



Date: April 30, 2020

Subject: **Joint efforts towards European HF Radar integration**

Dear High Frequency Radar operators,

During the past five years, most of you have contributed to make significant steps for achieving the needed accessibility to High Frequency Radar (HFR) data for a pan-European use. Since 2015, EuroGOOS Ocean Observing Task Teams, such as **HFR Task Team**, are supporting community building of observing networks. The main goals of the **HFR Task Team** are on the network development and sustainability, harmonization of operations, data quality and access, and proof of the readiness of HFR data and tools. Particular attention is being paid by the HFR Task Team to converge from different projects and programs toward those common objectives.

In this context, the purpose of this communication is to testify to the **coordination between both the European data aggregators and the community of European HF Radar operators**.

In order to improve EU coordination in the management and accessibility to HFR data, the **European HFR Node** was established in 2018 under the coordination of the EuroGOOS HFR Task Team. This effort benefited from the achievements of different initiatives at national and European level. The EU HFR Node is fully operational since December 2018 in providing:

- Guidelines
- Free and open-source repository software
- Support for standardization to the HFR operators
- Standardized and quality controlled HFR data towards the major European Marine Data Portals.

**EMODnet** (European Marine Observation and Data Network) **Physics** is a long-term program providing a combined array of services and functionalities to users for obtaining free of charge data, meta-data and data products on the physical conditions of European sea basins and oceans. EMODnet Physics contributed to the HFR Task Team objectives since 2016 unlocking access to HFR data and demonstrating HFR data products access through a single portal.

The Copernicus Marine Environment Monitoring Service (CMEMS) In Situ Thematic Assembly Centre (**In Situ TAC**) is the component of the Copernicus Marine Service which ensures a consistent and reliable access to a range of

in situ data for the purpose of operational service production and validation. Since 2018, the EU HFR Node is working within In Situ TAC for providing **quality-controlled homogenized data products both in real-time for forecast validation and as historical time-series for reanalysis activities.**

EMODnet Physics has, from its set-up, collaborated with CMEMS In Situ TAC (and relies on CMEMS In Situ TAC to collect a lot of the *in situ* observations). EMODnet has developed a user-friendly interface to view those data for its own users and developed widgets that have been updated to be used by CMEMS In Situ TAC to improve the viewing service developed for outreach and promotion activities. The service is presently under test and should be switched into operations before summer 2020.

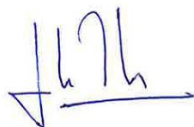
Consequently, the **effort performed by all the providers** in establishing the data flow through the EU HFR Node will provide consistent quality-controlled data to both CMEMS In Situ TAC and EMODnet Physics, contributing to **a consistent accessibility and visibility of each local HFR system and to a pan-European use of these HFR data.**

In the European framework, the EU HFR Node is now managing data from 12 HFR networks (built of 35 radar sites, representing more than 2/5 of the European Network), as shown in the inventory map available in <http://eurogoos.eu/high-frequency-radar-task-team/>. They belong to eight countries involved in three different ROOSes (i.e. MONGOOS, NOOS and IBIROOS), from the two most extended HFR system types (i.e. Direction Finding and Phased Array), being most of them permanent installations. Other operators are currently working on it and, by the end of 2020, it is expected to gather 20 networks (50 radar sites).

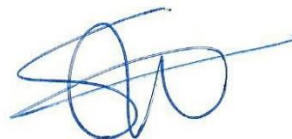
This joint initiative in the European HFR community, committed with the full and open data access, will be for sure the basis for **new exciting challenges** on developing research, downstream products or services based on HFR data. For that, all the European operators are highly invited to continue and extend their contribution to the EuroGOOS HFR Task Team.

Finally, we would like to conclude acknowledging the key effort performed at national level for investing and sustaining ocean observing infrastructures like HFRs. The current progresses in the EU coordination will contribute to integrate HFR platforms as important operational components of EOOS, the European Ocean Observing System, designed to align and integrate Europe's ocean observing capacity for a truly integrated end-to-end ocean observing in Europe.

Julien Mader  
Chair of EuroGOOS HF  
Radar Task Team



Sylvie Pouliquen  
Head of the Copernicus  
Marine In Situ TAC



Antonio Novellino  
Coordinator of EMODnet  
Physics

