Euro-Argo: The European contribution to the global Argo ocean observations network

S Pouliquen and Euro-Argo Management Board
About 4000 autonomous profiling floats are measuring ocean temperature and salinity up to 2000m depth, all over the globe.

The Argo network delivers essential data both for climate change research and for ocean analysis and forecasting systems.
Objective: Coordinate and sustain the European contribution to the global Argo network (1/4 of the network)

- Euro-Argo was part of the 2006 ESFRI Roadmap
- The Euro-Argo ERIC (European Research Infrastructure Consortium) was created in May 2014 with 9 members. Ireland and Spain joined the ERIC respectively in 2016, 2017. Bulgaria joined in April 2018.
- Euro-Argo is a Landmark in the ESFRI 2016 roadmap

April 2018: 808 active Euro-Argo floats
20% of the global array

European contribution to the international network: 26% of the global network deployment in 2017
Organisation of the Euro-Argo RI
A central facility and distributed national facilities

The Central Research Infrastructure

- Define and agree on a roadmap for the evolution of the European contribution to Argo
- Coordinate and monitor the deployment of all European floats
- Organize float procurement at European level
- Organize joint R&D activities
- Coordinate European contributions to Argo data management
- Maintain the link with research and operational oceanography (GMES Marine Service) user communities

Link with Argo International

Distributed National Facilities

- Float procurement
- Float Deployment
- Data processing
- Research and Development

Coordinate Distribute Work among partners

Contribute to the ERIC Share expertise and knowledge

Founding Members and Observers
- Ireland
- Greece
- Spain
- Italy
- Germany
- United Kingdom
- Norway
- Finland
- Poland
- France
- Portugal
- Bulgaria
- Netherlands

Planned Members

New
Euro-Argo partners contribution to the global Argo network in number of operational floats (color, left axis) and in percentage of the total number of active floats (dashed line, right axis) (© Jcommops/AIC).
Monitoring impact on Research

- 2921 publications from Euro-Argo members 28.89% of international publications
- 317 in 2017: 27.1% of Argo
Communication and Outreach

• New WWW site (http://www.euro-argo.eu/)
• Information send to users through various means
  • Social media @EuroArgoERIC
  • Quarterly NewsBrief linked to Euro-Argo News section on web site
  • New brochure
• 6th User workshop in June 2017 in Paris
• Cooperate with JCOMMOPS to organise the 1st OceanObserver Workshop involving scientists and teachers
• Generic booth material for members
New service for Members and Observers

• Euro-Argo ERIC Office has opened in 2017 an individual open European call for tenders to allow its members to purchase standard T&S floats as well as Deep floats

• For floats purchased through these contracts, Euro-Argo Office technical team proposes to its members
  • to deal with the inbounding logistics (follow-up of the manufacturing process, delivery dates, coordination of the telecommunication contracts opening),
  • to handle the acceptance tests in the IFREMER testing facilities (pressure tank, sea-water basin for real profiling down to 20 meters)

• The first batches have been ordered in December 2017, for a total number of float of 27. A new order for 28 float was placed in 2018
EC contributing to Euro-Argo: enhance and extend

- DG-MARE under EMODnet: MOCCA project T&S 2000m Floats
  Latest positions of deployed MOCCA floats. Green dots indicate active floats and red dots dead or recovered Argo floats. (©ERIC Office – February 2018).

- AtlantOS: BGC and Deep floats

- ENVRIplus
  - Cross Environmental RI coordination
  - Improvement of data interoperability
  - Link with EOSC
  - Strategy for future
Main Challenges:

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

Euro-Argo is developing the European strategy in coherence with the Argo one

- 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

Euro-Argo plans to contribute **to ¼ of the global network** and is now starting to implement the new phase of Argo.

“Strategy for evolution of Argo in Europe” document (Euro-Argo ERIC, 2016) - DOI: 10.13155/48526
Monitoring the Implementation of the strategy

European float deployments in 2017 per type of float and region compared to targets

Float deployments 2015-2017 and plans for 2018-2019
Conclusions & perspectives

• The importance of Argo for the Copernicus Marine service was proven through E-AIMS H2020 project and new OSE-OSSE underway in AtlantOS project

• Recent R&D studies conducted at European level have shown that Biogeochemical Argo technology are mature

• the Deep technology pilot development phase is still ongoing to reach the accuracy needed for climate applications

• Euro-Argo has successfully started to organize procurement, deployment and processing of new floats at European level
  • Coordination of national activities & purchase for members
  • European floats (MOCCA project) and AtlantOS

• Euro-Argo has started to implement the new phase of Argo, following the “Strategy for evolution of Argo in Europe” (Euro-Argo ERIC, 2016) and EU funds to complement national funds are essential

• Work is ongoing regarding sea-ice technology that will enable Euro-Argo to extend its capacity to high latitudes