



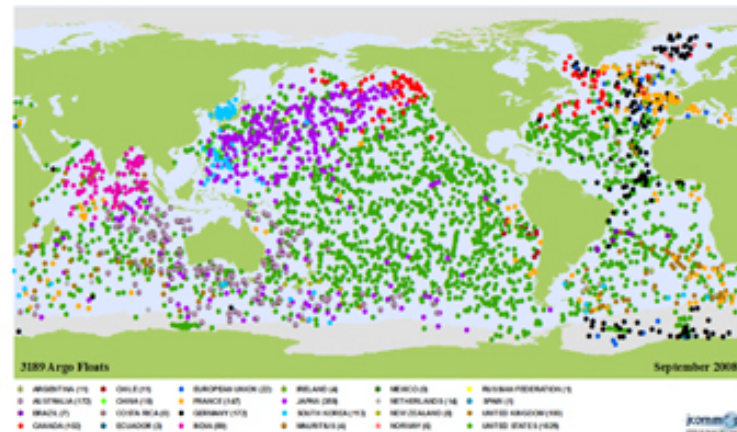
Euro-Argo: A new European Research Infrastructure

European contribution to a global ocean observatory

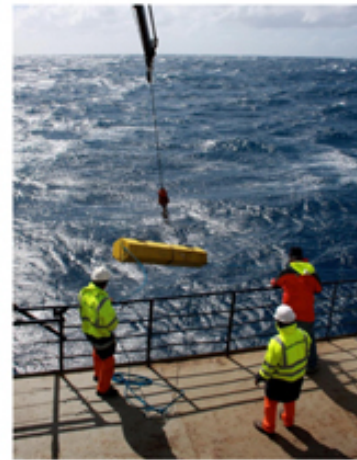


Argo, a global ocean observing system for the 21st century

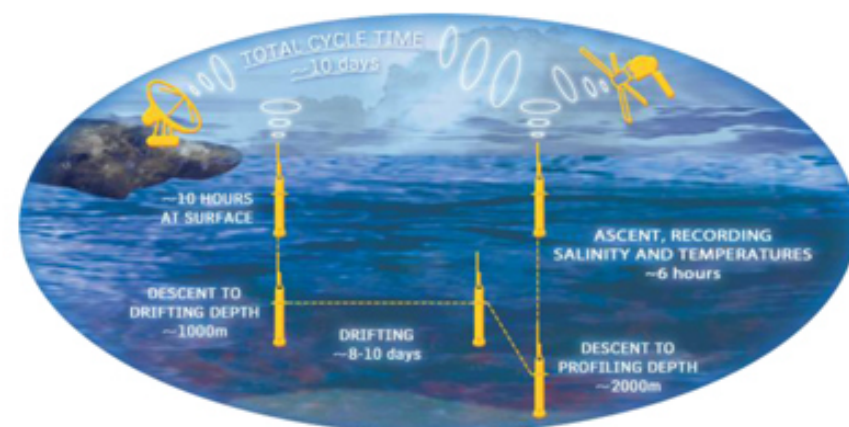
The science of climate change is one of the most pressing issues of our century. Understanding and prediction of changes in the atmosphere and ocean are needed to guide international actions and government's policies. This requires global data sets of the highest quality.



Active Argo floats by country



Argo float deployment



An Argo float mission cycle

In 2007, the international Argo programme reached its initial target of 3,000 profiling floats. These floats measure temperature and salinity down to 2,000 metres and deliver data in real time. This is the first-ever global, in-situ ocean observing network in the history of oceanography, providing an essential complement to satellite systems.

The Euro-Argo research infrastructure

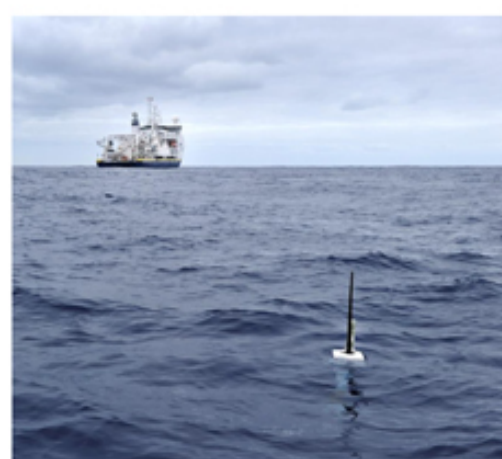
Maintaining the array's size and global coverage in the coming decades is the next challenge for Argo. Euro-Argo will consolidate the European component of the global network. Specific European interests also require increased sampling in regional seas. Overall, the Euro-Argo infrastructure should comprise 800 floats in operation at any given time. The maintenance of such an array would require Europe to deploy about 250 floats per year.

The Euro-Argo research infrastructure will strengthen European excellence and expertise in climate research and will establish a high level of cooperation between partners in all implementation aspects:

- operation at sea,
- array monitoring and evolution,
- technological and scientific developments,
- improving data access for research and operational oceanography (GMES),
- link to the international management of the Argo programme.



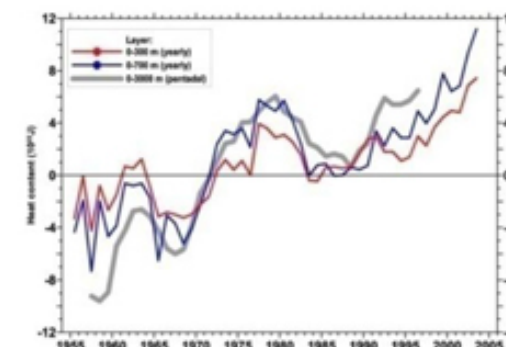
A European Argo float still active after 4 years of operation



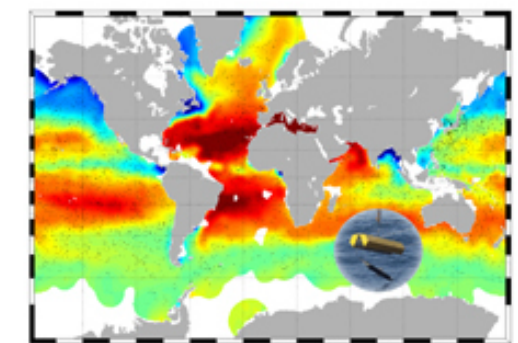
Dual use: Research and Operational Oceanography

The science case: Climate change and global warming

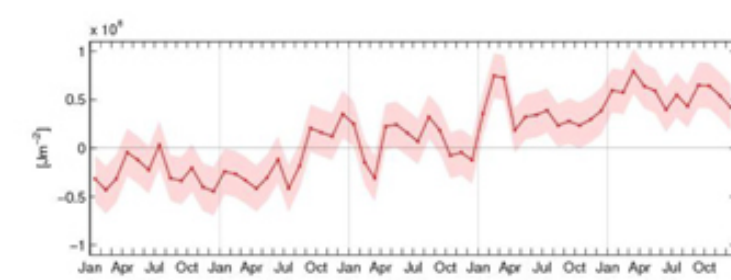
The oceans have a fundamental influence on our climate and weather, both of which are affected by changes in the currents and heat content of the ocean. Argo is a unique system to monitor heat and salt transport and storage, ocean circulation and global overturning changes and to understand the ability of the ocean to absorb excess CO₂ from the atmosphere.



Over the past 50 years, the oceans have absorbed more than 80% of the Earth warming due to the anthropogenic increase of greenhouse gas concentration.

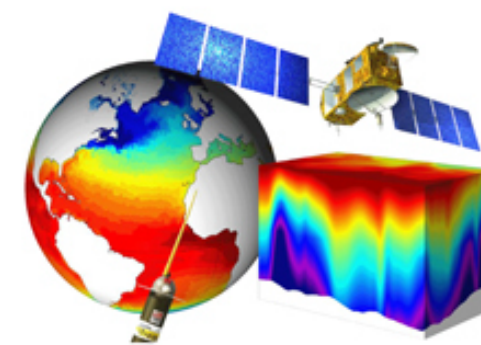


Argo observations allow us to monitor the large scale temperature and salinity variations (here the salinity at 10 m).



Global ocean heat content changes derived from Argo data. The global warming rate is about 0.6 Watts/m² during 2004-2008.

Operational Oceanography and the GMES Marine Core Service



Argo is the single most important in-situ observing system required for the GMES Marine Core Service (MCS). Argo and satellite data are assimilated into MCS models used to deliver regular and systematic reference information on the state of the ocean for the global ocean and the main European seas.



The Euro-Argo Long Term Research Infrastructure

As part of the Euro-Argo Preparatory Phase, the future long-term structure for Euro-Argo has been agreed by all partners. It will allow us :

- To supervise operation of the infrastructure and ensure that it evolves in accordance with the requirements set forth by the research and operational communities.
- To coordinate and supervise float deployment to ensure that Argo and Euro-Argo objectives are fulfilled.
- To organize float procurement at European level.
- To monitor the operation of the infrastructure and to maintain the links with research and GMES user communities.
- To decide on the evolution of the Euro-Argo infrastructure.
- To share expertise on all scientific/technological developments and use of Argo.
- To conduct R&D activities at European level.
- To fund and link with the international Argo structure.

The Euro-Argo structure will include a central facility (Central RI) and distributed national facilities. The central RI will provide the overall coordination for the programme and will organize and distribute the work in the national facilities. Its legal form will follow the new EU legal framework for European Research Infrastructure Consortium (ERIC).

The Euro-Argo ERIC application is expected to be validated at ministerial and European Commission levels by the end of 2010.

The Euro-Argo ERIC will be set up in 2011 based on member state contributions. An additional long term European Commission (through GMES) funding must be ensured, however, so that Euro Argo fulfills its objectives.

<http://www.euro-argo.eu/>

Contact : euroargo@ifremer.fr

