



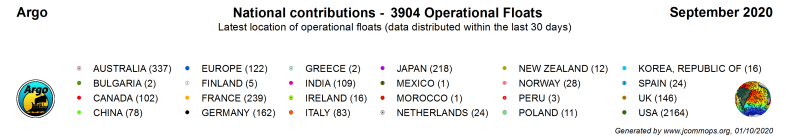
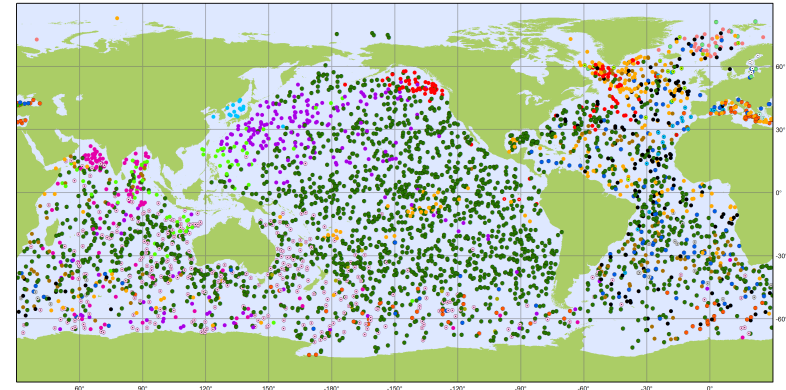
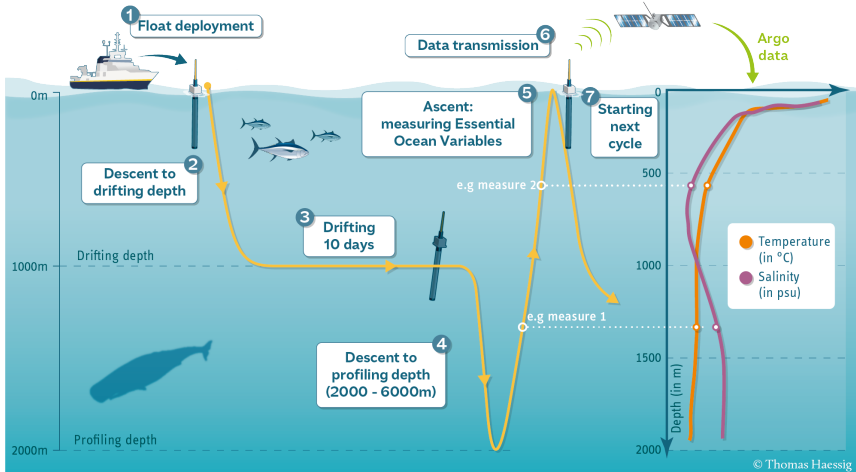
A new phase for Argo at the European level: Towards a global, full-depth, and multidisciplinary vision with the Euro-Argo RISE project

Estérine EVRARD*, Euro-Argo ERIC

**et al.*

Argo: a global *in situ* observing system

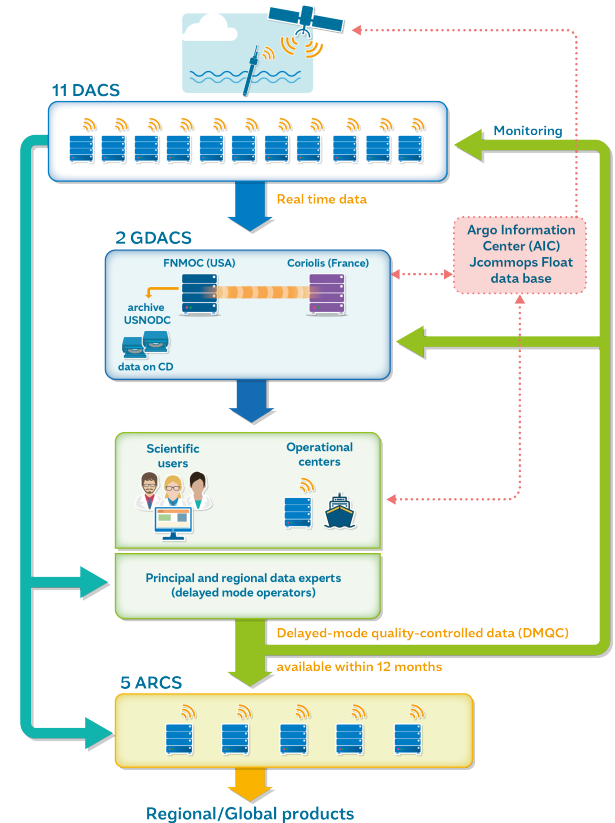
- Argo: an international network of ~4000 autonomous profiling floats drifting in the upper 2000m of the ocean
- Measuring T & S parameters



- Delivering essential data both for climate change research and for ocean analysis and forecasting systems

...with a strong data management system

- A **free and open** data policy
- Relying on an **organised** data management system and an **international community**
- **100%** quality-controlled dataset
- Two versions of Argo data:
 - Real-time data
 - Delayed-mode data



The Euro-Argo research infrastructure (ERIC)

Objective:

Coordinate and sustain the European contribution to the global Argo network (~25% of the network)

- Established in 2014
- Composed of 12 countries

Key numbers:

 **30**
INSTITUTES

 **100**
SHIPS

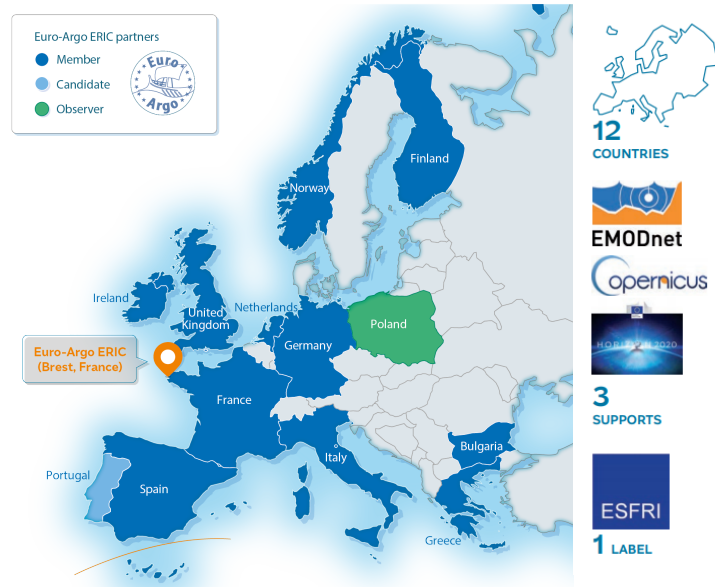
 **150**
SCIENTISTS



~250 FLOATS
DEPLOYED PER YEAR
BY EUROPE

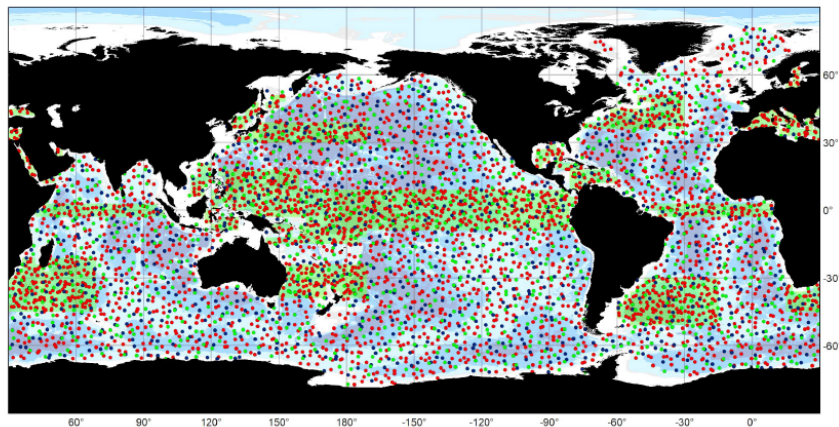


~1,000 FLOATS
IN OPERATION AT ANY TIME



- 2019, the new Argo design: a global, full-depth and multidisciplinary array*

* Roemmich et al, 2019 ([10.3389/fmars.2019.00439](https://doi.org/10.3389/fmars.2019.00439))



Argo

Argo global, full-depth, multidisciplinary design: 4700 floats

- Core Floats, 2500
- Deep Floats, 1200
- BGC Floats, 1000
- Target density doubled



Generated by www.jcommops.org, 19/03/2019

2500 standard floats 1200 Deep floats 1000 Biogeochemical floats

- From 3000 (initial design) to 4700 floats
- From 2 to 8 parameters
- From half to all the ocean (going deep, going green)
- Doubled density in key areas

CHALLENGE:



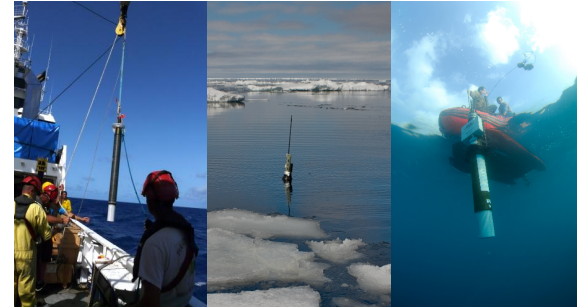
€/\$: 3 times the initial cost

Main challenges:

- Maintain the Research Infrastructure
- Extend its capacity to abyssal ocean (4000 to 6000m), biogeochemistry, partially ice-covered areas and shallow water regions



Euro-Argo RISE project will help to develop the maturity of the different elements of the Argo network in Europe

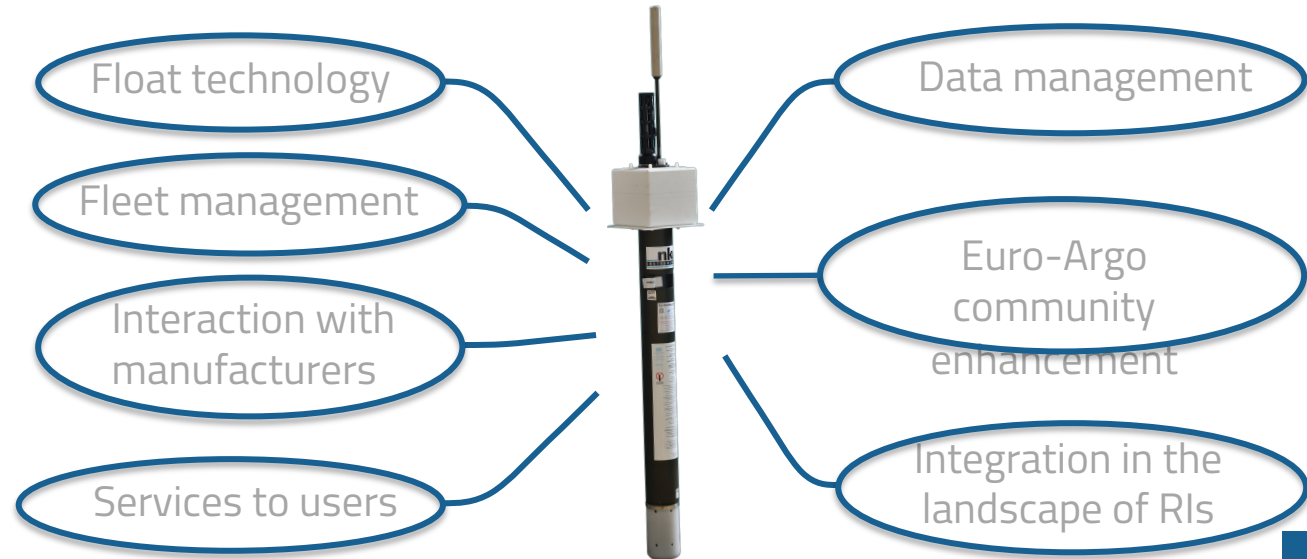


Euro-Argo RISE project [H2020: 2019-2022]

Objectives:

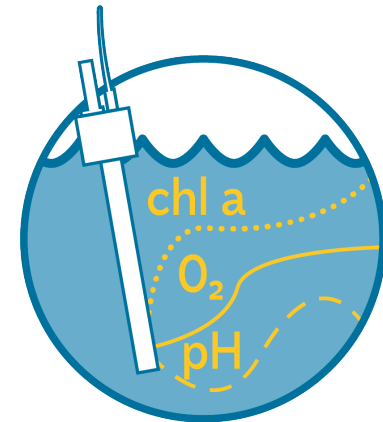
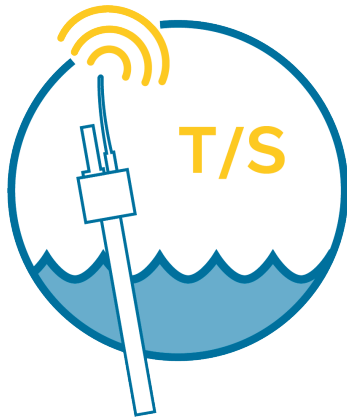
- (1) Sustain the existing core Argo
- (2) Set up and organise new components, extending observations to Deep and BGC-Argo missions, testing pilot arrays in partially ice-covered areas and shallow waters regions

Expected improvements on :



Euro-Argo RISE project: expected results

For data management

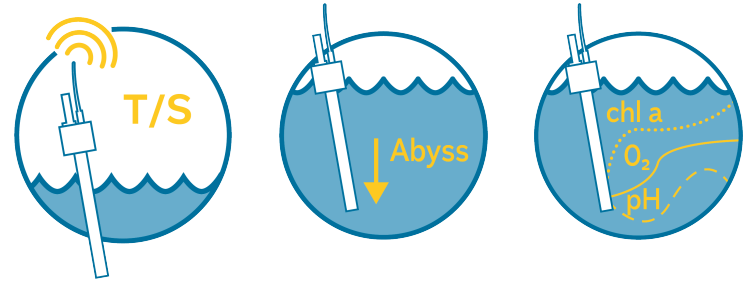


Strengthen Core and Deep-Argo data system
by enhancing methodologies used

Develop and Organise BGC data
processing (NRT and DMQC) in Europe

First results for data management

GOAL: Enhance data quality for EOVs



- Creation of an online collaborative framework for Europe
 - Working on softwares development
 - Improving reference dataset
 - Sharing Expertise



<https://github.com/euroargodev>



First results for data management



<https://github.com/euroargodev>



A python library for Argo data access, visualisation and manipulation



Perform and analyse numerical simulation of virtual Argo floats with a python library



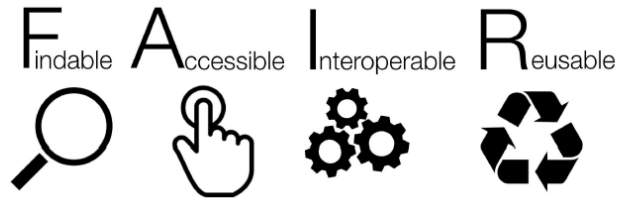
A public forum to talk about Quality Control of Argo measurements

Framework largely adopted by the Euro-Argo data management community since its creation



Existing synergies on data management improvement

- The Argo Data Management Team is implementing a framework to make Argo data:



Euro-Argo RISE project
[H2020: 2019-2022]



EnvriFAIR project
[H2020: 2019-2022]



...for the benefit of users



Working on **back-office**
Develop Machine to machine
services for FAIR enhancements



A robust API for machine access
from GDAC & JCOMMOPS

Working on **front-office**
Improve data access and
visualisation



A new viewing and subsetting service
at the GDAC

Easy access to Argo data for users



Conclusion

- Euro-Argo RISE will allow Europe to timely develop **its contribution to the new Argo design** and engage with new teams.
- At the level of the Euro-Argo ERIC, this project is crucially taking its members to a higher level of performance with regard to Argo activities and contributing to improve the overall European contribution to the Argo network and reinforce its sustainability on the long term.



GEOMAR





THANKS!

<https://www.euro-argo.eu/EU-Projects/Euro-Argo-RISE-2019-2022>



#EARISE

EURO-ARGO RISE



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