



GRANT N°: 871153
PROJECT ACRONYME : JERICO-S3
PROJECT NAME : Joint European Research Infrastructure for Coastal Observatories - Science, services, sustainability
COORDINATOR : Laurent DELAUNEY - Ifremer, France - jerico-s3@ifremer.fr

JERICO-S3 MILESTONE	
Joint European Research Infrastructure network for Coastal Observatory Science, Services, Sustainability	
MS#, WP# and full title	JERICO-S3 MS.29 – WP5 - “Training material on the functional homogenization tools for WP10 workshop”
5 Key words	Training; best practices; observing platforms; tutorial; knowledge transfer
Lead beneficiary	CNR
Lead Author	Carlo Mantovani (CNR)
Co-authors	In alphabetical order: Miguel Charcos (SOCIB), Lorenzo Corgnati (CNR), Juan Gabriel Fernández (SOCIB), Biel Frontera (SOCIB), Xisco Notario (SOCIB), Jay Pearlman (IEEE), Emma Reyes (SOCIB), Lohitzune Solabarrieta (AZTI), Nikolaos Zarokanellos (SOCIB)
Contributors	
Submission date	07/09/2024

→ **Please specify the type of milestone:**

- Report after a workshop or a meeting (TEMPLATE A)
- Report after a specific action (TEMPLATE B) (test, diagnostic, implementation,...)
- Document (TEMPLATE B) (training material)
- Other (TEMPLATE B) (to specify)

Diffusion list			
<u>Consortium beneficiaries</u>	Third parties	Associated Partners	other

PROPRIETARY RIGHTS STATEMENT

THIS DOCUMENT CONTAINS INFORMATION, WHICH IS PROPRIETARY TO THE **JERICO-S3** CONSORTIUM. NEITHER THIS DOCUMENT NOR THE INFORMATION CONTAINED HEREIN SHALL BE USED, DUPLICATED OR COMMUNICATED EXCEPT WITH THE PRIOR WRITTEN CONSENT OF THE **JERICO-S3** COORDINATOR.

*According to the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) and the 78-17 modified law of 6 January 1978, you have a right of access, rectification, erasure of your personal data and a right of restriction to the data processing. You can exercise your rights before the Ifremer data protection officer by mail at the following address: IFREMER – Délégué à la protection des données- Centre Bretagne – ZI de la Pointe du Diable – CS 10070 – 29280 Plouzané - FRANCE or by email: dpo@ifremer.fr // jerico@ifremer.fr
 Ifremer shall not hold your personal data for longer than necessary with regard to the purpose of the data processing and shall destroy it thereafter.*



TABLE OF CONTENT

TABLE OF CONTENT	2
1. Objectives and implementation process	3
2. Main report	3
3. Conclusion	5

1. Objectives and implementation process

Within subtask 5.2.2 a series of functional tools (see JERICO-S3 D5.5) have been discussed, designed, and implemented, for contributing to international efforts on harmonising joint management of main issues on mature JERICO observing platforms, namely Mooring, Ferry Box, High Frequency Radar, Underwater Glider. These functional tools are accompanied by manuals, guides, video tutorials that can be used to conduct training and specialisation courses aimed at transferring the know-how within the JERICO consortium.

This document describes and links the training materials mentioned above. Some of those materials were used during the JERICO-S3 WP10 Training Workshop #1, focused on HF Radars, described in JERICO-S3 D10.5.

2. Main report

A list of training tools is provided in the following paragraphs.

2.1.HOORT: HFR Online Outage Reporting Tool

Free and open web-based application to aid High-Frequency Radar (HFR) operations and maintenance and keep operators more aware of common outages, supporting also the reporting. <https://hoort.hfrnode.eu/>

Training material: [video tutorial](#) (folder "2022-11-21-Day 1" file "GMT20221121-133450_Recording_1920x1080", from mm:ss 27:17 to 50:00)

2.2.JERICO Coastal Ocean Resource Environment (CORE) as a platform to support HFR activities

The JERICO Coastal Ocean Resource Environment (CORE) Virtual Research Environment (VRE) offers the possibility to integrate services that take advantage of the knowledge base catalogue of JERICO resources. These advanced services can support processing and analysis of datasets that are discoverable in the knowledge catalogue. Moreover, they provide an overview of the status of the assets of coastal research infrastructures. An example of service in the JERICO-CORE VRE is proposed, helping to show the prospect of this platform for the HFR community and the gaps in the HFR information of the JERICO-CORE resource catalogue.

Training material: [video tutorial](#) (folder "2022-11-21-Day 1" file "GMT20221121-133450_Recording_1920x1080", from mm:ss 03:50 to 26:40)

2.3.European standard HFR data model

https://github.com/LorenzoCorgnati/European_standard_HFR_data_model

European standard QC, data and metadata model for Near Real Time current data from High Frequency Radar. A common data and metadata model and QC test battery for Near Real Time (NRT) current data from HFR to ensure efficient and automated data discovery and interoperability across distributed and heterogeneous earth science data systems.

This data model was defined and implemented for the first time in the framework of the Jerico-Next EU H2020 project, under the coordination of the EuroGOOS High Frequency Radar Task Team (<https://eurogoos.eu/high-frequency-radar-task-team/>). For any further information, please refer to the EuroGOOS European HFR Node website: <https://hfrnode.eu>.

For proposing changes, integrations and updates to the data model, please use the GitHub functionalities or email to info@hfrnode.eu.

Cite as: Corgnati, L.; Mantovani, C.; Novellino, A.; Rubio, A. and Mader, J. (2018) Recommendation Report 2 on improved common procedures for HFR QC analysis. JERICO-NEXT WP5-Data Management, Deliverable 5.14, Version 2.0. Brest, France, IFREMER, 82pp, (JERICO-NEXT-WP5-D5.14-V1.). DOI: <http://dx.doi.org/10.25607/OBP-944>.

2.4.HFR-TT_workshop_ROW2024_training_JupyterNotebook

https://github.com/LorenzoCorgnati/HFR-TT_workshop_ROW2024_training_JupyterNotebook

This Python-based Jupyter notebook (EU_HFR_NODE_ROW24.ipynb) focuses on providing basic routines for testing the processing and QC parameters for the operational workflow of the European HFR Node (<https://www.hfrnode.eu/>). The operational routines of the European HFR Node are available on the GitHub repository https://github.com/LorenzoCorgnati/EU_HFR_NODE_pyHFR.

For doing this you will provide sample radial and total files from the HFR network you manage. The sample files shall be saved in the data folder with the following folder tree: [1] data/HFR-network/Radials_ruv/stationID for radials measured by Codar systems, [2] data/HFR-network/Radials_asc/stationID for radials measured by WERA systems, [3] data/HFR-network/Totals_tuv for totals generated by Codar Radial Combine Suite, [4] data/HFR-network/Totals_asc for totals generated by WERA systems.

The comprehensive information about HFR networks and stations are read from the operational database of the European HFR Node. In order to insert or modify the information stored in the database, please use the online webform of the European HFR Node (<https://webform.hfrnode.eu/>).

2.5.Ferry Box training resources

11th FerryBox workshop, in Geesthacht, Germany, September 28-29, 2022, agenda, presentations and further information are available here : <https://ferrybox.org/dissemination/workshops/index.php.en>. The workshop took place in a conjunction with a JERICO-S3 NS & English Channel PSS / KASKEN & Norwegian Sea IRS (September 26-27, 2022).

(Most) Relevant presentations:

- [Gonzalez-Nuevo, G.: Development of web apps to facilitate QC and dissemination of TSG data from IEO research vessels \(PDF\)](#)
- [Protsenko, E.: NIVA Ferrybox data management \(PDF\)](#)
- [Böcke, M.: Data Management HELMI – HEreon Layer for Managing Incoming data \(PDF\)](#)
- Gorringer, P.: EMODNet – update and outlook

Target: Operators from the FerryBox community, other users who may be interested in FerryBoxes

2.6.Ocean practices maturity model

The model provides attributes for assessing both the maturity of the practice description and its implementation. It also provides a framework for analyzing gaps and suggesting actions for practice evolution.

Mantovani C, Pearlman J, Rubio A, Przeslawski R, Bushnell M, Simpson P, Corgnati L, Alvarez E, Cosoli S and Roarty H (2024) An ocean practices maturity model: from good to best practices. Front. Mar. Sci. 11:1415374. doi: <https://doi.org/10.3389/fmars.2024.1415374>.



3. Conclusion

Training materials for knowledge transfer within the JERICO consortium has been produced and used in training workshops within the project and remain available for further usage and improvement. This effort represents a noteworthy step forward compared to the initial state of the project; however, it is necessary to continue moving forward by developing more effective training tools, possibly hands-on and interactive. The use of Virtual Research Environments and tools such as interactive web-based notebooks should be considered for future developments. In addition, there is a need for a more standardised approach between the different observation platforms, as at present some platforms have more advanced training tools than others.