



The banner features a dark blue background with three circular inset images: a coastal radar station on a hill, a landscape view, and a radar data visualization. A white stylized wave graphic is on the right side.

EUROPEAN HF RADAR COMMUNITY

Overseeing the day-to-day
management of HFR data in Europe

Taking the pulse of the global ocean

 **HF Radar**
EuroGOOS Task Team

 **European
HFRadar
Node**

#EuroGOOSTaskTeam



Welcome to the #6 European HF Radar Task Team Newsletter

The European HF Radar Task Team helps coordinate the activities around the development and use of this coastal technology ([more info here](#)).

We are happy to share with you the latest news and events since August 2022.

Sustainability

“By seamlessly integrating Europe's diverse oceanic technology and thematic networks, we're paving the way for a unified, cutting-edge observatory system that promises to impact marine research and conservation across the continent.”

EuroSea, 2023

News flash

- 😊 **NEW WEBSITE.** The European HF Radar Node is working on a website to provide information about networks, links to useful tools for the community, and much more! The web is under construction and can be found here: <https://www.hfrnode.eu>
- 😊 **NEW APPOINTMENT** of Guiomar López as the head of the HFR_IBIZA facility, at SOCIB.
- 😊 **NEW DOI** for the Copernicus Marine In Situ-Global Ocean- in-situ Near real time observations of ocean currents
- 😊 **NEW MSc THESIS.** Last June, Giora Hasson, from the University of Tel Aviv, completed a MSc dissertation entitled: HF-radar remote sensing of ocean surface current shear using first order Bragg peaks. Congratulations!
- 😞 Cyber attack to HFR sites might be the reason of a higher data consumption
- 😊 **NEW HFR SITE** already installed in Fedje. Check out more info in the Snapshot stories.
- 😊 **NEW HFR SITE** already installed in the Catalanian coast. Check out more info in the Snapshot stories.
- 😊 **NEWS FROM ACROSS THE POND** (IOOS Bi-weekly):
 - **RFI:** IOOS is requesting information regarding desired features in the upcoming replacement and upgrade of the IOOS Surface Currents Program's "HFRNet" HF-radar data assembly center. Please direct all questions and responses to Senior Contract Specialist Alice Park (alice.park@noaa.gov). **Deadline: 15 October 2023**
 - **NETWORK RESTORATION.** Congratulations to AOOS's University of Alaska Fairbanks HF-radar team on the restoration of their CODAR SeaSonde® at Shishmaref, Alaska!
 - **NEW RADARS ADDED TO GCOOS.** Yucatán Channel HF Radars added to GCOOS [HF-Radar Data Page](#): Congratulations to the Understanding Gulf Ocean Systems (UGOS) and GCOOS teams!
 - **HFR TRAINING.** CODAR Ocean Sensors will be holding a Fall 2023 SeaSonde HF-Radar Basic Training event December 5–8, 2023 at their headquarter. Feel free to email trainingregistration@codar.com, should you have any questions.
 - **IOOS HF-RADAR IS A MATURE NETWORK.** Last June, the IOOS HF-Radar National Network was accepted as a mature network within the Global Ocean

Open and forthcoming calls

- **COST Action proposals:** Participants are invited to submit COST Action proposals contributing to the scientific, technological, economic, cultural or societal knowledge advancement and development of Europe. **Deadline: 25 October at 12:00 (CET).**
- **HORIZON-MSCA-2023-COFUND-01** to co-finance new or existing doctoral programmes and postdoctoral fellowship schemes, aiming to spread the MSCA's best practices. **Deadline: 16 February 2024.**
- **HORIZON-MSCA-2023-DN-01** to train entrepreneurial, innovative and resilient doctoral candidates, able to face current and future challenges and to convert knowledge and ideas into products and services for economic and social benefit. **Deadline: 28 November 2023.**
- **HORIZON-MSCA-2023-SE-01** to promote innovative international, inter-sectoral and interdisciplinary collaboration in research and innovation through exchanging staff and sharing knowledge and ideas at all stages of the innovation chain. **Deadline: 28 February 2024.**
- **HORIZON-MSCA-2024-NCP-01** to facilitate the trans-national co-operation between National Contact Points (NCPs) for the MSCA. **Deadline: 4 September 2024.**
- **MOBDOL-2023-12.** MSCA Croatian Science Foundation, the leading body for financing Croatian research activities, opened the Call for Proposals "Mobility Programme – Inbound Mobility of Senior Research Assistants". Any researcher from EU and Associated Countries (to the Horizon programme) who obtained their PhD in the last 7 years (and who was not working in Croatia in the last two years) is eligible to apply to this call. **Deadline: 1 December 2023**

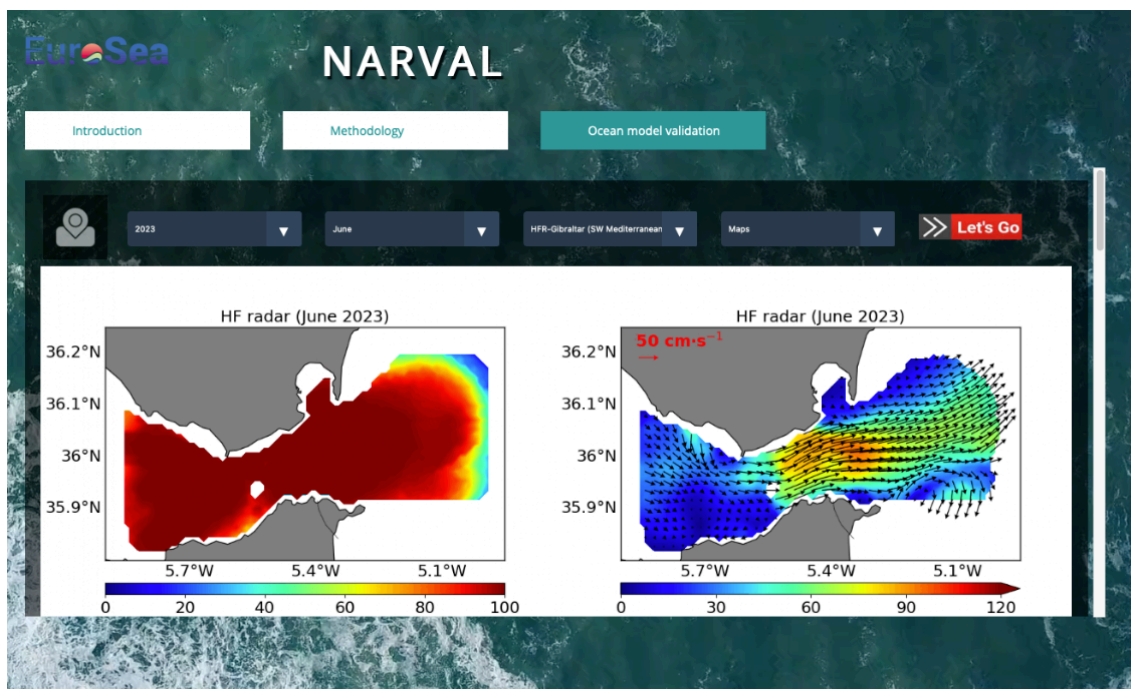
Job & internship opportunities

- **POSTDOC:** The 2nd postdoctoral call SMASH is open to researchers around the world who are interested in developing cutting-edge machine learning applications for science and humanities. **Deadline: 27 October**
- **OPEN POSITION:** technical officer on HF radar. IMOS Ocean Radar Facility. The University of Western Australia. Deadline: 11:55 PM AWST on Sunday, **15 October 2023**
- **OPEN POSITION:** Research fellowship on the analysis of in situ and remote oceanographic data collected in the framework of the project 3D-Pathways II (CALYPSO- ONR Initiative). Institute of Marine Sciences of the National Research Council (CNR-ISMAR, Italy). **Deadline: 5 November**
- **OPEN POSITION:** Research position on ocean modelling and data assimilation. SOCIB. **Deadline: open until filled**
- **POSTDOC:** Fine-Scale ocean currents from integrated multi-platform experiments and numerical simulations: contribution to the new SWOT satellite mission (FaSt-SWOT). **Deadline: open until filled**

Products and Services

JERICO-RI Vision: By 2030, the JERICO-RI will be the European gateway to long-term scientific observations and related services for European coastal marine systems at the convergence between the land, open ocean, and atmosphere; empowering European research excellence and expertise for the benefit of society.

- **NARVAL.** The first version of this tool to validate regional circulation models with HF radar-measured surface currents is now online! It allows validation of 4 circulation models (WMOP and MED for the Mediterranean; IBI y GLOBAL for the Atlantic) against data from 7 HF radars deployed along the Spanish coast.



Screenshot of the NARVAL validation tool showing the data availability (%), left) and the mean surface current measured by the HFR-Gibraltar during June 2023

Ongoing Research and Opportunities

“Research is formalized curiosity. It is poking and prying with a purpose”

(Zora Neale Hurston)

HFR recent/new publications

- **Alvarez-Fanjul, E., Pérez Gómez, B., de Alfonso Alonso-Muñoyerro, B., Lorente, P., García Sotillo, M., Lin-Ye, J., Aznar Lecocq, R., Ruíz Gil de la Serna, M., Pérez Rubio, S., Clementi, E., Coppini, G., García-León, M., Fernandes, M., García Valdecasas, J., García Valdecasas, J. M., Santos Muñoz, D., Luna Rico, M. Y., Mestres, M., Molina, R., Tintoré, J., Mourre, B., Masina, S., Mosso, C., Reyes, E., Santana, A.** Western Mediterranean recordbreaking storm Gloria: An integrated assessment based on models and observations. En: Copernicus Ocean State Report, Issue 6, Journal of Operational Oceanography, 15:sup1, s159–s167; doi:10.1080/1755876X.2022.2095169, 2022
- **Bendoni, M., Moore, A., Molcard, A., Magaldi, M., Fattorini, M. and Brandini, C.**: 4D-Var data assimilation and observation impact on surface transport of HF-Radar derived surface currents in the North-Western Mediterranean Sea, Ocean Model., 184, 102236, doi: 10.1016/j.ocemod.2023.102236, 2023.
- **Borzi, A. M., Minio, V., De Plaen, R., Lecocq, T., Alparone, S., Aronica, S., Cannavò, F., Capodici, F., Ciraolo, G., D’Amico, S., Contraffatto, D., Di Grazia, G., Fontana, I., Giacalone, G., Larocca, G., Lo Re, C., Manno, G., Nardone, G., Orasi, A., Picone, M., Scicchitano, G. and Cannata, A.**: Integration of microseism, wavemeter buoy, HF Radar and hindcast data to analyze the Mediterranean cyclone Helios, EGU sphere, 2023, 1–49, doi:10.5194/egusphere-2023-1212, 2023.
- **Cahl, D., Voulgaris, G. and Leonard, L.**: A Comparison of Beamforming and Direction Finding Algorithms (Beamscan and MUSIC) on a Linear Array HF Radar in a Medium to Low Wave Energy Environment, J. Atmos. Ocean. Technol., 40(2), 191–218, doi: 10.1175/JTECH-D-22-0005.1, 2023.
- **Cook, T. M., Terrill, E. J., Garcia-Moreno, C. and Merrifield, S.**: Observations of Ionospheric Clutter at Near Equatorial High Frequency Radar Stations, Remote Sens., 15(3), doi:10.3390/rs15030603, 2023.
- Copernicus Ocean State Report, issue 6, Journal of Operational Oceanography, 15:sup1, 1-220, doi: 10.1080/1755876X.2022.2095169, 2022
- **Dey, S. and Sil, S.**: Spatio-temporal variability of coastal upwelling using high resolution remote sensing observations in the Bay of Bengal, Estuar. Coast. Shelf Sci., 282, 108228, doi: 10.1016/j.ecss.2023.108228, 2023.
- **El Serafy, G., Mészáros, L., Fernández, V., Capet, A., She, J., Sotillo, M. G., 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.:** EuroGOOS roadmap for operational coastal downstream services, *Front. Mar. Sci.*, 10, doi:10.3389/fmars.2023.1177615, 2023.
- **Fahlbusch, J. A., Czapanskiy, M. F., Calambokidis, J., Cade, D. E., Abrahms, B., Hazen, E. L. and Goldbogen, J. A.:** Blue whales increase feeding rates at fine-scale ocean features, *Proc. R. Soc. B Biol. Sci.*, 289(1981), 20221180, doi:10.1098/rspb.2022.1180, 2022.
 - **Idžanović, M., Rikardsen, E. S. U. and Röhrs, J.:** Forecast uncertainty and ensemble spreading surface currents from a regional ocean model, *Front. Mar. Sci.*, 10, doi:10.3389/fmars.2023.1177337, 2023.
 - **Lipa, B., Barrick, D., Whelan, C., Losekoot, M. and Parikh, H.:** First Open-Coast HF Radar Observations of a 2-Phase Volcanic Tsunami, Tonga 2022, *Remote Sens.*, 15(9), doi:10.3390/rs15092325, 2023.
 - **Lorente, P., Rubio, A., Reyes, E., Solabarrieta, L., Piedracoba, S., Tintoré, J. and Mader, J.:** High-frequency radar-derived coastal upwelling index, edited by K. von Schuckmann Lorena Moreira and G. Neukermans, *State of the Planet*, 1-osr7, 8, doi:10.5194/sp-1-osr7-8-2023, 2023.
 - **Mourre, B., Clementi, E., Coppini, G., Coppola, L., Korres, G., Novellino, A., Alvarez-Fanjul, E., Daniel, P., Zodiatis, G., Schroeder, K. and Tintoré, J.:** Chapter 10 - Mediterranean observing and forecasting systems, in *Oceanography of the Mediterranean Sea*, edited by K. Schroeder and J. Chiggiato, pp. 335–386, Elsevier., 2023.
 - **Piroddi, L., Gauci, A., Kalfouni, R., Agius, M. R., Melfi, D., Borzì, A. M., Cannata, A., Cannavò, F., Minio, V., Orasi, A., Aronica, S., Ciraolo, G. and D'Amico, S.:** Exploring the Signature of the Apollo Medicane in the Central Mediterranean Sea Through Multi-Source Data Analysis: Satellites, Radar HF, Marine Buoys, and Seismic Data in October 2021, in *Computational Science and Its Applications – ICCSA 2023 Workshops: Athens, Greece, July 3–6, 2023, Proceedings, Part VIII*, pp. 611–623, Springer-Verlag, Berlin, Heidelberg., 2023.
 - **Saviano, S., Biancardi, A. A., Kokoszka, F., Uttieri, M., Zambianchi, E., Cusati, L. A., Pedroncini, A. and Cianelli, D.:** HF Radar Wind Direction: Multiannual Analysis Using Model and HF Network, *Remote Sens.*, 15(12), doi:10.3390/rs15122991, 2023.
 - **Schwing, F. B.:** Modern technologies and integrated observing systems are “instrumental” to fisheries oceanography: A brief history of ocean data collection, *Fish. Oceanogr.*, 32(1), 28–69, doi: 10.1111/fog.12619, 2023.
 - **Smith, M. J., Updyke, T. and Haines, S.:** Open-source software to support high frequency radar data analysis and quality control, in *OCEANS 2022, Hampton Roads*, pp. 1–4., 2022.
 - **Solabarrieta, L., Corgnati, L., Reyes, E., Lorente, P., Mantovani, C., Rubio, A., Mader, J., & Petihakis, G.** HF-Radar Tools. EuroSea Deliverable 3.14, EuroSea, 22 pp. doi:10.3289/eurosea_d3.14, 2023.
 - **Tokashiki, Y. and Fujii, S.:** Cause of Double-Peak Spectrum in Hyuga-Nada by the HF Radar, *J. Mar. Sci. Eng.*, 11(3), doi:10.3390/jmse11030503, 2023.
 - **Ursella, L., Aronica, S., Cardin, V., Ciraolo, G., Deponte, D., Lo Re, C., Orasi, A. and Capodici, F.:** Calibration and validation of high frequency coastal radar waves exploiting in-situ observations and modelled data in the south-west Sicily, *J. Oper. Oceanogr.*, 0(0), 1–14, doi:10.1080/1755876X.2023.2215111, 2023.

- **Updyke, T.** Use of HF Radar Data with Models - Summary Chart and Bibliography. Available at: https://cdn.ioos.noaa.gov/media/2023/01/HFR_and_Models_Summary_Bibliography.pdf, 2023.
- **Vargas-Yáñez, M., Moya, F., Serra, M., Juza, M., Jordà, G., Ballesteros, E., Alonso, C., Pascual, J., Salat, J., Moltó, V., Tel, E., Balbín, R., Santiago, R., Piñeiro, S. and García-Martínez, M. C.:** Observations in the Spanish Mediterranean Waters: A Review and Update of Results of 30-Year Monitoring, *J. Mar. Sci. Eng.*, 11(7), doi:10.3390/jmse11071284, 2023.
- **Wang, D., Jin, S., Hann, M., Conley, D., Collins, K. and Greaves, D.:** Power output estimation of a two-body hinged raft wave energy converter using HF radar measured representative sea states at Wave Hub in the UK, *Renew. Energy*, 202, 103–115, doi: 10.1016/j.renene.2022.11.048, 2023.
- **Wang, Y., Imai, K., Mulia, I. E., Ariyoshi, K., Takahashi, N., Sasaki, K., Kaneko, H., Abe, H. and Sato, Y.:** Data Assimilation Using High-Frequency Radar for Tsunami Early Warning: A Case Study of the 2022 Tonga Volcanic Tsunami, *J. Geophys. Res. Solid Earth*, 128(2), e2022JB025153, doi: 10.1029/2022JB025153, 2023.
- **Wyatt, L. R. and Green, J. J.:** Swell and wind-sea partitioning of HF radar directional spectra, *J. Oper. Oceanogr.* [online] Available from: <https://eprints.whiterose.ac.uk/190689/>, 2022.
- **Wyatt, L. R.:** HF radar wind, wave and current measurements for offshore wind power, in *OCEANS 2023 - Limerick*, pp. 1–8., 2023.
- **Yan, J., Cook, T., Ho, A., Otero, M., Rogowski, P. A., Siegelman, M., Terrill, E. and Merrifield, S.:** PyPlume: A toolkit for rapid ocean surface transport assessments, *Environ. Model. Softw.*, 168, 105783, doi: 10.1016/j.envsoft.2023.105783, 2023.

For a complete list of publications of the **European HFR** community please visit our ZOTERO Community Library

Ongoing projects

- **FaSt-SWOT.** Fine-Scale ocean currents from integrated multi-platform experiments and numerical simulations: contribution to the new SWOT satellite mission. In this context, and with the aim to better understand SWOT satellite measurements, the analysis of long HF radar timeseries will be used to characterise the spatial and temporal timescales of the surface current.
- **LAMARCA.** LAgrangian transport of MARine litter and microplastics from modelling, analysis and observations in CoAstal waters. The aim of the project is to further understand the role of oceanic transport in marine litter dispersion and accumulation areas in the sea surface. In this context, HF radar will be used to design in-situ sampling strategies and optimize a high-resolution oceanic circulation model. Check the outputs presented during the 54th International Colloquium on Ocean Dynamics held in Liège last May ([link](#)), and the ASLO aquatic Sciences Meeting held in Palma de Mallorca last June ([link](#))
- **EuroSea.** Improving and Integrating European Ocean Observing and Forecasting Systems for Sustainable use of the Oceans.
 - **HOORT**, a tool developed as part of the project, was launched last November (check our snapshot stories for more information about the tool).
 - With the end of the project approaching next December, EuroSea partners got together last September for the **Final General Assembly** to look back at the

biggest achievements and challenges.

Past events

- **MonGOOS** Workshop on the importance of scales and uncertainties in Ocean transport: physical and biochemical interactions in the Mediterranean Sea was held in Florence, from the 22nd to the 24th of November 2022 ([link](#))
- **ROWG**. Meeting recording and notes from this past November's 12th Radiowave Operators Working Group now available.
- Last January, Qualitas Instruments imparted a training course on HFR radar at Barcelona Expert Center, followed by a visit to the first HFR antenna installed by ICATMAR at Cap de Creus ([link](#))
- Throughout the 18th and 19th September, the i-waveNET partners celebrated the project's **final meeting** in Malta. i-waveNET's main objective was the implementation of an innovative system of observation of the state of the sea between Sicily and Malta, integrating different technologies (HF radar, directional wave buoys, high sensitivity seismographs, sea level stations, numerical models).
- **OBPS Workshop VII** is a virtual event that took place from October 9th to 13th, 2023. This workshop, free and open to all, aims to foster the development of best practices in ocean-related fields and promote their widespread dissemination through the Ocean Best Practices System
- The 2023 **EurOcean Conference** was held on 10-11 October in Vigo, Spain. The aim of this science-policy conference is to highlight the synergies between the EU Mission: Restore our Ocean and Waters by 2030, other EU research and innovation, and management initiatives, and the UN Decade of Ocean Science for Sustainable Development ([link](#))
- The first **Copernicus Marine Service Ocean Reanalyses workshop**, was held on 10-12 October 2023 in Toulouse, France. The aim was to address global and regional scales and encompass long reanalyses spanning the 20th century to reanalyses tailored for monitoring recent ocean variability.
- On September 20th, the **EuroGOOS HF Radar Task Team** attended the **EuroSea** Final General Assembly to present posters about their integrated approach to coastal observation, long term goals and community tools. A collaboration between AZTI, SOCIB, CNR-ISMAR and Puertos del Estado ([link](#))



- On September 21st SOCIB and AZTI colleagues attended the EuroSea Symposium on Ocean Observing and Forecasting to showcase European HFR community progress and next steps ([link](#))



Upcoming events and opportunities

- **SAVE THE DATE:** Atlantic Stakeholder Platform Conference, 18-19 October 2023, Oporto, Portugal ([link](#))
- **SAVE THE DATE:** International Digital Twins of the Ocean Summit, 9-12 November 2023, Xiamen, China ([link](#))
- **SAVE THE DATE:** MonGOOS Workshop and General Assembly, 14-16 November, Tangier, Morocco ([link](#))
- **SAVE THE DATE:** JERICO-DS General Assembly, 21-23 November 2023, Tallinn, Estonia ([link](#))
- **SAVE THE DATE:** European Big Data Value Forum (EBDVF), 25-27 October 2023, Valencia, Spain ([link](#))
- **SAVE THE DATE:** EMODnet Open Conference, 29-30 November 2023 Brussels ([link](#))
- **SAVE THE DATE:** Ocean Sciences Meeting, 18-23 February 2024, New Orleans, USA ([link](#))
- **SAVE THE DATE:** UN Ocean Decade Conference, 10-12 April 2024, Barcelona International Convention Centre (CCIB), Spain ([link](#))
- **SAVE THE DATE:** 55th International Liège Colloquium on Ocean Dynamics, 27-31 May 2024, Liège, Belgium ([link](#))
- **SAVE THE DATE:** International Conference on Marine Data and Information Systems, 27-29 May 2023, Bergen, Norway ([link](#))
- **SAVE THE DATE:** 8th WMO Workshop on the Impact of Various Observing Systems on Numerical Weather Prediction and Earth System Prediction, 27-30 May 2024, Norrköping, Sweden ([link](#))
- **SPECIAL ISSUE:** "Sustained Ocean Surface Observation Using HF Radar: From Data to Societal Applications II". If your submission is accepted and deemed well-written by all reviewers and Academic Editors, it will be granted a waiver Remote Sensing. **Deadline: 28 February 2024** ([link](#))

- **SPECIAL ISSUE:** "Explainable Artificial Intelligence (XAI) in Radar Imaging: Recent Advances and Future Directions". Remote Sensing. **Deadline: 30 November 2024** ([link](#))
- **SPECIAL ISSUE:** "Remote Sensing of Ocean Surface Currents: Measurement, Validation and Applications". Remote Sensing. **Deadline: 15 November 2023** ([link](#))
- **CALL FOR PAPERS:** "54th Liège Colloquium on Machine Learning and Data Analysis in Oceanography" Ocean Science. **Deadline: 28 February 2024** ([link](#))
- **SPECIAL ISSUE:** "Extremes in the marine environment: analysis of multi-temporal and multi-scale dynamics using observations, models, and machine learning techniques". Ocean Science. **Deadline: 31 December 2024** ([link](#))

Memory Corner

Please remember our 10 important "HOW-TO"

Do you want to...?

1. **ACCESS the CMEMS product** containing **Near real time in-situ** observations of surface ocean currents (drifters and HFR) for the Global Ocean? Click [here](#)
2. **ACCESS the CMEMS product** containing **Delayed Mode in-situ** Observations of surface (drifters and HFR) and sub-surface (vessel-mounted ADCPs) ocean currents for the Global Ocean? Click [here](#)
3. **ACCESS the EMODnet Physics** ERDDAP HFR catalog? Click [here](#)
4. **SYNCHRONIZE your HFR** data with the EU HFR Node? Learn here how to do it!
5. **SHARE your historical** HFR data? Contact Us: euhrnode@azti.es
6. **USE standard templates** for maintenance and for monitoring your HFR site? Access to the document available in the Ocean Best Practices repository.
7. **CONTRIBUTE** to the forthcoming **newsletters**? Contact Us: euhrnode@azti.es and help us to populate them.
8. **BE PART** of effective **consortium**? Fulfill the European HFR Competence Matrix.
9. **CONTRIBUTE** to the HFR **stakeholder engagement** strategy? Please, take a look at the list of existing and potential users of HFR data and help us to identify the main stakeholders in your region.
10. **INCLUDE** your **publications and projects** in the European HFR Task Team ZOTERO Community Library? Contact Us: euhrnode@azti.es

Snapshot Stories

Hello HFR community!

I hope you enjoyed your holidays. It has so far been a busy but good year, and we deserved some rest over the summer holidays before jumping back in.

As you might be already aware, High-Frequency Radar (HFR) technology is increasingly playing a pivotal role in coastal observation by providing high-resolution real-time surface circulation maps, aiding in monitoring coastal areas and extreme hazards. Since 2015, the European HFR community, working under the [EuroGOOS HFR Task Team](#), has collaborated on research and development projects to enhance its role in operational oceanography.

Over the past four years, the EuroSea project has significantly contributed to the community's 2020-2023 work plan, achieving several milestones: i) Enhanced Governance: Efforts were made to establish a more robust governance structure for long-term sustainability (Task 3.6; [D3.4](#)); ii) Development of Community Tools: Various tools were developed to improve operational data workflows and quality control, including the [HOORT](#) (HFR Online Outage Reporting Tool) and the HFR Coastal Upwelling index. A showcase demonstrating HFR's use for model validation in the North Atlantic Regional Validation ([NARVAL](#)) tool was also initiated (Task 3.6, [D3.14](#)); iii) Satellite Data Validation : HFR data were used to

validate satellite data, specifically comparing measurements from the Jason-2 mission in the SE-Bay of Biscay (Task 4.4, [D4.5](#)). iv) Multidisciplinary Integration: coastal circulation influence on anchovy distribution from HFR, ADCP and eggs data; Model skill assessment for Search and Rescue based on models, HFR and drifters (Task 3.9, [D3.8](#)).

In addition, two workshops have been conducted: one in March 2021, which brought together the [FerryBox and HFR communities](#) to exchange information and experiences, and another [EuroGOOS HFR Task Team workshop](#) in November 2022, focusing on sharing information about new HFR tools and featuring a special session on HFR wave data. This latter workshop identified two key future actions: the creation of a website for the European HFR Node (www.hfrnode.eu) and a strategy to increase visibility for HFR system providers through the creation of DOIs, which are currently in progress. In summary, EuroSea, in collaboration with the EuroGOOS HFR Task Team, has advanced the role of HFR technology in coastal observation and operational oceanography while addressing crucial data management aspects.

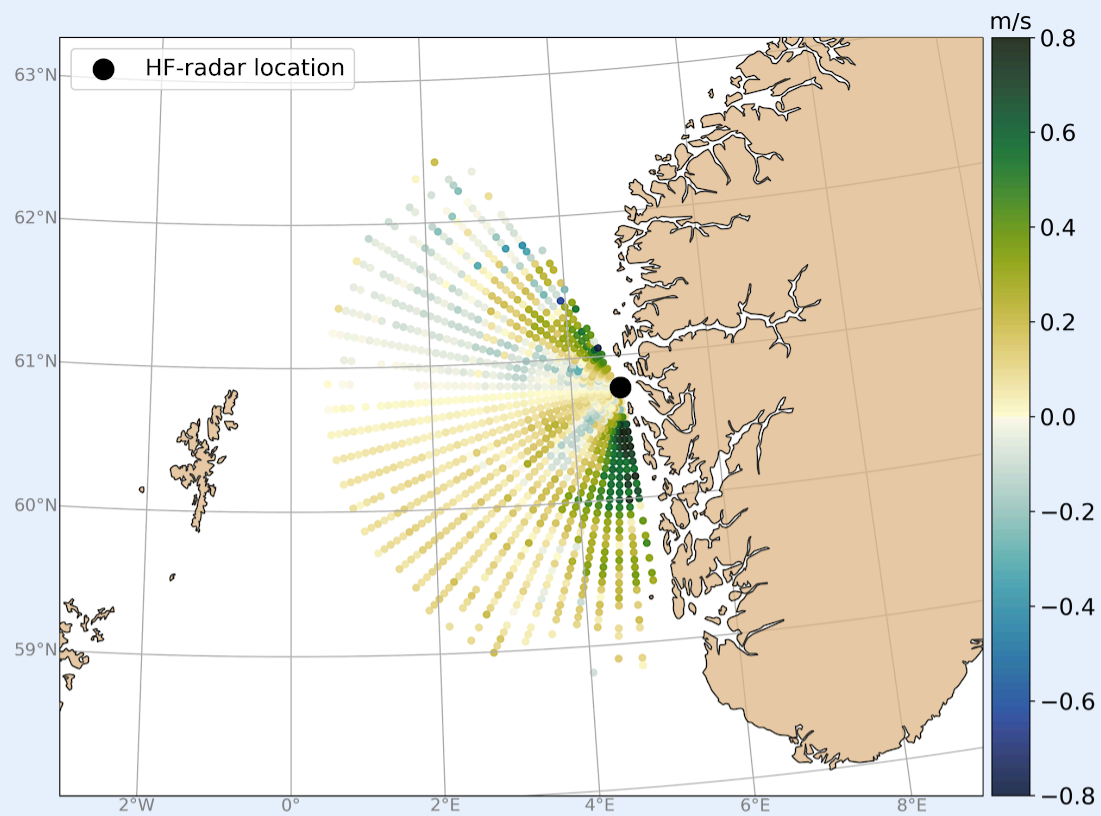
Welcome back!

Julien Mader (chair of the EuroGOOS HFR Task Team)

New High Frequency Radar in Fedje on the West Coast of Norway deployed by the Norwegian Meteorological Institute (MET Norway)

A new High Frequency Radar (HFR) has been installed in Fedje, Norway to provide data for assimilation in MET Norway's coastal ocean forecasting model, supporting safety & security in the region. The installation is funded by the Norwegian Clean Seas Association for Operating Companies (<https://nofo.no>). The data processing chain is being set up and real-time observations will soon be publicly available. The deployment is the first out of four along the West Coast of Norway. The areas covered by these radars frequently experience very rough weather, and long stretches of the ship lanes are completely exposed to open ocean conditions. MET Norway already operates 4 HFRs, deployed along the Skagerrak Coast and the Finnmark coast, respectively, and provides the HFR data from all of their stations to the EU HFR Node. Read more in this [link](#)

Kai Håkon Christensen, Terje Borge and Martina Idzanovic (MET Norway)

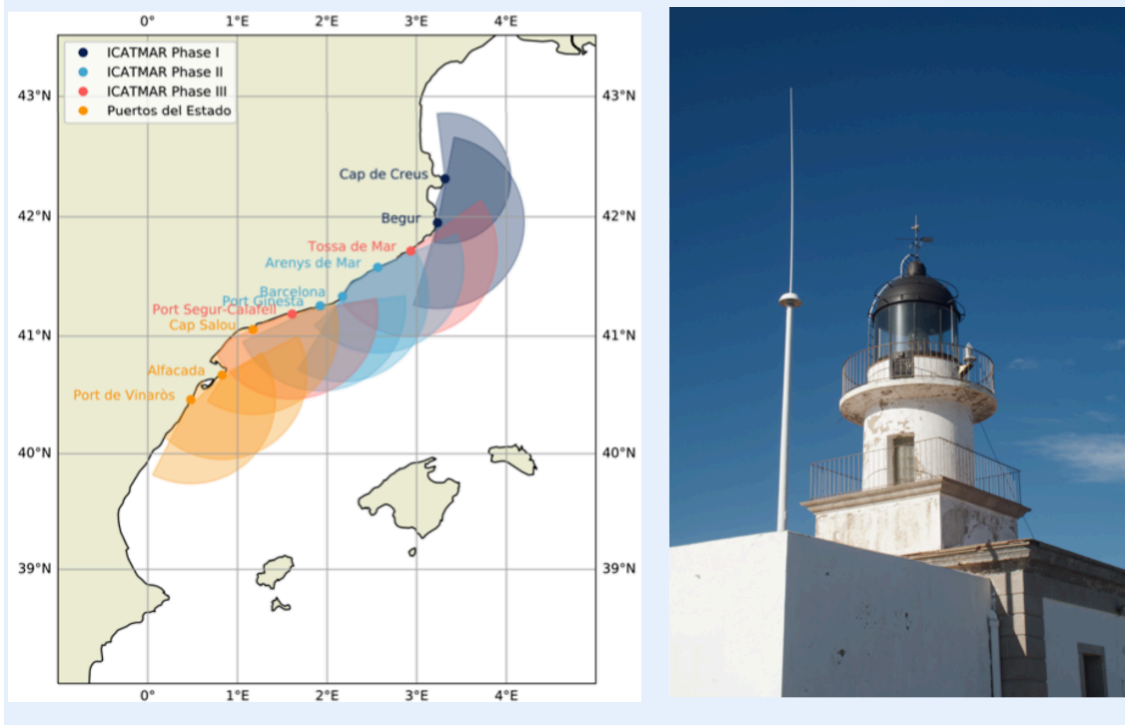


Top: Map of Norwegian coastline showing the meridional component of the surface current on 29/01/2023 at midnight as measured by the HFR Fedje station. Bottom-Left: Photo of the receiving antenna on Fedje station. Bottom-Right: Photo of the shed for computer and electronics on Fedje. Source: pictures taken by Baard Meldal-Johnsen .

A new High Frequency Radar antenna in the Cap de Creus Natural Park deployed by the Catalan Research Institute for the Governance of the Sea (ICATMAR)

A new High Frequency Radar (HFR) station has been installed in the Cap de Creus (Spain) to support maritime governance by the Institut Català de Recerca per a la Governança del Mar (ICATMAR), from the Catalonia Government, in cooperation with the Institut de Ciències del Mar (ICM-CSIC), as part of the deployment of an Operational Oceanography Service for the Catalan coast. The new station will be operational from mid 2023. ICATMAR will operate seven HFR stations that will be deployed along the Catalan Coast in three phases. The full network is expected to be operational by the end of 2024. ICATMAR will provide the HFR data from all of their stations to the EU HFR Node.

Jordi Isern-Fontanet and Joaquim Ballabrera (ICM-CSIC)

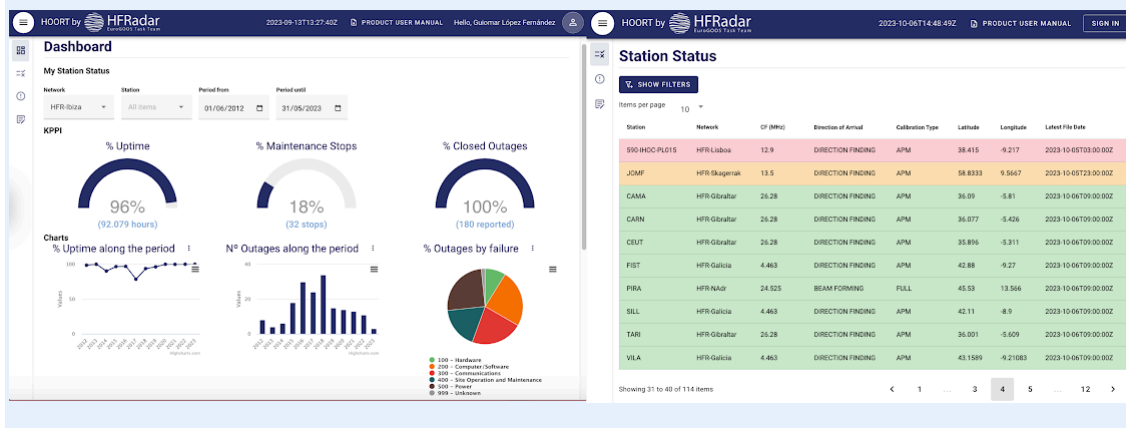


Left: ICATMAR HF Radar Network coverage and implementation phases. Right: Photo of the new HF radar station in Cap de Creus (source: Jordi Isern-Fontanet).

HOORT: A new HFR Online Outage Reporting Tool from the European HFR Node

HOORT stands for HFR Online Outage Reporting Tool: it is a free and open web-based application to aid High-Frequency Radar (HFR) operations and maintenance and keep operators more aware of common problems, helping them to report them. HOORT serves as a forum for troubleshooting, as a database of outage records per each HFR station and as a tool to report ongoing outages and to provide KPIs about the HFR stations' performance all around in Europe. The main objectives of HOORT are threefold (Detect-Alert-Report): 1) Detect the outage automatically based on the delay of the information arrival; 2) Alert the operator automatically by email; 3) Report the outage manually by means of an user-friendly interface and following best practices for HFRs operation and maintenance. HOORT could potentially be implemented for other mature platforms for monitoring outages (since they share KPIs Key Platform Performance Indicators and similar TRL - Technology readiness level)

Emma Reyes (SOCIB, Spain)



HOORT Snapshot of the HFR station status and the dashboard

HF radar solution to support marine operations off South Africa

As manager of the Service Department of **ACTIMAR**, a private company specialised in operational oceanography, I am working for one of our private clients in the monitoring of the surface current off South Africa. This area is subject to the Agulhas current regularly disturbed by eddies or natal pulses making the marine operations very risky in and around the current vein.

Main authors would like to express their gratitude to all co-authors, internal and external reviewers and the HFR community in general for bringing this long-standing contribution (of almost 2 years) towards a successful outcome. More information available in this link.

The improvement of the software/tools is currently in progress to be ready for the next operations in the area. Another challenge will be also the improvement of the current models to take into account more precisely the oceanographic phenomena in this complex area.



HF Radar
EuroGOOS Task Team

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