KOREA Argo National Data Management Report
ADMT-23
Miami, USA, Dec 5 – Dec 9, 2022

1. Status

1.1. Data acquired from floats

In 2022, the National Institute of Meteorological Sciences of Korea Meteorological Administration (NIMS/KMA) could not deployment Argo floats due to COVID-19 and rapid exchange rate increase. The NIMS/KMA has deployed 259 Argo floats around Korea such as the East Sea, Yellow Sea, and the North Pacific Ocean since 2001, and 11 floats are in active as of November 24, 2022. As one of regional DACs, the NIMS/KMA is acquiring ARGOS messages and Iridium messages via web service from CLS in real-time, and all profile data obtained are transmitted to GDAC with the NetCDF format using BUFR data after the real-time quality-control process on operational system.
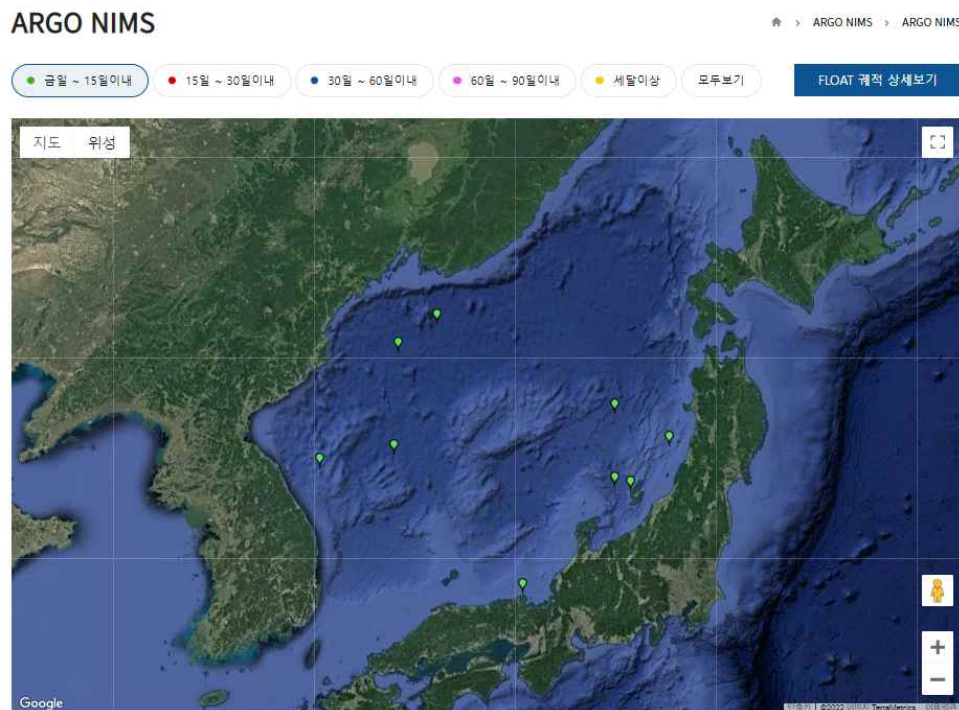

Fig. 1. Active Argo floats location deployed by NIMS (November 24)

1.2. Data issued to GDAC

Total **995** profiles were acquired during January through November in 2022 and sent to the GDAC after the real-time QC processes.

・Data reproduction and resubmission to GDAC by applying Warning Objective Analysis report.

・Implementing the Argo data format check program (New version).

・Updating the RTQC procedure with adding the grey-list test to the trajectory file, and MEDD test for the Pacific and Yellow Sea data, and global range test (Argo QC manual Ver. 3.6.1).

・Real-time quality control development and application to 1,517 profiles obtained from September 2017 to December 2022.

・Romoving the duplicated profile in the data quality-control system.

1.3. Web pages

The NIMS operates the Argo web page (http://argo.nims.go.kr) as regional data assembling center and provides profile data, temporal and spatial distribution of T and S, and status of Argo float activities to the public. It has shown 74,928 hits by visitors in monthly average.
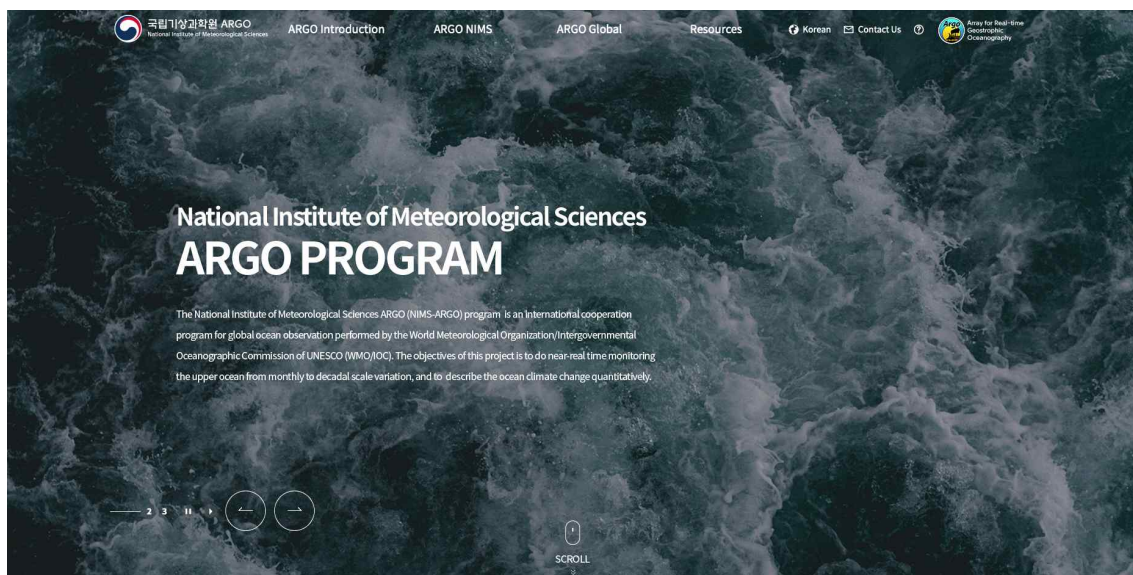

Fig. 2. Argo homepage of NIMS/KMA (http://argo.nims.go.kr)

1.4. Deployment plan for 2023

In 2023, total 14 Argo floats will be deployed around the Korea peninsula in July and November (see Fig. 3). The red squares show the potential deployment area next year aiming at covering the regional seas of Korea.

2. Delayed Mode QC

We completed the DMQC operation on 3,492 profiles (1,905 profiles from the East Sea, 1,587 from the Yellow Sea), which had been observed from early September 2021 to
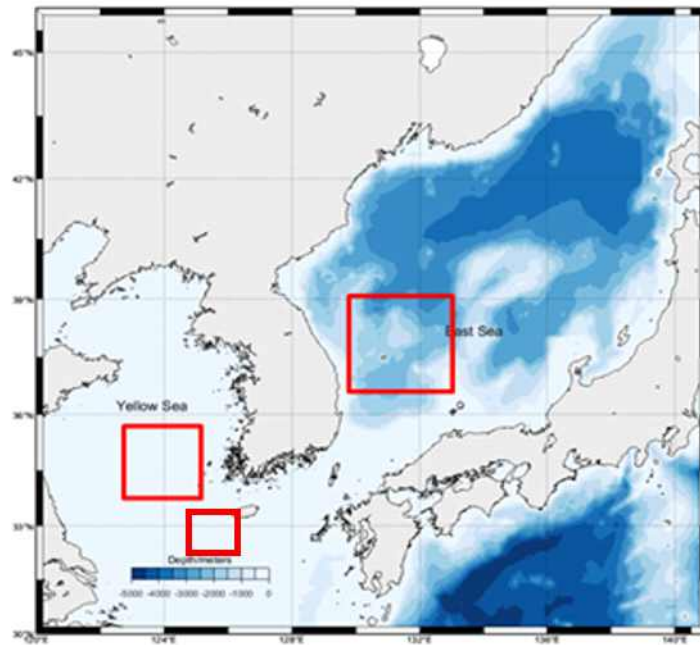
Fig. 3. NIMS/KMA's deployment area in 2023

early September 2022. The OW (Ver. 3.0.0) was used for profile data from the East Sea with new parameters (spatial-temporal correlation scales etc). All QCed profiles had been sent to the Ifremer GDAC on June 29 & October 21, 2022 in NetCDF format. The D-files were updated successfully as checked.

Constant salinity offsets were identified in the several shallow Argo floats right after deployments in the Yellow Sea by using shipboard CTD data. Since the floats in the Yellow Sea observed for relatively short period of time (due to shallow parking depths of less than 100m and short cycle times for about a day), they usually have initial salinity offsets rather than salinity drift. Additionally, since the Yellow Sea is a wide continental shelf area, its temporal and spatial scale of salinity variability are much smaller than those of the open ocean. So, the only shipboard CTD data collected at the similar time and location as Argo floats were utilized as a reference for OW. The identified offset for PSAL evaluated based on the shipboard CTD data is adjusted by using LAUNCH_OFFSET in "MAIN_write_dmqc_files"(matlab code). We will be able to improve this DMQC prototype for the shallow Argo floats with collecting more accurate CTD data.

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