP (EuroGO-SHIP project funding)

Future look

Towards Cloud native workflows for DAC/GDAC architectures

- Today's data workflows are based on unsecure FTP or unefficient HTTPS protocols
  Switch to a cloud native ARCO formats - Analysis Ready Cloud Optimized
  - No need to download, data is directly usable and up to date
  - Every version of data is preserved and accessible

- Funded by EU projects including
  - EOSC AMRIT : cloud data flows and EOOS dashboard
  - EOSC ENVRI-Hub-Next (downstream data services for ERICs)
  - EOSC FAIR-EASE (ENVRI), EOSC Blue-Cloud 2026: cloud VREs
  - Copernicus Marine Data Store – MDS

Future look

- Semantic web
  Vocabularies, ontologies (SeaDataNet, ENVRI, FAIR-Impact)
  Triplestores with PIds on data, publications, software codes for traceability
  Sparql endpoints to browse ontologies, vocabularies and subset data

- EOOS - European operational oceanography dashboard
  - AMRIT collaborative software development – cloud & dashboard – DevOps CI CD
  - AMRIT-C2 observing systems control & command

- AI – Artificial Intelligence
  - New domain for DataMEQ, interactions with Coastal Working group
  - Data management topics
    - How to preserve and publish AI training datasets such as millions of annotated images (Fair-Ease Ecotaxa, iMagine for EMSO)
    - How to preserve and publish trained models

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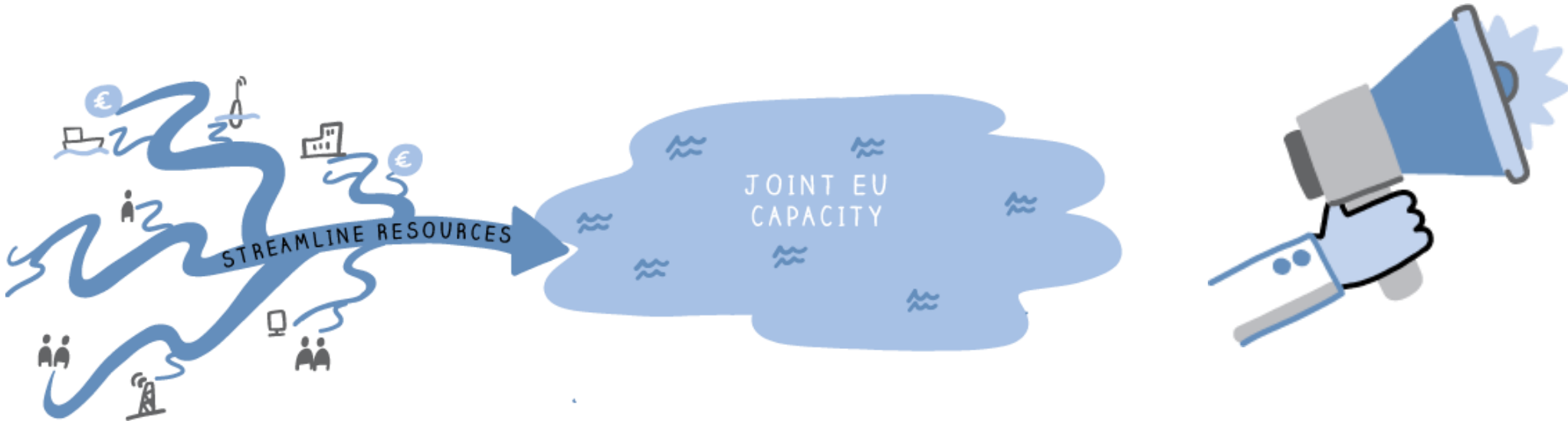


Other priorities for DataMEQ working group ?

Thierry.Carval@ifremer.fr

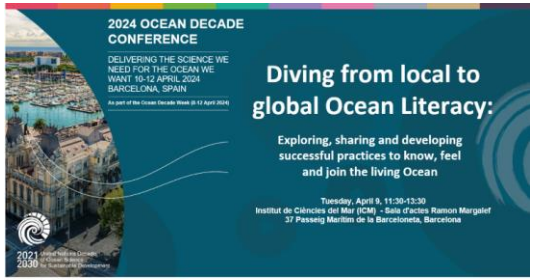
Ocean Literacy Working Group

EuroGOOS Annual General Assembly Meeting
21-23 May 2024

Angela Pomaro (CNR, Italy) - Yolanda Koulouri (HCMR, Greece) Dina Eparkhina (EuroGOOS Office, EU)

HIGHLIGHTS

- ✓ Presentation at the Ocean Race Grand Finale, June 2023
- ✓ Presentation at the IUGG 2023, July 2023
- ✓ Ocean Literacy session and special event at the Galway Aquarium, at the 10th EuroGOOS International Conference, October 2023
- ✓ Co-organisation of side event of the UN Ocean Decade Conference ‘Diving from local to global ocean literacy’, April 2024
- ✓ Development of survey on ocean literacy in European oceanographic agencies to be launched in May 2024, March-May 2024
- ✓ Acceptance of OLWG chapter in the upcoming two-book series, "Ocean Literacy: The Foundation for the Success of the Ocean Decade," to be published by Springer Nature (May 2024)



Ocean Literacy Working Group

CHALLENGES

The EuroGOOS Ocean Literacy Working Group brings together experts from 25 organizations in 11 countries and 4 organizations with a pan-European or global remit. However, there are several members that are not responsive.

Several shorter (below 1 hour) and longer (2 hours) meetings depending on the agenda items, throughout the year.

An on-site meeting is considered in 2024 (group has never met fully in person since the establishment of the EuroGOOS OL Network (predecessor of OLWG) in 2019.

Need to strengthen work of our OL WG through funding based on common projects…

FUTURE LOOK

- Launch survey on societal engagement (OL) activities in European oceanographic agencies
- Submit a paper with the results of the abovementioned survey
- Attend the global OL conference (UNESCO), June 2024
- Develop and implement a training for scientists to engage in OL (EU4Ocean project)
- Youth Engagement on Oceanography (EU4Ocean project)
- Session / side-event at EMSEA 202
- Book chapter for Springer Nature

Activity updates Science Advisory WG

Lucie Cocquempot
Ifremer

EuroGOOS GA, 21-23 May 2024

HIGHLIGHTS

SAWG is an open forum/ a think tank for sharing innovative trends and scientific challenges faced by our community, our institutions, our countries and our regions....

- 2 communications on behalf the SAWG were given during the 10th EuroGOOS international conference under the session *Strategic developments in ocean observing* :

EuroGOOS Scientific Strategy: Advancing a Seamless Earth System Approach for European Operational Oceanography

Jun She et al.

Advancing European Ocean Observing System: Fit-for-Purpose Monitoring Integration, Cost-Effectiveness, Shared Responsibility and network optimization

Lucie Cocquempot et al.

- Discussion on cross-cutting activities from the WG and TT work plans collected earlier this year. Two topics were identified : AI/ML applications in operational oceanography & Accessible ocean observing technologies
- Preparation and debriefing of the UN Decade ocean conference

CHALLENGES

- The position of co-chair of the SAWG has been vacant for a year now,
  All applications will be considered with great interest.

- The production of a white paper has been put on hold due to the lack of availability of writing groups.
  In-kind contributions are becoming difficult to secure among some
  partners

- SAWG needs strong connections to task teams, working groups, ROOS and also to the Board .
  Although we have a great representation of EuroGOOS groups within
  SAWG, communication could be enhanced

FUTURE LOOK

- Re-activate the Integration workshop
  (*maybe in a different format)*

- Contribute to the ***EuroGOOS webinar series*** from autumn 2024 on cross-cutting topics: AI/ML applications in operational oceanography & Accessible ocean observation technologies.
  All contributions from the community are welcome.

- Consult with member delegates on matters of interest to them
  Consolidate in-kind shareholdings and increase added value for the community

Activity updates Technology Plan WG

Urmas Lips

MSI

(Laurent Delauney, Rajesh Nair)

EuroGOOS GA, 21-23 May 2024

HIGHLIGHTS

#Goal: bring together technology developers, manufacturers and users to exchange knowledge on platforms and sensors, with the view towards enhancing the accessibility of ocean observations.

#Goal: identify and promote emerging synergies in the technology community to advance the optimization of ocean observing in Europe (and worldwide).

EOOS Technological Forum 2024 – Accessible ocean observing technologies

Organized at **Ocean International** (as a one day workshop on 13 March 2024; supported by EuroGOOS, JERICO, Ifremer, OGS, SMHI, and DOOS)

Four sessions:

- **Accessible technology**: Needs of the ocean observing community
- **Opportunities and challenges** for accessible ocean observing technologies
- **Data quality aspects** of accessible ocean observing technologies
- **Sustainability aspects** of accessible ocean observing technologies

Involvement: 33 persons, 15 companies

Report in progress

CHALLENGES

- Addressing the entire data value chain.
- Substantial permanent investment needed for building capacity (human capital, training and continuing education).
- Highly variable data usability landscape - need for sufficiently characterized data with well-understood, communicable, quality information *congenial to easy encoding as metadata*.
- Common measuring practices, *particularly with regard to calibration, calibration methodology and reference material, and uncertainty assignment*.
- Cost-efficient technological solutions do not, in themselves, translate into cost-efficient data and observations.
- Designing “participatory” monitoring programmes in a way that is as noninterfering as possible (from the point of view of the volunteers); the lowest-cost solution may not always the most appropriate.
- Assuring scalability (technologies must be widely available and capable of being used over large regions).

FUTURE LOOK

- Encourage the deeper involvement of marine technology manufacturers and suppliers (companies, startups, SMEs, …) in the definition of the marine data value chain (go beyond mere product technical specifications for characterizing implemented technology).
- Promote sustainability as a core value and requirement for marine observing technology (manufacturers are more likely to consider environmental sustainability if there is a strong demand from customers in this sense).
- Cultivate events such as Oceanology International, where industry and ocean professionals gather, to showcase the ocean observing community as an important market player and demonstrate its increasing demand for sustainable technological solutions.
- Promote the case for environmental impact assessments of marine technologies.
- Encourage changes in regulation or legislation favoring the development and commerciality of new, more sustainable marine observing technologies, playing an active role in the global coordination of such efforts.

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Thank you for your attention

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Activity updates
EuroGOOS Task Teams

EuroGOOS GA, 21-23 May 2024

Activity updates
Argo TT

Antonio Miguel Piecho-Santos
IPMA

EuroGOOS GA, 21-23 May 2024

HIGHLIGHTS

- EuroGOOS Board & Chairs virtual meeting, May 2023
- Three Argo-FVON Workshops, September and October 2023 (Miguel Santos)
- Participation in the 10th EuroGOOS International Conference, October 2023 (Miguel Santos)
- Argo Workshop between BSH, IH and IPMA, Portugal, November 2023 (Meike Martins, Miguel Santos and Luísa Lamas)
- EuroGOOS Argo Task Team meeting, December 2023
- Ocean Sciences Meeting 2024, February 2024 (A. Miguel Santos)
- BGC Argo Technological Task Team online meeting, April 2024 (Griet Neukermans)

CHALLENGES

- Identification and inclusion of new members
- Joint meeting with Euro-Argo ERIC Management Board (funding)

FUTURE LOOK

- Exchange of information via a single EuroGOOS Argo TT mailing list (e.g., argott@groups.eurogoos.eu)
- Ask members to fill in a form and make a document with information about who they are, their expertise, their interest in Argo, deployment plans and areas, and what they expect from the TT
- Set up a shared drive where TT will share contents, such as the best practice guide for float deployment, meeting agendas and minutes, and a list of upcoming Argo meetings
- Proposed joint DMQC (in person) course/workshop with Euro-Argo ERIC
- Planning for interaction with Euro-Argo ERIC Management Board under a joint meeting
- Deployment of 6 Argo floats (1 full BGC, 1 BGC with only DO, and 4 core), as a contribution of ARGO.PT to the Argo Program
- Acquisition of 6 BGC with only DO under ARGO.PT

Activity updates Ferrybox TT

Henning Wehde
IMR

(Andrew King, Anna Willstrand Wranne)

EuroGOOS GA, 21-23 May 2024

HIGHLIGHTS

HCMR:

- First CO_2 recordings in the Eastern Mediterranean using a FB; CO_2 data to be processed and submitted to the next SOCAT submission i.e. in 2025.

Hereon:

- Lysbris Seaways is offline since November, 2023 due to new ballast water treatment system installed. Cuxhaven station is a Pilot ICOS Estuarine station in ICOS-D since January 2023.

NIVA:

- new FerryBox complete on coastal steamer MS Richard With, also with General Oceanics pCO_2 sensor for ICOS Norway, soon will apply for ICOS station labeling; eDNA and IFCB deployments on MS Color Fantasy as part of H2020 projects; nearly complete with re-establishing data links with EMODnet and beyond.

SYKE:

- celebrating 30 years of FerryBox measuriments in Algaline “project”; demonstrated the operationality of plankton Imaging (IFCB, Cytosense) on SOOP line FINNMAID (Helsinki-Travemunde) for 5-month period.

SMHI:

- SOOP line Tavastland is back in the Baltic Sea covering again the Bothnian Bay and the Baltic Proper.

TalTech:

- upgraded FerryBox system installed onboard Victoria I (TallinnHelsinki/Stockholm)

FMI:

- pCO_2 measurements onboard Silja Serenade (Helsinki-Stockholm) joining ICOS OTC.

CHALLENGES

- Challenges with funding (as usual)
- Change of route for the SOOP lines

FUTURE LOOK

- Strengthen the collaboration between the related European RIs and other projects and initiatives.
- Work towards an updated “white book/paper” about FerryBoxes for potential users/stakeholders
- 12th FerryBox Workshop planned for October 1-2 in Helsinki, hosted by SYKE.

Activity updates Fixed Platforms TT

Marcello G. Magaldi
CNR

EuroGOOS GA, 21-23 May 2024

HIGHLIGHTS

A first-time, uniform view of the EuroGOOS effort on fixed platforms

Coordination:
Pieter Gurdebeke

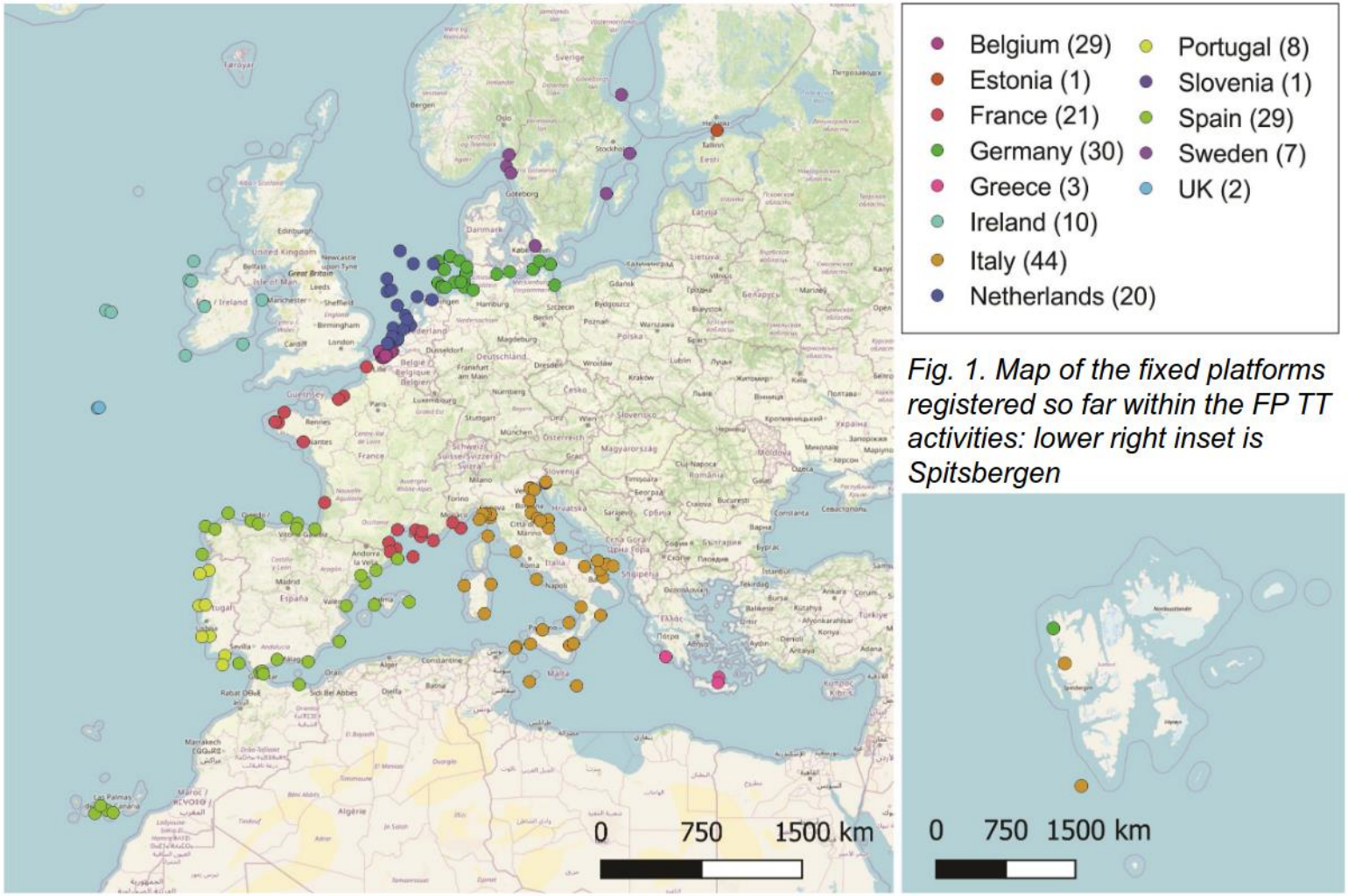

Fig. 1. Map of the fixed platforms registered so far within the FP TT activities: lower right inset is Spitsbergen

CHALLENGES

Inactivity:

- Only one meeting during last year (on May 9, 2024)
- Difficulties in finding the co-chairs
  - February 2023: co-chair call for nominations sent
  - April 2023, physical meeting in Rome: no replies to the call
  - March 2024: resignation of the two co-chairs, proposition of a new co-chair
  - April 2024: several request sent for a second co-chair
  - May 2024: only one co-chair not formally elected

Weakness (SWOT analysis performed in Rome, April 2023):

- Heterogeneity and diversity of the platforms
- Risk of duplication of the activities
- Low external visibility
- Lack of funds

FUTURE LOOK

Low-hanging fruits

- Nomination of a second co-chair
- Consolidation of the list of members in the Task Team
- Insert map in the FP TT page (dynamical? By type?)
- Create a gallery in the FP TT page for platform pictures
- Work on a presentation format for bimonthly webinars (presentation of facilities, errors, unsolved problems)
- Revise/rethink leaflet

Raising the bar

- White papers (find coordinators, review deliverables)
- Improve FP TT dataset including sensors and EVs info

FRONT

<—

BACK

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EuroGOOS
European Global Ocean Observing System

Glider Task Team

EuroGOOS Annual General Assembly Meeting
21-23 May 2024

Carlos Barrera, Pierre Testor and Victor Turpin

Country	Institution	National POC	EuroGOOS Member
Belgium	VLIZ	**W. Boone**	
Cyprus	CMMI	**D. Hayes**	
Estonia	TTU	**T. Liblik**	
Finland	FMI	**K. Tikka**	
France	CNRS LOV-IMEV SHOM IFREMER	P. Testor (Chair) **A. Bosse**	
Germany	HEREON MARUM GEOMAR	**L. Merckelbach**	
Greece	HCMR	**E. Bourma**	
Ireland	MI	**P. Gaughan**	
Israel	IOLR	**Tal Ozer**	
Italy	CNR OGS UNI. PARTENOPE UNI. TUSCIA	**E. Mauri**	
Netherlands	NIOZ	**M. Smit**	
Norway	UiB APN IMR	**A. D. Brakstad**	
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Spain	SOCIB ULPGC AZTI PLOCAN IEO	**C. Barrera (Chair)**	
Sweden	UGOT VOTO	**B. Queste**	
UK	UEA NOC SAMS BAS CEFAS PML	**M. Palmer**	

40 Glider Operators (20/20)
16 Countries (12/4)

Glider
EuroGOOS Task Team

HIGHLIGHTS

- **Capacity Building and Engagement** of new EU institutions/teams operating ocean gliders i.e. IH (Portugal), NIOZ (Netherlands), etc.
- Cooperation and synergies with **EU-flagship projects** - (EuroSea, GROOM II, TechOceans, Mission Atlantic, AQUARIUS, etc.)
- **GROOM-II** project successfully ended: Towards to the EU-glider infrastructure (March 2024)
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- 13th **Glider School** (October 2023)
- GTT **annual survey** 2024 still ongoing
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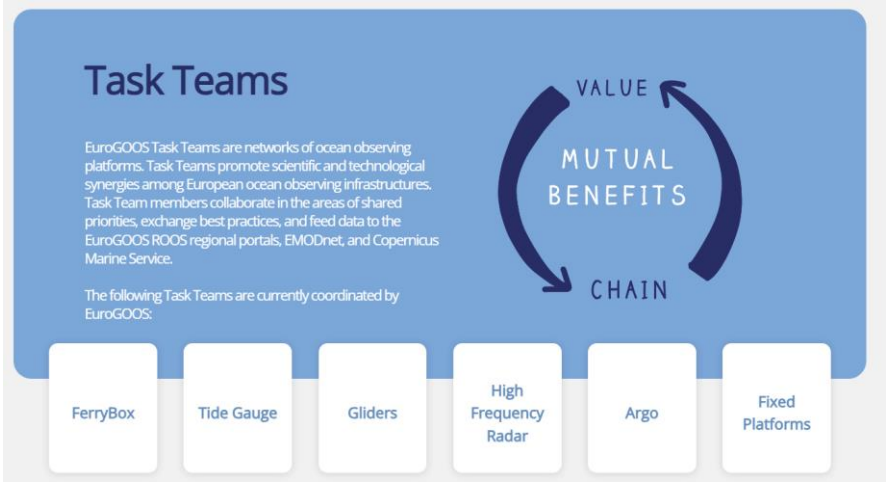
CHALLENGES

- Clarification of the GTT contribution into the “EU/International glider ecosystem” –OceanGliders, EGO, GROOM-RI,… Who is who and for what?
- Promote active involvement from members (probably derived from previous topic).
- Provide clear data strategy and guideline to glider operators.
- Lack of coordination and inputs from national delegates (ROOS should play a key role here)



FUTURE LOOK

- Promote and support the **coordination from a national perspective** of the EU glider activities (under GROOM RI leadership) from the best inclusive way possible as a community.
- Deliver clear **guidelines** for operators and support data management to ensure data availability for the Copernicus Marine Environment Monitoring Service (CMEMS), EMODNet, SeaDataNet via the EuroGOOS regional data portals (ROOS) in particular.
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- Promote and consolidate **new observatories** in the European glider array, serving the EOOS framework and supporting EU directives and policies related to ocean observation (i.e. MSFD, MSP, CFP,…).
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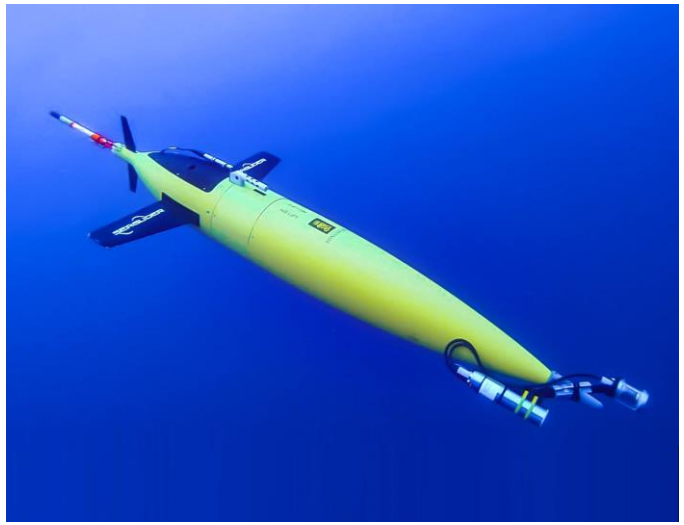

EuroGOOS
European Global Ocean Observing System

Glider Task Team

EuroGOOS Annual General Assembly Meeting
21-23 May 2024

Carlos Barrera, Pierre Testor and Victor Turpin

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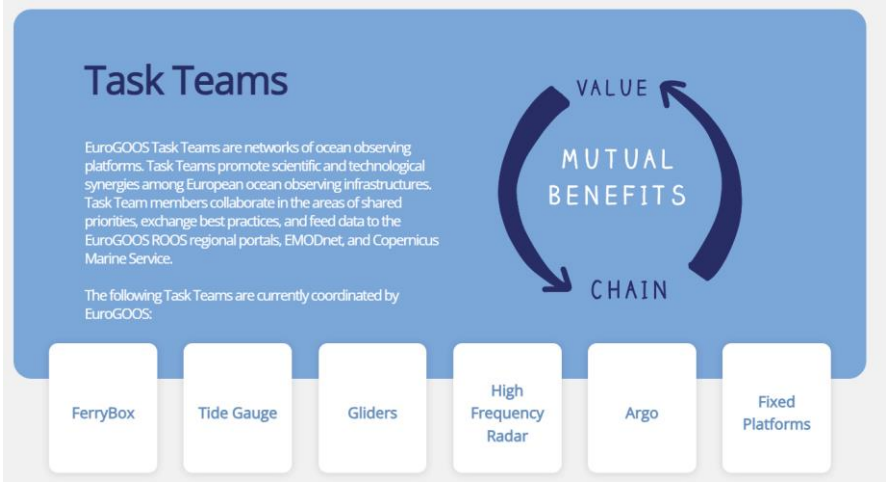

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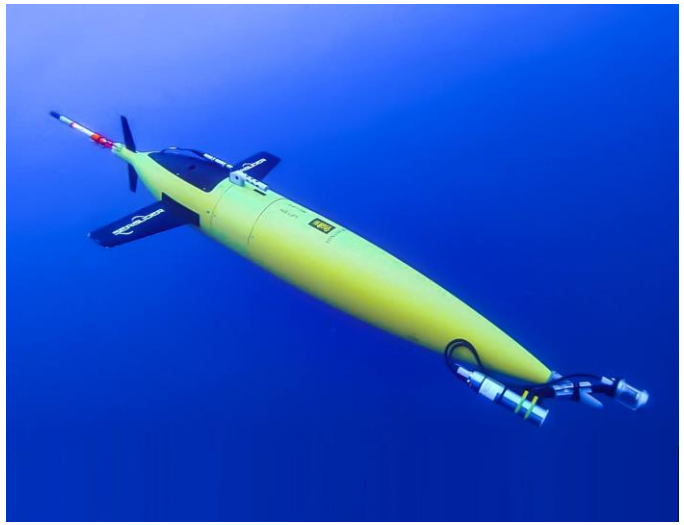


Activity updates
HFR TT

Lorenzo Corgnati
CNRN

EuroGOOS GA, 21-23 May 2024

HIGHLIGHTS

- Integration of new networks in the operational workflow (Western Norwegian Coast, Catalunya, Sicily Channel).

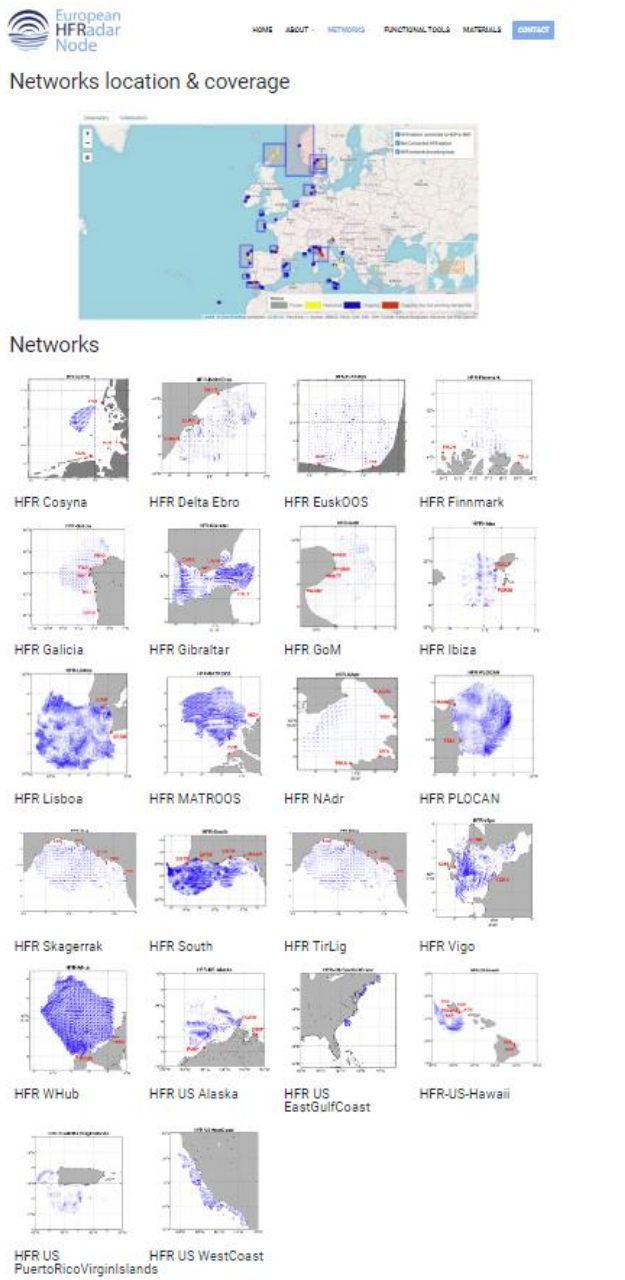
- Periodic revision/update of the documentation of the European standard HFR data model, published on the OBPS repository (https://doi.org/10.25607/10.25607/OBP-944.2)

- Publication of the EU HFR Node website (https://www.hfrnode.eu/)

- Allocation of DOIs to all the connected HFR networks

- Allocation of WMO platform codes to the European HFR stations

- Setup and publication of the ERDDAP Data Server for discovery and access of Near Real Time surface current data (https://erddap.hfrnode.eu)



CHALLENGES

- Completing the connection to all the networks contributing in Europe
- Working groups are not progressing as expected because all the components are extremely busy. A new mechanism for engagement and commitment is needed and will be discussed in the next in person meeting
- Unlock HFR data potential: boost the integration of HFR data in data downstream services, engage end-users

FUTURE LOOK

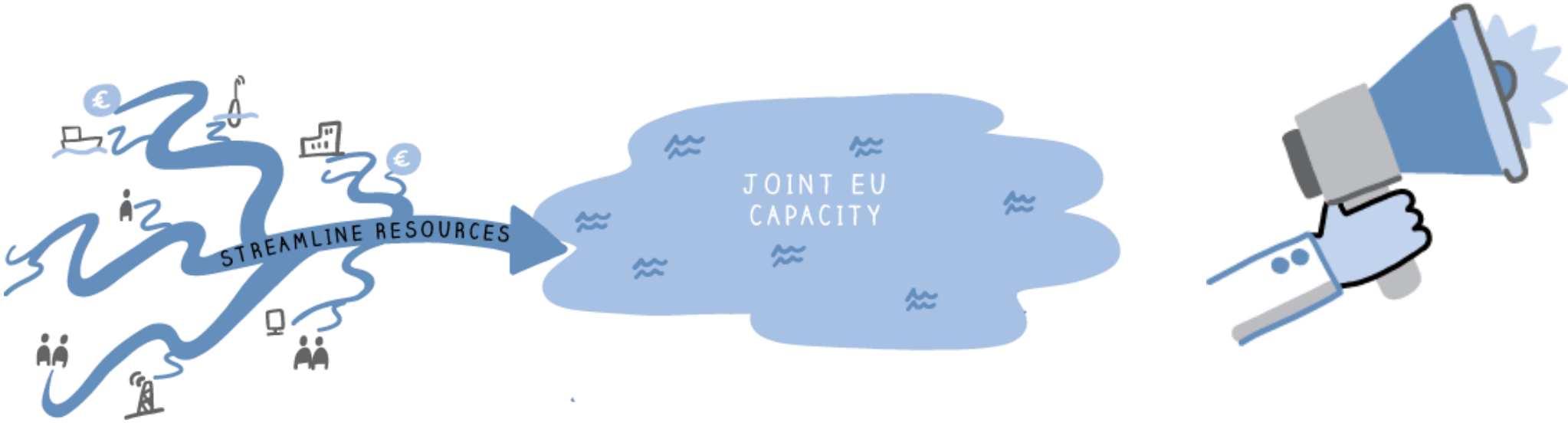
- HF RADAR TASK TEAM PROGRESS MEETING at Radiowave Oceanography Workshop 2024 (ROW2024) - University of Plymouth, 3-5 September 2024

- Design and development of advanced Quality Control procedures based on Artificial Intelligence and non velocity-based parameters

- Development of added-value products (gap-filling, physical components of the surface field, other data from HF radars)

- Porting of IT architecture of the NRT workflow at the EU HFR Node on hyperconvergent computing system for improving service performances

- Sustainability of our role in structuring and coordinating the HFR community in the EOOS perspective



Julien Mader - jmader@azti.es
Lorenzo Corgnati - lorenzo.corgnati@sp.ismar.cnr.it

Activity updates Tide Gauges TT

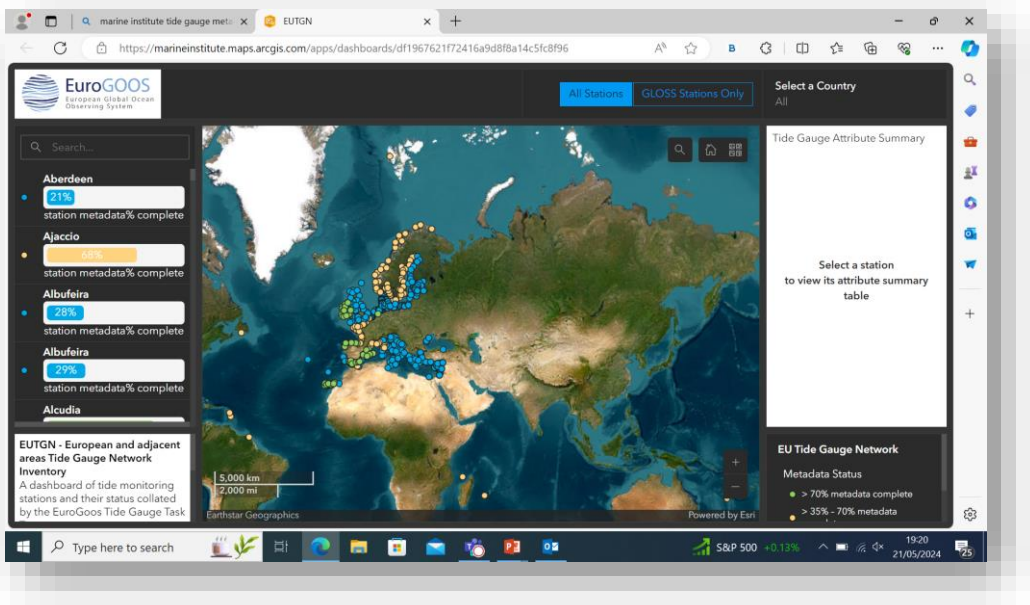
Angela Hibbert
NOC

EuroGOOS GA, 21-23 May 2024

HIGHLIGHTS

- The Marine Institute of Ireland secured ongoing funding to support a new look Tide Gauge Metadata Inventory
- 2nd EuroSea Tide Gauges Workshop, May 2023

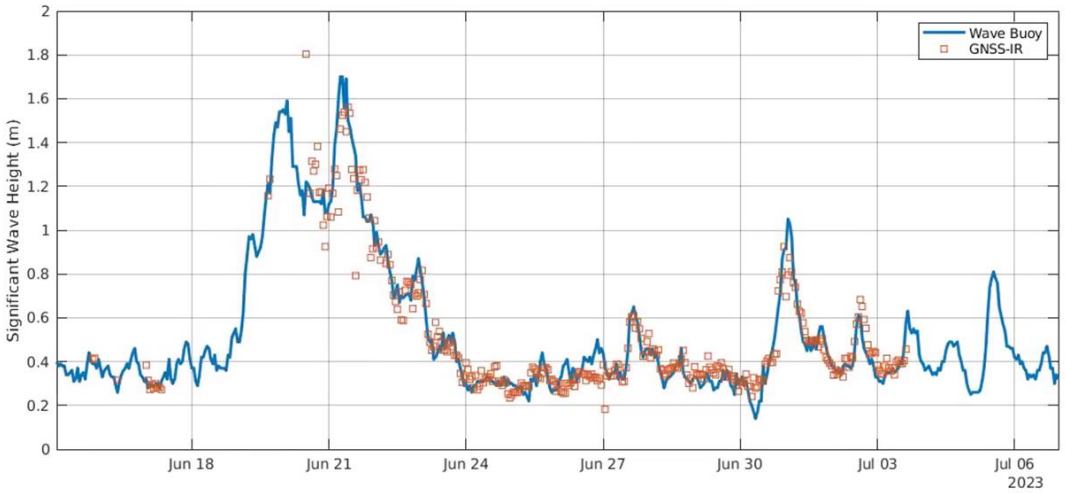
Focus on data processing and quality control
4 keynote speakers, 21 delegate presentations



- IAPSO-funded Tidal Analysis Best Practice Study Group meetings in July and Nov 2023 => recommendations report
- PSMSL upgraded and supporting GNSS-IR data portal
- The Copernicus Sea Level REProcessed product was updated in November 2023 including new stations

CHALLENGES

- Tide gauges are long-established technology, so there are multiple national, regional and global stakeholders and networks, with varied applications and inconsistent data processing and distribution methods.
- Co-ordination with primary governing body IOC's GLOSS (Global sea level observing system), which pre-dates European governance bodies
- Co-ordination of emerging technology – GNSS-IR (system hardware and software, operational use, uncertainties, applications)
- Funding and time!



FUTURE LOOK

- Establishing a Tide Gauge Metadata /Data Portal working group with membership from the TGTT to look at metadata standards and provisions and data portal comparisons
- EuroGOOS/GLOSS Special Interest Group to establish Best Practices in GNSS-IR
- Plan to incorporate GNSS-IR sea level in Copernicus Sea Level REProcessed product
- Improve integration of ROOS and TGTT, specifically IBI-ROOS and ArcticROOS
- Acting on the recommendations of the 2nd EuroSea workshop, identify funding and plan for a regional/global data quality control training workshop using open source software.

EuroGOOS
European Global Ocean Observing System

Activity updates EuroGOOS ROOS

EuroGOOS GA, 21-23 May 2024

Activity updates
Arctic ROOS

Vidar Lien
IMR

EuroGOOS GA, 21-23 May 2024

HIGHLIGHTS

- Strong involvement in the ongoing international initiative to co-design and develop a pan-Arctic ocean observing alliance (Arctic GRA), formally endorsed by SAON in March 2024 and the GOOS Steering Committee in April 2024
- Close collaboration with the OceanPrediction DCC Arctic Regional Team (joint workshop, inclusion in Steering Group meetings)
- Establishment of an Arctic ROOS Task Team on in-situ sea ice observations and data

CHALLENGES

- No access to Russian Arctic currently possible and no participation of Russian partners in Arctic ROOS activities
- All Arctic ROOS activities are currently on an in-kind basis

FUTURE LOOK

- Continue to support the design of a pan-Arctic regional alliance
- Participation in developing international activities like DBOs, SAS, OP-DCC
- Cooperation with and promotion of the Copernicus Arctic thematic hub
- Support enhanced real-time delivery of observations to European infrastructures
- Strengthen engagement and collaboration with other ocean observing systems and networks around the Arctic (e.g., US IOOS' Alaskan OOS)
- Facilitate building of joint R&I projects

Activity updates
BOOS

Jun She
DMI

EuroGOOS GA, 21-23 May 2024

HIGHLIGHTS 2023/24

EuroGOOS
European Global Ocean Observing System

Observations and data management	• River data collaboration with EMODnet • Enhanced private-public relationship: Joint R&D & proposal with Vattenfall; Invite industrial partners to present in BOOS • Data management: BOOS-EuroGO-SHIP workshop
Observing system assessment	• Enhanced assimilation: SIC/SIT, Argo/glider, SSH • Organize a workshop on ”Full value chain integration for monitoring and assessment”, with ROOS Chairs, EMODnet, CMEMS, EPAs and HELCOM. • Fit-for-purpose obs. gap analysis for OWE application areas (2 papers); • Jun/Laura contributed to a Baltic Sea workshop on obs. gap analysis
Modelling	• New modelling capacities: On-demand modelling, NBS; OWF/Aquaculture impact modelling; seamless modelling; NEMO-FABM-ERGOM coupling • Digital twin ocean: new national, regional and EU initiatives on DTO, with BOOS involved; developing enterprise virtual working environment
Enhance cross-cutting cooperation	• BOOS-UNDOS: BOOS presentation in Baltic Sea Scientific Congress; • BOOS in GlobalCoast (3 pilot areas) • BOOS-EuroGOOS: BOOS AI WG-Coastal WG Chair; BOOS Chair – EuroGOOS meeting; BOOS web update; • BOOS-BALMFC cooperation: NEMO-Nordic Workshop 2024; BOOS-CMEMS session in BOOS Collaborative meeting; National systems are benefited from BALMFC R&D on NEMO, PDAF and ERGOM
Strengthen emerging R&D areas with new WGs	• AI/ML WG: joint ML WG – Coastal modelling WG workshop; a workshop on using AI/ML for sea level forecasting • Remote sensing cooperation: new ESA project 4DBaltDyn, Horizon project FOCCUS
Joint initiative on a Special Issue on storm Babet	8 papers in preparation: storm surge processes, forecast technology, fit4purpose monitoring, impact assessment, data assimilation, wave-current interaction, coastal erosion, flooding assessment, climate attribution.

m

CHALLENGES

- Lack of resources for BOOS collaboration: to maintain an active collaboration for a STG and 12 WGs, it is a big challenge to find volunteers for next BOOS Chair
- Green transition exposes great challenges for classic O.O., esp. In EEZ waters, need to development new capacities
- Emerging technologies/activities in DestinE/Ocean mission eg AI, cloud, container, jupyter notebook, virtual coding are changing O.O. collaboration ecosystem
- Integrating on-going R&D projects with BOOS WGs

FUTURE LOOK 2024/25

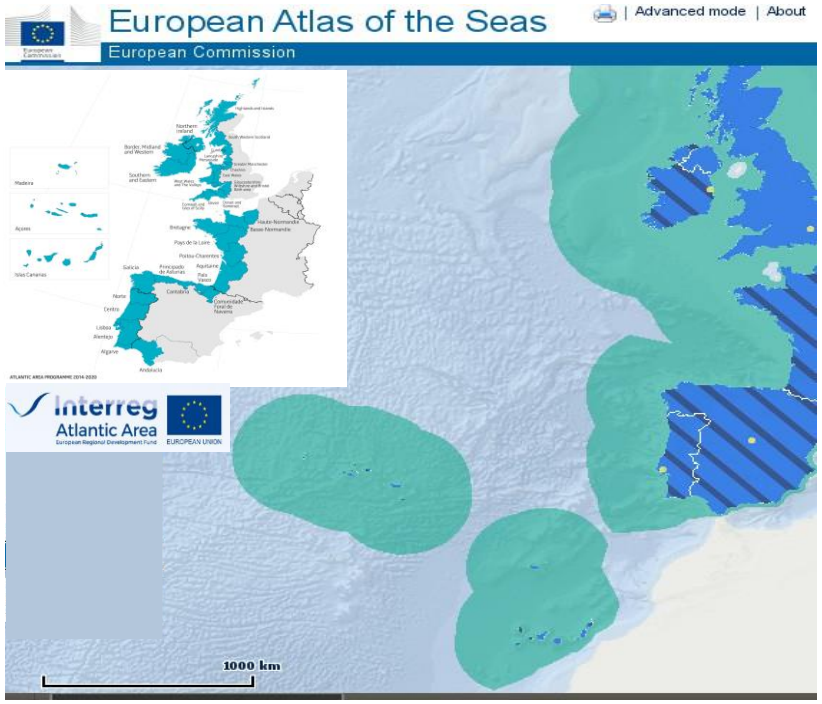
- Strengthen BOOS Steering Group
- Promote joint proposals
- To have minimum 1 workshop for most of the WGs
- Integrate on-going R&D projects with BOOS WGs
- Promote AI and AI cooperation in BOOS
- Finalize the special issue on Storm Babet
- Enhance EuroGOOS-BOOS interaction, e.g., on AI/ML

Activity updates
IBI ROOS

Manuel Ruiz Villareal
IEO

EuroGOOS GA, 21-23 May 2024

STRENGTHEN and expand partnerships



17 members, 5 countries (Portugal, Spain, France, Ireland, UK)

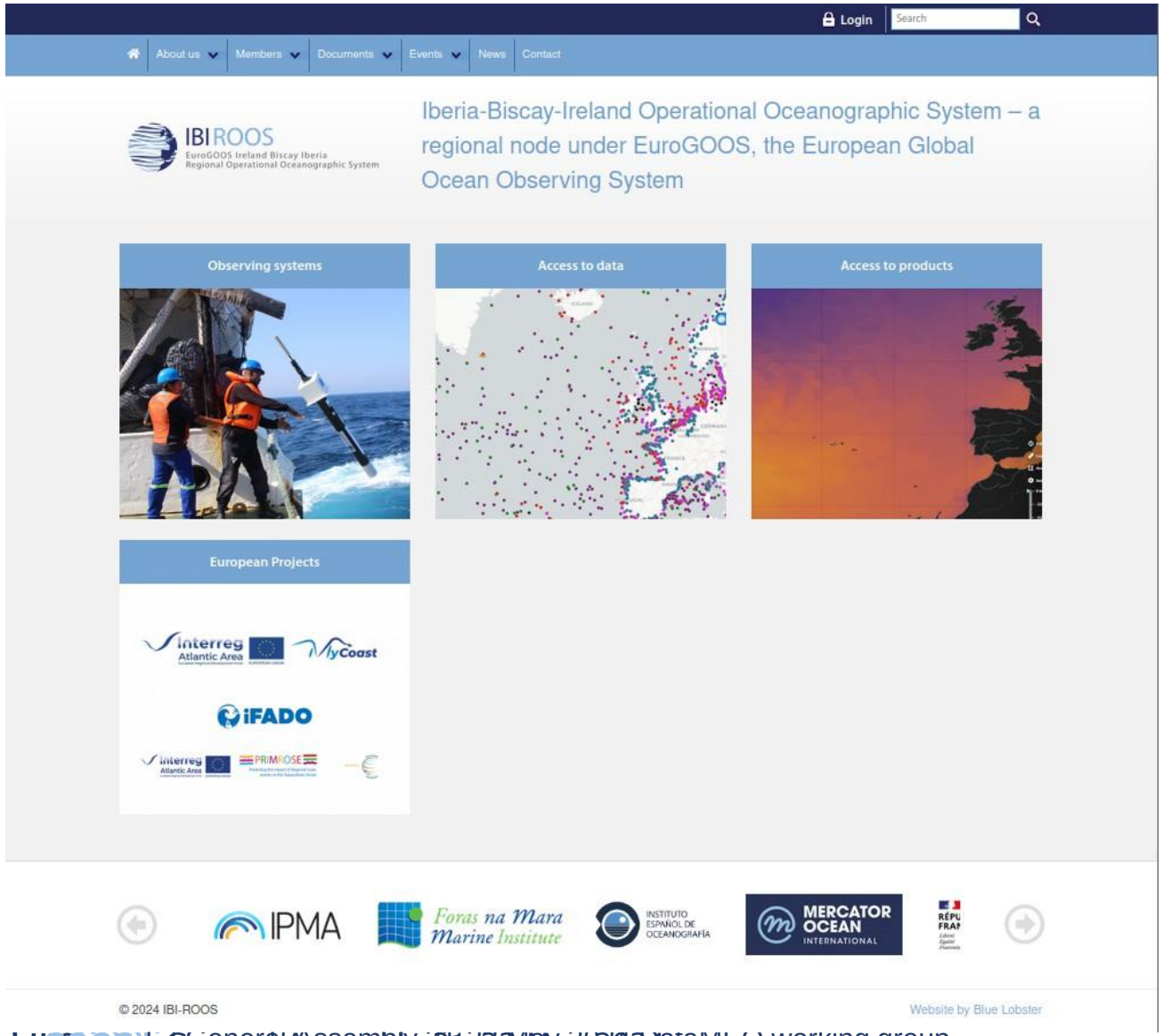
- Success in consolidating cooperation (Atlantic coastal observatories) extending IBIROOS activities to the Macaronesia (Canary, Azores and Madeira)
- Cooperation with UK institutes intensified and new observers
- We are preparing an updated MoU (and will be sent to potential new partners)

Meetings

- 2019 IBI meeting in Plymouth (together with Mycoast meeting)
- 29 Nov-1 Dec 2022, Santiago de Compostela, IBIROOS Annual meeting together with MyCOAST
- 14-16 June 2023, Lisbon, IBIROOS Annual meeting together with MyCOAST meeting
- 13 May 2024, Online meeting. September online meeting
- 2024-Spring 2025: Meeting in Galway??? (Financing available from participation in EuroGOOS EEA COINS)

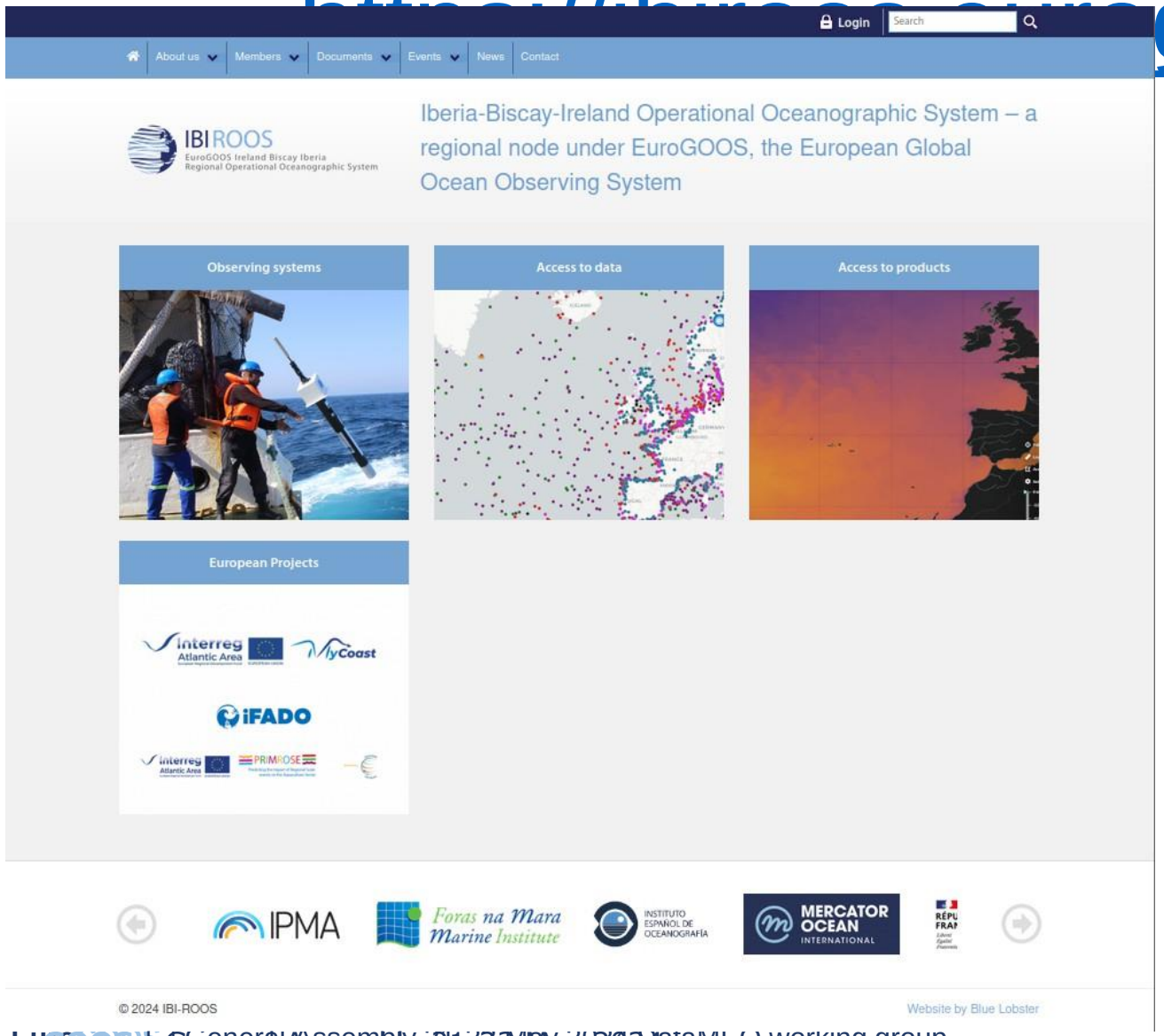
IBIROOS showcases the impact of regional cooperation in maintenance and development of sustained observing systems and operational products in the European Atlantic Area (shelf, slope, open ocean,

https://ibiroos.eurogoos.eu/



- Updated web page
- 25 years IBIROOS (history, pictures, reports…)
- Description of main projects (products and services, full value chain)
- Catalogue of the IBIROOS observing system

https://ibiroos.eurogoos.eu/



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EuroGOOS
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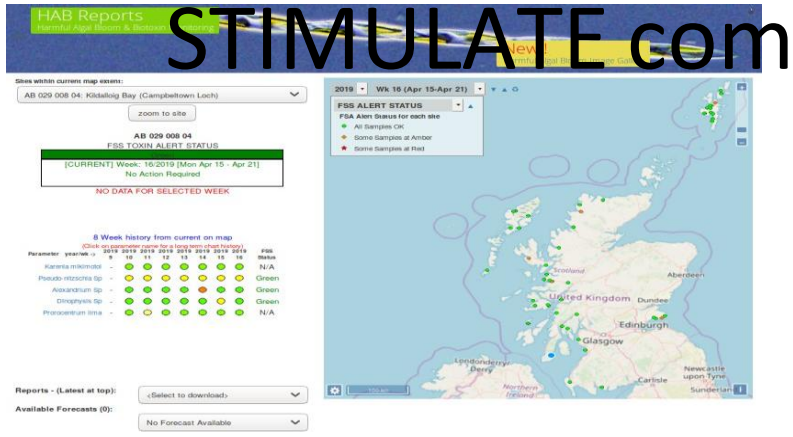
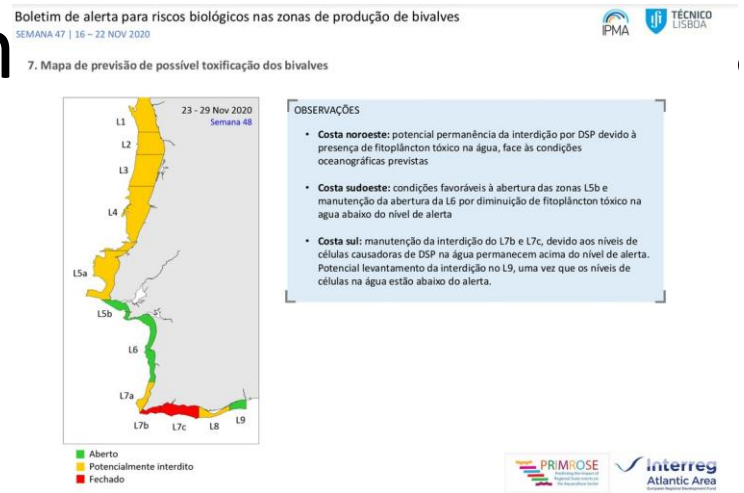
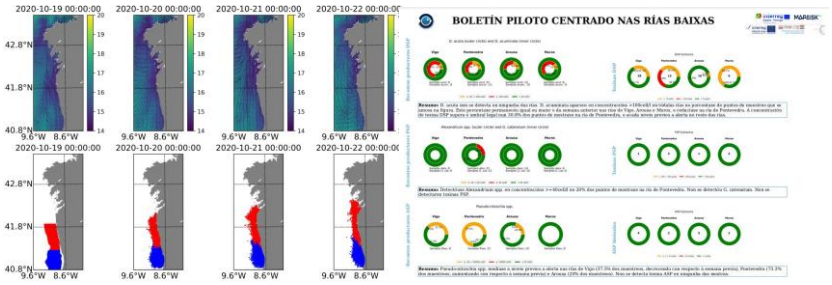
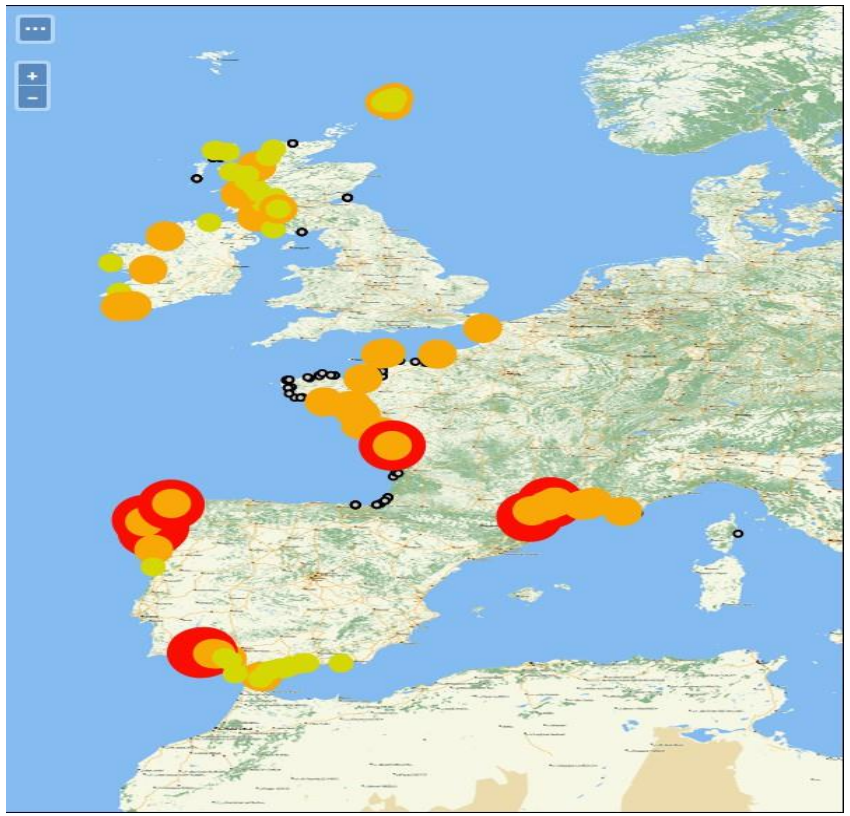
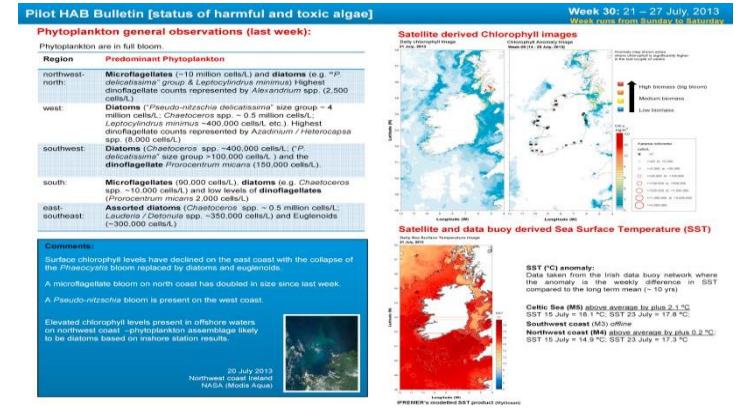








Dinophysis acuminata September 2020 Data sharing, Standards and interoperability

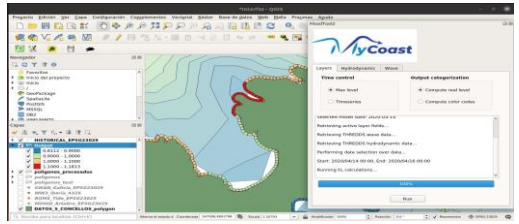


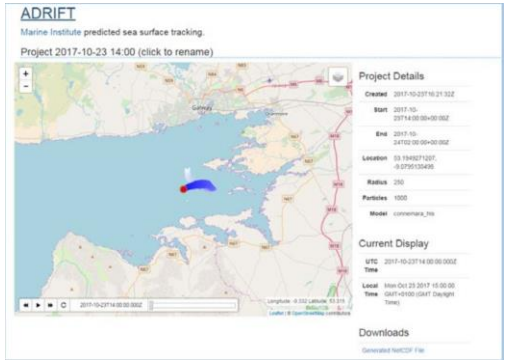
HAB early warning http://www.shellfish-safety.eu/

ASIMUTH
AtlantOS
Interreg Atlantic Area
European Regional Development Fund
EUROPEAN UNION
PRIMROSE
Predicting the Impact of Regional Scale events on the Aquaculture Sector

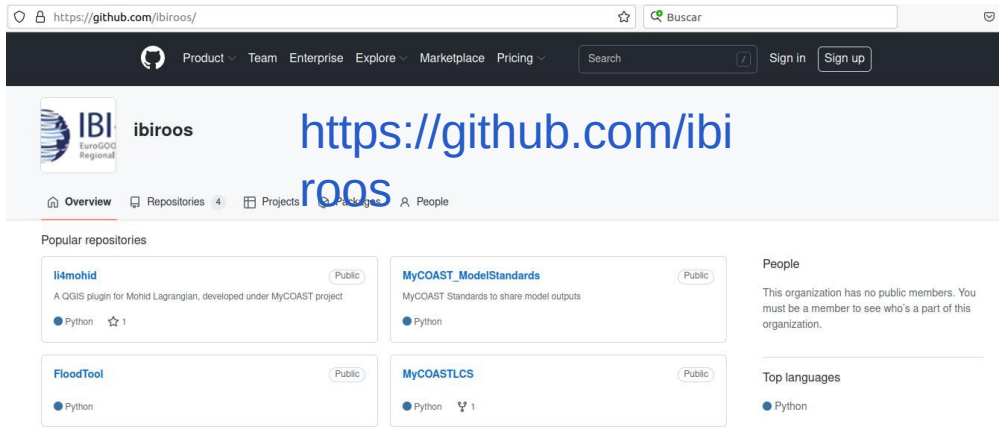
MyCOAST project

Co-design and Co-development for coastal risk tools.
Pilot demonstrations along the Atlantic Area. Co-production





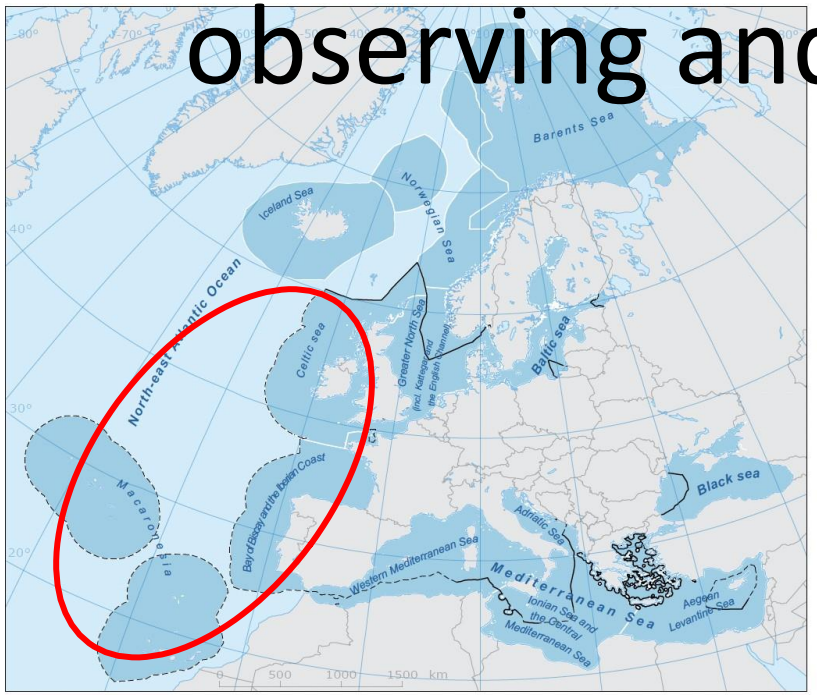
Stakeholders workshops Marine pollution exercises

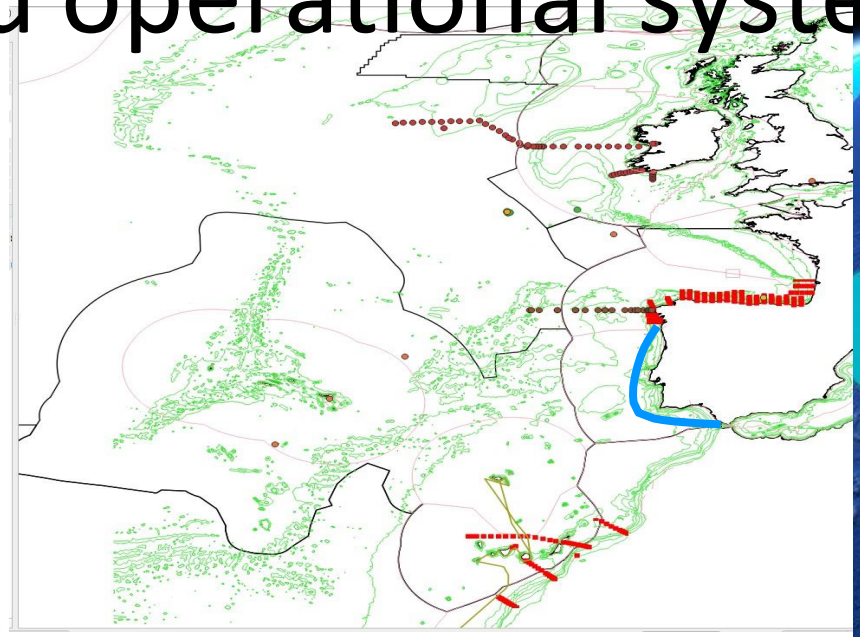


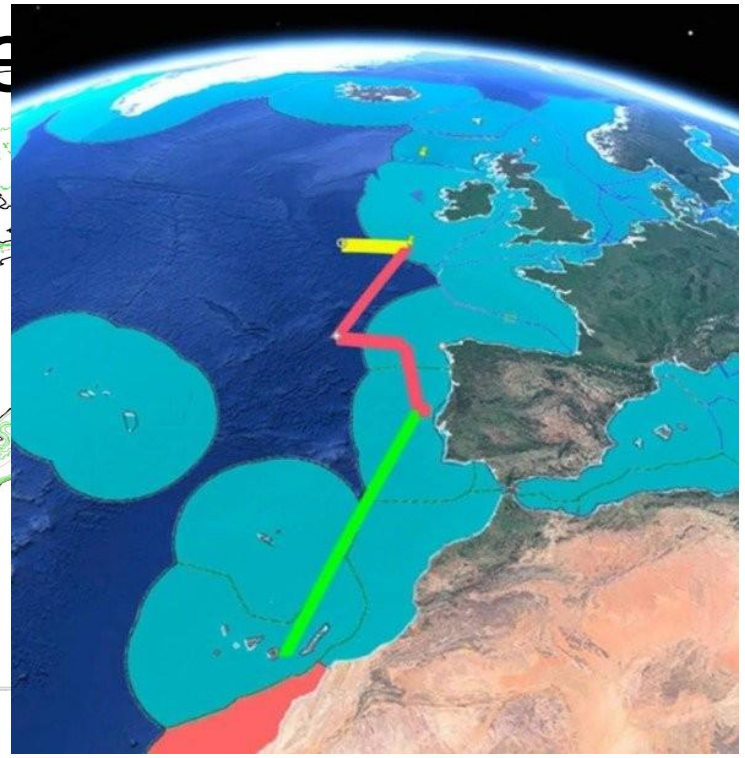
https://github.com/ibiroos

Coastal Risk	MyCoast Tool	Models
Flood	Flood tool	ROMS (tide), SWAN (wave)
Pollution	MyCoastLCS	FVCOM, MOHID, ROMS, NEMO, TELEMAC
Search and rescue	ADRIFT	ROMS, FVCOM
HNS & OILSPILL Forecast	LI4MOHID	MOHID, FVCOM, NEMO, ROMS
Maritime safety tool	Weather Window tool	SWAN, WW3

ADVOCATE for coordinated and integrated EU observing and operational syste







Monitoring cruises
MFSD
implementation
Offshore pelagic ecosystem
Novel methodologies, SOPs, Best practises

IFADO
GeoNetwork

#PAAnoramic Glider mission Winter-spring 2023: AA capitalization call

https://www.ifado.eu/

PROMOTE sustainability across the value chain of operational oceanography and ocean observing

IBI-ROOS
EuroGOOS Ireland-Biscay-Iberia
Regional Operational Oceanographic System

EuroGOOS
European Global Ocean
Observing System

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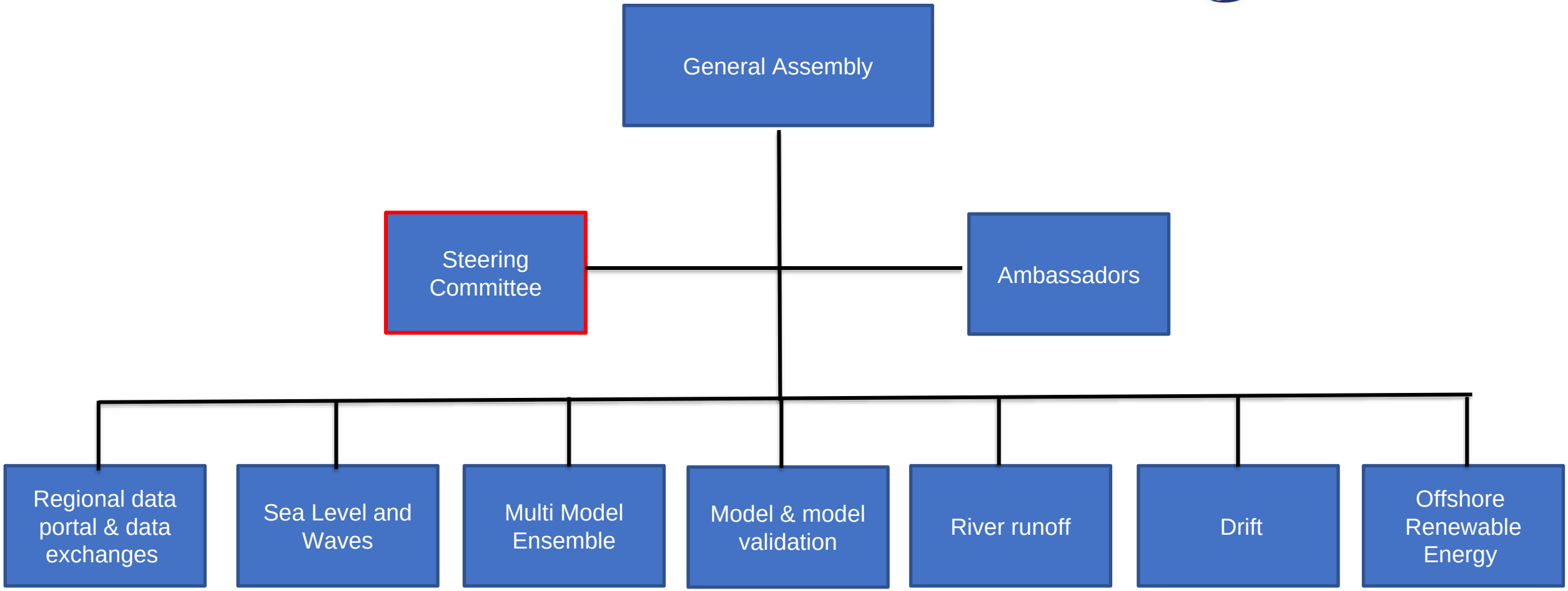
Activity updates
NOOS

Sebastien Legrand
RBINS

EuroGOOS GA, 21-23 May 2024

NOOS
EuroGOOS North West European Shelf Operational Oceanographic System



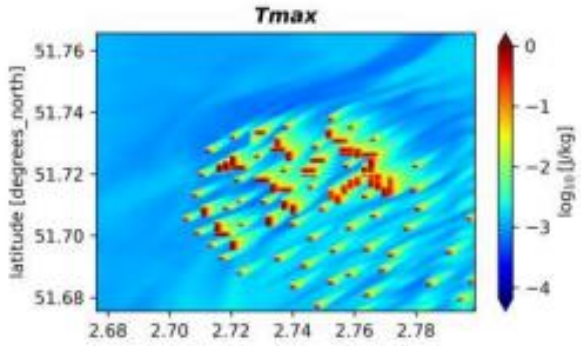
http://noos.eurogoos.eu/

HIGHLIGHTS

- Annual meeting, 12-14 September 2023, @MetNo
- CMEMS NWS-MFC workshop, 15th of February 2024, @BSH
  - Brainstorming on the future NWS-MFC
- Low-cost sensors : OpenMetBuoy-v2021 & Small Friendly Buoy

- Buoys deployment (Met Eireann) & new mooring concept (BSH)

- Impact resolving modelling
- ML/AI & DTO, as hot topics for all members
- OSPAR EIHA Expert Group on Alteration of Hydrographical Cor



- EU Projects : OLAMUR, FOCCUS, JERICO RESEARCH INFRASTRUCTURE

CHALLENGES

- Maintenance of NOOS in-kind community products & services :
  - MME (supported by CMEMS VERIBLUE tender)
  - BMA system (being renewed)
  - NOOS Data portal (no maintenance)
  - NOOS-Drift (no maintenance)

- Lack of interactions with TTs / Place of the observing community in NOOS

- Working group lead by overcommitted people

- Re-engaging with “sleeping members”

- More NOOS projects!

FUTURE LOOK

NOOS
EuroGOOS North West European Shelf Operational Oceanographic System

- NOOS strategy 2030
  - **Mission** : TO COOPERATE in the development and implementation of sustained and coordinated operational oceanography across the North West European Shelf region
  - **4 objectives :**

    1) Cooperate as NOOS community of experts
    2) Improve operational oceanographic data and information services
    3) Build NOOS community products and services
    4) Support European partners and networks

- In 2024 : A new steering committee, including a new chair

NOOS

EuroGOOS North West European Shelf Operational Oceanographic System

Activity updates MonGOOS

Vanessa Cardin
OGS

EuroGOOS GA, 21-23 May 2024

HIGHLIGHTS

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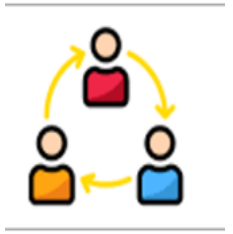
Capacity building & Promoting Marine Science:

- First meeting in Africa since the establishment of MonGOOS
- Workshop in close cooperation with EU SEAMLESS for young researchers
- New cooperation with the fisheries sector: key player in the establishment of the Tuna Observatory in the Mediterranean.
- Strengthening the presence of African countries: New member from Morocco – Association de Gestion Intégrée des Ressources – AGIR
- Participation to several conferences



Collaboration & Promoting Visibility:

- Preparation of ATLAS together with MERCATOR
- Agreement with OceanPrediction DCC for the Mediterranean and Black Sea Regional Team
- Collaboration with EuroGO-SHIP – Mediterranean & BLACK SEA
- Start collaboration with Monaco Explores within the Missions Mediterranee
- Increase downstreaming services: Civil protection, pollution risk management, decarbonization strategy

MonGOOS

CHALLENGES

Increase	• Increase link with neighboring GOOS Regions -> sharing activities information with Black Sea GOOS and GOOS Africa and increase partners contribution
Link	• Link MONGOOS strategies and objectives with Mediterranean Fisheries Management Organizations
Find	• Network participation to EU projects and programs for sustainable observations -> Existing networks mainly rely on national and short-term funding
Improve	• Improve best practices -> data sharing, interoperability, etc. among partners
Support	• Support the planning and implementation of international initiatives involving operational oceanography and promote the participation of non-EU Mediterranean countries (i.e. Decade)

FUTURE LOOK

Update the MonGOOS Strategy Plan

Election of new chairs

Link MONGOOS strategies and objectives with Mediterranean Fisheries Management Organizations

Finalize the ATLAS Survey on the forecasting modeling systems in the Mediterranean Sea

Increase scientific knowledge

Workshop on “Boost the understanding of the Mediterranean for adaptation to climate change and extreme events – Malaga 1-3 October

ICCAT connections for Climate change and fisheries (i.e. MedTunaHabitatObs)

FAO connection: Participation in the GFCM network of experts on climate change

white paper on the forecasting modeling capabilities in the Mediterranean Sea

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EuroGOOS Discussion

Moderated by Holger Brix

EuroGOOS GA, 21-23 May 2024

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EuroGOOS integration and forward-looking actions

World Café

EuroGOOS GA, 21-23 May 2024

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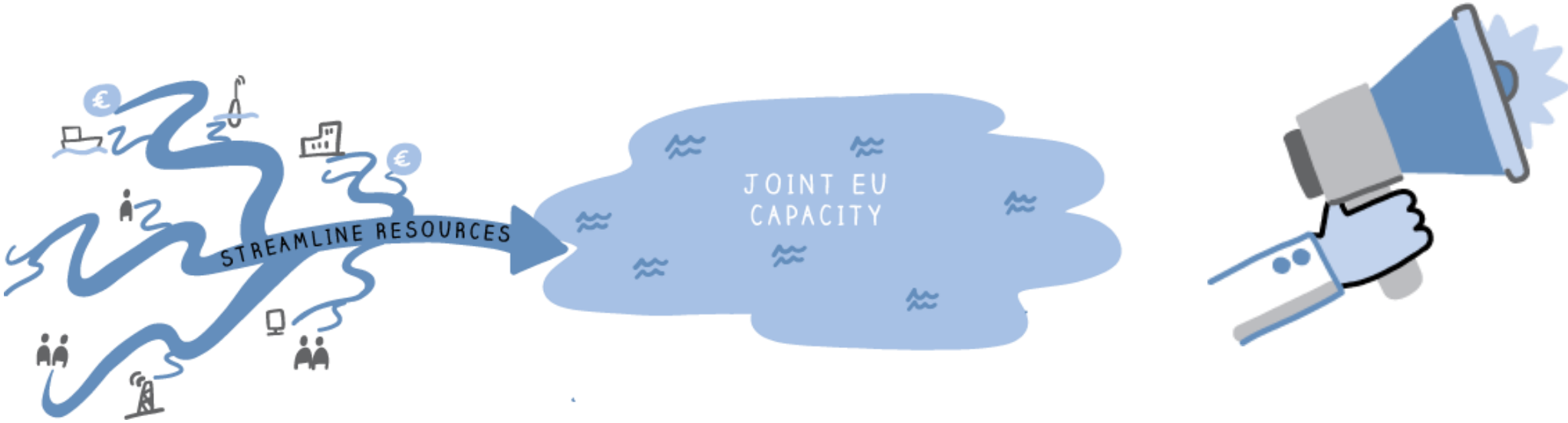

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