



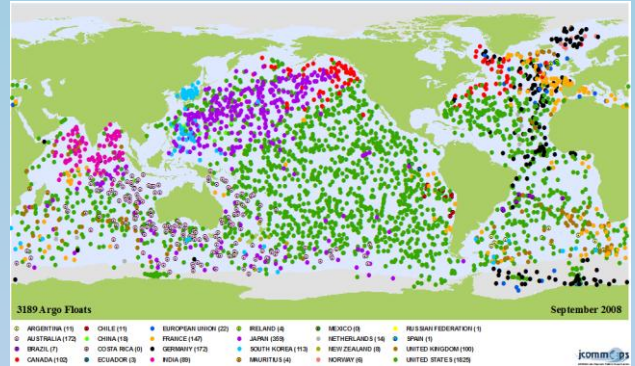
Greek Argo: The Greek contribution to the Euro-Argo infrastructure





Argo : A global ocean observing system for the 21st century

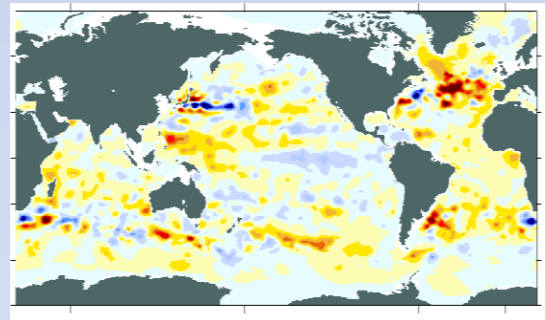
Argo is the name of an array of floats that have eventually become the “eyes” of the scientists inside the world’s oceans. The Argo network is currently made up of more than 3.500 active drifters. These floats are designed in order to submerge up to 2.000m depth and emerge periodically due to a dynamic buoyancy system. The data collected are profiles of temperature, salinity, sea pressure and deep currents. Furthermore a lot of new upgraded floats have the capacity of measuring a variety of biochemical parameters such as chlorophyll and dissolved oxygen. Once the float reaches the sea surface, transmits the collected data to data centers through satellite connection. Argo data, especially in conjunction with satellite measurements, are creating new ways to view the ocean’s basic physical properties.



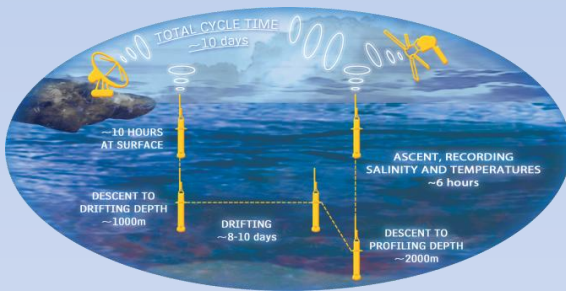
Active Argo floats by country.

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 carbon dioxide from the atmosphere.



Change in ocean heat content ($Watts/m^2$) from 2003 to 2007 based on Argo observations. On global scales, anomalies are generally positive, except in areas of strong interannual fluctuations (e.g. the Pacific ocean with the development of La Niña event in 2007).



An Argo float mission cycle.

The Euro-Argo research infrastructure

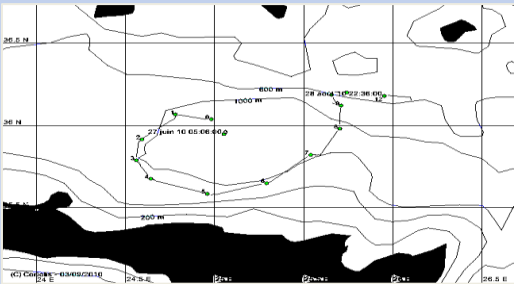
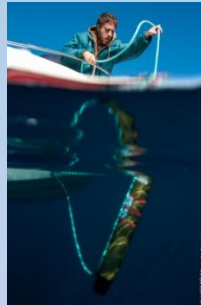
Maintaining the array’s size and global coverage in the coming decades is the next challenge for Argo. Around 800 new floats will be required each year to maintain the 3.000 float array. Euro-Argo will develop and progressively consolidate the European component of the global network. Specific European interests also require increased sampling in some regional seas (Nordic, Mediterranean and Black 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 Greek-Argo Project

The Greek-Argo infrastructure is fully aligned with the key objectives of the European infrastructure Euro-Argo. The Greek Argo project, taking into account its special role in the climate studies with emphasis in the Aegean Sea and the Mediterranean Sea, aims to strengthen and highlight the role of Greece in the Euro-Argo infrastructure.



Argo float trajectory that was deployed north of Crete in the 27th of June of 2010 north of Crete Island by the Hellenic Centre of Marine Research (HCMR), initiating the Greek-Argo programme.

Greek-Argo objectives

- Deployment of 3-5 new floats per year in the Southeast Mediterranean, with emphasis in the Aegean, Ionian and Cretan Sea for their continuous monitoring.
- Euro-Argo infrastructure expansion in regional seas of the eastern Mediterranean, taking into account their special characteristics.
- Contribution to the optimization of Argo data management (data collection, validation and quality control, distribution to the final users).
- Use of upgraded Argo floats in the study of biochemical parameters (pCO₂, chlorophyll).



- Dissemination of Argo infrastructure and its products to the scientific community and development of new partnerships between research groups in Greece.
- Expanding the use of open access Argo data in Greek operational forecasting systems and the study of climate.
- Promoting the role and importance of Argo infrastructure in the educational community to raise awareness of students in terms of marine research and climate.

The Greek-Argo group/network

The Greek Argo network consists of the Institute of Oceanography-Hellenic Centre for Marine Research (HCMR), the School of Civil Engineering-Aristotle University of Thessaloniki, the Department of Marine Science-University of the Aegean Sea, the Environmental Chemical Processes Laboratory-Department of Chemistry-University of Crete and the Department of Geography-Harokopio University. Greece established national funding to the Greek Argo programme through the General Secretariat of Research and Technology (GSRT), Ministry of Education, Lifelong Learning and Religious Affairs (funding agency). The programme is co-financed by Greece and the European Union.

For more information visit the project's website: <http://www.greekargo.gr>

Photos: Yannis Issaris (www.yissaris.com)





Greek Argo
Ελληνική Υποδομή Αργώ

12 Countries
15 Organisations
200 People
15 Teams

Euro Argo

A new European Research Infrastructure contributing to Argo International program

Euro-Argo website

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

Greek-Argo website

<http://www.greekargo.gr>

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European Union
European Regional
Development Fund

