

Argo National Data Management Report for ADMT-25

Each country is asked to send a National Report using this document as a guide for the material to be reported. As we take steps to modernize the real time processing chain, we have changed the format for the Real Time Status to help better understand the current status at each DAC. We also updated several other section prompts and ask that you use this updated template when writing your report.

Reports are DUE: 10 October 2024

1. Real Time Status

Please report the status of your real time data processing for all Argo Missions, including pilots. If you have not yet implemented the tasks, please give us an estimate of when you expect the task to be completed. Here are some questions to answer:

- How many floats are you currently processing & what type are they?

Float family	Number of versions	Number of floats* (*approximate)
APEX	current version	47 active floats
ARVOR	current version	184 active floats
PROVOR	2 Provor-III, 7 Provor IV, 1 Provor V	10 active floats
Navis		none
BGC Navis		none
SOLO/S2A		none
Deep SOLO		none
Deep Arvor		none
Other (customize additional rows as needed)		

- How many different sensors are you currently processing?

Parameters	Type(s) of sensor for that parameter
Temperature/Salinity	227 SBE41 and 14 RBR
oxygen	19 floats with Aanderaa Optode
NO3	-----
pH	9 floats with Seafet sensor
Chla	6 floats with ECO_FLBBCD sensor
bbp	6 floats with ECO_FLBBCD sensor
irradiance	6 floats with Satlantic OCR504 sensor

New Sensors you have begun processing (either deployed in past 12 months or expected in the next few months)	Have all the Argo vocabularies been implemented to accommodate the sensor? (Yes, No, In progress)
pCO2	in progress

The real time processing for all German Floats is performed by Coriolis. The relevant documents (manuals, calibration sheets) are exchanged prior to deployment by file exchange. Decoders for the specific floats are developed at the data center. At present there are 241 operational German floats processed by Coriolis some of which may presently be under ice in ice covered regions.

- What is the status of BGC processing and RTQC test implementation? See here to get the version of manuals you are using to process and qc the BGC variables or : [Documentation - Argo Data Management \(argodatamgt.org\)](http://argodatamgt.org) If your floats **do not** include a listed parameter, please enter 'N/A' (Not Applicable); if your floats **do** include the listed parameter, but you have not yet implemented processing for this parameter, please enter 'N/I' (Not Implemented).

parameter	Processing cookbook version you are using (ie, current or version 2.0 Oct 2018)	QC manual version you are using (ie, current or version 2.0 Oct 2018)	Notes on when changes will be made to update to latest version
oxygen	current	current	
NO3	current	current	
pH	current	current	
Chla	current	current	
bbp	current	current	
irradiance	current	current	

All German BGC floats are also processed by Coriolis in the real time chain and the most recent versions of the processing cookbook are applied.

- What is the status of RBR data processing (if applicable)? Are you adjusting salinity in real time? See [DACs with floats with RBR CTDs to implement real-time salinity adjustment as per QC Manual, and flag PSAL_ADJUSTED_QC = '1' in 'A' mode. Real time adjusted data can be distributed onto GTS - Issue #55 - OneArgo/ADMT \(github.com\)](#)

RBRargo3 2K model	Are you filling Adjusted data (A mode) following User Manual 3.8 instructions?	Notes or additional information
pre-April 2021	yes	for 5 floats compressibility had to be determined by deployment CTDs
post-April 2021	yes	9 floats have been calibrated in the tank

- Are you regularly applying real time adjustments for the following items:
 - Salinity adjustments -> done by Coriolis if applicable
 - Cpcor for deep floats -> no German floats yet
 - BGC parameters (if so, which ones) -> done by Coriolis if applicable

	Yes/No for current R files	Are you going back to make adjustments on all available R files when new adjustment comes in?	Notes or additional information
Salinity adjustment	yes	yes	
Cpcor adjustment for Deep floats	n.a.	n.a	
oxygen	yes	no	Realtime adjustments proposed by Coriolis are applied to some of our Argo-O2 floats
NO3	no	no	
pH	no	no	
Chla	no	no	
bbp	no	no	
irradiance	no	no	

- What data are you sending onto the GTS? All German data are ingested directly on GTS by Coriolis unless they are greylisted.
- What data is going to the aux directory? UVP, FL2BB, OPUS and pCo2
- Are you automatically greylisting questionable floats detected by min/max test? Yes, normally Coriolis directly does this for the German floats.
- What is the status of the transition to v3.2 trajectory files? When do you think you will be ready to stop acceptance of v3.1 Btraj files? Information should be provided by Coriolis.
- Do you have any code to share with other DACs? If so, where is that available? Information should be provided by Coriolis

2. Delayed Mode QC status

This section of the report is for reporting on the status of DMQC in your country and is the place to share your progress, your challenges, your concerns and any links to shareable tools or code. The following questions to help guide you:

- What is the status of delayed mode trajectory files? Have you created any d-mode trajectory files? If not, what are the reasons? If you have, would you be interested in sharing your experiences with others?
 - > No trajectory files have been d-moded due to lack of time. Task still does not have high priority and since most of our active floats are Arvor, we would like to profit from code development at Coriolis.
 - > Quota of finished core dmqc is remaining at high levels. A total of 117096 profiles have been collected by German floats, 102964 D-files have been created for the core variables and 9389 eligible profiles have not yet received a dmqc yet, resulting in a percentage of 92 % for dmqc work on German floats. Only the AWI data stand out with much lower quota of only 41%. This is due to the below detailed problems with the old Nemo floats and ongoing discussions about the correction of the initial asymptotic adjustments of the salinity of the AWI floats, which is more abundant in the Weddell gyre than in other areas of the world ocean. We hope to resolve the issues until the end of the year.

German Floats/ Program Name	Number of profiles	Number of D-files	D-files pending
Argo BSH	90169	82267	3539
Argo AWI	10108	4034	5694
Argo GEOMAR	13474	13407	67
Argo U. HH	3347	3258	89
Argo Denmark with U.HH	371	360	11

- > BSH has also adopted some floats from Finland (10 non Baltic floats), the Netherlands (113 floats), Norway (30 floats) and Poland (13 floats) for DMQC and is performing DMQC on parts of the MOCCA fleet (44 floats) from the European Union. The progress in these programs providing D-files is generally good [80- 90%]. Since Argo-Norway has received fundings from the national research council to increase the number of Norwegian floats deployed per year, the program has gotten more involved in the dmqc activities. Floats deployed from 2019 onward have been covered by Norwegian DMQC operators. The same is true for Argo-Poland which also has performed DMQC on their own floats from 2019 onward.

Adopted floats/ Program Name	Number of profiles (selection)	Number of D-files (selection)	D-files pending (selection)	Comments
Argo Poland (13 floats out of 35)	1604	1309	289	Handed over to operators in Poland in 2019
Argo Finland (10 floats out of 49)	798	795	3	Mostly Baltic and Barent Sea floats handed over to operator from Finland
Argo Netherlands (113 out of 125 floats)	13826	12078	447	Mainly RBR floats still pending
Argo Norway (30 floats out of 92)	5131	4902	118	Handed over to operator from Norway in 2019
MOCCA (45 floats out of 119)	12253	8785	3093	Baltic floats pending
US Navy (10 floats)	1908	1901	7	Overlooked new cycles from one float
NAAMES/US (E. Boss) (13 floats)	2724	2622	102	One float missing

- How are you implementing BGC dmode - by parameter or one expert does all parameters?
 - > On 3 parameters (pH – Geomar/Kiel, NO3 – IOW/Warnemünde and IRR – ICBM/Wilhelmshaven) we rely on experts from cooperating institutes, other 3 parameters (Chla, CDOM, DO) the expertise of the current cookbooks will be applied by one expert.
- What challenges have you encountered and how have you dealt with them?
 - > A large portion of older AWI floats (NEMO floats) is still untouched. Preparing D-files for these needed another revision of the tech-files, which has recently been finished after intense discussion with AWI and Coriolis. Hopefully, the preparation of D-files can now start soon.
 - > The implementation of the RBR processing is underway, discussion with RBR are planned at ADMT to discuss the calculation of elptime from the time information available for Arvor floats.
 - > For the DMQC of floats in the Baltic another workshop was held at Sopot (Poland) from 13.09-26.09.2024 and procedures for validation were jointly developed and need to be finished.
 - > The DMQC for all BGC parameters is delayed due to missing personal. However, expertise is slowly being developed with support from several cooperating German institutes. More progress is expected in 2025.

- Do you have any code or tools you'd like to share with other DM operators? If so, where is that available?
- Do you have any concerns you'd like to bring to the ADMT?
 - > Density maps for BGC parameters would be very useful in order to deploy floats with BGC sensors (eg. Oxygen) in areas of data need.

3. Value Added items

- List of current national Argo web pages, especially data specific ones
 - > BSH is maintaining the new Argo Germany Web site at <https://www.bsh.de/DE/THEMEN/Beobachtungssysteme/ARGO/>.
It provides information about the international Argo Program, the German contribution to Argo, Argo array status, data access and deployment plans. It also provides links to the original sources of information.
- Known National Argo data usage
 - Please list known operational centers using Argo data in your country in this table:

Operational center	Contact (name, email), if known	What data do they use? (for example, core, BGC, all profile data, trajectory data)
Fleet support German Navy		The German Navy uses Argo data on a regular basis for the operational support of their fleet
Earth System model (ESM) of MPI University of HH, ESM-W used at Germany's National Meteorological Service (DWD)		Argo data (now including BGC data) are routinely assimilated into the Earth-System-model of the Max-Planck Society in various applications reaching from short term to decadal predictions and are used for model validation.

- Products generated from Argo data that can be shared
- Publicly available software tools to access

4. GDAC Functions

If your centre operates a GDAC, report the progress made on the following tasks:

- Operations of the ftp server
- Operations of the https server
- Operations of a user friendly interface to access data
- Data synchronization
- Statistics of Argo data usage : Ftp and https access, characterization of users (countries, field of interest : operational models, scientific applications) ...

Not applicable

5. Regional Centre Functions

If your Nation operates a regional centre, report the functions performed and any future plans.

Not applicable

6. Other Issues

Please include any specific comments on issues you wish to be considered by the Argo Data Management Team. These might include tasks performed by OceanOPS, the coordination of activities at an international level and the performance of the Argo data system.

The prolonged down-time of OceanOPS was a major setback at the beginning of the year. In future it would be preferable if there could be advanced warning about shut-downs. Also more detailed information on the dmqc of the bgc variables would be helpful. So far the graphs on the overall percentages give on information on the number of profiles involved .