



EuroGOOS
European Global Ocean
Observing System

EuroGOOS General Assembly
30 May to 2 June 2017, Brussels
EuroGOOS/BELSPO, Ground floor

Agenda Item 8: Reports from Task Teams

Document 8.1: Chair's reports

Full TT Title	EuroGOOS Euro-Argo Task Team
Established	May 2014 at the creation of the Euro-Argo ERIC
Chair/co-Chairs	Sylvie Pouliquen
Current members	<p>Euro-Argo ERIC Members are countries, and adherence to the ERIC is signed at ministry level who then designs an institute to represent the country in the Euro-Argo ERIC Council and Management Board.</p> <p>10 countries has signed the statutes. They represent 17 institutes</p> <p>Founding Members: Finland, France, Germany, Greece, Ireland, Italy, Netherlands, United Kingdom</p> <p>Founding Observers: Norway, Poland</p> <p>Ireland joined the ERIC in April 2016 and Spain in January 2017</p> <p>he Euro-Argo ERIC Office is a team of 5 persons with project management, technical and scientific background. Two of them joined the ERIC in 2016: R Cancouët in April and C Gourcuff in October.</p>
Main contact person	Sylvie Pouliquen
Webpage	http://eurogoos.eu/euro-argo/
Objective	<p>Euro-Argo objectives is to coordinate and sustain the European contribution to the global Argo network (1/4 of the network) and develop a strategy and an implementation plan Euro-Argo , in coherence with the Argo International priorities, to :</p> <ul style="list-style-type: none"> • Sustain the core T&S mission, with an emphasis in Western Boundary regions • Monitor European marginal seas (Baltic, Mediterranean & Black seas) • Monitor high latitudes • Monitor the abyssal oceans • Monitor ecosystem parameters
Relevance to EuroGOOS Strategy	Euro-Argo activities contribute to the “Sustained Observations “ topic of the EuroGOOS strategy in link with the Recommendation defined in the “Strategy “ one as Euro-Argo works closely with CMEMS to take into account CMEMS needs in the network developments .
Successes 2016-2017	In 2016 a lot of activities have been carried on within the MOCCA, AtlantOS and ENVRI+ EU project . In Particular within MOCCA 150 floats have been purchased, tested and half of them either deployed or prepared and shipped to the vessel ready to be deployed demonstrating the Euro-Argo ERIC capacity to manage end to end Float management from purchase to delivery for the members

	<p>Euro-Argo has also worked closely with other observing networks both in AtlantOS and in ENVRI+ cluster to harmonise data services and enlarge the use of Argo data.</p> <p>It has issued the V3 of the “Strategy of the evolution of Euro-Argo Contribution to Argo for the next decade” that have been validated by the Euro-Argo scientific advisory board.</p> <p>Finally Euro-Argo is developing a communication plan to define the best means to target different communities; In 2016 the priority has been on developing a newsletter that is issued every 2 to 3 months and to develop Euro-Argo visibility on social media (Twitter).</p>
Bottle necks / problems	Mostly relies on research funds with uncertainties in terms of sustainability. Difficulties in developing with EC a sustained European contribution to Argo
Main work plan areas 2017-2018	<p>Euro-Argo ERIC plans to work in 2017 along six main activities:</p> <ul style="list-style-type: none"> • Coordination of Euro-Argo float deployment and float monitoring activities • Organise the work of the ERIC within the EU projects (MOCCA AtlantOS and Envri+) • Develop with Members the Euro-Argo implementation plan including the extensions of Argo • Enhance communication and outreach including training • Work with EC to develop a sustained European contribution to Argo
Meetings 2016	3 Management Board Meetings and 2 Council meetings were organised in 2016
Next meetings planned	3 Management Board Meetings and 2 Council meetings are organised in 2017
Links / synergies with other initiatives	<p>Euro-Argo is involved in AtlantOS and leads the task on profiling floats. It’s also involved in the ENVRI+ project that aims at creating a more coherent, interdisciplinary and interoperable cluster of Environmental Research Infrastructures across Europe .</p> <p>Euro-Argo also work closely with Copernicus Marine Service (CMEMS) to take into account CMEMS needs in the strategy development.</p>

Full TT Title	EuroGOOS FerryBox Task Team
Established	Dec. 2014
Chair/co-Chairs	Franciscus Colijn, Wilhelm Petersen / Kai Sørensen, Andrew King
Current members	HZG, NIVA, IMR, SMHI, SYKE, CEFAS, IFREMER, HCMR
Main contact person	Franciscus Colijn, Wilhelm Petersen
Webpage	www.ferrybox.org
Objective	European FerryBox network, common standards of best practises, contribution to CMENS and EOOS, European component of global community of ships of opportunity
Relevance to EuroGOOS Strategy	Integration of FerryBox networks in the European Marine Services, future component of the EOOS
Successes 2016-2017	Final version of the white book, agreement about a common European FB database, FB fact sheet
Bottle necks / problems	Sustainable funding of FerryBox operations Sustainable financial support for a common data base Activities are still not well spread over the whole team
Main work plan areas 2017-2018	Finalising the white book about FerryBox in Europe Working on a European FerryBox database and data portal Discussion on FB products: e.g. contributions to EU environmental assessments, climate related assessments,
Meetings 2016	FB TT meeting at: <ul style="list-style-type: none"> FerryBox workshop, Heraklion April 2016 Presentation of FB-TT at: <ul style="list-style-type: none"> EuroGOOS Annual meet. in Brussels (May '16) EuroGOOS Chairs meeting (Oct '16) JCOM-SOT Meeting in London (March '17)
Next meetings planned	FerryBox workshop, Oslo, Oct 2017
Links / synergies with other initiatives	EMODnet, JERICO-Next, JCOMM-SOT, GoSud, ROOSes

Full TT Title	EuroGOOS HF Radar Task Team
Established	2014
Chair/co-Chairs	Julien Mader (AZTI, Spain)
Current members	Antonio Novellino (ETT, Italy), Annalisa Griffa (CNR-ISMAR, Italy), Johannes Schulz-Stellenfleth (HZG, Germany), Maribel Ruiz (Puertos del Estado, Spain), Lucy Wyatt (Univ. Sheffield, UK), Céline Quentin (MIO-Toulon, France), Anna Rubio (AZTI, Spain), Carlo Mantovani (CNR-ISMAR, Italy), Michael Hartnett (NUIG, Ireland) During 2016: Pablo Lorente used to represent Puertos del Estado in the Task Team activities. SOCIB has been very active in some collaborative actions (2016 workshops and CRUSOE proposal).
Main contact person	Julien Mader (jmader@azti.es)
Webpage	http://eurogoos.eu/high-frequency-radar-task-team/
Objective	<p>ToR#1. To develop the European High Frequency Radar (HFR) network and assist the standardization of HFR operations, data and applications, including:</p> <ul style="list-style-type: none"> • All applications of coastal radars (surface current, wave, target detection...) • Applications in integration with other technologies (including satellite, X-band, fixed platforms, gliders, numerical modeling...) <p>ToR#2. To contribute to the development of the European Ocean Observing System (EOOS)</p> <p>ToR#3. To ensure the integration of HFR networks in the European Marine Downstream Services</p> <p>ToR#4. To act as the European component in the global HFR community</p> <p>ToR#5. To ensure data availability via the ROOS data portals</p> <p>ToR#6. To provide recommendations (from operators to end-users) on: *Data structure, format and dissemination (interoperability of datasets), *Quality control procedures, *Validation procedures, *Technological solutions.</p> <p>ToR#7. To be a framework for:</p> <ul style="list-style-type: none"> • sharing success stories and difficulties; • improving administrative procedures, regulations at European level that can be adopted in member states; • providing and exchanging tools (data analysis, applications...); • promoting scientific synergies for key questions; • filling gaps and looking for complementarity with other technologies or modeling products; • promoting joint progress through networking (e.g. creating synergies between different local consortium).

i. Sustained observing system:

- Developing an important component of the ocean observing system: a unique insight to coastal ocean variability, by providing synoptic, high frequency and high resolution data at the ocean atmosphere interface ☐ involved in key initiatives like JERICO-NEXT, EMODnet, CMEMS...
- Enhancing the current potential of the European systems and planning the future
- Creating community at operator level and at user level
- Involved at Global level (GOOS and GEO)

ii. Data:

- Performing (and updating) European HFR Inventory http://eurogoos.eu/download/publications/EU_HFRadar_inventory.pdf
- Considerable progress on standardization of Data format, control and distribution.
- Allowing open access data in European data infrastructure
- Focus on users (Data assimilation and model assessment, Marine Safety, Coastal and Marine Environment, Marine resources)

iii. Products:

- Development of advanced products (Data gap filling and refined grid products, Short term prediction, Lagrangian)
- Working both at European level (JERICO-NEXT, EMODnet, CMEMS...) and between downstream services
- MSFD: Environmental programs with strong hydrodynamic and transport monitoring components
- Integration of HFRs with other observing technologies with wider horizontal (as the satellite remote sensing) and vertical coverage (as profilers, ADCPs in fixed stations or gliders)

iv. Communications Interface:

- Outreach activities as a HFR European community (contents for EuroGOOS webpage, workshops, conferences, review paper, etc)
- Supporting joint initiatives between European HFR actors
- Working with EuroGOOS office for communication actions
- Improve visibility of the European systems (Inventory, EMODnet Physics, ...)
- Involved at Global level (GOOS and GEO)

**Relevance to EuroGOOS
Strategy (cont.)**

v. Cross-cutting activities:

- Assisting coordination and complementarities between different initiatives or projects
- Wide participation of the HFR European community (HFR Task Team driven by a Core group with an extended list of associated actors)
- Contribution into the EuroGOOS advisory role (EOOS workshops...)
- Contribution into the EuroGOOS communication

Successes 2016-2017

1. Management of the HFR Task Team, Internal actions in EuroGOOS

- Chair attending EuroGOOS Executive Board and Chairs Meetings: 24-25 May; 29-30 November 2016; Internal reporting.
- A meeting with the Core group + some associated experts have been organized in La Spezia, Italy, on 15th September 2016.

2. Strategy: Roadmap (based on Inventory, state-of-the-art, workplan) #ToR1

- A review paper (Rubio et al. 2017) described the state-of-the-art of HFR in Europe.
- The La Spezia workshop provided discussions and some strategic guidelines for three different topics:
 - ✓ Basic products: Data format and QA/QC
 - ✓ Advanced products and applications
 - ✓ Technical implementation and strategic development

Minutes and presentations available at:

<https://azti.box.com/v/EuroGOOSHFRITINCREASExpWS>

3. Networking and coordination activities

3.1. Co-operation: promoting/following coordinated actions in projects #ToR7

- *Building a community*: Joint proposals seeking for funding for networking activities:

(1) a new COST action proposal led by L. Wyatt (Univ. Sheffield) was submitted in December 2016;

(2) a new MSCA-ITN-ETN CRUSOE proposal led by SOCIB has been submitted in January 2017; rejected in May 2017. <http://crusoe-hfradar-training.eu>

- Coordinated actions run in collaborative projects that provide outputs and benefits for all the HFR community:

JERICO-NEXT with homogenization, innovation, standardization and demonstration for the use of HFR in the coastal observatories;

EMODNet-Physics with interoperability and contributing to unlock access to data;

CMEMS and the INCREASE (Service Evolution 2016 call) project, which aims to the integration of existing European HFR operational systems into the CMEMS and to the promotion of the use of HFR data for improving CMEMS numerical modelling systems;

SeaDataCloud for building historical products for reanalysis purposes and for standard improvements.

- JERICO-NEXT provided in December 2016 a report on the status of HF-radar systems: <http://www.jerico-ri.eu/download/jerico-next-deliverables/JERICO-NEXT-Deliverable-2.1.pdf>
- The survey performed in Summer 2016 (Mader et al. 2016) provided a detailed inventory of the existing HFR operational systems in Europe, the characteristics of the systems, their operational products and applications.

3.2. Co-production of HFR data products #ToR3&5

- More systems have been connected to the homogenised THREDDS catalogue (EMODnet Physics and INCREASE framework): 32 radial stations connected in May 2017. <http://www.emodnet-physics.eu/map/DefaultMap.aspx?sessionid=636311557889581543>
- JERICO-NEXT: 4 HFR systems are included in the Virtual Access offered by the JERICO infrastructure.

3.3. Recommendations #ToR6

- Progress have been performed for achieving early 2017 a first recommendation at European level to achieve the harmonization of HFR data management including the following points: data format, metadata structure, QC flagging scheme and QC tests (D5.13 JERICO-NEXT).
http://www.jerico-ri.eu/download/jerico-next-deliverables/JERICO-NEXT-Deliverable-5.13_V1.pdf

4. Promotion (dissemination, webpage) and representation (Global HFR, EOOS) #ToR2&4

- The European HF Radar Inventory has been published into EuroGOOS Webpage:
http://eurogoos.eu/download/publications/EU_HFRadar_inventory.pdf
- A review paper entitled “HF Radar Activity in European Coastal Seas: Next Steps Towards a Pan-European HF Radar Network” has been published in the Research Topic “Horizon Scan 2017: Emerging Issues in Marine Science” of Frontiers in Marine Science. January 2017. Authors: Rubio, A., Mader, J., Corgnati, L., Mantovani, C., Griffa, A., Novellino, A., Quentin, C., Wyatt, L., Schulz-Stellenfleth, J., Horstmann, J., Lorente, P., Zambianchi, E., Hartnett, M., Fernandes, C., Zervakis, V., Gorringe, P., Melet, A., Puillat, I.
<http://journal.frontiersin.org/article/10.3389/fmars.2017.00008>
- Presentation in the French Renhfor project meeting, giving an update of the progress towards a unified HFR European network. Brest, October 2016. Presenting author: A.Rubio (AZTI).
- Poster entitled “Joint Efforts Towards European HF Radar Integration” in the session “OS13B Toward an International Coastal Ocean Radar Network: Technology Development, Research Demonstration, and Operational Applications II Posters” of the AGU- Fall Meeting, San Francisco, USA, 12 December 2016. Authors: Mader, J., Rubio, A., Griffa, A., Mantovani, C., Corgnati, L., Novellino, A., Schulz-Stellenfleth, J., Quentin, C., Wyatt, L., Ruiz, M.I., Lorente, P., Hartnett, M., Gorringe, P.
https://agu.confex.com/agu/fm16/mediafile/Handout/Paper174583/poster_AGU_vf.pdf
- Representation by A.Rubio (AZTI) in the 5th Meeting of the GEO Global HF Radar Task held in San Francisco, USA, on the 12th December 2016. Agenda of the meeting and presentations:
<http://global-hfradar.org/meetings.html>

Successes 2016-2017

- Article in Copernicus In Situ Newsletter #1: “Coastal Radar for the Copernicus Marine Environment Service”
<http://insitu.copernicus.eu/news/newsletter1/>
<http://insitu.copernicus.eu/news/towards-integrating-a-coastal-radar-network-into-the-copernicus-marine-environment-service>
- Article in a Special Issue #55 of Mercator Ocean Journal jointly coordinated with Coriolis, April 2017: “Progress towards a French high frequency ocean surface wave radar network”. Authors: C. Quentin, B. Zakardjian, L. Marié, A. Rubio, A-C. Bennis, F. Dumas, A. Sentchev, G. Sicot, Y. Barbin, S. Jousset, A. Bonnat, J. Mader, Y. Ourmières, G. Charria, S. Tarot, D. Mallarino.
https://www.mercator-ocean.fr/wp-content/uploads/2017/04/Newsletter_55April17.pdf
- Participation of C. Mantovani and L. Corgnati (CNR-ISMAR) representing European community in Radiowave Operators Working Group (ROWG) 14-15 March 2017 Texas A&M University, Galveston, Texas.
- Oral presentation in EGU General Assembly, Vienna, 23-28 Apr 2017, Session ESSI1.1 Informatics in Oceanography and Ocean Science. Title: Innovation and Networking for the integration of Coastal Radars into European mARine Services. Presenting author: A.Novellino (ETT).
<http://meetingorganizer.copernicus.org/EGU2017/EGU2017-19261.pdf>

Bottle necks / problems

- Difficulties in funding a wide networking project (like a COST or ETN action).
- Some operators have difficulties to make their system sustainable (Research funding).
- Some isolated cases of no data open policy that should be tackled (in progress).
- Another important need to be addressed through international collaboration is to coordinate the use of the limited radio frequency bands and protect them either from reciprocal HFRs radio interference or from unauthorized radio sources.

**Main work plan areas
2017-2018**

1. Management of the HFR Task Team, Internal actions in EuroGOOS
 - Review of the integrated strategy with EuroGOOS office
 - Next meeting in Lüneburg, Germany, during ROW2017 (22 September 2017)
 - Intermediate communication and technical exchanges between the core group in on-line meetings.
 - General information every 6 months to the extended mailing list of associated actors.
2. Strategy: Roadmap (based on Inventory, state-of-the-art, workplan) **#ToR1**

Strategic collaborative actions have been agreed (La Spezia, Sep 2016) for pushing the implementation and development of the European HFR network:

 - work on a demonstrator:
 - a. available tools are sufficient to demonstrate the capability;
 - b. radials have to be provided;
 - c. intermediate users with applied best practices should be involved;
 - work on dissemination to public society:
 - a. why this technology and the benefit for key societal challenges;
 - b. what do we miss if we have not the network;
 - c. create some show cases (e.g. marine safety – S&R, water pollution monitoring – long term data series in key places e.g. Naples);
 - d. consequences (costs) if you are missing that information and if you reacted wrongly;
 - work on defining future plans for the European network with priorities in filling gaps and with a quantitative estimation of cost (installation and maintenance).
3. Networking and coordination activities
 - 3.1. Co-operation: promoting/following coordinated actions in projects **#ToR7**
 - Harmonization and co-production will be produced in different projects (JERICO-NEXT/INCREASE).
 - 3.2. Co-production of HFR data products **#ToR3&5**
 - Progress on connecting existing system to European data systems (Emodnet Physics III).
 - Progress on defining a European coordinated organization for HFR data management and production (role of CMEMS, EMODnet, ...).

**Main work plan areas
2017-2018
(cont.)**

3.3. Recommendations #ToR6

- JERICO-NEXT will provide a “Recommendation Report 2 on improved common procedures for HFR QC analysis” (D5.14 Sep2018).
- JERICO-NEXT will work for producing a Report on Best Practice for new network systems: HF-radar /cabled coastal observatories (D2.4 Dic2018). Recommendations for operations and quality assessment should be included.

4. Promotion (dissemination, webpage) and representation (Global HFR, EOOS) #ToR2&4

- A HFR Users workshop will be organized as a special session of the Copernicus Marine Week, Brussels, 26th Sep 2017, 13:30-18:00.
<http://www.copernicusmarineweek.eu/programme.html>
- Promoting future events of interest:
Summer School on HF and X-band radars. 21-25 Aug 2017, Caen, France:
<https://sites.google.com/site/anneclairebennis/Home/actua>
[lites](https://sites.google.com/site/anneclairebennis/Home/actua)

Radiowave Oceanography Workshop (ROW-2017). 19-21 Sep 2017, Lunenburg, Germany:
<https://www.hzg.de/ms/row/index.php.en>
- Developing contents in the EuroGOOS/HFR TT webpage
- To be active in the Global initiative for implementing HFR in Global networks (GEO HFR, GOOS).
- To edit a fact sheet with EuroGOOS Office.

Meetings 2016

- Partial group: JERICO-NEXT HF-radar workshop, San Sebastian, Spain, from 09 to 11 Mar 2016
- Full core group: La Spezia, Italy, on 13-15 Sep 2016

Next meetings planned

- In Lunenburg, Germany, after ROW2017 (22 Sep 2017)

**Links / synergies with
other initiatives**

- EuroGOOS WGs
- HFR TT should play a role in EOOS development
- Contribution in JERICO infrastructure strategy
- Link with Global HFR network, ROW, ROWG