



ARGO National Report 2021: Bulgaria

1. The status of implementation

BulArgo programme is a component of the MASRI – Infrastructure for Sustainable Development of Marine Research and Participation in the European Infrastructure Euro-Argo. MASRI (<http://masri.io-bas.bg/>) is a project of the National roadmap for scientific Infrastructure (2020-2027) of Republic of Bulgaria. The BulArgo 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.

Three floats model Arvor I - DO were purchased by the Institute of oceanology-BAS via Euro Argo- ERIC tender procedure in the fall 2020. Two of them were deployed by the Bulgarian Argo team in the western Black Sea from the board of R/V Akademik. The floats integrate Iridium satellite telemetry system which provides a dual telecommunication capability, allowing modification of the configuration in real-time. The BulArgo floats (WMO 3902004 and 3902005) were deployed on 21st of October 2021 in Bulgarian EEZ at depths 1300 m and 1150m, respectively. The floats were programmed to cycle between the surface and 1500 dbar every 5 days and to drift at the parking depth of 750 dbar. Both floats are still active. The status information for the Bulgarian floats deployed in the Black Sea during 2021 is presented on Table 1. Surface positions of the BulArgo active floats are shown on Figure 1.

a) BulArgo floats deployed in 2021 and their status

Table 1. Status information for the Bulgarian floats deployed in the Black Sea during 2021

Model	WMO	Deployment date	Deployment time	Latitude	Longitude	№ of Cycles	Status
Arvor-I-DO	3902004	21/10/2021	18:19	42.9863	28.8105	29	Active
Arvor-I-DO	3902005	21/10/2021	23:00	43.1467	29.0843	29	Active



Figure 1. Trajectories of active BulArgo floats deployed in the Black Sea during 2021 (WMO 3902004-grey line and WMO-3902005 –red line)



b) Status of contributions to Argo data management (including status of conversion to V3 file, formats, pressure corrections, etc.)

Carried out by Coriolis for the Institute of oceanology-BAS

c) Status of delayed mode quality control process

Carried out by OGC, Italy for the Institute of oceanology-BAS.

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

Bulgaria continues to be a committed member of the Euro-Argo ERIC and will comply with the minimum requirement of deploying 3 floats per annum. The national funding is provided by the National roadmap for scientific infrastructure (2020-2027) and covers membership subscription, float procurements, deployment and communication costs and part-time personnel support.

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)

IO-BAS plans to deploy 3 BulArgo floats in 2022. Additionally two BGC floats are planned to be deployed in the Black Sea in 2022 in the frame of H2020 project DOORS (Developing Optimal and Open Research Support for the Black Sea) as well one Italian Argo core floats. The deployment plans of these floats could be affected by political situation in the Black Sea region and its financial repercussions.

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.

BulArgo focuses on both research topics and marine climate monitoring of the Black Sea.

All Argo data are routinely assimilated into the BS-MFC operational Black Sea forecasting system of the Copernicus Marine Service (CMEMS).

Argo data are being used by the researchers from the Black Sea countries to improve the understanding of Black Sea physical and biogeochemical properties.

5. Issues that your country wishes to be considered and resolved by the Argo Steering Team regarding the international operation of Argo. These might include tasks performed by the AIC, the coordination of activities at an international level and



the performance of the Argo data system. If you have specific comments, please include them in your national report.

Nothing.

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. Additionally, please list CTD data (calibrated with bottle data) taken by your country in the past year that may be added to the reference database. These cruises could be ones designated for Argo calibration purposes only or could be cruises that are open to the public. To help CCHDO track down this data, please list the dates of the cruise and the PI to contact about the data.

The CTD casts were performed just before the floats deployment. No data uploaded to the Argo reference database.