



Welcome to the #2 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 June 2020.

Sustainability

Seeking a more sustainable future for Europe, ensuring ocean observing platforms sustainability.

Happy stories

- 😊 **UPDATED** MAP of HFR locations from the EuroGOOS HFR Task Team. Glad to see a growing amount of active connections and new deployments. Keep growing!
 - Do you want to see your HFR stations pulsing on the map? [Learn how](#).
 - Do you want to discover the new deployments? [Keep reading!](#)
- 😊 **NEW RELEASE** of the CMEMS delayed-mode product dedicated to in-situ observations of surface (drifters and HFR) and sub-surface (vessel-mounted ADCPs) water velocity, available since July 2020.

- Wanna share your historical data? Contact Us!
- 🤖 **NEW MARINE RADAR** (x-band) installed in the Basque coast (Cape Higher) last December with the help of Euskalmet, in the framework of a new collaboration between AZTI (Spain) and the Helmholtz-Zentrum Geesthacht center (HZG, Germany), within SusTunTech project leaded by Marine Instruments (Spain). More info here
- 🤖 **EBRO DELTA HF radar** system could effectively retrieve both wave and current estimations during the record-breaking storm Gloria late January 2020, in spite of the southernmost site failure.
- 🤖 **NEW HFR DATA INTEGRATION:** University of Plymouth started publishing Wave Hub HF Radar data from the Celtic Sea to the Marine Copernicus Service.
- 🤖 **SUBMITTED PROPOSAL** to Supergen Flexible Fund. Good luck Plymouth!
- 🤖 **LONGEST RANGE WERA** systems used for the monitoring of currents for oil rigs located more than 200 km off-shore in South Africa. More info here
- 🤖 **VIRTUAL OIL SPILL EXERCISE** in (21-25 Sep 2020) in joint cooperation between RADAR ON RAIA, MyCOAST and MELOA projects. HF radars and drifters were used for model calibration skill assessment.
- 🤖 **DOI for HFR-Ibiza (SOCIB)** dataset already available here.
- 🤖 **#11F: CONGRATULATIONS** to all women from the HFR community in STEM. You are the perfect example for overcoming stereotypes and breaking barriers!

Open and forthcoming calls

- **OPEN CONSULTATION:** European Commission consultation 'Ocean observation – sharing responsibility'. Deadline: 19/02/2021
- **OPEN CALL:** COST Action next collection date is planned for 29/10/2021
- **OPEN CALL:** Innovation Fund Small Scale Projects (InnovFund-SSC-2020). Deadline: 10/03/2021
- **OPEN TENDER:** IT Consultancy Services in the Areas of Application Development to Support Thematic Data Products to the European Environment Agency and the European Commission (DG ENV). Deadline: 11/03/2021
- **ASSESSMENT VOUCHER 1st OPEN CALL:** Change2Twin. Deadline: 29/03/2021.
- **VOUCHER CALL 1:** GALATEA Innovation Support Mechanism. Deadline: 31/03/2021

Job & internship opportunities

- **POST-DOCTORAL position** - Healthy Ocean at SOCIB. Application deadline: 18/02/2021
- **SCIENTIFIC AND TECHNICAL OFFICER** - Oceanographic and Climate Services. Application deadline: 24/02/2021
- **CALL** for 2 new European Marine Board **YOUNG AMBASSADORS**. Deadline: 28/02/2021
- **14 RESEARCH ASSISTANTS/DOCTORAL** positions in the Collaborative Research Centre "Mobile Material Characterization by Electromagnetic Sensing" (MARIE). Application deadline: 01/03/2021

- **DOCTORAL** Candidates (PhD students) in Radio Resource Allocation and Spectrum Management. Application deadline: 07/03/2021
 - **INTERNATIONAL POST-DOCTORAL** fellowships in Marine Sciences. Application deadline: 29/03/2021
 - **POST-DOCTORAL** position in Electrical Engineering: Microwave Resonator for Securized Space Communication (R2CS2). Application deadline: 31/05/2021
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Products and Services

"It is not about mapping the state of the ocean, but about designing solutions"

(Stéphane Isoard, from the European Environment Agency during the Copernicus Marine Service General Assembly, January 2021)

Basic products

- **OCEAN SURFACE CURRENTS** still remain as the most widely provided HFR product, closely followed by WAVES according to the survey's outcome sent along with the call for contributions of this newsletter. In third position, WINDS and GAP-FILLED surface currents are gaining popularity. Other uses of HFR data are related to model skill assessment and to over-the-horizon ship tracking.
- **SOFTWARE UPGRADE for HFR** surface current NRT and REP production. Next version -v2.2- releases, complying with the new CMEMS-INSTAC format specifications, will soon be available here: <http://doi.org/10.5281/zenodo.2639555>
- **JUPYTER NOTEBOOKS for HFR** data analysis. In the 2020 CMEMS Arctic workshop you will find useful code for dealing with HF Radar files (radial and total): video and notebook. Click here to download the whole material or here for accessing a remote-server setup.
- **DASHBOARD** CMEMS In Situ TAC is accessible now from the new CMEMS site (Access Data). Use it to visualize all integrated HFR sites applying the corresponding filter.
- **DIVAnd FREE TOOL** developed by GHER (University of Liège) for the interpolation of HFR data available on github: https://github.com/gher-ulg/DIVAnd_HFRadar.jl
- **WEBINAR** on "Scientific and Societal applications of ocean currents data from high-frequency radars". Spanish version here

Advanced products

- **TOP-4 KEY APPLICATION AREAS of HFR data:** Marine and Coastal research; Coastal Protection, Planning and Governance; Ocean Observing Networks, Platforms & Technology and Ocean Forecasts and Models.
- **NOVEL COASTAL UPWELLING INDEX** development in the NW Iberian Peninsula based on hourly HFR-derived surface currents. It could lead to potentially useful applications if extended to other areas of interest.
- **MAPS OF WAVE** height/direction/period around the 5 HF radar stations in the framework of RADAR ON RAIA and MyCOAST.
- **NEW RADAR "OTHR"** system (from Helzel) for monitoring of the exclusive economic zone.
- **NEW DATA PRODUCT:** Hourly interpolated currents applying DIVAnd free tool (designed by GHER, University of Liege) to the SOCIB's High-Frequency Radar for the month of October 2014.

Data downstream services

- **SOFTWARE FOR METOCEAN** (wave - including directional spectrum, wind, current) from phased array HF radars (from Seaview Sensing Ltd). Data provided in hdf and text files and via data viewer. Take a look at the Wave Hub HF Radar data!
- **IBISAR** operational downstream service: one year of supporting emergency response at sea and user story. Virtual booth at the Copernicus Marine Service General Assembly.
- **FML-TRACK** operational downstream service: to support the reduction of Floating Marine Litter in the coastal area. Virtual booth at the Copernicus Marine Service General Assembly.

Ongoing Research and Opportunities

“Observations are the basic truth in anything you are doing when you create knowledge”

(Hans Dahlin, from the Swedish Meteorological & Hydrological Institute -SMHI-, source: “Ten Years of EMODnet in Ten Minutes”)

HFR recent/new publications

- **Barth, A., et al., 2021.** Variational interpolation of high-frequency radar surface currents using DIVAnd. Ocean Dynamics (2021). <https://doi.org/10.1007/s10236-020-01432-x>

- **Berta, M., et al, 2020.** Small scale ocean weather during an extreme wind event in the Ligurian Sea. In: Copernicus Marine Service Ocean State Report, Issue 4, Journal of Operational Oceanography, 13:sup1, s149—s155; <http://doi.org/10.1080/1755876X.2020.1785097>
- **Caballero, A., et al., 2020.** Integration of HF Radar Observations for an Enhanced Coastal Mean Dynamic Topography. Front. Mar. Sci. 7:588713.<https://doi.org/10.3389/fmars.2020.588713>
- **Domps, B., et al., 2021** (pre-print). Improved Observation of Transient Phenomena with Doppler Radars: a Common Framework for Oceanic and Atmospheric Sensing. <https://arxiv.org/abs/2102.00183>
- **Gómez, R. et al., 2020.** HF Radar Validation and Accuracy Analysis using Baseline Comparison Approach in the Sunda Strait. <http://doi.org/10.13140/RG.2.2.11110.96322>
- **Guérin, C-A., et al., 2021** (preprint). High-Frequency radar measurements with CODARs in the region of Nice: improved calibration and performances. <https://arxiv.org/abs/2102.04507>.
- **Lorente, P., et al., 2020.** Comparative Analysis of Summer Upwelling and Downwelling Events in NW Spain: A Model-Observations Approach. Remote Sens, 12 (17), 2762. <https://doi.org/10.3390/rs12172762>
- **Manso-Narvarte, I., et al, 2021.** Three-Dimensional Characterization of a Coastal Mode-Water Eddy from Multiplatform Observations and a Data Reconstruction Method. Remote Sens, 13, 674. <https://doi.org/10.3390/rs13040674>
- **Révelard, A., et al., 2021** (accepted for publication). Sensitivity of Skill Score metric to validate Lagrangian simulations in coastal areas: recommendations for Search and Rescue applications. Front. Mar. Sci. - Ocean Observation, doi: 10.3389/fmars.2021.630388
- **Reyes, E., et al, 2020.** IBISAR service for real-time data ranking in the IBI area for emergency responders and SAR operators. In: Copernicus Marine Service Ocean State Report, Issue 4, Journal of Operational Oceanography, 13:sup1, s92—s99; <http://doi.org/10.1080/1755876X.2020.1785097>
- **Rubio, A., et al., 2020.** A Lagrangian approach to monitor local particle retention conditions in coastal areas, in: Copernicus Marine Service Ocean State Report, Issue 4, Journal of Operational Oceanography, 13:sup1, S1-S172, <https://doi.org/10.108/1755876X.2020.1785097>
- **Ruiz-Parrado, I., et al., 2020.** Coastal ocean variability related to the most extreme Ebro River discharge over the last 15 years. In: Copernicus Marine Service Ocean State Report, Issue 4, Journal of Operational Oceanography, 13:sup1, s160—s165, <http://doi.org/10.1080/1755876X.2020.1785097>.
- **Tintoré, J., et al., 2020.** HF Radar Ibiza data from date 2012-06-01 (Version 1.0) [Data set]. Balearic Islands Coastal Observing and Forecasting System, SOCIB. <https://doi.org/10.25704/17GS-2B59>
- **Wyatt, L., 2021.** Spatio-Temporal Metocean Measurements for Offshore Wind Power. Journal of Energy and Power Technology, 3 (1):15. <https://doi.org/10.21926/jept.2101005>

Ongoing or new projects:

- **ONGOING projects:** latest news & videos since the newsletter #1
 - ShareMed: First Capitalization Workshop, 14-15, December 2020.

- SICOMAR plus: forthcoming summer school on HFR.
- RADAR-ON-RAIA: extension southwards of the Galician HF radar network. Keep reading!
- RADAR-ON-RAIA: disclosure video. Enjoy it!
- MyCOAST: The installation of a new HFR station is progressing in Aquitaine (France). First data expected in 2021!
- Jerico S3: HFR community is working on harmonizing Best Practices with other Coastal platforms in a single handbook.
- EuroSea: disclosure video. Click on play! Contributions to key activities of the HFR Task Team.
- **NEW project** i-waveNET: a INTERREG V-A Italia-Malta project (code: C2-3.2-106) leaded by the University of Palermo (Italy) aiming to provide a Decision Support System capable to cross data from the innovative sea state monitoring system (HF, seismic) with other data (meteo-station, buoys) aiming responsible entities to improve their efficiency in managing the emergencies.

Upcoming events & opportunities

- **JOINT WORKSHOP on High Frequency Radar and Ferrybox** (Online), March 17-18@afternoon (CET). SUBMIT the title of your contribution, before 18/02 & REGISTER before 08/03.
- **SAVE THE DATE:** IMDIS 2021 (Online), April 12-14
- **SAVE THE DATE:** vEGU21 (Online), April 19-30.
- **SAVE THE DATE:** 9th EuroGOOS International Conference (Online), May 5-6. 'Advances in Operational Oceanography : Expanding Europe's ocean observing and forecasting capacity'
- **JOINT ECMWF/OceanPredict WORKSHOP** on Advances in Ocean Data Assimilation, (Online) May 17-20. Registration is open until 31/03.
- **Sicomar+** SUMMER SCHOOL on oceanographic HF radars, May 26-28 in Toulon. Registration open.
- **UPCOMING TRAINING ANNOUNCEMENT:** Course on discovering, accessing and processing tools for oceanography data in the RAIA area (Galicia - North Portugal). July 2021 (date to be confirmed)
- **VI EXPANDING OCEAN FRONTIERS** CONFERENCE, Barcelona, 28 June-1July. Submission deadline: 30/04.
- **SPECIAL ISSUE** in Remote Sensing: "Sustained Ocean Surface Observation Using HF Radar: from Data to Societal Applications". Deadline: 31/03/2022
- **SPECIAL ISSUE** in Remote Sensing: "Observing the Flow of Ocean Currents and Circulation Using Remote Sensing". Deadline: 30/06/2021
- **SPECIAL ISSUE** in Ocean Science: "Advances in interdisciplinary studies at multiple scales in the Mediterranean Sea". Deadline: 31/07/2021

Snapshot Stories

Hello HFR community!

2020 was an extraordinary year for HFR, not only because of the COVID crisis, but mostly because of the high rate of publications, the expansion of the network, the continuous and increasing distribution of near real-time and historical HFR data to CMEMS, the improvement in the promotion of scientific collaborations, the advances in data integration with other observing systems and models, the enhancement of the utility of HFR data to our users and the promotion of the joint progress through networking.

In 2021, HFR is in the run-up to the crucial milestone of the establishment of a governance structure, aiming to create community at the operator level for playing

a role in establishing a sustainable integrated coastal observatory and to connect with global organizations (eg. GOOS, GEO, OCEANOPS), enhancing the current potential of the EU systems and planning the future, which hopefully will be also benefited by the end of this pandemic.

I now invite you to discover new beautiful places hosting new HFR deployments for monitoring our coastal areas through the stories sent by our colleagues.

Thank you very much for your many contributions and for keeping rowing together towards!

*Julien Mader (chair of the EuroGOOS
HFR Task Team)*



New High Frequency Radar in Leça da Palmeira (Portugal)

New High Frequency Radar in Leça da Palmeira (Portugal) deployed at Lat: 41° 12.150' N and Lon: 08° 42,640' W by the Portuguese Hydrographic Institute (IHPT).

A new High Frequency Radar (HFR) was installed in Leça da Palmeira (Portugal) last Jul'20 to: i) improve the maritime emergencies management (Search and Rescue, SAR); ii) to manage accidental or intentional oil spills; iii) to study the oceanic dynamics of the Euroregion; iv) to benefit the productivity and territorial planning of the Galician-North Portugal region, etc. The new deployment was made by the Portuguese Hydrographic Institute, in cooperation with CETMAR, INEGI, INESC TEC, IIM-CSIC, INTECMAR, PUERTOS DEL ESTADO, USC, UVIGO) in the context of the project RADAR ON RAIA co-funded by the European Union through EP-INTERREG V A España-Portugal (POCTEP) program.

The new site (with EDIOS Platform ID: LPRO) has been operating since Sep'20 being part of the HFR-Galicia network. The IHPT already operates 6 HFR sites, deployed along the Atlantic Portuguese coast and provides the HFR data from all of their stations to the EU HFR Node. Read more in this link and viewers (<http://www.marnaraia.org/> and <https://portus.puertos.es/#/>)

Silvia Piedracoba Varela (CETMAR)



New High Frequency Radar in Port de Menton (France)

New High Frequency Radar (Codar SeaSonde) in Menton (French-Italian border, 43.782 N, 7.521 E) deployed by the Mediterranean Institute of Oceanography (MIO) & University of Toulon last Sept'20 to monitor the Northern Current in the context of the Sicomar-Plus Interreg Marittimo project & Mediterranean Ocean Observing System for the Environment.

The new site (with EDIOS Platform ID: CMEN) has been running since Nov'20 being part of the HFR-MIO network and the HFR measured currents will be soon available just after validation. The MIO already operates 3 HFRs deployed along the Mediterranean coast: 2 WERAs in the region of Toulon (see <http://hfradar.univ-tln.fr>) and 1 CODAR in the region of Nice (Saint-Jean Cap Ferrat) to be coupled with the new CODAR in Menton.

Charles-Antoine Guérin (MIO)



New High Frequency Radar Portofino (Italy)

New High Frequency Radar in Portofino (Italy) deployed by the Institute of Marine Sciences of the National Research Council.

A new High Frequency Radar (HFR) was installed in Portofino (Italy) last July 2020 to expand the HFR network in NW Mediterranean and provide useful information to decision makers in support of management of port development and preservation of marine protected areas in the Italy-France transboundary area.

The new HFR was installed by the Institute of Marine Sciences, in cooperation with the Italian Navy in the context of the project “IMPACT – Impatto Portuale su aree marine protette: Azioni Cooperative Transfrontaliere”. The new site (with EDIOS Platform ID: PFIN), restored after huge damages occurred during Oct 2018 sea storm after its first setup, has been operating since July 2020 being part of the HFR-TirLig network. The Institute of Marine Sciences already operates three HFRs, deployed along NW Mediterranean Italian coast, and provides the HFR data from all of their stations to the EU HFR Node. Read more in this link

Carlo Mantovani (CNR-ISMAR)



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