



## ARGO National Report 2023: Bulgaria

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### 1. Status of implementation

BulArgo programme is a component of the project MASRI – Infrastructure for Sustainable Development of Marine Research and Participation in European Infrastructure (Euro-Argo). (<http://masri.io-bas.bg/>), a part of the National roadmap for scientific Infrastructure (2020-2027) of the Republic of Bulgaria. The BulArgo programme comprises a consortium of three scientific organizations: Institute of Oceanology (IO-BAS) in Varna, Sofia University “St. Kliment Ohridski” and National Institute of Meteorology and Hydrology in Sofia.

Since 2011 IO-BAS has deployed altogether 15 floats under the BulArgo programme, which is the Bulgarian contribution to the Euro-Argo ERIC infrastructure. The floats have provided more than 2500 profiles out of which 1467 include DOXY measurements (Fig.1). Currently the number of active floats in the Black Sea is 14 out of which 9 are operated by Bulgaria.



**Figure 1.** Profiles of the BulArgo programme (2011-2023)

#### a) Floats deployment and their performance

During 2023, two BulArgo floats were deployed in the Black Sea under the framework of the MASRI project. One of the floats WMO 3902461 is ARVOR - DO and float WMO1902575 is ARVOR T/S. Both floats integrate Iridium satellite telemetry system which provides a dual





In 2023, Bulgaria continues to be a committed member of the Euro-Argo ERIC. The national funding for 2023 covers float procurements, deployment and communication costs. Three persons from IO-BAS are working on the Euro-Argo and BulArgo activities. They do so besides their other duties.

**3. Summary of deployment plans (level of commitment, areas of float Deployment, low or high resolution profiles, extra sensors, Deep Argo) and other commitments to Argo (data management) for the upcoming year and beyond where possible)**

In 2024, IO-BAS plans to deploy:

- ARVOR -DO float in the Georgian Black Sea waters during H2020 DOORS cruise #3
- ARVOR – DO and ARVOR- (RBR) in the Bulgarian Black Sea waters

The deployment plan of these floats could be affected if the conflict between Russia and Ukraine is deepened.

**4. Summary of national research and operational uses of Argo data as well as contributions to Argo Regional Centres. Please also include any links to national program Argo web pages to update links on the AST and AIC websites.**

**4.1. Operational and scientific use of Argo data**

BulArgo focuses on both research topics and marine climate monitoring of the Black Sea. Argo data are routinely assimilated into the BS-MFC operational Black Sea forecasting system of the Copernicus Marine Environment Monitoring Service (CMEMS). Argo data are being used by researchers from the Black Sea countries to improve the understanding of Black Sea physical and biogeochemical properties. In the end of 2022 BulArgo programme has launched its web page: <https://bulargo.io-bas.bg/> that demonstrates and promotes Argo, Euro-Argo and BulArgo activities. The BulArgo webportal provides information and data access from all floats operating in the Black Sea and presenting all Bulgarian Argo activities, news and data from Argo floats. A continuous upgrade is ongoing integrating more images and videos from floats deployment activities.

**4.2. Dissemination activities of the BulArgo programme**

Within 2023 several dissemination activities were carried out by the BulArgo programme such as the participation of 2023 Researchers Night and the educational activities for high school students organized by IO-BAS.

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

NON.



6. To continue improving the quality and quantity of CTD cruise data being added to the reference database by Argo PIs, it is requested that you include any CTD station data that was taken at the time of float deployments this year.

At all deployment locations a deep CTD station was taken. The ship-data will be sent to Argo (Reference Database).

7. Does your National Program have any deployment plans for RBR floats in the next couple years?

Planned in 2024.

### 8 .Ago bibliography

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