

Argo Spain 2015 report

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1. The status of implementation

The Argo Spain program began in 2003 and is currently coordinated by the *Instituto Español de Oceanografía* (IEO). Since then, 62 floats have been deployed, of which 18 were active at the end of 2015.

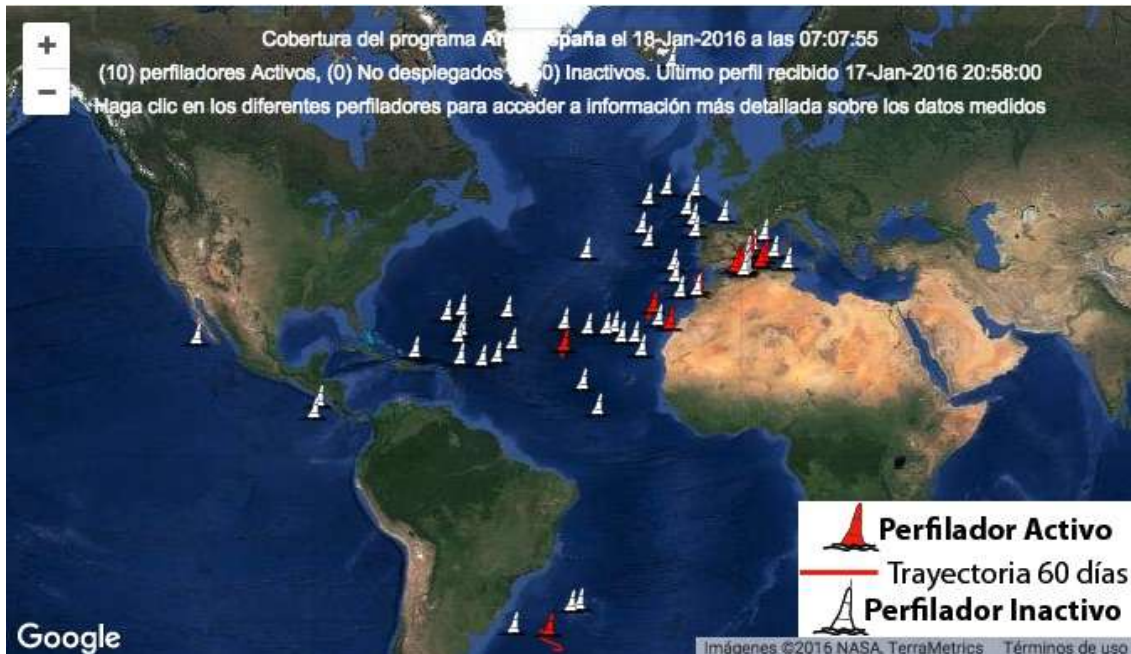


Figure 1. Status of the Argo Spain program on January 18th 2016. Altogether, 62 floats have been deployed .

- **Floats deployed and their performance**

During 2015, a total of 4 Argo floats were deployed by Spain:

- 1 Deep Arvor float (E-AIMS project) and 1 Apex float were deployed in the Eastern Atlantic by the R/V Angeles Alvariño.
- 1 Apex float was deployed in the Mediterranean Sea by SOCIB, the Coastal Ocean Observing and Forecasting System located in the Balearic Islands.

Although the funding for the purchase of the floats may come from different sources, all Argo floats deployed by Spain are managed by the Argo-Spain program, which gives support to the different contributions.

- **Technical problems encountered and solved**

No major technical problems were encountered in 2015.

- **Status of contributions to Argo data management (including status of pressure corrections, technical files, etc)**

After each deployment, the detailed technical information is provided to the DAC in charge of the floats (Coriolis) and to the AIC. The Argo-Spain program is aware

of the changes in the technical and metadata data formats, and is providing the necessary information.

Some of the earlier floats deployed by Spain were affected by TNP. These floats have not been yet corrected, but the corrected files will be submitted during 2016.

- **Status of delayed mode quality control process**

The delayed quality control process is underway, however it has not been submitted yet. The submission will be done during 2016 according to the information provided in the paragraph 2.

2. Present level of and future prospects for national funding for Argo including a summary of the level of human resources devoted to Argo.

The Argo Spain program is actually not funded. Spain remains committed to the European contribution to Argo (Euro-Argo), however the final decision for becoming a member of Euro-Argo has not yet been taken. This decision, that will mean a long-term contribution (5-10 years) to Argo, should be taken during 2016 by the Spanish Ministry of Economy.

The funding covers (and will cover) float procurement, transmission costs and part-time (1.5 man month per year) personnel support. The *Instituto Español de Oceanografía* funds the scientific coordination and the remaining personnel support of the Argo-Spain program. In addition, a specific budget from Ministry of Economy has been assigned to incorporate one full - time research technician for the next three years to the Argo Spain program from 2016.

Besides the long-term support from the Spanish Ministry of Economy, the Coastal Ocean Observing and Forecasting System located in the Balearic Islands (SOCIB) will deploy 3/4 Argo floats in the Western Mediterranean for 2016, although this funding could be extended until 2021. The Argo-Spain program also coordinates this contribution.

3. Summary of deployment plans and other commitments to Argo for the upcoming year and beyond where possible.

During 2016, a total of 4 floats will be deployed. Supporting the global array in the Atlantic Ocean and Mediterranean Sea is the main goal. The deployment plan has been submitted to the IAC.

Although the ultimate deployments may change following feedback from the Spanish research community, the current plan is:

- 3 floats to be deployed in the Mediterranean Sea.
- 1 Deep Float in the Eastern Atlantic

Funds are only secured for Argo deployments beyond 2016 in the Western Mediterranean Sea, with 3 floats scheduled to be deployed every year until 2021.

4. Summary of national research and operational uses of Argo data as well as contributions to Argo Regional Centers.

Argo is used by many Spanish researches to improve the understanding of the climate and ocean variability. Ocean and weather forecast operational models also use Argo data.

The web page of the Argo Spain program is: <http://www.argoespana.es>

5. Issues that your country wishes to be considered and resolved by the Argo Steering Team regarding the international operation of Argo.

None.

6. To continue improving the number of CTD cruise data being added to the reference database by Argo PIs, it is requested that you include the number and location of CTD cruise data uploaded by PIs within your country to the CCHDO website in the past year. These cruises could be used for Argo calibration purposes only or could be cruises that are open to the public as well.

A CTD cast is performed after most of the Argo-Spain deployments. However, the data have not been submitted to the CCHDO website due to lack of personnel during 2015. This task will be undertaken throughout 2016.

7. List of all papers published by scientists within Spain in the past year using Argo data, including non-English publications.

- Peña-Izquierdo J., Van Sebille E., Pelegrí J.L., Sprintall J., Mason E., Llanillo P., Machín F., 2015. Water mass pathways to the North Atlantic Oxygen Minimum Zone. *Journal of Geophysical Research: Oceans*, 120, 3350-3372,
- Castellanos P., Pelegrí J.L., Campos E.D., Rosell-Fieschi M., Gasser M., 2015. Response of the surface tropical Atlantic Ocean to wind forcing. *Progress in Oceanography*, 134, 271-292,
- Rosell-Fieschi M., Pelegrí J.L., Gourrion J., 2015. Zonal jets in the equatorial Atlantic Ocean. *Progress in Oceanography*, 130, 1-18.
- García – Lafuente J., Naranjo C., Sánchez – Leal R., Sammartino S., Bellanco M.J., Sánchez – Garrido J.C., Soto – Navarro J. On the origin of the seasonal and interannual T – S variability of the inflow through the Strait of Gibraltar, 2015. *Deep – Sea Research I*, 101, 38 – 53.