EURO-ARGO RISE KICK OFF MEETING

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Euro-Argo Research Infrastructure Sustainability and Enhancement Project (EA RISE Project) - 824131

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1.1	12/04/2019	S. POULIQUEN	Integration of partner remarks

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1 Summary of the Euro-Argo RISE kick off meeting

The kick-off meeting was held in January 09-11, 2019 in Plouzané, France. 19 beneficiaries attended the meeting. The kick-off meeting not only allowed to introduce the scope and structure of the project and its consortium, but it also paved a path for a more detailed work plan through dedicated WP sessions, thus improving its capabilities to start the actual work.

1.1 Goals of the meeting

The meeting was organized around **3 main goals**:

Create a shared understanding of the project objectives and aims;

Create a more detailed work plan with clear idea of:

- What is the purpose of each Work Package (WP),
- What are the products or services the WP shall deliver,
- What are the timelines and milestones for each task within all the WPs,
- Who are the key people within each task and what is their role.

Organise the administrative and financial activities.

The kick-off meeting was organized in both plenaries and specific WPs sessions. In addition, a General Assembly and an Executive Board meeting were also held.

1.2 The approach of the meeting

In order to develop such a specific work plan with a clear understanding of the aims and responsibilities, specific WPs sessions were organized prior to the General Assembly. The Euro-Argo RISE Kick-Off meeting ran from Wednesday 9 January morning to Friday 11 January noon.

WP meetings: The first three half days were dedicated to Work Packages meetings, organized by WP leaders. The aim of these 2 to 3 hour meetings was to organize the workplan within Work Packages for the project duration. For each Work Package, a dedicated agenda was provided by the WP leader to the partners involved.

General Assembly: Work package leaders reported to the General Assembly on Thursday afternoon and Friday morning. The objective of this first General Assembly was to ensure we all understood the workplan content, discuss the main issues and the way we will organize the work within the project.

Executive Board meeting: The Executive Board, composed of the 8 Work Packages leaders and chaired by the Project Coordinator, met after the General Assembly to internally discuss the project management.

2 Participants of the meeting

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3 General Assembly

The Euro-Argo RISE Project Coordinator, Sylvie Pouliquen, opened the meeting. She verified that the number of members attending the General Assembly was high enough to make the proceedings of the meeting valid (more than 2/3 of the members were represented). Only PML and IMR were not represented. The agenda of the meeting was adopted with one change: Romain Cancouët from the Project Office at Euro-Argo ERIC gave a presentation of the *Active Collab* tool chosen for project management activities after S. Pouliquen presentation.

4 Euro Argo RISE overview

Sylvie Pouliquen from the Euro-Argo ERIC office presented an overview of the project and highlighted the main expected results from the project.

First at European-Argo Level, Euro-Argo-RISE will provide:

- Recommendations to operate Argo floats in all the Euro-Argo-RISE targeted areas
- Recommendations for the use of alternative sensors for both the CTD and BGC parameters and engagement with manufacturers for their implementation on existing float types
- Tools and methodology to enhance Euro-Argo fleet behaviour through monitoring facilities
- Proposal to Euro-Argo Council for BGC data processing (NRT and DMQC) in Europe
- Revision of a strategy for the next decade (first) and the implementation of the strategy (second)

Then, within the ESFRI and EOOS context, Euro-Argo-RISE will:

- Develop common tools for Euro-Argo members and Users including training and outreach material
- Develop a partnership with Environmental RIs to facilitate co-design and co-operation of the European Ocean Observing System
- Refine requirements from users in particular CMEMS and EMODnet
- Strengthen links with Euro-Argo users including those of the Argo extensions
- Develop partnership with surrounding countries of European marginal seas to enhance Argo coverage and enhance services at regional scale
- Develop a long-term sustainability plan for Argo in Europe to be proposed to the Euro-Argo ERIC Council

Romain Cancouët from the Euro-Argo-RISE Project Office presented the project management software tool *Active Collab* and how it will be used by the ERIC office as well as WP leaders to facilitate collaborative work with partners and facilitate project management and monitoring. Each person working on the project will receive an email from the Project Office.

5 Work Packages summaries

The WP leaders presented a summary the activities carried out in their WP as well as the main conclusion of the WP meeting. The WP meeting reports are in Annex.

5.1 WP2 - The Core mission improvement

Guillaume Maze, **WP2** leader, presented the Core mission improvement:

- Extend life expectancies by better understanding failure origins, energy impact of different float configurations
- Diversify sensor by testing RBR sensor on Arvor float as the monopoly position of Seabird is presently a risk for the Argo mission. The activity will be done in collaboration with national programmes and will be tested on 4 floats.
- Improve sampling from Argo in boundary currents in order to do improve information retrieved with a limited number of floats.
- Develop and implement DMQC methods that will be strengthened through R&D activities in particular in testing machine-learning technics. Integration of existing methods into a collaborative framework will foster code, methods sharing, and development of training material.

5.2 WP3 - The Deep extension

Pedro Velez, **WP3** leader, presented the Deep mission extension:

- Identify the capacity of the available deep sensors (SBE41, SBE62, RBR) using one tri-head and two dual-head floats. From the experiment, clearer estimation on the stability and accuracy of the different sensors will be assessed and recommendation for the implementation of the DEEP extension elaborated. The first prototype will be available in June 2020 and first deployment are planned in September 2020.
- Organise DMQC for deep data will be led by NERC (Brian King) in close collaboration with Deep Argo international coordination. The focus will be on the methodology and on reference database.

5.3 WP4 - The BGC extension

Fabrizio d'Ortenzio, **WP4** leader, presented the extension to BGC working on 3 aspects:

- Diversify sensor by testing new sensors for NO3 and Irradiance on dual-head floats comparing SBE and TRIOS sensors. Prototype will be tested.
- Enhance data qualification and BGC data management within Euro-Argo. Different aspects will be addressed: improvement of the DMQC methods, share development

and tools through collaborative framework, design the complete BGC data management in Europe.

- Development of new products deriving new variables from BGC floats using neural network methods (link to carbon network).

5.4 WP5 - High latitude extension

Laura Tuomi, **WP5** leader, presented the extension to high latitude, working on 3 aspects:

- Enhance technology for under-ice measurements improving ISA algorithm, building from existing technology to be able to operate in the Arctic (Barents Sea, Baffin Bay and other Arctic basins) and Baltic Sea. Collaboration with INTAROS will also help in this development.
- Enhance cooperation in high latitude areas. This activity will be done jointly with WP6 Baltic activities. Scandinavian (Denmark and Sweden) and Russia are targeted countries with whom Euro-Argo will start to engage with as well as other high latitude coordination bodies. The Arctic Science Summit that will be held in May 2019 will allow initiation of Argo network promotion.
- Enhance Argo data quality in Southern Ocean (SO ARC) focussing the Weddell Sea and Antarctic Circumpolar Current.
- Raising awareness within the Arctic community of the potential of Argo is important as well as building collaboration with other surrounding countries are essential.

5.5 WP6 - Extension to shallow coastal waters

Giulio Nortastefano, **WP6** leader, presented the objectives of the WP6, which aims to expend the regional Argo community as well as extend Argo towards shallow coastal waters for Baltic, Mediterranean Sea and Black Sea. This task will work closely with WP7 and WP8. For extension of the regional Argo community, the objectives will be achieved at:

- Scientific level: by engaging with new scientific teams, through engagement with existing organised research Infrastructures such as EMSO, ICOS, etc. or coordination bodies such as the EuroGOOS ROOS,
- Political level: with the aim to facilitate Argo operation in the marginal seas linking with existing events such as Maritime day or bodies such as HELCOM in the Baltic Sea or UNEP-MAP.

The work will also include technological activities with tuning floats to operate in shallow coastal waters using the Euro-Argo fleet monitoring tools in partnership with WP2. This will lead to recommendation deliverable.

Giulio showed the priority list of activities from rapid purchase of the floats, setting up the tools and discussion for float configuration in coastal areas, to engaging with regional Argo communities.

In terms of WP coordination, Giulio plans more frequent teleconference meetings the first year and then less frequent ones (every 9 months as stated in the CA).

5.6 WP7 - Enhancement of communication and services toward users

Claire Gourcuff, **WP7** leader, presented the objectives of the WP7 that is a cross cutting WP aiming at enhancing communication and services toward users. It will be organised via:

- First task is to better assess the user needs through survey and phone calls.
- Promote and improve data access and usage by
  - Enhancing Argo data portal in partnership with ENVRI-FAIR project
  - Developing an online Argo-school highlighting what is Argo and how to access Argo data
  - Developing an Argo Data discovery tool by JCOMMOPS to add 3D features and link to Argo data portal
  - Deliver several "use cases" showing the importance of Argo that should address the different usage of Argo from improvement of knowledge to operational or monitoring services. The importance of Argo for MSFD will also be highlighted using the Greek example (and the results of this work could be used as one subject for the use cases)
- Building agreement with CMEMS, C3S and EMODnet, as Argo are essential to these programmes.
- Forster European contribution to Ocean Observers educational activities.
- Communication to general public will be done through the Euro-Argo website and described in a communication plan that will be shared with partners (due Month 3).

In term of Social media, the Project Management team plans to connect to all partners twitter accounts.

The Management team will also set a document in *Active Collab* to register all relevant presentations, meetings and publications throughout the project duration, to be used for project periodic reporting.

5.7 WP8 - Strengthening integration of Euro-Argo within a multiplatform observing network

Diarmuid Ó Conchubhair, **WP8** leader, presented the WP8 objective which is a key WP building upon other WP achievements on 5 main objectives:

- Reinforcing collaboration with other ERICs and networks in close relation with the BEERI (set up by the ENVRI-FAIR project) as well as JERICO and EUROFLEETS+. Mutual agreements or Memorandum of Understanding (MoU) as well as co-design observing systems are foreseen in such agreements.

- Deployment in EEZ will focus on the work of developing best practices and helping EA ERIC members with the administrative procedures.
- Link with industry through dedicated workshop side to international conference where industrial are participating (international Conferences identified: Ocean Business or Oceanology International)
- 3 main documents will be provided:
  - Long Term Sustainability Plan
  - Strategy (Roadmap)
  - Implementation plan

These documents will be developed from WP results, will be endorsed by the Euro-ERIC governing bodies, then used and updated after the projects ends.

Diarmuid also presented the management organisation he plans with monthly WebEx and ongoing/interactive use of *Active Collab*.

5.8 WP1 - Euro-Argo-Rise project management

Grigor Obolensky from the Euro-Argo ERIC office presented the project management and how the Coordination will work with the partners and the Commission.

The Consortium Agreement is finalised and all the partners have to sign the Consortium agreement: one scan of the page with signature should be sent by email and 2 originals by regular mail before end of January.

All deliverables will be approved by WP leaders before being submitted to the ERIC and only the ERIC will upload deliverable to ECAS. As half of the deliverables are in the second reporting period of the project, partners are urged to pay attention to respect deadlines and a strict monitoring will be performed at Euro-Argo ERIC office to manage this risk.

The need for a specific action on the coordination of the many workshops was identified that will be done by the Executive board.

Financial and Reporting issues:

- The reporting periods of the Euro-Argo RISE project are classical for H2020 projects at months 18, 36 and 48. It is important that all the partners will inform their administration about these different periods.
- Banking details – All the partners need to send stamped and signed form containing their banking details as soon as possible. They can send the form electronically.
- No change of the Grant Agreement is needed for the following cases:
  - Changes in beneficiaries' data (address changes, authorised representatives).

  - Transfer of budget between different activities and between themselves as long as the work is carried out as foreseen in DoA.
- No Amendment is needed in case of budget transfer or reallocation of funds between one beneficiary to another but the Euro-Argo-RISE coordinator has to be informed and agree and a signed letter by the two beneficiaries has to be provided to the coordinator.
  - No Amendment is needed in case of reallocation of budget category to another for a beneficiary but the Euro-Argo RISE coordination has to be informed by email and agree.
  - In all other cases, amendment are likely to be needed and the Euro-Argo-RISE coordination has to be warned in advance.
- No amendment will be issued close to the reporting dates.

Communication issues:

- Project Management web system – *Active Collab*.
- **Website** - A section on the Euro-Argo website dedicated to Euro-Argo-RISE will be set up (https://www.euro-argo.eu/EU-Projects/Euro-Argo-RISE-2019-2022);
- **Logo:** Partners recommended to keep the Euro-Argo brand in the Euro-Argo-RISE logo as important to keep linked to Euro-Argo ERIC.
- **Email lists** – Most of the communication and discussion will be done through Active Collab. The general mailing list has been set up for general information on the project earise-general@listes.ifremer.fr .

EA-RISE will be GDPR compliant and ensure correct use and handling of personal data in terms of email lists and newsletters

5.9 Executive Board meeting report

Participants

Chair: Sylvie Pouliquen

Attending: Guillaume Maze, Pedro Velez, Fabrizio d'Ortenzio, Laura Tuomi, Giulio Nortastefano, Claire Gourcuff

Excused: Diarmuid Ó Conchubhair

Invited: Romain Cancouët, Grigor Obolensky

Meeting minutes

The Executive Board (EB) met at the end of the General Assembly and validated its membership, including coordinator, work package leaders and project office. Sylvie Pouliquen, as project coordinator chaired the meeting.

No Agenda was submitted beforehand. The agenda was mainly dedicated to the wrap-up of the General Assembly. Further explanation on *Active Collab* for WP leaders were provided by Romain Cancouët and a discussion was held on the planning of the project workshops throughout the project duration.

Members of the Project Office

Romain Cancouët and Grigor Obolensky as part of the Management Support Team are invited to all EB meetings without voting rights.

Internal communication: The Executive Board (EB) will convene their meetings either physically or through Teleconference. EB meetings will be organized every 2 months.

Planning Workshops

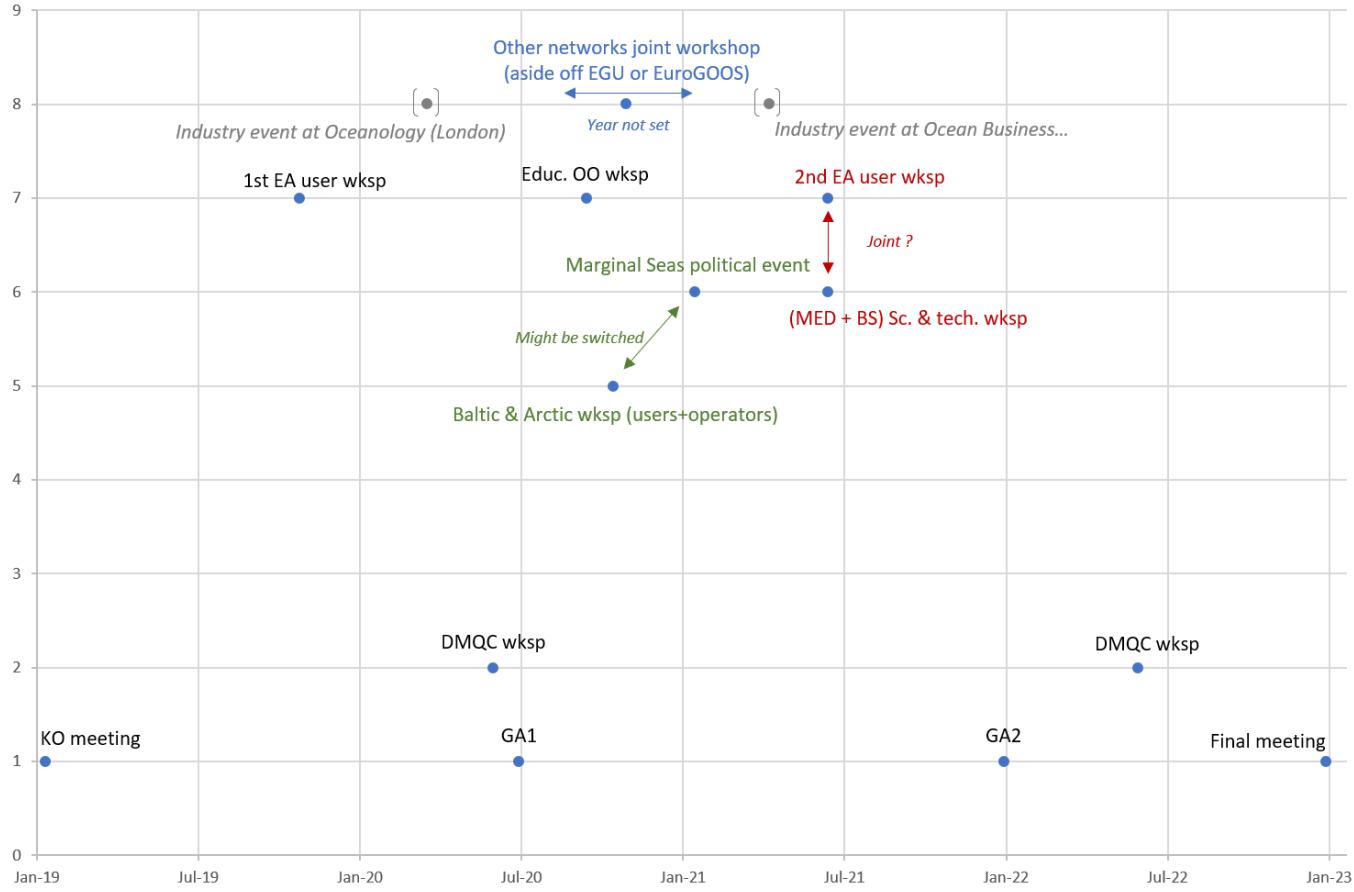
A total of 11 workshops/events involving different kind of stakeholders are planned within the project: 2 Euro-Argo users workshops, one educational workshop, one political event around marginal Seas, one joint event with other observing networks, one event for links with industry, one Baltic workshop, one Arctic workshop, one Mediterranean & Black Seas workshop and two DMQC training workshops.

Discussions held during the EB meeting to try to gather workshops and maximize their impact lead to the following conclusions:

- The Baltic & Arctic workshops will be gathered and organized in Autumn 2020
- The Marginal Seas political event could be organized aside of the "Maritime Day", during spring 2021
- The event for links with industry will be organised either aside off "Ocean Business" (Southampton, Spring 2021) or "Oceanology" Conference (London, 2020 or Oceanology 2022)
- The event jointly organised with other ocean observing networks should be organised aside off the EuroGOOS Conference (2020) or at EGU.
- The Mediterranean & Black Sea workshop could be organised aside off the 2nd EA users meeting (2021).

- Dates for the next EA user workshop were set to October 2019.

After gathering the Baltic and Arctic workshops we end up with a total of 10 events/workshops, in addition to the 2 General Assembly, the KO meeting and the final meeting. The figure bellow summarises the events along the timeframe of the project, and by WP.



Summary of the planned timeline for EA-RISE events & workshops, as of January 2019.

Priorities for next months are:

- Start the float purchase in the WP2-6 and start planning the deployment activities
- Finalise the Workshop planning to maximize the potential impact and avoid date conflict with major events planned for the targeted communities
- Prepare for the Next EB internal milestones to secure the monitoring of progress and have the capability at EB level to detect issues early in advance
- Prepare the Communication and Data Management Plan deliverables at Project Office level
- Set the EB teleconference meetings until summer break (March, May and July 2019).

AOB

The activities that must be fulfilled by the Executive Board are described in Article 6.3.2 of the Consortium agreement and copied hereafter :

6.3.2.3 Tasks

6.3.2.3.1

The Executive Board shall prepare the meetings, propose decisions and prepare the agenda of the General Assembly according to Section 6.3.1.2.

6.3.2.3.2

The Executive Board shall seek a consensus among the Parties.

6.3.2.3.3

The Executive Board shall be responsible for the proper execution and implementation of the decisions of the General Assembly.

6.3.2.3.4

The Executive Board shall monitor the effective and efficient implementation of the Project.

6.3.2.3.5

In addition, the Executive Board shall collect information at least every 6 months on the progress of the Project, examine that information to assess the compliance of the Project with the Consortium Plan and, if necessary, propose modifications of the Consortium Plan to the General Assembly.

6.3.2.3.6

The Executive Board shall:

- note the Members of the Management Support Team, upon a proposal by the Coordinator
- support the Coordinator in preparing meetings with the Funding Authority and in preparing related data and deliverables
- prepare the content and timing of press releases and joint publications by the consortium or proposed by the Funding Authority in respect of the procedures of the Grant Agreement Article 29.

6.3.2.3.7

In the case of abolished tasks as a result of a decision of the General Assembly, the Executive Board shall advise the General Assembly on ways to rearrange tasks and budgets of the Parties concerned. Such rearrangement shall take into consideration the legitimate commitments taken prior to the decisions, which cannot be cancelled

6 Agenda of the meeting

6.1 Overview of 3 days meeting

	Wednesday 9 January	Thursday 10 January		Friday 11 January
8:30-9:00	WP2	WP5	WP8	General Assembly
9:00-9:30	WP2	WP5	WP8	General Assembly
9:30-10:00	WP2	WP4	WP8	General Assembly
10:00-10:30	WP2	WP4	WP8	General Assembly
10:30-11:00	Break	Break	Break	Break
11:00-11:30	WP6	WP4	WP3	General Assembly
11:30-12:00	WP6	WP4	WP3	General Assembly
12:00-12:30	WP6	WP4	WP3	General Assembly
12:30-13:00	WP6	WP4	WP3	General Assembly
13:00-14 :00	Lunch	Lunch		
14:00-14:30	WP7	General Assembly		
14:30-15:00	WP7	General Assembly		
15:00-15:30	WP7	General Assembly		
15:30-16:00	WP7	General Assembly		
16:00-16:30	break	Break		
16:30-17:00	WP5	General Assembly		
17:00-17:30	WP5	General Assembly		
17:30-18:00	WP5	General Assembly		

6.2 Agenda of the General Assembly

10th January 2019

14:00 Euro-Argo RISE overview and objectives - Sylvie Pouliquen (E-A ERIC)
14:30 WP2: Improvement of the core Argo mission – Guillaume Maze (IFREMER)
15:00 WP3: Extension to deep ocean – Pedro Vélez (IEO)
16:00 WP4: Extension to biogeochemical parameters – Fabrizio D'Ortenzio (SU)
16:30 WP5: Extension to high latitude regions – Laura Tuomi (FMI)
17:00 End of the 2nd day
19:00 Joint Dinner

11th January 219

09:00 WP6: Extension to marginal seas – Giulio Nortastefano (OGS)
09:30 WP7: Euro-Argo visibility: communication and dissemination towards user's Community – Claire Gourcuff (E-A ERIC)
10:00 WP8: Integration of Euro-Argo activities in the general context of global ocean observations – Diarmuid O'Conchubhair (MI)
11:00 WP1 Project Management (E-A ERIC)
12:00 End of the General Assembly

7 Annexes - WP session reports

7.1 WP2 – minutes

This work package is dedicated to the improvement of the **core historical Argo mission** of observing temperature and salinity in the open ocean from the surface to 2000m. The WP has 4 main objectives: the optimisation of floats configuration and improvement of life expectancy, to make available a new sensor to the core Argo mission (the RBR*argo* OEM), to improve Argo data usage and observation of boundary regions and to improve the Argo dataset quality and DMQC process at the European level. To reach these objectives, the WP strategy is to integrate existing technology, to optimise the network in boundary current and to develop new data processing methods. 12 partners from 8 countries will participate in this WP with a budget of 750ke, which will last for 48 months and involved 73 person months. Partners involved into each task are reviewed, together with commitments and the list of deliverables (9) and milestones (6).

TASK 2.1 lead by EA-ERIC partnering with FMI and JCOMMOPS is about increasing the floats lifetime through enhanced at sea monitoring tools and development of best practices for deployment and float configuration in different European seas. Assessment of the implementation costs will also be tentatively produced as input for implementation plan for WP8. Standardized European fleet report may be developed in this task. The task activity will first need an assessment and clean-up of mandatory metadata and technical information, and increased coherence between GDAC and AIC. For best practices, the goal it to be able to assess the impact of some key configuration parameters on float life expectancy. Finally, if enough manpower is available a work on better understanding the energy budget could be undertook (but this will require major involvement of manufacturer and/or IFREMER R&D). Define KPI to monitor the EU fleet and work towards more standardized EOL (end of life) report to better understand failure and provide feedback to manufacturers and warn Euro-Argo members when there is risk in deploying float.

TASK 2.2 lead by FMI partnering with IFREMER and NERC is about diversifying sensors available to the core mission. It will consist in the integration design of the new RBR*argo* OEM CTD onto the Arvor float and the test and evaluation of 4 prototype floats to be deployed in the Baltic Sea and the North Atlantic.

TASK 2.3 lead by IFREMER partnering with BSH, IPMA, SOCIB and SU is about improving the Argo observation of boundary current regions through enhanced information statistically extracted from Argo profiles, development of new sampling strategies and combination with other data sources.

TASK 2.4 lead by IFREMER partnering with BSH, FMI, IEO, IOPAN, NERC, OGS and SOCIB is about the development, implementation and training of DMQC processes among European partners. New methods for the marginal seas and new tools based on machine learning will be devised while training workshop and a collaborative R&D numerical framework will be organised and adopted.

G. Maze would like to organise WP2 meeting dedicated to:

- The setup of the DMQC framework (at least one day)
- Review of others WP2 activities (half a day)

7.2 WP3 – minutes

Extension to deep ocean: all the WP participants, except from NERC, were represented (IFREMER, IEO) Pedro Vélez (IEO) presented the WP3 objectives within the Euro-Argo Rise project, the participants and the different tasks. In this WP, there are two tasks.

TASK 3.1 SENSORS: ADDRESSING SBE61 ACCURACY AND STABILITY & TESTING RBR. Lead by the IFREMER.

Virginie Thierry presented the last results from a test of a three headed float carried out in summer 2018 in the Mediterranean Sea. The float was equipped with SBE41, SBE61, and concerto RBR sensors. The test indicate that the platforms is robust, with observations from the three sensors down to 2000 m. Regarding the behaviour of the sensors, there was an overall pressure dependent bias of around 1 dbar, with the largest differences between sbe41 and 61, and with consequences in the temperature and salinity observations. It seemed that he SBE41 and SBE61 pressure sensors were subject to incorrect calibration coefficients. The RBR salinity sensors had also high-pressure dependent bias.

After a discussion with the engineering team of the IFREMER, the milestones foreseen in the project will be fulfilled. They foresee that the Specifications for the design of floats equipped with RBRargo|2000 and RBRargo|4000 CTD sensors would be ready by June 2019, and the first prototype available by June 2020. Therefore, the 3-head and 2-head deep floats will be ready for deployment by summer/fall 2020. Serge Le Reste also informed that he will retire by March 2019, but Martin Amice will take Serge's relay.

It was also discussed the location for the 3-head and 2-head deep float deployments. The 2-head deep float would be deployed by October 2020 northwest of the Canary Islands, in an area which hydrographic properties has been monitored since 1997. Damien Desbruyères and Virginie Thierry commented that although the initial plan was to deploy the 3-head deep float in the North Atlantic by October 2020 they were thinking in alternative locations. Pedro Vélez offered the periodic cruises in the Canary Islands, but the final decision will be taken in summer 2020.

It was suggested by Virginie Thierry, and agreed, that Damien Desbruyères would coordinate this task.

TASK 3.2 ORGANISATION OF DELAYED MODE QUALITY CONTROL FOR DEEP OCEAN DATA. LEAD BY NERC-NOC.

Due to previous compromises, neither Brian King (NERC-NOC) nor Matt Donnelly (NERC-BODC) were unable to attend the meeting; however, Pedro Vélez had a conversation with Brian king during the 2018 ADMT. He thinks that when the international community starts to have enough experience to share at a Deep DMQC workshop, we should set up a workshop to share expertise and to learn. At that time, we will be able to decide the best context for a meeting, it could be within a Deep Argo workshop when other aspects of Deep Argo science are being discussed or within a DMQC workshop, where other aspects of DMQC are being discussed.

We agree on Brian's plan, and since we have plenty of time to decide if we can have this activity together with the deep Argo workshop after the one of this year in Hobart, the decision will be postponed.

It was agreed to have a videoconference before summer to update in the activities of both tasks.

7.3 WP4 – minutes

Presents involved in WP4 (**Biogeochemical extension):** Thierry Carval, Hervé Claustre, Fabrizio D'Ortenzio, Arne Körtzinger, Antoine Mangin, Catherine Schmechtig, Laura Tuomi, Simo Siiriä, Excused: Giorgio Dall'Olmo, Matt Donnelly, Birgit Klein, Violetta Paba

GENERAL PRESENTATION by WP leader: Fabrizio D'Ortenzio (SU). Fabrizio D'Ortenzio recalls the general objectives of the WP4, the organization in tasks and sub-tasks, the deliverables list and the milestones.

SHORT PRESENTATIONS of the different institutes involved: SU (Fabrizio D'Ortenzio), FMI (Laura Tuomi), IFREMER (Thierry Carval), Geomar (Arne Körtzinger), ACRI-ST (Antoine Mangin). Each partner describes its involvement in the BGC component of Argo, and the role in EA-RISE.

TASK 4.1. NEW BIOGEOCHEMICAL SENSOR. Presentation given by task leader: Hervé Claustre (SU). Hervé Claustre recalls the general motivation of this task: testing alternative BGC sensors to decrease the present-day cost of the BGC floats. Among the 6 BGC-Argo parameters, an alternative to the existing sensors is available for the NO3 and Irradiance parameter. Two "dual-sensor" prototypes (mounting, on the same float, the existing and the alternative sensor) will be developed by SU and initially tested in the Mediterranean Sea (at Villefranche). Further, floats will be deployed in the Baltic Sea by FMI in a "real" situation. FMI is involved in observing activity in the Baltic, providing then the required logistic and ancillary data to evaluate performances of the new sensor. Sensors (from TRIOS manufacturers) and floats (PROVOR) will be quickly acquired. The person to be recruited on the EA-Rise funding have been identified and she will start the 1st of February. Planned deadlines are all confirmed.

People involved SU: Hervé Claustre, Edouard Leymarie, Antoine Poteau, Christophe Penkerc'h, 1 person to be recruited

FMI: Laura Tuomi, Simo Siiriä, Tero Purokoski

TASK 4.2. BIOGEOCHEMICAL DATA MANAGEMENT ORGANIZATION. Presentation given by task leader: Catherine Schmechtig (SU). Catherine Schmechtig recalls the task organization, which is divided in two subtasks.

The subtask 4.2.1 focuses on testing and improving the quality control methods for the six core BGC-Argo variables, pH, radiometry, chlorophyll-A, suspended matters, dissolved oxygen and nitrate, both for real time and delayed mode. For this, a template[1] for the sub-task deliverables (one for each variable: NO3, Irradiance, CHL-a: SU; ph, O2: GEOMAR, suspended particles: PML) was proposed and widely approved. Some documentations are already available on the Argo data management web site (http://www.argodatamgt.org/Documentation).

An agreement was obtained on the fact that sub-task work should be conducted in strong, recurrent and continuous coordination with the Argo Data Management Team (ADMT) and phased with it. For this reason, it was decided at the KO, after discussion, that sub-task workshops have to be planned

[1] https://docs.google.com/document/d/1uUnSnVUDhkqHs6T896iz2abvw7qio8889cWjPPe93lg/edit?usp=sharing

regularly just before ADMT meetings. The next ADMT will be held in Villefranche the 14 - 18 October, 2019, a WP4 subtask 4.1 workshop will be organized during the same week (i.e. the 14th??).

An outcome of the last ADMT meeting (proposed also in the sub-task template) is that every suggested improvement of a quality control method should be objectively verified on a test dataset (ideally, the whole fleet if applicable) and illustrated with consolidated statistics. This outcome should be considered as a prerequisite for the subtask 4.2.1. It was decided to start with a first showcase for DOXY (the most advanced variables) and associated error field. It should be verified the different performances of the different DM:

- DM for DOXY, with or without DM for PSAL, TEMP
- DM for DOXY after 5, 10, 40 profiles (following SOCCOM proposition)
- DM for DOXY with different ancillary data (NCEP vs ECMWF reanalysis) ideally, the results of this showcase have to be presented at the next ADMT.

Finally, a need to collect and centralize numerical tools for data processing was identified.

The **subtask 4.2.2** focuses on the definition of a European organization of the data management structured by coordinating operational actors (i.e. data centres IFREMER, BSH, and NERC-BODC) and identified delayed mode centres for the 6 BGC variables (NO3, Irradiance, CHL-a: SU; ph, O2: GEOMAR, suspended particles: PML). Participants discussed then on identified technical and operational issues, which have to be account for in the data organization. In particular, the hierarchy of the data flow and the entanglements/dependence of the BGC variables (i.e. DOXY-NITRATE-pH / Radiometry-BBP-CHLA) could create bottlenecks in the organization. One preliminary idea leads to define two concepts of DM:

- A DM performed routinely by a DM operator experienced in the 6 BGC variables, using collaborative tools (WP2 link for the framework) developed by expert teams.
- A “supra” DM, after the float death, for which the dataflow is fixed, with the best ancillary data, performed at a regional scale.

At the present day, it is still premature to decide. It was however continuously kept in mind that this point will be a major expected result of WP and will be presented when mature at the Euro-Argo ERIC Management Board and then Council. Planned deadlines are all confirmed.

People involved SU: Catherine Schmechtig, Hervé Claustre, Fabrizio D’Ortenzio, 1 person to be recruited IFREMER: Thierry Carval, Euro-Argo Eric: Sylvie Pouliquen, ACRI-ST: Antoine Mangin, Marine Bretagnon, Paolo Simonelli Geomar: Arne Körtzinger, Henry Bittig, BSH: Birgit Klein, PML: Giorgio Dall’Olmo, NODC: Matt Donnelly, Violetta Paba.

Task 4.3. New products development. Presentation given by task leader: Arne Körtzinger (Geomar). Arne Körtzinger recalls the task objectives, which are the development of new products derived by BGC-Argo network, with a particular focus on marine (inorganic and organic) carbon cycle. More specifically: a first product will be generated from observations of 3 BGC-Argo floats with pH and O2 sensors (deployed in June 2018), which will be used to operationally derive the net air-sea CO2 flux in the Labrador Sea. A second product will be derived by combining surface VOS observations with BGC-

Argo fleet. Surface ocean carbon budget are aimed and the role of the biological and physical controls of relevance for biological carbon pump (e.g., particle abundance and size). This second product should emphasize the potential interoperability of the BGC-Argo fleet with other observing systems.

People involved: Geomar: Arne Körtzinger, Henry Bittig, 1 person to be recruited SU: Hervé Claustre, Laurent Coppola

7.4 WP5 – minutes

The WP5 (**Extensions Towards High latitudes**) session was arranged as part of the EA-RISE kick-off meeting on Wednesday 9th (16:20 -17:15) and Thursday 10th (08:30-9:15). The list of participants is given in Appendix 1.

General overview about the work package was presented by WP leader Laura Tuomi (FMI) gave a general overview about the work package. The institutes and persons involved were introduced and the deliverables and milestones related to WP5 and briefly described.

The objectives of the work package are:

- The extension of Argo floats deployments beyond 60° of latitude in the two hemispheres
- To combine and develop techniques applied for operating floats on these areas
- To ensure best practices are used for Argo floats applied in icy conditions
- To enhance the dissemination and co-operation between all potential operator

The three tasks included in WP5 are:

5.1 New technologies for under-ice measurements

Lead by Birgit Klein, BSH, and other participating institutes: FMI, IO PAN, SU and IMR

5.2 Cooperation with high latitude countries

Lead by Waldemar Walczowski, IO PAN, and other participating institutes: FMI and IMR

5.3 Southern Ocean regional data quality assessments

Lead by Matthew Donnely, NERC, and other participating institutes: BSH

TASK 5.1 WAS PRESENTED BY KATRIN LATARIUS (BSH)

This task is be divided into four subtasks:

- Define/refine ISA with experiments from float deployments in Baltic and Barents Sea
- Classify hydrographic data in the Arctic Ocean and subpolar areas with help of ice edge information
- Define/refine ISA and use passive/active acoustics for sea-ice avoidance for deployments in Baffin Bay
- Interact with INTAROS project on use of tomography for under-ice navigation

A presentation about the activities in the Baffin Bay was given by Edouard Leymarie (SU/LOV)

The discussions related to this task showed that there are already some experiences about using ice-sensing algorithms, which gives a good starting point to further develop the methods and algorithms.

TASK 5.2 WAS PRESENTED BY WALDEMAR WALCZOWSKY (IO PAN)

The main aims of this task are:

- engaging with the community surrounding the Arctic Ocean
- focus on strengthening contacts with existing structure
- arranging workshop on Argo operations in Arctic (Sopot, Poland)
- strengthen contacts with Scandinavian partners (IMR)
- strengthen contacts with Russian oceanographers (IOPAN)

The organisations, institutes and projects identified as target groups are:

- International Arctic Science Committee (IASC)
  - Marine Working Group
- European Global Ocean Observing System EuroGOOS
  - Arctic ROOS
- European Polar Board (EPB)
- Euro-Argo ERIC
- Integrated Arctic Observation System (INTAROS)
- Arctic Research Icebreaker Consortium (ARICE)
- International Arctic Drift Expedition (MOSAIC)
- Arctic Antarctic Research Institution (AARI) St. Petersburg
- P.P.Shirshov Institute of Oceanology Moscow
- The North-Western Branch of the P.P.Shirshov Institute of Oceanology, Arkhangelsk
- Norwegian and Swedish research institutes operating in the Arctic

It was discussed that the workshop on Argo operations in Arctic could be arrange in connection with the Baltic Sea Argo workshop (WP6) to engage more participants.

TASK 5.3 WAS PRESENTED BY MATT DONNELY (BODC-NOC (NERC))

The aim of this task is to establish routine regional data quality assessments (frequency to be determined) in the Southern Ocean for feedback to DACs/DMQC operators/PIs

The target areas are the Weddell Gyre (WG) and Antarctic Circumpolar Current (ACC)

A more detailed timeline for the work under this task was proposed: M8 - WG planed report; M28 – WG implementation; M36 – ACC plan report; M36 – ACC implementation

Meetings and conferences in 2019, in which we can promote EA-RISE project and Argo operations in high latitudes, were discussed. At least Arctic Science Summit Week (ASSW), held on 22-30 May 2019 in Arkhangelsk, Russia and Baltic Sea Science Congress 19-23.8., in Stockholm, Sweden.

Risks and anticipated difficulties were discussed for each task. The following were identified:

- Floats might be lost under ice before we have managed to gather enough data
- Uncertain political situation may complicate the cooperation
- In some tasks, institutes are working in new areas of activity and they need to ensure that right approaches are used
- Sustaining the activities beyond the project lifetime

Discussions about the workflow and WP meetings:

As the deliverables are at quite end stage of the project, it was agreed that a more detailed subtask and time plan will be made for each work package. For Task 3, this was already presented in the Kick off meeting, for the other tasks this will be done within 2 months.

A video conference will be arranged to discuss a detailed work plan and time schedule for each task and to agree on the frequency and means of communication. WP leader will propose meeting times to the participants after the kick-off meeting to find a suitable time.

Generally, the WP meetings will be arranged at least every 9 months. They can be either face-to-face meetings or video-/teleconferences. In the beginning of the project, the meetings will be arranged more frequently and they can also be task specific.

7.5 WP6 – minutes

Giulio Notarstefano (OGS) presented the participants and manpower allocated to WP6 (**Extension to marginal seas)**. The dual objective of the WP6 is the expansion of the regional Argo community and the regional extension and implementation of the Argo array.

In order to achieve the first target (expansion of the regional Argo community), the collaboration with the riparian countries will be strengthened to sustain all the Argo activities; new participant will be attracted to take part in the Argo activities; new countries will be approached to join Argo and for partnership in Euro-Argo ERIC through dedicated workshops and political events; connections with other Research Infrastructures and regional network will be improved to promote Argo and consolidate the network of scientist engaged in climate and ocean research (this will be done in strong link with tasks 7.3, 8.1 and 8.2).

In order to achieve the second target (regional extensions and implementation of the Argo array), it is programmed the extension of Argo into targeted shallow coastal waters of European marginal seas that have important socio-economic impact; some technical aspects of Argo floats will be improved, like the optimization of the sampling characteristics (in strong link with task 2.1); the existing Euro-Argo controlling and monitoring tool will be tailored for operations in marginal seas (strong link with task 2.1). These two main targets will be pursued by the three tasks of WP6, dedicated to different marginal seas: task 6.1 for the Mediterranean Sea, task 6.2 for the Black Sea and task 6.3 for the Baltic Sea. There are eight deliverables in WP6: one is dedicated to the tailoring of the controlling and monitoring tools for operation in shallow waters; three deliverables consist of the preliminary results of shallow coastal float operations in the marginal seas (one deliverable per each marginal sea); two deliverables are dedicated to the workshops and another one to the political event; the last deliverable will be based on the recommendation to operate shallow coastal float in European marginal seas in order to develop the implementation plan in those areas.

Three milestones are assigned to WP6: the first one is related to the deployment of 8 floats in shallow coastal waters (4 in the Mediterranean Sea, 2 in the Black Sea and 2 in the Baltic Sea) within 18 months since the start of the project; the other two milestones are about the consolidation with Argo international at ADMT 21 and AST 22 on progress made on data management and on network design and implementation, respectively. WP 6 meetings will be held every 9 months above all by teleconferences. Since the Project Coordinator asked the WP leaders to report every 2 months at least for the first year of the project, it was agreed to meet every 2 months during the year 2019, about one week before the Executive Board meeting. All the WP6 partners has been invited by the WP6 leader to join the *Active Collab* tool provided by the Coordinator. The presentations given during the kick-off meeting have been uploaded to the *Active Collab* dedicated section of the WP6 (“Files” section).

TASK 6.1 – EXTENSION ACTIVITIES IN THE MEDITERRANEAN SEA (HCMR)

Dimitris Kassis (HCMR) presented the activities in the Mediterranean Sea. To expand the Argo communities (first main target), new countries will be approached for cooperation and membership and in particular:

- **SOCIB**: Morocco and Algeria
- **HCMR**: Cyprus, Israel, Turkey
- **IEO**: Moroccan Institut National de Research Halieutique [INRH]: float donation
- **OGS**: (Slovenia?) Croatia, Montenegro, Malta, Tunisia

- We will try to contact Egypt and show them the benefit of Argo

Intergovernmental organizations, research communities, regional networks, research infrastructures will be approached to promote Argo data and share the best practice and knowledge and in particular:

- UNEP-MAP, EEA, marine research communities within EOOS, MONGOOS and RIs relevant to Med Sea (EMSO, ICOS, EGO, Med-Ship, etc.) will be approached by **HCMR** with contribution by **All** partners. Links with WPs 7 & 8 (Tasks 7.3 & 8.1, 8.2)

A workshop (together with the Task 6.2 partners) will be organized by HCMR with the contribution of all partners with the objective of:

- Showing the scientific use of Argo and technical aspects of floats
- Attracting policy makers and stakeholders from targeted countries.
- **SU** share experience on (i) pre-deployment mission design (links with tasks 2.1 and 2.3), (ii) successive deployment and recovery for verification of sensor calibration and assess any possible drifts over multi-floats time-series.

To extend and implement the Argo array at regional level (second main target) the following activities are programmed:

- Explore the uncovered shallow coastal areas with Argo and see the feasibility from different point of view: instrumental, human resources, quality control etc.
- Raise legal issues regarding float operations in territorial waters and EEZs (link with WP8, in particular task 8.2. **HCMR** with contribution of all partners relatively with the countries that they have to approach)
- Expansion of Argo into targeted shallow coastal areas:
  - **SOCIB:** shallow shelf region near Cabrera Island (National Park) in the Balearic archipelago
  - **SU:** French coast in the Gulf of Lions, where pre-deployment mission designs will be proposed and several scenarios performed within the MOOSE observing system
  - **OGS:** North Adriatic
  - **HCMR:** shallow area in the north Aegean Sea
- Alternate configuration settings as test cases
- Improvement of float operations, increase life expectancy and sampling efficiency; Strong links with WP 2 (**OGS**, **SOCIB**, **SU, HCMR** with cooperation of all the partners of Tasks 6.1, 6.2, 6.3**)**
- Tailoring of the Euro-Argo existing monitoring and controlling tools for the marginal sea context (alert system for stranding, very shallow waters, sea bottom, stuck, …). Link with WP 2. **OGS**, **SOCIB**, **SU**, **HCMR** with cooperation of all the partners (Tasks 6.1, 6.2, 6.3)
- Analyse how the recommendations of this task are applicable to Marginal Seas (**OGS**, **SOCIB**, **SU**, **HCMR**). Sharing expertise, knowledge and practice between all the Tasks.

TASK 6.2 – EXTENSION ACTIVITIES IN THE BLACK SEA (IO-BAS)

Atanas Palazov (IO-BAS) presented the activities in Black Sea. To expand the Argo communities (first main target), it is planned to:

- Cooperate with Black Sea countries at research and inter-ministerial level:
  - Approach first scientists and then they help to contact their local political people (**IO-BAS**)
- Approach intergovernmental organizations, research communities, regional networks, RIs to promote Argo data and share best practice and knowledge:
  - Contact the Black Sea Commission (**IO-BAS**)
  - Contact the Black Sea GOOS (**IO-BAS**)
  - Contact Danubius RI (**IO-BAS**)
- Organized a workshop together with the Mediterranean Sea partners (**IO-BAS,** with contribution of **All partners**) in order to:
  - show the scientific use of Argo and technical aspects of floats (invite the riparian countries)
  - attract policy makers and stakeholders from targeted countries
- A political event (**IO-BAS, OGS, FMI, HCMR** with contribution of **All partners**) will be organized:
  - to attract politicians, decision-makers and stakeholders and show the role of Argo in addressing environmental policies (MSFD, national ecosystems, etc.) and operational monitoring for the society (forecasts, sea-state, sea transport, etc.)
  - an important big event where political people, decision/policy-makers attend will be selected and it will be considered to organized a side event (Maritime Day, IOC assemblies or link to BlueGrowth meetings organised by EC)

To extend and implement the Argo array at regional level (second main target) the following activities are programmed:

- Expansion of Argo in the Western shelf of the Black Sea (crucial area for ecological reasons - pollution):
  - Northwestern Shelf in front of Danube River (**OGS**) with help of Romania (GeoEcoMar)
  - Northwestern Shelf in front of Kamchia River (**IO-BAS**)
- Improvement of the float operations, increase life expectancy and sampling efficiency (**IO-BAS**, **OGS**):
  - Park floats at the sea bottom (strong currents in the top 200 meters)
  - Moored the floats (strong currents in the top 200 meters)
  - Test different mission configuration
  - Take a CTD at a regular time for QC purposes?
  - Consider the recovery of the platforms?
  - Participating in tailoring the controlling and monitoring tools

TASK 6.3 – EXTENSION ACTIVITIES IN THE BALTIC SEA (FMI)

Simo Siiria (FMI) presented the Baltic Sea activities. In order to expand the regional Argo communities, it is planned to:

- Strengthen the cooperation with Baltic countries and approach Research Institutes and in particular:

- Swedish Meteorological and Idrological Institute (SMHI), German Institute for Baltic Sea Research in Warnemunde (IOW), Russian Shirshov Institute of Oceanology (**IO PAN**)

- Approach intergovernmental organizations, research communities, regional networks, RIs to promote Argo data and share best practice and knowledge:
  - Baltic Sea Science Congress will be arranged in August in Stockholm – FMI and IOPAN will present the EA-RISE project and Baltic Sea Argo activities
  - BOOS Annual Meeting will be held in May, at least SMHI and IOW will be present there– we'll ask for a time slot to introduce the project and the Baltic Sea Argo work
  - HELCOM: The Helsinki Commission works to protect the marine environment of the Baltic Sea from all sources of pollution through intergovernmental co-operation
- A user-workshop will be organised in Sopot, Poland, by IO PAN for all the scientists and technicians of the Baltic Sea (**IO PAN, FMI**).

In order to extend and implement the Argo array at regional level the following activities are planned:

- Deployments of Argo floats into targeted shallow areas (Bornholm basin, Gotland deep have been proposed)
- Tests for improving and optimizing the sampling in areas of high density gradient in the bottom zone (linked with WP5):
  - Improvement of the platform lifetime
  - Minimization of the probability of stranding and getting stuck in sediments (**IO PAN** and **FMI**).
  - Ice-avoidance tests
  - Battery-life tests
  - Algorithm that computes the parking depth
  - Plan to recover floats every year or when batteries become low
- Connection to WP4, BGC floats for testing in the Baltic
- Increase the automatization process of float monitoring and controlling activities → Development of machine learning algorithm (linked with WP2) which take advantage of the knowledge of previous Argo missions, weather data, bathymetry and/or simulated results of currents in the deployment area
- The best practices will be disseminated and taught to other Marginal Seas partners.
- Collaboration for the tailoring of the controlling and monitoring tools

Next WP6 Meeting: First week of March 2019 (TBC) by teleconference.

All partners have to present on progress made within the tasks they are involved in

It has been asked to keep into consideration the priority list as given in the presentation of the WP6 at the General Assembly during the kick-off meeting.

7.6 WP7 – minutes

WP7 **(Increase Euro-Argo visibility: Communication and dissemination towards user community)**

Participants: all the WP participants were represented (E-A ERIC, MI, IFREMER, IEO, JCOMMOPS, SU, SOCIB, FMI)

Claire Gourcuff (E-A ERIC) presented the WP7 objectives within the Euro-Argo Rise project, the participants and the different tasks.

Diarmuid O'Conchubhair presented the **TASK 7.1** (M1-M24) on assessment of user needs with the aim to target existing Argo user community through a survey by phone calls. The idea is also to extend to other communities with the help of the other WPs.

E-A ERIC is leading **TASK 7.2:** improving data access and usage, divided in 5 subtasks:

- **TASK 7.2.1A:** Thierry Carval (Ifremer) presented the work that will be done on the Argo dashboard, viewing service using Oceanworks that would allow to filter on metadata but also technical data. The new data portal should be an improvement of back end services, either existing such as ERR-DAP or new services developed in the ENVRI-FAIR project where both Ifremer and E-A ERIC are involved.
- **TASK 7.2.1.B**: Pedro Vélez (IEO) presented the task for promotion and improvement of data access and usage: IEO will develop an online Argo School with support of SOCIB (core mission) and SU (BGC Argo), including videos (examples https://eu.udacity.com). He presented the outline: 1) What is Argo, 2) How to access the data, 3) How to use the data, including scientific results. The second section should rely on what will be developed in subtasks 7.2.1a and 7.2.2.
- **TASK 7.2.2:** Mathieu Belbeoch (JCOMMOPS) presented how to improve JCOMMOPS portal where 3D data can be viewed using existing backend systems (ERRDAP service at Coriolis GDAC).

Developments performed in tasks 7.2.1a & 7.2.2 could concern level 2 products (gridded data, etc.) whereas the one highlighted in the Argo school (7.2.1b) will only focus on level 1 products.

- **TASK 7.2.3:** Use cases showing importance of Argo: Claire Gourcuff presented some ideas for use cases and no comments were made by the participants.
- **TASK 7.2.4**: HCMR presented the MSFD (Marine Strategy Framework Directive) descriptors (D-5 linked to BGC, D-7 linked to physical, D-11 in future linked to noise) that could be used to monitor the GES (Good Environmental Status) first with Greek MSFD, then UN-MAP will be contacted for a deliverable planned at M36. Sylvie Pouliquen (E-A ERIC) suggested to also interact with the European Environmental Agency and probably CMEMS and EMODnet as they are also addressing the MSFD at European level.

TASK 7.3 on the links with CMEMS, C3S and EMODnet is leaded by Ifremer. Thierry Carval highlighted the importance to formalize the relation between Euro-Argo and Both Copernicus and EMODnet and clarify the interactions.

TASK 7.4: Educational activities were presented by Emmanuela Rusciano (JCOMMOPS). The main objective of this task is to organise the second Ocean Observers workshop in May/June 2020. The possibility to host the workshop in the Balearic Islands (by SOCIB) was mentioned and will be further explored. Mathieu Belbeoch will present the advancement of the activity at next AST meeting.

TASK 7.5: Communication toward the general public. This task is lead by E-A ERIC but every partners of the Euro-Argo RISE consortium should participate in sending inputs regarding the project advancement to E-A ERIC. The Communication Plan deliverable, due at month 3 (March 2019) will be distributed for comments to the consortium before being sent to the EC. There was an agreement to use #EARISE as the official hashtag for the project on twitter.

7.7 WP8 – minutes

WP 8: Task Leaders

- **MI Action: Refine List of WP 8 participants**
- **MI Action: Arrange doodle poll for monthly calls (what day/time suits all)**
    - Begin Monthly calls from end Feb/start March

D 8.1: LINK WITH ERICS

- HCMR, MI and EA-ERIC cover EMSO ERIC, Eurofleets+ (EF+) and ENVRI- FAIR
- Argo User workshop (2021) to include ½ day or full day to include links with ERIC and also links with industry (also covering 8.3)
    - Also to consider EGU (as it takes place every year)
    - Oceanology International (2020 every 2nd year) and/or Ocean Business (2019 every 2nd year) are also viable options
- Also need to look at agreements: formal agreements and MoUs with,
- for example; EMSO ERIC, ENVRI and EF+
- Consider co-design of deployments i.e. moorings to transmit high- frequency data back to shore – useful for ice covered surface or for high volume data instrumentation (images, acoustic etc.)
- Shelf – open ocean boundary best practice report
    - Need to define what we mean by open shelf
    - Work has been carried out in AtlantOS and JERICOnext

D 8.2: LEGAL ASPECTS OF FLOAT DEPLOYMENTS

- Donor programmes
- Engage with scientists first in a 'bottom-up' approach
- Multi-lateral agreements
- It would be good to include a use case of an example of a programme above that has worked well

D 8.3: ENGAGING WITH INDUSTRY

- Oceanology International and/or Ocean Business
  - Set-up of side meetings/half-day or full day Argo collaboration workshops etc.
- NEXOS and AtlantOS (WP 6) have done a lot of work on engaging with
- new technologies and technological developers. Also EA-RISE new sensors WP will be working with novel and new sensors and equipment (plankton monitoring and acoustic monitoring)
    - All of the above can be used to construct a pipeline of contacts
  - working on new technologies which can then be used to invite to Euro-Argo User Workshop and/or arrange meetings with at Oceanology and/or ocean business
- Need to consider standardisation of interfaces with new equipment
- and/or updated versions of existing equipment
- Consider marine-plastics monitoring equipment? (Grigor EA-ERIC may have a contact here)

D 8.4: LONG-TERM SUSTAINABILITY PLAN AND REVISED ARGO STRATEGY BUILDING on work and deliverables in nearly every other WP of EA-RISE

- May lead to new sources of funding
- Implementation plan (will need to be reviewed and agreed with ERIC MGT board and council)
- Will be open to input from all partners involved in EA-RISE

D 8.5: LINK WITH INTERNATIONAL ARGO

- Report on new testing, methodology and engagement with industry with AST and ADMT (international Argo)
- ERIC has begun this process
- Argo International will provide feedback on the above
- No official deliverable but ongoing discussions and input are in place/ongoing between ERIC and Argo international