

Agenda Item 2: Open Session on EuroGOOS Activities

Document 2.7: TT Chairs' Reports

Status Report for the EuroGOOS General Assembly 2025 (Fixed Platforms Task Team)

Reporting period: May 2024-April 2025

1. Co-Chairs (Name and affiliation) and email

Marcello Magaldi, marcello.magaldi@cnr.it

2. List of current members, affiliation and country

- Adam Gauci, University of Malta (UM), Malta
- Agnieszka Beszczynska-Möller, Institute of Oceanology, Polish Academy of Sciences (IOPAN), Poland
- Andrew Gates, National Oceanography Centre (NOC), UK
- Angelika Renner, Institute of Marine Research (IMR), Norway
- Anne-Marie Fitzgerald, Irish Meteorological Service (Met Éireann), Ireland
- Anthony Ouba, Cyprus Marine and Maritime Institute (CMMI), Cyprus
- Arianna Orasi, Italian National Institute for Environmental Protection and Research (ISPRA), Italy
- Branko Čermelj, National Institute of Biology (NIB), Slovenia
- Carl Johan Andersson, Swedish Meteorological and hydrological institute (SMHI), Sweden
- Conall O'Malley, Marine Institute (MI), Ireland
- Daniel Hayes, Cyprus Marine and Maritime Institute (CMMI), Cyprus
- Dijana Klaric, Croatian Meteorological and Hydrological Service (DHMZ), Croatia
- Giuditta Marinaro, National Institute of Geophysics and Volcanology (INGV), Italy
- Francesco De Leo, Università di Genova (UniGe), Italy
- Holger Brix, Helmholtz-Zentrum Hereon (HEREON), Germany
- Ivan Manso, Fundación AZTI, Spain
- Jitze P. van der Meulen, Royal Netherlands Meteorological Institute (KNMI), Netherlands
- Kai Herklotz, Federal Maritime and Hydrographic Agency (BSH), Germany
- Laurent Coppola, French National Centre for Scientific Research (CNRS), France
- Marcello Magaldi, National Research Council of Italy (CNR), Italy
- Marta de Alfonso Alonso-Muñoyerro, Puertos del Estado (PdE), Spain
- Michael Fettweis, Royal Belgian Institute of Natural Sciences (RBINS), OD NATURE, Belgium
- Michel Repecaud, French Research Institute for Exploitation of the Sea (IFREMER), France
- Mustafa Yücel, Institute of Marine Sciences, Middle East Technical University (METU), Turkey
- Nikolas Flourentzou, Cyprus Marine and Maritime Institute (CMMI), Cyprus
- Nuno Zacarias, Hydrographic Institute (IH), Portugal
- Paris Pagonis, Hellenic Centre for Marine Research (HCMR), Greece
- Pieter Gurdebeke, Agency for Maritime and Coastal Services (MDK), Coastal Division, Belgium

- Raquel Somavilla, Spanish Institute of Oceanography (IEO), Spain
- Sebastiano D'Amico, University of Malta (UM), Malta
- Simo Cusi, European Multidisciplinary Seafloor and water column Observatory (EMSO ERIC)
- Sólveig Rósa Ólafsdóttir, Marine and Freshwater Research Institute (HAFRO), Iceland
- Urmas Lips, Tallinn University of Technology, Marine Systems Institute (MSI), Estonia
- Vanessa Cardin, National Institute of Oceanography and Experimental Geophysics (OGS), Italy
- Vlad Radulescu, National Institute of Marine Geology and Geoecology (GEOECOMAR), Romania
- Zacharias Siokouros, Cyprus Marine and Maritime Institute (CMMI), Cyprus

3. Objectives:

The EuroGOOS Fixed Platform Task Team aims to:

Develop Europe's Fixed Platform network and assist in the standardization of operations by sharing best practices, also in keeping with other relevant programmes at global level (such as OOI, ONC, IMOS, DONET);

Contribute to the development of the European Ocean Observing System (EOOS);

Ensure the integration of Fixed Platforms in the open and coastal ocean;

Provide European input to the OceanSites community and other relevant initiatives;

Enhance the number of biogeochemical measurements in European seas;

Ensure data availability via the EuroGOOS ROOS data portals and hence to CMEMS and EMODnet;

Deliver recommendations on data structure, format, and dissemination (interoperability of datasets) and quality control procedures;

Foster the cooperation with Research Vessel operators in terms of existing networks, projects, and other relevant coordination initiatives with large and well-equipped facilities (e.g., ERVO, OFEG and EurofleetsPlus projects);

Establish a link with DBCP (Data Buoy Cooperation Panel) and E-SURFMAR in order to coordinate activities and best practices;

Link with EuroGOOS ROOSes, Working Groups and Task Teams and relevant ongoing programmes/projects (e.g., CMEMS INSTAC, EMODnet, JERICO-RI, etc.) and Research Infrastructures (such as EMSO ERIC) to avoid duplication of efforts.

4. Relevance to the EuroGOOS Strategy:

The Fixed Platforms Task Team plans to contribute to all five strategic objectives (SOs) defined in the EuroGOOS Strategy 2030 document, namely:

SO1. Stimulate communities of practice, by:

monitoring community activities, sharing experiences both in terms of problems solved, errors made and common pending issues;

contributing and aligning to Global initiatives like the American Ocean Observatories Initiative (OOI), the Canadian Ocean Networks Canada (ONC), the Australian Integrated Marine Observing Systems (IMOS), the Japanese Dense Ocean floor Network for Earthquakes and Tsunamis (DONET) and the global Surface Ocean Lower Atmosphere Study (SOLAS).

SO2. Advocate for coordinated and integrated European ocean observing and operational oceanography, by:

integrating the observations measured by the European fixed platforms, both in the open and coastal ocean;

contributing to the EOOS Operations Committee.

SO3. Strengthen and expand partnerships, by:

establishing a link with OceanOPS in particular with the Data Buoy Cooperation Panel (DBCP) in order to coordinate activities and best practices.

SO4. Promote sustainability across the value chain of operational oceanography and ocean observing, by:

endorsing and supporting the fixed platforms operators;

assessing estimates for the annual costs to operate a typical fixed platform;

providing evidence that benefits of investing in sustained fixed platforms are higher than the costs.

SO5. Mobilise the public on the importance of the ocean and its services, by:

producing maps of the panEuropean distribution the fixed platforms together with the different Essential Ocean Variables they measure;

showcasing the multidisciplinary and interdisciplinary approach used in the fixed platforms as they combine physical, chemical and biological observations on several time scales.

5. Key achievements in the reporting period (May 2024-April 2025):

The key achievements of the Fixed Platforms Task Team were mainly in the direction of the management and community building, namely by:

consolidating the list of active members in the Task Team;

sharing experiences, knowledge and expertise by showing Members' facilities and networks with their own strengths but also highlighting the problems and the errors made;

agreeing upon a common format and a shared 20-min template presentation for the recurrent Task Team meetings.

6. Bottlenecks or obstacles during the reporting period (May 2024-April 2025):

The current main obstacles of the Fixed Platforms Task Team are:

- inability to find a second co-chair;
- heterogeneity and diversity of the platforms;
- risk of duplication of the activities;
- difficulties in providing the proper commitment due to the lack of dedicated funds.

7. Main priority areas and other major activities (2025-2026):

- Second Co-chair:
 - Sent out the call for nominations for the second co-Chair to the whole Task Team.
- Members activity:
 - Monitor member activity and increase country representation (e.g. Finland and Denmark not currently represented).
- Task Team Facility database:
 - consolidate the database using proper programming languages (SQL vs Excel)
 - attempt to collect information including sensors and essential variables measured in each fixed platform.
- Website and visibility:
 - have a map on the Task Team website harvesting on the facility database showing all EuroGOOS fixed platforms;
 - have a gallery on the Task Team website to show facility pictures.
- Sustainability:
 - host a series of seminars for assessing estimates for the annual costs to operate a typical fixed platform.
- FAIRness:
 - attend a dedicated workshop on FAIR data likely in October 2025.

8. Meetings during the reporting period (May 2024-April 2025):

During the reporting period the Task Team has met virtually four times specifically on:

- May 9, 2024;
- June 27, 2024;
- September 11, 2024;
- April 15, 2025.

9. Next planned meetings (2025-2026):

The next planned virtual Task Team meeting will take place on:

- June 27, 2025, 11am CEST
- September 17, 2025, 10am CEST
- December 17, 2025, 10 am CET
- March 18, 2026, 10 am CET

We are also trying to organize a joint in-person meeting with the EuroGOOS High Frequency Radar Task Team at the CNR-ISMAR center in Lerici in the fall, i.e. week October 6-10, 2025 (likely on October 7-8) to reduce overlapping with the MetroSea 2025 Conference in Genoa. The meeting will be funded by the ITINERIS project (EU Next-Generation Recovery Plan Programme).

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

Synergies and links with other EuroGOOS initiatives are natural as many TT members are also seating in other ROOSes, WGs and TTs, namely:

ROOSes:

Arctic: Agnieszka Beszczynska-Möller

BOOS: Urmas Lips

NOOS: Jitze P. van der Meulen, Kai Herklotz, Pieter Gurdebeke

IBI: Marta de Alfonso Alonso-Muñoyerro, Raquel Somavilla

MONGOOS: Laurent Coppola, Vanessa Cardin

WGs:

Data Management, Exchange and Quality: Marta de Alfonso Alonso-Muñoyerro

Technology Plan: Pieter Gurdebeke, Urmas Lips

TTs:

FerryBox: Paris Pagonis, Urmas Lips

Tide gauges: Arianna Orasi, Paris Pagonis, Pieter Gurdebeke

HF radars: Adam Gauci, Arianna Orasi, Marcello Magaldi

The synergies with MONGOOS and the High Frequency Radar Task Team are stronger.

11. Links and synergies with non-EuroGOOS initiatives:

- Contribution in EOOS OC
- Contribution in both EMSO and JERICO infrastructure strategies

12. Additional information:

13. Suggestions:

Status Report for the EuroGOOS General Assembly 2025 (High-Frequency Radar TT)

Reporting period: May 2024-April 2025

1. Co-Chairs (Name and affiliation) and email

- Julien Mader, AZTI, Spain, jmader@azti.es
- Lorenzo Corgnati, CNR-ISMAR, Italy, lorenzo.corgnati@sp.ismar.cnr.it

2. List of current members, affiliation and country

- Adam Gauci, University of Malta, Malta
- Alejandro Gallego, Barbara Berx, Bill Turrell, Marine Scotland Science, United Kingdom
- Ana Konstantinidou, Gerasimos Korres, HCMR, Greece
- Anna Rubio, Lohitzune Solabarrieta, AZTI, Spain
- Andres Alonso Martirena, Ismael Lopez, Maria Fernandes, Alkiviadis Kalampokis, Qualitas Remos, Spain
- Anne-Claire Bennis, University of Caen, France
- Anne-Marie Fitzgerald, Joanne Cullinane, Rosemary Lawlor, Met Éireann, Ireland
- Antonio Novellino, ETT, Italy
- Arianna Orasi, Matteo Marasco, Italian National Institute for Environmental Protection and Research (ISPRA), Italy
- Bernardo Gozzini, Stefano Taddei, Consorzio LaMMA, Italy
- Branko Cermelj, Matjaz Licer, Vlado Malacic, National Institute of Biology, Slovenia
- Bruno Zakardjian, Céline Quentin, Charles-Antoine Guérin, MIO – Univ. of Toulon, France
- Bruce Hackett, Sune Jensen, Kai Christensen, Kjetil Stiansen, Snorre Ronning, Vegar Kristiansen, Terje Borge, Norwegian Meteorological Institute, Norway
- Cariou Valérie, Franck Dumas, Stéphanie Louazel, SHOM, France
- Carlo Mantovani, Annalisa Griffa, Carlo Brandini, Bartolomeo Doronzo, CNR-ISMAR, Italy
- Carlos Barrera, Ruben Marrero, Joaquin Brito, PLOCAN, Spain
- Concepción Bueno, Generalitat de Catalunya, Spain
- Cristina González-Haro, Emili García-Ladona, Joaquim Ballabrea-Poy, Justino Martínez, Lucía Quirós-Collazos, Jordi Isern-Fontanet, Institut de Ciències del Mar (CSIC), Spain
- Daniel Conley, University of Plymouth, United Kingdom
- Emma Reyes, Guiomar López, Joaquin Tintoré, SOCIB, Spain
- Enrico Zambianchi, University of Rome La Sapienza, Italy
- Fulvio Capodici, Giuseppe Ciraolo, University of Palermo, Italy
- Garbiñe Ayensa, Pedro Montero, Intecmar, Spain
- Gisbert Breitbach, Jochen Horstmann, Johannes Schulz-Stellenfleth, Marius Cysewski, Helmholtz-Zentrum Geesthacht, Germany
- Guillaume Charria, Louis Marié, Ifremer, France
- Hezi Gildor, Institute of Earth Sciences, Israel
- José Gonzalez Fernandez, Ramiro Varela, University of Vigo, Spain
- Lucy Wyatt, Seaview Sensing, UK

- Pablo Lorente, Puertos del Estado, Spain
- Patrick Gorringe, SMHI, Sweden
- Pierpaolo Falco, Università Politecnica delle Marche, Italy
- Roberto Gomez, HELZEL Messtechnik, Germany
- Roberto Pinna Nossai, Giovanni Ficca, ARPA Sardegna, Italy
- Silvia Piedracoba Varela, CETMAR, Spain
- Stipe Muslim, Vlado Dacic, Institute of Oceanography and Fisheries, Croatia
- Vanessa Cardin, Laura Ursella, OGS, Italy
- Vânia Lima, Instituto Hidrografico, Portugal
- Vassilis Zervakis, University of the Aegean, Greece

3. Objectives:

1. To develop the European High Frequency Radar (HFR) network and assist the standardization of HFR operations, data and applications, including:

-All applications of coastal radars (surface current, wave, target detection...)

-Applications in integration with other technologies (including satellite, X-band, fixed platforms, gliders, numerical modeling...)

2. To contribute to the development of the European Ocean Observing System (EOOS)

3. To ensure the integration of HFR networks in the European Coastal Marine Service

4. To act as the European component in the global HFR community

5. To ensure data availability via the ROOS data portals

6. To provide recommendations (from operators to end-users) on:

-Data structure, format and dissemination (FAIRness of datasets)

-Quality control procedures

-Technological solutions

7. To be a framework for:

-sharing success stories and difficulties;

-improving administrative procedures, regulations at European level that can be adopted in member states;

-providing and exchanging tools (data analysis, applications...);

-promoting scientific synergies for key questions;

-filling gaps and looking for complementarity with other technologies or modeling products;

-promoting joint progress through networking (e.g. creating synergies between different local consortia).

4. Relevance to the EuroGOOS Strategy:

SO1. Stimulate communities of practice

- Community building and governance of the European HF Radar network
- Monitoring community activities
- Harmonisation and recommendation on HFR operations and data management (OBPS)
- Contribution and alignment to Global initiatives (OBPS, OCEANOPS, IOC-HFR Global network)
- Support the delivery of fit for purpose high-quality data to services
- Support joint development of new products and services

SO2. Advocate for coordinated and integrated European ocean observing and operational oceanography

- Contribution in EOOS Operations Committee
- Monitoring of the network and support for harmonised open data flow
- Active contribution for improving coordination and integration within coastal observatories

SO3. Strengthen and expand partnerships

- Identify all relevant stakeholders and develop an engagement strategy based on good practices
- Co-produce of oceanographic services and information
- Support the development of sustained Coastal Research Infrastructure
- Support the global network for connection to OCEANOPS

SO4. Promote sustainability across the value chain of operational oceanography and ocean observing

- Endorsement and support to the platform operators
- Good practices of stakeholder commitment shared in the community

SO5. Mobilise the public on the importance of the ocean and its services

- Communication material that can be integrated in wider promotion made by EuroGOOS office or Ocean Literacy WG

5. Key achievements in the reporting period (May 2024-April 2025):

1- Management and Community building / Sustainability

Integration of new networks in the operational workflow for the distribution of Near Real Time and Delayed Mode surface current datasets: HFR-ICATMAR (Catalunya), HFR-MedTIn (NW Med, French coast), HFR-GoS (Tyrrhenian Sea, Italian coast).

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

Activity of the Waves Working Group for defining the strategy for the operational production and distribution of wave data measured by HFR systems.

Maintenance of the operational monitoring of the European network.

2- HF Radar Node

Creation of a unique Python3 module for HFR data processing by merging the Python3 ROWG/hfradapy (developed by the US HFR community) and the EU_HFR_NODE_pyHFR (developed by the EU HFR Node) toolboxes.

Publication of the FAIR Implementation Profile of the European HFR community for assessing the FAIRness level of the community (https://w3id.org/np/RAXgSL7swwOsqo4RZC3OPE5FJjxBQikDFG-QwMEH0_Wb0).

3- Research & Developments, Products & Services

Monitoring R&D community activities (ZOTERO)

Renewal of the tender involving the EU HFR Node (AZTI, CNR, SOCIB) for the operational provision of HFR surface current data towards Copernicus Marine Service In Situ TAC (2025-2028).

Commitment of the EU HFR Node (AZTI, CNR, SOCIB) within the new Copernicus Marine Service In Situ TAC tender for integrating HFR-derived wave data in the Copernicus Marine portfolio (Service Evolution).

Commitment of the EU HFR Node (AZTI, CNR, SOCIB) within the new Copernicus Marine Service In Situ TAC tender for developing an AI-based Quality Control method to be applied to HFR-derived surface current data (Service Evolution project).

Seaview Sensing Ltd awarded with the “EMEC Offshore Wind Innovation Call” for its work on wind speed mapping and better single radar wave inversion.

Establishment of the connection with the satellite community: some members of the HFR Task Team are also members of the Mission Advisory Group of some ESA (European Space Agency) missions and started building a common strategy to improve the satellite and HFR data combination (e.g. gap filling, validation, etc.).

6. Bottlenecks or obstacles during the reporting period (May 2024-April 2025):

Some members have difficulties in carrying on the scheduled activities because of the lack of specific funding.

Improvable connections with other key communities (e.g. modelling) for widening the impact of HF Radar data.

Unlock HFR data potential: boost the integration of HFR data in data downstream services, engage end-users, more science-based from HFR observations, enhance the applications development, promote the development and delivery of operational added-value products.

Lack of long term funding. The HFR network managed by the University of Plymouth was decommissioned, so currently there are no HFR systems in the UK.

7. Main priority areas and other major activities (2025-2026):

MAIN PRIORITY AREAS

1- Management and Community building / Sustainability

1.1 Update ToR after receiving EuroGOOS board/office guidelines & feedback

1.2 Bianual newsletters

1.3 Organize in person meeting jointly with the EuroGOOS Fixed Platform Task Team (possibly first week of October at CNR-ISMAR lab in Lerici/La Spezia)

1.4 Progressing in the implementation of the governance / link with JERICO-RI / Integration in Multiplatform approach

2- HF Radar Node

2.1 Enhance the implementation & use of the EU HFR Node tools: Annual monitoring

2.2 Contribute in the Global Data Implementation Strategy to the HF Radar network - particularly looking at ERDDAP data services and the m2m exchange of metadata with OceanOPS

2.3 Organize dedicated online training session for HOORT (HFR Online Outage Reporting Tool)

2.4 Enhance the FAIRness of the European HFR community by mapping the HFR derived surface current data model to the SOSA ontology and generating the SensorsThing API for implementing the effective M2M accessibility to HFR datasets.

3- Research & Developments, Products & Services

3.1 Specific online meetings for Technical Groups to be launched (the Waves WG will be highly committed due to the opportunity coming from the Copernicus Marine Service In Situ TAC tender).

3.2 Engagement with the HFR operators for preparing the inventory of available wave datasets (coordinated by the Waves WG).

3.3 Effort to persuade EMEC and West of Orkney Wind Farm to invest in one HFR system in order to benefit from Seaview Sensing Ltd research.

3.4 Some Task Team members from ICATMAR partner are currently working in an EMSA project to build a search and rescue (SAR) tool to assess European Community member states during SAR emergencies. The tool is expected to ingest real time sea surface velocity fields from HF radar systems for two main purposes: as an aid in decision-making facing an emergency and for validation of forecasting results. The EMSA project has identified the EU-node HFR portal as a potential provider of operational data.

OTHER MAJOR ACTIVITIES

1- Management and Community building / Sustainability

Networking activity for the integration of new HFR networks in the operational dataflow.

Following opportunities of collaboration with existing or future Marine RIs.

Contribution to a paper on HFR systems in the Mediterranean Sea, under the coordination of OceanOPS.

2- HF Radar Node

Porting of IT architecture of the NRT workflow on hyperconvergent computing system for improving performances (postponed with respect to what scheduled last year).

Release of the unified Python3 module for HFR data management and analysis.

Endorsement of the European standard data model for HFR current data within OBPS.

3- Research & Developments, Products & Services

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

Launch of specific online meetings for Technical Groups (WAVE, DFG, Coastal Upwelling, ...).

8. Meetings during the reporting period (May 2024-April 2025):

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

HF RADAR TASK TEAM PROGRESS MEETING - Online, 10 April 2025

9. Next planned meetings (2025-2026):

JOINT HF RADAR AND FIXED PLATFORMS TASK TEAM PROGRESS MEETING at CNR-ISMAR, Lerico/Las Spezia, October 2025

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

Collaboration with DATAMEQ on FAIRness and improvement of the HFR data model.

Centralized support from the HFR Node for Regional HFR data products to be distributed in Copernicus Marine In Situ TAC.

Joint meeting with the Fixed Platform Task Team.

11. Links and synergies with non-EuroGOOS initiatives:

Contribution in EOOS OC

Contribution in JERICO infrastructure strategy

Contribution in Copernicus Marine In Situ TAC Technical WG

Contribution in MIC WG (Joint Marine In Situ Coordination Group)

Link with Global HFR network, OCEANOPS, ROW, ROWG

Collaboration with GO FAIR FOUNDATION on FAIRness and improvement of the HFR data model.

Collaboration with the Mission Advisory Groups of ESA (European Space Agency)

12. Additional information:

13. Suggestions:

Status Report for the EuroGOOS General Assembly 2025 (Argo Task Team)

Reporting period: May 2024-April 2025

1. Co-Chairs (Name and affiliation) and email

- Griet Neukermans, University of Gent, Belgium; griet.neukermans@ugent.be
- Yann-Hervé De Roeck, Euro-Argo ERIC, France; yhdr@euro-argo.eu
- Emanuele Organelli, National Research Council of Italy (CNR), Institute of Marine Sciences (ISMAR), Italy; emanuele.organelli@cnr.it

2. List of current members, affiliation and country

- Alan Berry, Marine Institute, Ireland
- Andreas Sterl, Royal Netherlands Meteorological Institute (KNMI), Netherlands
- Birgit Klein, Federal Maritime and Hydrographic Agency (BSH), Germany
- Clare Bellingham, National Oceanography Centre, UK
- Gerasimos Korres, Hellenic Centre for Marine Research, Greece
- Giulio Notarstefano, National Institute of Oceanography and Experimental Geophysics (OGS), Italy
- Kjell Arne Mork, Institute of Marine Research (IMR), Norway
- Laura Tuomi, Finnish Meteorological Institute (FMI), Finland
- Luísa Lamas, Hydrographic Institute (IH), Portugal
- Marios Josephides, Department of Fisheries and Marine Research, Ministry of Agriculture, Rural Development and Environment, Cyprus
- Pedro Velez Belchi, Spanish Institute of Oceanography (IEO), Spain
- Rita Esteves, Portuguese Institute for Sea and Atmosphere (IPMA), Portugal
- Tanya Mendes Silveira, Portuguese Institute for Sea and Atmosphere (IPMA), Portugal
- Thierry Carval, French Research Institute for Exploitation of the Sea (Ifremer), France
- Tülay Çokacar, Institute of Marine Science Management, Istanbul University, Turkey
- Violeta Slabakova, IOBAS, Bulgaria
- Waldemar Walczowski, Polish Academy of Sciences (IO-PAN), Poland

3. Objectives:

The main objective of the Task Team is to facilitate interactions between non-Euro-Argo ERIC institutes/countries and the Euro-Argo ERIC governance structure, especially the Management Board (MB). This relates to operational activities on floats such as deployment plans, cruise plans, data management and quality control, but also on capacity building by invitation to events and training workshops, as well as organisational to foster the building of national Argo programmes and the integration to Euro-Argo ERIC.

Argo-TT also builds the link of the Argo community with EuroGOOS Regional Operational Observing Systems (ROOSs), Working Groups, Task Teams and relevant ongoing observational programmes/projects.

4. Relevance to the EuroGOOS Strategy:

The international Argo Programme is an important component of the Global Ocean Observing System (GOOS), providing freely available data on the physical and biogeochemical state of the ocean sampled by a global array of autonomous profiling floats. The EuroGOOS Argo Task Team is expected to be the main forum for non-Euro-Argo ERIC institutions/countries in issues related to planning, deployment, quality control and sustainability of Argo floats in tight collaboration with the Euro-Argo ERIC bodies and members. Like all EuroGOOS Task Teams, this activity is an important building block towards an integrated end-to-end European Ocean Observing System (EOOS).

5. Key achievements in the reporting period (May 2024-April 2025):

The Task Team is mainly a forum to exchange expertise and procedures between the Euro-Argo Office, consolidated Argo users and candidate users. Though some issues have been faced during the reporting period (see details below) that have hindered the organization of regular meetings, discussion on key topics among members have been achieved:

1. The Euro-Argo office has introduced and discussed with TT members the procedure to become an ERIC member state/institute.
2. Discussion on Argo operations in Exclusive Economic Zones (EEZ) has started among members. To dive into the topic, a presentation by OceanOps planned in February 2025 has been postponed in the following reporting period.
3. Several International and European Argo-related activities have been presented to TT members to enhance the establishment of communication interfaces (e.g. with the BGC-Argo Technology Task Team).
4. The Euro-Argo office has presented the Euro-Argo ONE project that supports the overall capacity building of the ERIC to ensure the European contribution to the OneArgo design.
5. Two sessions of consecutive Management Boards of the ERIC have been opened to attendance to the Argo-TT members, who also have been invited to two preparation meetings of the global ADMT and AST meetings.

Furthermore:

6. A shared folder has been created to share useful documents and best practices related to Argo.
7. A TT mailing list has been created.

6. Bottlenecks or obstacles during the reporting period (May 2024-April 2025):

Miguel Santos (co-Chair with Griet Neukermans) resigned from his position in Summer 2024. In September 2024, Yann-Hervé De Roeck and Emanuele Organelli were appointed by the Task Team members as new co-chairs.

Joseph Nolan (EuroGOOS policy officer) changed job position at the end of 2024. In April 2025, Manuel Sala Pérez was appointed as new office support.

7. Main priority areas and other major activities (2025-2026):

Continue discussion on how to become an Euro-Argo member

Consolidate discussion on Argo operation in EEZs

Discuss Argo procurement procedures and share/present useful tools to help beginners and candidates

8. Meetings during the reporting period (May 2024-April 2025):

06/09/2024

22/11/2024

27/02/2025

9. Next planned meetings (2025-2026):

Third week of June 2025, then every 2-3 months.

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

Not developed yet. In July 2025, within the frame of the ITINERIS project, the TT's co-chair E. Organelli will lead the ITINERIS' EYES oceanographic cruise across the Central Mediterranean, during which multi-platform experiments involving Argo floats, Lagrangian drifters, gliders, ferrybox, and fixed moorings along repeated transects will be executed. Major aims of the cruise are (i) to study the relationship between biodiversity and ocean circulation from surface to deep ocean; (ii) to intercompare sensors across instruments and platforms (thus Research Infrastructures) that measure a given Essential Variable to improve data FAIRNESS; (iii) communication and training. This cruise might thus be an example/experiment to start discussion and develop synergies among the Argo TT, other EUROGOOS task teams, MonGOOS and other working groups.

11. Links and synergies with non-EuroGOOS initiatives:

- Horizon Europe EuroArgo One project: Euro-Argo ERIC scaling up for OneArgo Network Extension
- ITINERIS: The Italian Integrated Environmental Research Infrastructures System
- ERC CarbOcean: development of enhanced BGC-Argo floats with PIC and POC sensing capabilities
- BioGeoChemical-Argo Technological Task Teams
- OceanOps
- Copernicus Marine Service

12. Additional information: NA

13. Suggestions: NA

Status Report for the EuroGOOS General Assembly 2025 (FerryBox Task Team)

Reporting period: May 2024-April 2025

1. Co-Chairs (Name and affiliation) and email

Anna Willstrand Wranne, anna.wranne@voiceoftheocean.org

Andrew King, andrew.king@niva.no

2. List of current members, affiliation and country

- Andrew King, Pierre Jaccard, Kai Sørensen, Norwegian Institute for Water Research
- (NIVA), Norway
- Anna Willstrand Wranne, Voice of the Ocean (VOTO), Sweden
- Yoana Voynova, Helmholtz-Zentrum Hereon (Hereon), Germany
- Henning Wehde, Institute for Marine Research (IMR), Norway
- Alicia Blanco EuroGOOS, Belgium
- Jukka Seppala, Finnish Environment Institute (SYKE), Finland
- Bengt Karlson, Irena Draca, Madeleine Nilsson, Patrick Gorringer, Swedish Meteorological & Hydrological Institute (SMHI), Sweden
- Urmas Lips, Villu Kikas, Tallinn University of Technology (TTU), Estonia
- George Petihakis, Manolis Ntoumas, Constantin Frangoulis, Hellenic Centre for Marine Research (HCMR), Greece
- Loic Petit De La Villeon, French Institute for Ocean Science (IFREMER), France
- Kate Collingridge, Camille Visinand, Centre for Environment, Fisheries & Aquaculture Science (CEFAS), UK
- Anouk Blauw, Dutch institute for Delta Technology (Deltares), Netherlands
- Andre Cattrijsse, Thanos Gkritzalis, Flanders Marine Institute (VLIZ), Belgium
- Manuel Ruiz Villarreal, Gonzalo Gonzales Nuevo, Spanish Institute of Oceanography (IEO), Spain
- Carolina Cantoni, National Research Council Italy, Marine Sci. Institute (CNRISMAR), Italy
- Eric Delory, Oceanic Platform of the Canary Islands (PLOCAN), Spain
- Miguel Santos, Portuguese Institute for Sea and Atmosphere (IPMA), Portugal
- Kremena Stefanova, Violeta Slabakova at IOBAS, Bulgaria
- Roberto Crosti - Italian Institute for Environmental Protection and Research
- Hedy Aardema - Max Planck Institute for Chemistry
- Danilo Astorga-Gallano - Universidad Austral de Chile

3. Objectives:

- Act as the European component of the global community using ships of opportunity
- Develop links with other EuroGOOS TT/WG/ROOS, GOOS, Ocean OPS, ICOS, and other complementary activities

- Ensure the integration of FerryBox networks in the European ocean observing efforts and contribute to the development of EOOS
- Operate and promote a common European FerryBox data portal
- Ensure and enable data availability via the EuroGOOS ROOS data portals including data quality procedures and links to CMEMS and EMODnet.

4. Relevance to the EuroGOOS Strategy:

Stimulate communities of practice:

- Continued contribution to EU projects such as EuroSea, CLAIM, NAUTILUS, MINKE, AQUARIUS, LandSeaLot
- (Always) improving data flow/QC and feeding of data to CMEMS/EMODnet
- Best practices and QC of underway autonomous carbonate system measurements and automated phytoplankton observations, long-time QC-ed datasets analysed & published.

Advocate for coordinated and integrated ocean observations

- Build on links with GOOS/Ocean-OPS SOT and SOOIP and also with ICOS for FB pCO₂ observations, EuroGOOS BIO and OL WGs, ROOSs

Strengthen/expand partnerships

- Added new partner institutes to the FB-TT, several new members from existing partner institutes, new co-chair elected in 2024, training new partner institutes
- 12th FB workshop planned for October 2024 in Helsinki organized by SYKE/FMI. Next workshop planned at HCMR in 2026.

Promote sustainability and interaction with society

- Participation in proposals/projects that include FB in infrastructure projects; continued to look for ways for FB Task Team to contribute to EOOS
- Promote citizen science and ocean literacy through FB-TT activities and research and with OL WG

5. Key achievements in the reporting period (May 2024-April 2025):

SYKE/FMI, Finland:

- Operating FerryBox at two Ferrylines (FINNMAID and Silja Serenade) and at fixed station Utö Atmospheric and Marine Station
- Recent work with plankton imaging and carbonate systems, resulting in two PhD thesis: Kaisa Kraft (2024) <https://helda.helsinki.fi/items/aecccc0bb-2bde-4f68-aac8-64eb3d263754> and Martti Honkanen (2025) <https://helda.helsinki.fi/items/75d0e990-ea99-4ac2-a1ec-54411ea00833>

NIVA, Norway:

- Particulate matter/eDNA sampler demonstrations performed on MS Trollfjord and MS Color Fantasy as part of H2020 NAUTILUS and H2020 JERICO-S3 projects; ICOS station on MS Richard With is continuing with a new round of funding from the Research Council of Norway; IFCB has been operational in 2025 on MS Color Fantasy (with some parts of spring Pseudochattonella bloom detected)

SMHI, Sweden:

- FerryBox systems have been in operation on merchant vessel Tavastland, on R/V Svea and on coast guard vessel KBV181. Data has been quality controlled and submitted to Copernicus Marine Services. This applies to all Ferrybox systems in the Baltic Sea region.
- Tavastland operated by SMHI

The Ferrybox system was operational almost the whole period. The approximately weekly route covered a large part of the Baltic Sea and sometimes the Kattegat, the Skagerrak and the North Sea. Route: Lübeck – harbours in the Gulf of Bothnia – Lübeck. On occasion the ship also sailed to England. The General Oceanics pCO₂ system on R/V Svea was updated with a new sensor. Also, some bio-optical sensors were updated (phycocyanin-fluorescence and CDOM-fluorescence). Reference samples for the carbonate system were collected, partly to investigate how long samples for total alkalinity can be stored.

R/V Svea operated by SMHI

The Ferrybox system was operational almost the whole period. The route during monthly oceanographic monitoring cruises covered the Skagerrak, the Kattegat and the Baltic Proper. During fishery surveys also other nearby sea areas were sampled. In the end of year 2024 also the Gulf of Bothnia was sampled. Observations of the carbonate system were carried out in addition to basic parameters. The Imaging Flow Cytobot was used to collect quantitative phytoplankton data. Comparisons of results from microscopy and the IFCB are in progress.

KBV181 operated by Umeå University

The Ferrybox system was operated during oceanographic monitoring cruises covering the Gulf of Bothnia. More information on this may come later.

Hereon, Germany:

- SailingBox development (SOOP, <https://www.soop-platform.earth/>), presentation at 1) FB workshop, fall 2024 and at 2) 13th session of the Ship Observations Team (SOT), April, 2025 (5.7-SOT13-Monaco.pptx)

Carmaflux cruise, RV Heincke North Sea (SeaReCap project)

- M/S Magnolia Seaways and M/S FunnyGirl (Büsum-Helgoland) are operating in the North Sea (Hereon)

Cuxhaven and Tesperhude stations in the Elbe Estuary

- Recently added FerryBoxes

RV Coriolis – new research vessel at Hereon:

https://www.hereon.de/innovation_transfer/coriolis/index.php.en

- Upgraded FerryBoxes

Tesperhude Station is now also providing pCO₂ measurements (stationary, Elbe River, Hereon)

New FB acquired for Cuxhaven Station

- FerryBox Task Team-ICOS cooperation:

Cuxhaven Station (stationary, Elbe Estuary, Hereon), added methane (CH₄) measurements in 2025, within BMBF ITMS CoastGEM project

TalTech, Estonia:

Tallinn-Helsinki ferrybox line is in operation;

ii. Ferrybox measurements are part of the national marine monitoring program;

iii. participation in the FerryBox workshop in Helsinki, 1-2 October 2024, presentations about long-term data analysis for revealing multi-scale variability in the surface layer and using ferryboxes to collect and analyze eDNA samples;

iv. publication of a paper on CO₂ and CH₄ variability in the surface layer and fluxes based on research vessel based ferrybox measurements (Lainela et al., 2024; <https://doi.org/10.5194/bg-21-4495-2024>)

6. Bottlenecks or obstacles during the reporting period (May 2024-April 2025):

- lower funding for operations, no funding for replacement of North Sea routes (example: Lysbris Seaways route).
- lack of funding for reinstalation and maintenance of the FB systems.

7. Main priority areas and other major activities (2025-2026):

Ferrybox TT:

Update of the Ferrybox White Paper from 2017

Peer review paper on Ferrybox measurments and case studies from the partners

SMHI:

A well described data flow for data on phytoplankton abundance and diversity was established. It is based on data from the Imaging Flow CytoBot operated as part of the FerryBox system on R/V Svea. The work was largely funded by Digital Twin Ocean BioFlow through EMODnet. Quantitative phytoplankton data are sored and quality controlled at the Swedish National Oceanographic Data Centre at SMHI and are made available at GBIF (Global Biodiversity Infrastructure) and is, or will be, available at EMODnet biology – OBIS (Ocean Biodiversity Information System). The system includes a software package "iRfcb" available open access.

Intercalibration of bio-optical sensors at the SMHI oceanographic laboratory in Gothenburg in October 2024. This was carried out in cooperation with NIVA (Kai Sørensen) and the Voice of the Ocean Foundation. Sensors for chlorophyll fluorescence and phycocyanin fluorescence were

calibrated with phytoplankton cultures from the Gothenburg University Marine Algal Culture Collection (GUMACC).

NIVA:

New FerryBox installation planned for MS Color Hybrid (northern Skagerrak; 4 crossings/day), completion by summer 2025; New HEurope project XTREMOLIFE will be utilizing expedition ship FerryBoxes in the Antarctic with fieldwork planned for 2026

Hereon:

FerryBox installation in planning on RV Akademik (IO-BAS) Black Sea, with support from Helmholtz SeaReCap project (IO-BAS - Hereon collaboration)

HCMR:

Main priority areas: reactivation and ensuring sustainability of the system, upgrade of the system

TalTech:

- analyzing research vessel ferrybox data (collected since 2013);
- application of new methods/analyses (pH, eDNA, microlitter)

Discussions about including ferrybox data in the national digital twin platform (pilot in 2025-2027);

- Contributing to FerryBox white paper update and review paper;
- Using the results from ferrybox data analysis in a review paper about submesoscale variability in the Baltic Sea.

8. Meetings during the reporting period (May 2024-April 2025):

The 12th FerryBox Workshop 1-2 Oct 2024 in Helsinki and adjacent two additional metrology-related sessions by MINKE project, targeting especially young and early career marine scientists and technical staff working on FerryBox observations.

<https://www.finmari-infrastructure.fi/events/ferrybox-workshop-october-2024/>

Organising an annual Baltic FerryBox calibration workshop for fluorometers in Feb 2025 (participation from Finland, Estonia, Germany Sweden)

Macovei, VA, N Lefèvre, D Diverres, N Kinski, YG Voynova. At-sea intercomparison of a membrane-based pCO₂ sensor and a traditional showerhead equilibrator system. 2024 ICOS Science Meeting, Versailles, France

Rewrie, LCV, B Baschek, JEE van Beusekom, A Körtzinger, G Ollesch, YG Voynova. Recent inorganic carbon increase in a temperate estuary driven by water quality improvement and enhanced by droughts. 2024 ICOS Science Meeting, Versailles, France

Ocean Optics, Gran Canaria, Spain, 7-11 October 2024

International Conference on Arctic Research and Planning IV (ICARP IV) - FerryBoxes in the Arctic in oral presentation;

ALSO Aquatic Sciences Meeting 2025 – Canadian Arctic land-ocean interaction oral presentation; Ocean Optics 2024 – IFCB poster presentation

SOT13

- presentation of the Ferrybox TT

- Presentation of FB status (SOOP), Greek National Report

9. Next planned meetings (2025-2026):

EGU 2025

Ferrybox Workshop at HCMR, 2026

Annual bioptical workshop at SYKE, 2026

Ocean Optics in Glasgow, UK, 22-27 February 2026

Ocean Sciences, 2026

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

- Contributed to Ocean Literacy Working Group survey/paper and Ocean Literacy book chapter
- The EuroGOOS Biological Observations Working Group (BLOWG)
- Baltic Operational Oceanographic System (BOOS)
- North West Shelf Operational Oceanographic System
- NOOS, BSH, CMEMS to report data – discussions within LandSeaLot HE project

11. Links and synergies with non-EuroGOOS initiatives:

AQUARIUS (HE, 2024-2028)

LandSeaLOT (HE, 2024-2028)

SOOP (Helmholtz Association, 2023-2026)

CoastGEMs (BMBF Germany, 2024-2027)

TESA (Germany, cooperation agreement, 2024-2025),

SeaReCap Phase 2 (Helmholtz Association, 2024-2026)

ICOS Integrated Carbon Observation System

ICES-IOC Working Group on Harmful Algal Bloom Dynamics – HAB early warning systems

IOC-FAO Intergovernmental Panel on Harmful Algal Blooms – Task Team on the Early Detection, Warning, and Forecasting of HAB Events

OceanOPS, WMO: UN Ocean Decade Monaco Missions & SOOP: application of SailingBox

JPI Oceans – Knowledge Hub Ocean carbon capacities: participating in 2 working groups

12. Additional information:

13. Suggestions

Status Report for the EuroGOOS General Assembly 2025 (Gliders Task Team)

Reporting period: May 2024-April 2025

1. Co-Chairs (Name and affiliation) and email

- Carlos Barrera / PLOCAN / carlos.barrera@plocan.eu
- Pierre Testor / LOCEAN-IPSL / testor@locean-ipsl.upmc.fr

2. List of current members, affiliation and country

- Wieter Boone, Flanders Marine Institute (VLIZ), Belgium
- Dan Hayes, Cyprus Marine and Maritime Institute (CMMI), Cyprus
- Taavi Liblik, Tallinn University of Technology (TalTech), Estonia
- Kimmo Tikka, Finnish Meteorological Institute (FMI), Finland
- Laurent Coppola, Sorbonne Université, France
- Corentin Guyot, French Research Institute for Exploitation of the Sea (IFREMER), France
- Antony Bosse, Aix-Marseille University, France
- Lucas Merckelbach, (HZG), Germany
- Evi Bourma, Hellenic Centre for Marine Research (HCMR), Greece
- Paul Gaughan, Marine Institute (MI), Ireland
- Tal Ozer, Israel Oceanographic and Limnological Research (IOLR), Israel
- Ayah Lazar, Israel Oceanographic and Limnological Research (IOLR), Israel
- Jacopo Chiggiato, National Research Council (CNR) ISMAR, Italy
- Elena Mauri, National Institute of Oceanography and Experimental Geophysics (OGS), Italy
- Marck Smit, Royal Netherlands Institute for Sea Research (NIOZ), Netherlands
- Peter Thijsse, Marine Information Service (MARIS), Netherlands
- Ailin Dale Brakstad, University of Bergen (UiB), Norway
- Ilker Fer, University of Bergen (UiB), Norway
- Joao Tasso, Underwater Systems and Technology Laboratory (LSTS-FEUP), Portugal
- Ana Martins, Institute for Sea and Atmosphere (IPMA), Portugal
- Inês Martins, Instituto Hidrografico (IH), Portugal
- Benajamin Casas, SOCIB, Spain
- Angel R. Santana, Universidad de Las Palmas de Gran Canaria (ULPGC), Spain
- Anna Rubio, AZTI, Spain
- Raquel Somavilla, IEO-CSIC, Spain
- Bastien Queste, University of Gothenburg (GU), Sweden
- Matthew Palmer, National Oceanography Centre (NOC), United Kingdom
- Estelle Dumont, Scottish Association for Marine Science (SAMS), United Kingdom
- Justin Buck, British Oceanographic Data Centre (BODC), United Kingdom
- Emma Slater, British Oceanographic Data Centre (BODC), United Kingdom
- Mark Hebden, British Oceanographic Data Centre (BODC), United Kingdom
- Alvaro Lorenzo, National Oceanography Centre (NOC), UK

3. Objectives:

- To support and assist the coordination framework of the European glider activities.
- Assist the standardization of glider operations, data and applications.
- To contribute to the EOOS strategy development and improvements, in close cooperation with EuroGOOS Secretariat, ROOS, WGs and TTs.
- Ensure data availability for the Copernicus Marine Environment Monitoring Service (CMEMS), via the EuroGOOS regional data portals (ROOS) in particular.
- Generate and promote Best Practices in applications, technologies, data management, training and scientific development (tools/products and services).
- To promote and consolidate synergies and collaborative frameworks within a Quadruple Helix approach.
- Jointly contribute to Global and EU programs, RIs and projects, Ris.

4. Relevance to the EuroGOOS Strategy:

SO1 - Promote and stimulate community of practice.

- Community building and governance of the EU glider network.
- To monitor community activities at a national level perspective.
- Harmonization and recommendations on glider operations, data management, etc. (OBPS, etc.)
- To contribute on the alignment with international and global glider initiatives (OceanGliders, EOOS, OASIS, etc.)
- To support the delivery of f-f-p high quality and sustained data to services and products.
- Support joint developments of new products and services.

SO2 - Advocate for coordinated and integrated EU ocean-observing and operational oceanography.

- To contribute in EOOS Operations Committee.
- To monitor the network activities and support harmonized data (FAIR) flow.
- Active contribution for improving synergies and coordination actions with WG and TT for EuroGOOS and non-EuroGOOS initiatives.

SO3 - Strengthen and expand partnerships.

- Identify and engage leading partners and stakeholders through a good-practices strategy.
- Co-produce oceanographic services and information.
- Support the development of sustained long-term coastal and open-ocean multi-platform-based observatories.
- Support the global network connections from local to national domain.

SO4 - Promote and support across the value chain of operational oceanography and ocean observing.

- Endorsement and support to glider operators.
- Good practices and stakeholder commitment shared in the community.

SO5 – Raise awareness to the society on the importance of the ocean and related services.

- Communication and promotion material to be integrated in wider promotion made by EuroGOOS office or specific WGs such Ocean Literacy.
- Dissemination activities in forums with different scope in order to bring the message to the wider and diverse audiences in order to get their commitment somehow.

5. Key achievements in the reporting period (May 2024-April 2025):

- Capacity Building and engagement of new EU institutions/teams operating gliders i.e. IH (Portugal), NTNU (Norway), IEO-CSIC (Spain), etc.
- Cooperation and synergies with EU-flagship projects - (TechOceans, Mission Atlantic, AMRID, AQUARIUS-RI etc.)
- GROOM-RI Policy Brief released “GROOM -RI: A coordinated infrastructure for Marine Autonomous Systems, at the service of science and the blue economy”.
- Increase OceanGliders activity across EU framework.
- Strength synergies and cooperation with international programs and strategies (OceanGliders, OceanOps, etc.) and regional coordination initiatives (UG2). Webinar Series in partnership with UG2.
- Inclusion of new underwater gliders/USV technologies into the EU glider task force.
- Improvements in data flow/quality control through main data aggregators.
- Dissemination activities through the main science and technology forums (OSM, UG2, OCEANS IEEE-MTS, UN Decade, Underwater Intervention, Underwater Defense Technology, Ocean Business, EOOS Forum, etc.).
- Spanish national glider task force moves forward as CEOG and IEO-CSIC procures new glider units.
- 14th Glider School (October 2024) - <https://gliderschool.eu/>
- IUGC 2024 successfully held in Gothenburg (10-14 June 2024) - <https://www.iugc2024.com/>
- GTT annual survey is ongoing (expected outcomes to be presented at the GA in May 2025).

6. Bottlenecks or obstacles during the reporting period (May 2024-April 2025):

- Clarification of the GTT contribution into the “EU/International glider ecosystem”
- Improve 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.

7. Main priority areas and other major activities (2025-2026):

- 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.
- Clarify the role of each European glider initiatives (GROOM RI, EuroGOOS GTT, EGO), how they connect each other and how they work together (shared services).

- 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.
- Generate and promote Standardization and Best Practices in applications, operations, technologies, data management, and scientific development.
- Build a strategy with other European entities to reinforce the presence of European in the OceanGliders steering team.
- Contribute to flagship EU projects (AMRIT, AQUARIUS, etc.) and international programs (OceanGliders, UG2, SOVA, OASIS, etc.) and initiatives.
- Build a EU glider training strategy.

8. Meetings during the reporting period (May 2024-April 2025):

- December 2024 (Madrid, Spanish national task force - CEOG).
- June 2024 (Gothenburg, IUGC 2024).

9. Next planned meetings (2025-2026):

- December 2025 (Madrid, CEOG).
- (TBC) GTT Annual Meeting 2025.
- June 2026 (Tampa, UG2)

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

- All ROOS currently have glider presence and contribution.
- All WG currently have glider involvement somehow, highlighting Biological, Coastal, Science and Technology.

11. Links and synergies with non-EuroGOOS initiatives:

OceanGliders, GOOS, UG2, SOVA, EMSO, REPMUS, ICOS, OASIS (UN Decade Endorsed Program), CORIOLIS, EOOS OC, BIOGLIDER, JERICO-RI, MINKE, Mission Atlantic, TechOceans, AQUARIUS-RI, OCEANOPS, AMRID, CMEMS, EMODNet, etc.

12. Additional information:

Open Call for a new co-chair member still pending.

13. Suggestions:

N/A

Status Report for the EuroGOOS General Assembly 2025 (Tide Gauge Task Team)

Reporting period: May 2024-April 2025

1. Co-Chairs (Name and affiliation) and email

- Elizabeth Bradshaw, British Oceanographic Data Centre, UK, elizb@noc.ac.uk
- Angela Hibbert, National Oceanography Centre, UK, anhi@noc.ac.uk

2. List of current members, affiliation and country

- Andy Matthews, National Oceanography Centre, UK
- Anna Gyldenfeldt, Bundesamt für Seeschifffahrt und Hydrographie (BSH), Germany
- Antonio Novellino, ETT Solutions, Italy
- Arianna Orasi, Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA), Italy
- Athanasia Papapostolou, Hellenic Centre for Marine Research (HCMR), Greece
- Begona Perez Gomez, Puertos del Estado, Spain
- Deirdre Fitzhenry, Marine Institute, Ireland
- Khalid El Khalidi, Chouaib Doukkali University, Morocco
- Endri Qershija, State Authority for Geospatial Information (ASIG), Albania
- Fabio Raicich Consiglio Nazionale delle Ricerche (CNR) Istituto di scienze Marine, Italy
- Fernando Manzano, Puertos del Estado, Spain
- Francisco Hernandez, Vlaams Instituut voor de Zee (VLIZ), Belgium
- Daniele Galliano, Joint Research Centre (JRC), Italy
- Georgios Sylaios, Democritus University of Thrace, Greece
- Gerald Dias, Instituto Hidrographico, Portugal
- Guy Westbrook, Marine Institute, Ireland
- Guy Woppelmann, Univ La Rochelle, France
- Ivan Haigh, Univ Southampton, UK
- Ivica Vilibic, Ruđer Bošković Institute, Croatia
- Kelda Low, Environment Agency (EA), UK
- Laurent Testut, La Rochelle Université, France
- Leonidas Perivoliotis, Hellenic Centre for Marine Research (HCMR), Greece
- Luisa Lamas, Instituto Hidrographico, Portugal
- Marco Picone, Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA), Italy
- Marie Dauget, SHOM, France
- Marinos Charalampakis, National Observatory of Athens, Greece
- Marta Marcos, Universitat de les Illes Balears, Spain
- Marta de Alfonso Alonso Munoyerro, Puertos del Estado, Spain
- Martin Verlaan, Deltares, Netherlands
- Nikos Kalligeris, National Observatory of Athens, Greece
- Dominique Obaton, Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER), France
- Oda R. Ravndal, Norwegian Mapping Authority, Norway
- Patrick Gorringer, Swedish Meteorological and Hydrological Institute (SMHI), Sweden
- Paul Swinburne, Environment Agency (EA), UK

- Phil Thompson, University of Hawaii, USA
- Philip Staley, Environment Agency (EA), UK
- pieter.gurdebeke@mow.vlaanderen.be
- Per Knudsen, Danmarks Tekniske Universitet (DTU), Denmark
- Sara Morucci Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA), Italy
- Stephane Tarot, Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER), France
- Thomas Hammarklint, Swedish Maritime Administration, Sweden
- Vibeke Huess, Danish Meteorological Institute (DMI), Denmark

3. Objectives:

The EuroGOOS Tide Gauge Task Team will address the following objectives:

1. As a European Tide Gauge Network assist in the standardization of tide gauge operations, data processing and management and data applications of a multi-purpose network, based on GLOSS and ICG/NEAMTWS and other user requirements, and fulfilling the following basic needs:

- Sea level trends, variability and climate change
- Sea level related hazards warning systems (storm surge, tsunamis)
- Validation of numerical models and forecasts
- Comparison with satellite altimetry and other sources of geodetic data
- Determination of coastal Mean Dynamic Topography to contribute to the unification of different height systems
- Fulfil the requirements of operational users.

2. Contribute to the development of the European Ocean Observing System (EOOS) with the identification of duplication and/or gaps on the geographical coverage and on the existing sea level data portals in Europe.

3. Work with other EuroGOOS entities (ROOS, task teams and working groups) towards internal integration e.g. sharing best practices, developing common standards and processes, facilitating product development etc.

4. Promote the integration of tide gauge networks in ongoing and future European initiatives and identify relevant products required by sea level users.

5. Act as a link between national agencies of tide gauge operators and data providers, the ROOSs data portals and as the European component in GLOSS.

6. Promote research and tests of new sea level monitoring technologies.

7. Promote the recovery of historical data and related studies relevant for Europe including North African countries.

8. Acknowledge existing data portals and ensure data availability according to the different applications. Assure delivery of tide gauge data to the ROOS data portals.

9. Promote the co-localization and use of additional instrumentation relevant for sea level applications such as ocean bottom pressure sensors, land movement monitoring stations (GNSS), atmospheric parameters, or tsunami sensors.

10. Ensure the implementation of new requirements on sea level quality control and data processing.

11. Provide recommendations (from operators to end-users) on:

- Data structure, format and dissemination (interoperability of datasets)
- Quality control procedures
- Validation procedures
- Technological solutions
- Complementary instrumentation (through interaction with other groups, e.g. GNSS).

12. Collaborate with the satellite altimetry community for a better understanding of altimeter and tide gauge data calibration.

13. Be a framework for:

- collation of a single database describing the in-situ monitoring equipment and its status across Europe, ensuring conformance with an internationally agreed data policy and adoption of a common citation.
- sharing success stories and difficulties including analysis of the funding strategies and importance placed on this work in the different countries
- providing and exchanging open source tools (data analysis, applications...)
- promoting the installation and/or inclusion of further stations from Northern Africa
- promoting scientific synergies for key questions

4. Relevance to the EuroGOOS Strategy:

The critical and increasing need for tide gauge data, based on recent coastal disasters and the projections of sea level changes in the future, has yielded the establishment in 2015 of this task team, that has the role of bringing together the European and adjacent seas tide gauge community by: compiling information on existing sea level networks, sharing expertise and experience across this community, providing expertise on tide gauge observations to operators and scientists and supporting national and regional sea level initiatives to maintain a permanent and sustainable system. The initiative is not trying to replicate existing efforts but fostering collaboration, scientific and technological development and by this enhancing the European and adjacent countries capacity, under the new umbrella of international programs of data exchange such as CMEMS, as well as the existing ones such as the Global Sea Level Observing System (GLOSS) or the Permanent Service for Mean Sea Level (PSMSL). Our objectives are aligned with the EuroGOOS strategy and will promote mutual co-operation wider EuroGOOS entities e.g. other task teams, working groups and Regional Ocean Observing Systems (ROOS).

5. Key achievements in the reporting period (May 2024-April 2025):

We reviewed our key activities in March 2024 and have made progress on several of the items (reported below).

In January 2024 an email was circulated regarding setting up a tide gauge test site by Puertos del Estado to compare tide gauge technologies. The task team has since contributed to the setting up of a sensor comparison working group by the GLOSS Group of Experts, formalised at the GLOSS meeting in March 2025.

Another of our key activities was to establish a Tide Gauge Metadata Inventory/Data Portal working group to look at metadata provisions and data portal comparisons. This has been an ongoing task and has now become part of the data management working group, set up in March 2025 at the GLOSS Group of Experts meeting.

We would like to thank Claire Fraboul (SHOM, France) for their contribution to the tide gauge task team as co-chair. Claire stepped down in September 2024 and we will be looking for nominations for a replacement in our next annual meeting.

TGTT members have continued to contribute to the IAPSO initiative to evaluate tidal analysis and prediction methods and a meeting report was circulated in October 2024.

Finally, we aimed to establish a GNSS-IR Special Interest Group for best practice in collaboration with the Global Sea Level Observing System. At the GLOSS Group of Experts meeting in March 2025, it was decided that initially this group would be part of the general sensor comparison working group that was to be established.

Finally, we have expanded our membership, including new members from Morocco, which will prove very beneficial to the group.

6. Bottlenecks or obstacles during the reporting period (May 2024-April 2025):

We had identified the need to hold a data quality control workshop but have struggled to identify sources of funding to help organise this event.

7. Main priority areas and other major activities (2025-2026):

- We will contribute to the development of a new GLOSS implementation plan
- We will contribute to the WMO Integrated Global Observing System (WIGOS) Rolling Review of Requirements (RRR), which is a structured process that supports the development of global observing systems
- We will contribute to the update of the GLOSS GOOS network specification sheets
- We will encourage our members to contribute to the IAPSO best practice document on tidal analysis and prediction methods
- We will participate in the new GLOSS working groups on data recovery, sensor comparison, and quality control and data management

8. Meetings during the reporting period (May 2024-April 2025):

Members of the tide gauge task team attended the following meetings:

- EuroGOOS DATAMEQ (November 2024, January 2025)
- GLOSS Group of Experts (March 2025). Several members presented network reports <https://goosocean.org/event/4663>
- GOOS16th Observations Coordination Group (April 2025)

9. Next planned meetings (2025-2026):

- Annual TGTT meeting (May 2025)
- Annual TGTT meeting (Summer 2026)

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

We have members who act as ambassadors to several of the ROOS, and are working on identifying people who could join the task team from the remaining ROOS.

We are working with other EuroGOOS task teams and Working Groups to identify low cost sensors/accessible technologies/accessible ocean observing technology

11. Links and synergies with non-EuroGOOS initiatives:

- TGTT members are also members of the newly established GLOSS working groups on data recovery, sensor comparison, and quality control and data management
- TGTT members contributed to the GOOS OCG metadata survey (March 2025)
- TGTT members have worked with Copernicus Marine Service to improve sea level data products (November 2024)

12. Additional information:

At the 18th session of the GLOSS Group of Experts, Begoña Pérez, former chair of the EuroGOOS TGTT was voted in as chair of GLOSS.

13. Suggestions: