

Updates from Global High Frequency Radar Network

for the GOOS Observation Coordination Group (OCG)

March 14, 2022

Region 1 (Europe, Africa, Middle East)

Julien Mader, Chair of the EUROGOOS HFR Task Team

Spain

- A governance structure for the HFR community has been proposed ([EUROSEA D3.4](#))
- Updated map of HFR network (see [EuroGOOS Task Team web](#))
- Updated list of publications of the European HFR community is available in a [ZOTERO Community Library](#)
- New release of the Copernicus Marine Service delayed-mode product dedicated to in-situ observations of water velocity with historical data reporting
- Data Gap filling and Wave Working Groups have been launched
- Contacts with OCEANOPS have been established.
- Increasing number of systems connected to the European HFR Node (+7).
- Ongoing activities for identifying the stakeholders, their needs/problems/requirements, and the capability of HFR data/products.
- Ongoing work on describing good practices on stakeholder commitment.
- Ongoing work to build a competence matrix of the European HFR community.
- 2 community papers have been submitted in MONGOOS

Region 2 (Americas)

Guy Meadows (Great Lakes Research Center, Great Lakes Observing System)

United States

Full installation and testing of two 41 MHz CODAR SeaSondes in the Straits of Mackinac (the confluence of Lake Michigan and Huron) was completed in June/July 2022. The first US operational freshwater HF radar system went fully active on October 18, 2022 and is presently being integrated into the National Network. There are two NDBC Buoys within the footprints of both HFRs and the complex flows of the Straits are well covered by advanced FVCOM numerical forecasts

Kevin Bartlett (Ocean Networks Canada) and Tamara Wilson (Dalhousie University)

Canada

Ocean Networks Canada (ONC) continues to operate one Wera radar and ten CODARs (two of them belonging the federal Department of Fisheries and Oceans) on the west coast of British Columbia. In 2021, ONC began archiving data from a new CODAR station, SCOV, which is co-owned by Dalhousie University and Defence Research and Development Canada (DRDC) and operated by Dalhousie University. SCOV is located at Sandy Cove, near Halifax, Nova Scotia, and is soon to be paired with a second Dalhousie CODAR at Medway Head. MEDH is expected to be operational before April 2022.

Stephan Howden (U. of Southern Mississippi, Gulf of Mexico Coastal Ocean Observing System)
United States

Still responding to damage from multiple hurricanes over the 2020 and 2021 seasons, with response slowed down due to COVID restrictions

University of Southern Mississippi - Operating three 5 MHz long-range systems in the Mississippi Bight. Operating two 25 MHz systems in the Mississippi Sound and working to re-establish a third site after damage from hurricane Zeta in 2020. Waiting for permission to install and operate two 5 MHz stations on Shell platforms Appomattox and URSA (NASEM funding).

Texas A&M University - Operating five 5 MHz HFR sites and working to install a sixth north of Port Mansfield, Texas to extend coverage closer to the Texas/Mexico border. Have two stations installed on Yucatan peninsula and waiting for permission to operate (NASEM funding)

FUGRO - working to repair and reestablish two 5 MHz stations and the mouth of the Mississippi River and Port Fourchon, LA after damage in 2020 from hurricane Sally and 2021 from hurricane Ida.

Hugh Roarty (Rutgers U., Mid Atlantic Regional Association Coastal Ocean Observing System)
United States

All MARACOOS HF radar operators have applied for Radio Station Authorization from the Federal Communications Commission. Rutgers was the first to receive its station license and has begun operations with a call sign transmission every 20 minutes. MARACOOS HFR wave data was used operationally by the National Weather Service on October 6, 2021 during the passage of Hurricane Sam. MARACOOS is working with the NOAA Office of Science and Technology Integration to progress the HFR wave measurements.

Region 3 (Asia and Oceania)

Jian-Wu Lai (National Academy of Marine Research (NAMR))
Taiwan

The initiative of Taiwan's oceanographic radar observation network in the oceanographic community and the efforts of the Taiwan Ocean Research Institute of the National Applied Research Laboratories for many years. A CODAR-based network with more than 19 stations around Taiwan was completed in 2016. Between 2019 and 2024, more than 42 oceanographic radar stations (20 high-frequency radars and 23 microwave radars) in various government departments will be built and put into operation successively, including 12 of the Central Weather Bureau (CWB) of the Ministry of Communications (6 high-frequency radars and 6 microwave radars), and 3 of the Institute of Harbor and Marine Technology (IHMT) of the Ministry of Communications (2 high-frequency radars, 1 microwave radar), and 27 of the National Academy of Marine Research (NAMR) of the Ocean Affairs Council (12 high-frequency radars and 15 microwave radars). In addition, the Water Resources Bureau of the Ministry of Economic Affairs also has a microwave oceanographic radar in Qigu, Tainan. It is believed that these telemetry remote sensing systems will give full play to the benefits of long-term observation in the aspects of metocean observation, navigation safety, marine energy assessment, marine recreation risks, marine disaster rescue and pollution prevention and response.

Agency	HFR	Microwave
TORI/NARL	19	0

CWB	6	6
IHMT	3	0
MIC	2	2
NAMR	12	15
	42	23

Naoto Ebuchi (Institute of Low Temperature Science, Hokkaido University)

Japan

The annual meeting of HFR user communities was held in December 6-7, 2021 in Fukuoka. The theme for the meeting was “Development and Application of Sea State Monitoring System using Ocean Radars”. There were 11 presentations.