

Argo Canada National Data Management Report

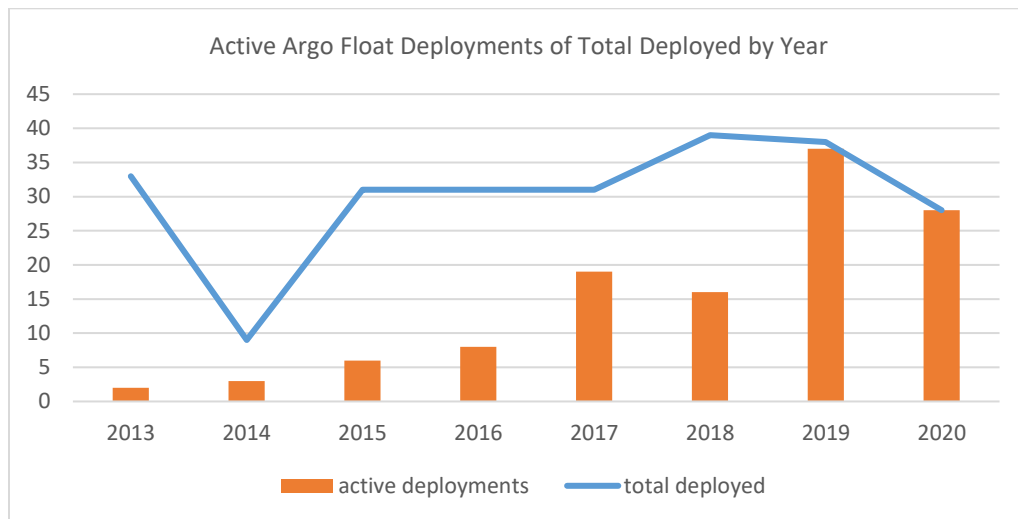
ADMT21 - Virtual Meeting

November 29 – December 4, 2020

1. Status

- Data acquired from floats

As of the end of October 2020, we are tracking 119 floats of which 14 floats may have failed to report within the last 6 months. The plot below shows the total number of floats deployed per year and the number of floats which are still active since 2013.



Since October 2019, we deployed 32 new ARVOR-I floats of which 2 floats are equipped with dissolved oxygen sensors. All floats were acquired from NKE and are reporting on the Iridium satellite system.

- Data issued to GTS

All data are issued to the GTS in BUFR formats. Since October 2019, on average, 85% of data were issued on the GTS within the 12 hour target in BUFR formats. A monthly average of 283 BUFR messages were transmitted on the Argo network between October 2019 and October

2020. As of October 2020, we have experienced some difficulties with the server and has caused a drop in the transmission time on the GTS.

- Data issued to GDACs after real-time QC

The profile, technical, trajectory and meta files are transmitted to the GDACs in NetCDF format version 3.1 on an operational basis with some additional delay, compared to the data sent on the GTS, because the two processes run on different servers. There are still a number of trajectory NetCDF files of dead floats that are not in format version 3.1 at the GDACs.

- Data issued for delayed QC

Data are available for delayed mode QC as soon as they are sent to the GDACs, but only floats deployed for at least 6 months are qualified for DMQC

- Delayed data sent to GDACs

About 1300 profiles have been DMQCed within the last year. Specifically, the eligible files deployed for at least 6 months are quality-controlled in full cycle including pressure, visual QC and salinity OWC process and the QCed profiles converted to D-files are transmitted to GDACs. The profiles lasting under 6 months are quality-controlled in partial cycle with pressure and visual QC and the QCed profiles converted to D-files are sent to GDACs. All the delayed data files are gradually converted from the previous V3.1 to V3.3 based on the latest Argo quality control manual, including supplementary comments on DMQC institutions and operators.

- Web pages

<http://www.meds-sdmm.dfo-mpo.gc.ca/isdm-gdsi/argo/index-eng.html>

We maintain web pages that show float tracks and all data collected by Canadian floats. Links to both real-time and delayed mode data are also available for download directly from GDAC. The pages are updated daily.

Argo Canada data is discoverable from the Government of Canada Open Government Portal, <https://open.canada.ca/en>.

It provides links to download data in NETCDF and web services to access float positions.

- Statistics of Argo data usage (operational models, scientific applications, number of National Pis...)
 - a. Argo data have been used to generate monthly maps and anomaly maps of temperature and salinity along line P in the Gulf of Alaska. Line-P has been sampled for 50 years and has a reliable monthly climatology. For more information on the Line-P products and other uses of Argo to monitor the N.E. Pacific go to: <http://www.meds-sdmm.dfo-mpo.gc.ca/isdm-gdsi/argo/canadian-products/index-eng.html>.
 - b. The Canadian Meteorological Centre (Dorval, Québec) of Environment Canada is assimilating real-time Argo data in operational mode.

2. Delayed Mode QC

As of November 2, 2020, 67% of all eligible floats, active and inactive, had their profiles DMQCed visually and adjusted for pressure according to the latest delayed-mode procedures at least once, significantly greater than the last year's percentage of 50%.

- Of eligible floats, 66% have been DMQCed at least once with salinity QC, obtaining the higher percentage of 68% for the last year. The relatively lower percentages of eligible salinity QCed floats for the current year are mainly due to the fact that some of the recent DMQCed floats initially

deployed within 6 months are visually QCed only and these floats are not counted into the percentage. In addition, the new floats deployed within the last year increase the total numbers of floats and consequently decrease the percentage of eligible floats.

- Of eligible B-profiles, 14% have been visually DMQCed at least once. There are similar percentage of eligible B-profiles floats that have been fully DMQCed at least once with 14% in the current year and 12% for the last year. It should be noted that the current DMQC of B-profiles in Canada refers to the quality control of DOXY.

The DMQC tool in Canada for core Argo floats has been updated to the most recent climatology references for salinity and visual QC. In addition, functions have been added to the tool, advancing the reading capability of both ascending and descending profiles within the same cycle and extending the visualization QC to include the floats locations on a geographic map. The DMQC tool for BGC Argo float focusing on DOXY is under development with notable improvements.

A near-future plan for the Canadian core Argo DMQC is to bring in the satellite sea surface temperature (SST) such as AVHRR to better validate the floats deployed in the Gulf Stream region under complex oceanographic conditions.

3. GDAC Functions

Canada forwards TESAC data to the GDACs in Ifremer (France) and USGODAE (USA) three times a week. Canada also monitors the timeliness of Argo data on the GTS in BUFR format.

4. Regional Centre Functions

Canada has no regional centre function.

5. References