

National Report for Argo Steering Team-23 (AST-23) - 2022

South Africa

Take-over cruises = cruises to maintain bases on sub-Antarctic Islands (Marion and Gough) and Antarctica SANAE base

1. The status of implementation of the new global, full-depth, multidisciplinary Argo array (major achievements and problems in 2021)

- a. Floats deployed and their performance

None procured by South Africa, however deployed on behalf of other teams:

- 2 Core Argo floats - Marion Island takeover cruise (April - May 2021)
- 13 Core Argo floats - SANAE VI cruise (December 2021 – January 2022)
- 9 Core and 3 BGC (Oxygen sensor) Argo floats - Endurance22 cruise to the Weddell Sea (February - March 2022)

- b. Technical problems encountered and solved

None.

- c. Status of contributions to Argo data management (including status of high salinity drift floats, decoding difficulties, ramping up to include BGC or Deep floats, etc)

None. Available to assist with deployment of Deep and BGC floats only where sufficiently competent Research team(s) onboard. Most deployments currently take place on take-over cruises.

- d. Status of delayed mode quality control process

n/a

2. Present level of and future prospects for national funding for Argo including a summary of the level of human resources devoted to Argo, and funding for sustaining the core mission and the enhancements: BGC, Deep, Spatial (Polar, equator, WBCs)

Present: One person on AST team (Dr. Morris). One person on BGC team (Dr. Thomalla). Limited input to data management teams. Make available deployment opportunities to assist with core mission and enhanced missions where possible.

Future: An infrastructure funding initiative has been approved through the Department of Science and Innovation (DSI) in South Africa. The initiative will allow for the potential procurement of core and BGC floats to be deployed in South Atlantic, South Indian and Southern Oceans. Discussions are underway, however the overall budgets have been cut.

3. Summary of deployment plans (level of commitment, areas of float deployment, Argo missions and extensions) and other commitments to Argo (data management) for the upcoming year and beyond where possible.

Take-over cruises 2022/2023:

- **Marion Island cruise:** April / May 2022. Transect goes from Cape Town to Marion Island and returns directly to Cape Town again. Floats confirmed:

2 Core Argo floats from UK MetOffice

6-8 Core Argo floats from WHOI

4-5 BGC Argo floats from University of Washington
- **Gough Island cruise:** September 2022. Transect goes from Cape Town to Tristan da Cunha, then on to Gough Island. The vessel returns via the same route. Potential floats:

6-8 Core Argo floats from WHOI
- **SANAE IV cruise:** December 2022 – February 2023. Transect goes from Cape Town along the GoodHope Line to Antarctica.

6-12 Core Argo floats from WHOI

Research cruises 2022/2023 (some are still COVID-19 dependent):

- **Resilience Cruise:** April / May 2022. The French research vessel *Marion Dufresne* is undertaking research within the Mozambique Channel. Floats confirmed:

2 BGC Argo floats (with oxygen) from Euro-Argo
- **SEAmester cruise (potential):** July 2022. Vessel will transect from Cape Town to just north of Port Elizabeth and undertake a CTD transect across the Agulhas Current. Thereafter returning to Cape Town.
- **Winter research cruise (potential):** July / August 2022. Call for research to be confirmed. But work envisaged for Southern Ocean / Marion Island. Vessel will transect from and back to Cape Town.
- **SAMBA mooring cruise:** September / October 2022. Vessel will transect from Cape Town directly westwards into the South Atlantic to service moorings.

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

Environmental education purposes:

- 1) **Adopt-a-Float.** This was a massive undertaking for the Endurance22 project and got a lot of support from schools in South Africa, Namibia and the US.

2) Lecturing at Honours level on Ocean Observing technologies

Core Argo Standards and Best Practices paper

Research in the Greater Agulhas Current region, particularly on transport for heat, salt and mass.

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.

None

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.

We have been heavily restricted collecting CTD data on take-over cruises due to the number of team members that can be on the cruise (COVID protocols). Though likely outstanding for the CCHDO since the last upload.

7. Keeping the Argo bibliography ([Bibliography | Argo \(ucsd.edu\)](#)) up to date and accurate is an important part of the Argo website. This document helps demonstrate the value of Argo and can possibly help countries when applying for continued Argo funding. To help me with this effort, please include a list of all papers published by scientists within your country in the past year using Argo data, including non-English publications.

None

There is also the thesis citation list ([Thesis Citations | Argo \(ucsd.edu\)](#)). If you know of any doctorate theses published in your country that are missing from the list, please let me know. Finally, if you haven't already sent me a list of Argo PIs in your country, please do so to help improve the statistics on how many papers are published including an Argo PI vs no Argo PIs.

None

8. How has COVID-19 impacted your National Program's ability to implement Argo in the past year? This can include impacts on deployments, procurements, data processing, budgets, etc.

Technically none, other than being unable to undertake research cruises limiting our deployment opportunities to take-over cruises only.

