

Argo National Data Management Report for ADMT-25

MBARI report, prepared by Tanya Maurer and the MBARI data management team, Oct 1, 2024

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	2 (Apf9i; Apf11i)	446
ARVOR	0	--
PROVOR	0	--
Navis	0	--
BGC Navis	2 (Navis-EBR; Navis Nautilus)	137
SOLO/S2A	2 (Early IDG-built; MRV)	13
Deep SOLO	0	--
Deep Arvor	0	--

Other (customize additional rows as needed)	0	--
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- How many different sensors are you currently processing?

Parameters	Type(s) of sensor for that parameter
Temperature/Salinity	SBE41
oxygen	4 (Aanderaa 3830; 4330; SBE63; SBE83)
NO3	2 (SBS SUNA; MBARI ISUS)
pH	3 (SBS DURA; MBARI DURA, MBARI GDF)
Chla	3 (MCOMS_FLBB CD, ECO-FLBBAP2, ECO-FLBBFL)
bbp	3 (MCOMS_FLBB CD, ECO-FLBBAP2, ECO-FLBBFL)
irradiance	1 (OCR504), yet we have multiple channel configurations (although moving forward will be deploying solely the recommended 380, 443, 490, 555 channel config)

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)
FLBBFL	No
SBE83 optode	No
GDF pH sensor	Yes

- 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	<i>Current</i> V2.3.3 (2023)	<i>Current</i> V2.1 (2021)	--
NO3	<i>Current</i> V1.2.2 (2024)	<i>Current</i> V1.0 (2021)	--
pH	<i>Current</i> V1.2 (2023)	<i>Current</i> V1.0 (2023)	--
Chla	<i>Current</i> V1.0 (2015)	<i>Current</i> V3.0 (2023)	D-mode procedures not yet implemented.
bbp	<i>Current</i> V1.4 (2018)	--	Implementation of QCv1.0 is in progress
irradiance	<i>Current</i> V1.0 (2015)	--	--

- 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	NA	MBARI only processes BGC
post-April 2021	NA	MBARI only processes BGC

- Are you regularly applying real time adjustments for the following items:
 - Salinity adjustments **N/A**
 - Cpcor for deep floats **N/A**
 - BGC parameters (if so, which ones) **Yes**

	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	N/A	N/A	
Cpcor adjustment for Deep floats	N/A	N/A	
oxygen	yes	yes	
NO3	yes	yes	
pH	yes	yes	
Chla	yes	yes	
bbp	yes	yes	
irradiance	N/A**	N/A**	

** We are not populating adjusted fields for irradiance data (in real-time, nor delayed mode). However, we do maintain the capability to rapidly reprocess all profiles from a single float, should the need arise to retroactively apply updated cal coeffs or processing procedures. This is true for all sensor parameter data that we manage.

- What data are you sending onto the GTS? AOML manages this data stream for the US.
- What data is going to the aux directory? FLBBFL for two deployed floats (~20 more floats with FLBBFL will be deployed in the coming year), but these data streams are being managed through manual batch updates to the aux dir.
- Are you automatically greylisting questionable floats detected by min/max test? We are automatically flagging any and all measurements caught by the min/max test in real time, and also maintain an internal greylist, but this list is managed manually.
- 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? We are working with AOML and UW to

refine a workflow for v3.2 trajectory files. AOML is managing the real-time Rtraj. UW will be managing D-mode for core & timing data within the v3.2 traj; MBARI will be managing the D-mode for BGC data within the v3.2 traj. This collaboration is in the early stages but we hope to make significant progress on this in the coming year, as we now have dedicated personnel assigned to this task.

- Do you have any code to share with other DACs? If so, where is that available? All of our processing code is currently available via the SOCCOM github: <https://github.com/SOCCOM-BGCArgo>

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 dmode trajectory files? If not, what are the reasons? If you have, would you be interested in sharing your experiences with others? Not yet but we will be collaborating with UW on Dtraj for SOCCOM/GO-BGC floats and are in the early stages of defining this workflow. We plan to make progress in the coming year, as we now have more resources to devote to this project.
- How are you implementing BGC dmode - by parameter or one expert does all parameters? We have 5 DMQC operators managing ~350 operational floats. We D-mode all relevant BGC data for each float, assigning batches of floats to each operator for each DMQC session (typically ~2 DMQC sessions per year). Additionally, regular review of the data for scientific consistency is performed by the data team and by biogeochemists using Ocean Data View.
- What challenges have you encountered and how have you dealt with them? Floats that operate outside of the conditions in which published qc methods were built upon present a challenge (ie floats that profile in shallow waters, and in regions with limited coverage). We tend to take a conservative approach when presented with such challenges, leaning on inflation of the <param>_ADJUSTED_ERROR terms (and/or flagging), as is deemed appropriate through detailed analysis of nearby floats and any/all available ancillary data, and until methods are further refined/characterized for such cases.
- Do you have any code or tools you'd like to share with other DM operators? If so, where is that available? All code is available on our github: <https://github.com/SOCCOM-BGCArgo>
- Do you have any concerns you'd like to bring to the ADMT?

3. Value Added items

- List of current national Argo web pages, especially data specific ones

- <https://www.go-bgc.org/>
- <https://soccom.princeton.edu/>
- 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)

- Products generated from Argo data that can be shared
 - Derived carbon parameters available in SOCCOM/GO-BGC routine data archives: <https://library.ucsd.edu/dc/collection/bb0488375t>
 - GOBAI-O2 oxygen product (NOAA) <https://www.pmel.noaa.gov/gobai/>
- Publicly available software tools to access
 - BGC-Argo data access tools developed and supported by GO-BGC are available here: <https://github.com/go-bgc>

4. GDAC Functions

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

N/A. MBARI does not participate in any operational GDAC functions.

- 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) ...

5. Regional Centre Functions

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

The Southern Ocean Argo Regional Center has been inactive all year (2024) and had limited activity last year (2023). SOARC lacks centralized focus/management (and, primarily, resources/funding to support that).

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.

1. The recent instances of duplicate WMO assignments by the OceanOPS system occurred across multiple DACs and is very concerning. Our understanding is that this was a result of temporary hiccups related to their system migration, but it would be great to emphasize to DACs the importance of continuing to report on such occurrences, should they continue to arise in the coming year.
2. We view OceanOPS role in fleetwide performance monitoring of BGC-sensor data as a high priority. We hope this development continues to mature through 2025 and are happy to assist with and support this effort, as needed, both at MBARI and through the TTT/ADMT.