

KOREA Argo National Data Management Report

ADMT-22

Virtual Meeting, Dec 6 – Dec 10, 2021

1. Status

1.1. Data acquired from floats

In 2021, the National Institute of Meteorological Sciences of Korea Meteorological Administration (NIMS/KMA) deployed total 6 floats around Korea: 2 for the East Sea, 2 for the Yellow Sea and 2 for South Sea of Korea (Fig. 1). 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 18 floats are in active as of November 30, 2021. 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.

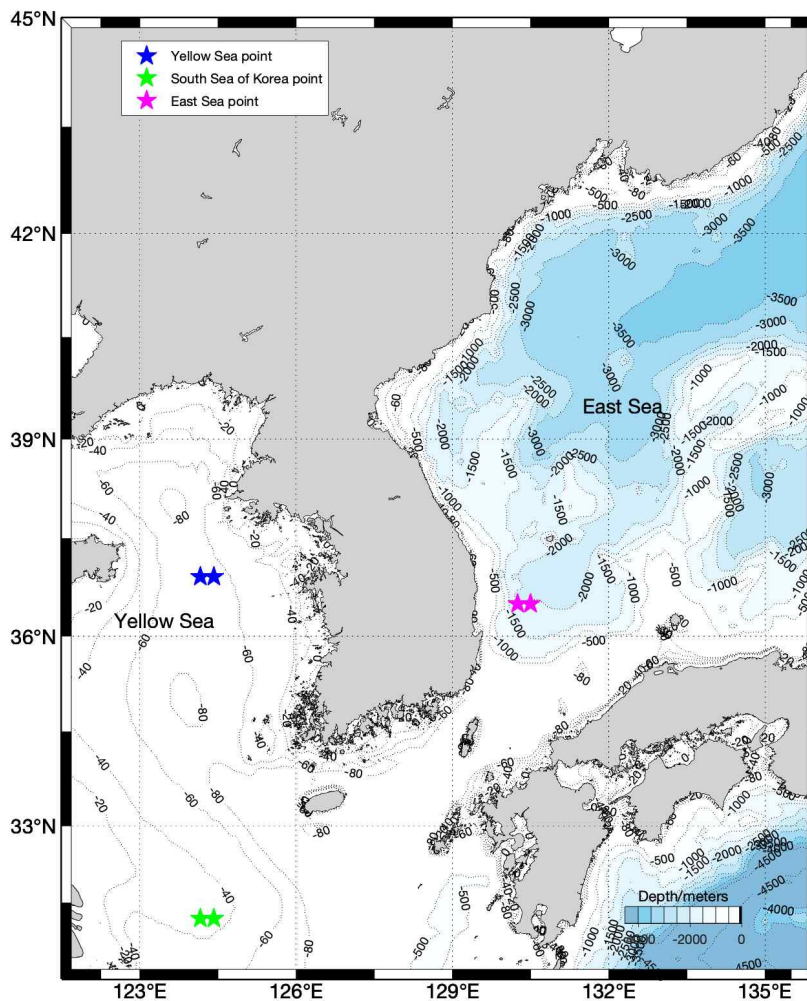


Fig. 1. Deployment location of Argo float by Korea in 2021

1.2. Data issued to GDAC

Total 858 profiles were acquired during January through November in 2021 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).
- The RTQC procedure has been updated for grey-list.
- Real-time quality control development and application on shallow sea.
- The RTQC procedure has been updated for MEDD test for the Pacific and Yellow Sea (Gradient test: East Sea)
- The data quality-control system was improved. (e.g. removal of the duplicated data)

1.3 Shallow Argo

This year, four Argo floats were successfully deployed the shallow sea such as the Yellow Sea and South Sea around Jeju Island on November 13~16, 2021. The NIMS/KMA will try to keep this shallow Argo observation network in around Korean peninsular.

1.4. Web pages

The NIMS operates the Argo web page (<http://argo.nims.go.kr>) as regional data assembling center. and provides profile data and status of Argo floats to the public. It has shown **26,954 hits** by visitors in monthly average. also, It provides figures of vertical profile, spatial distribution and T-S diagram.

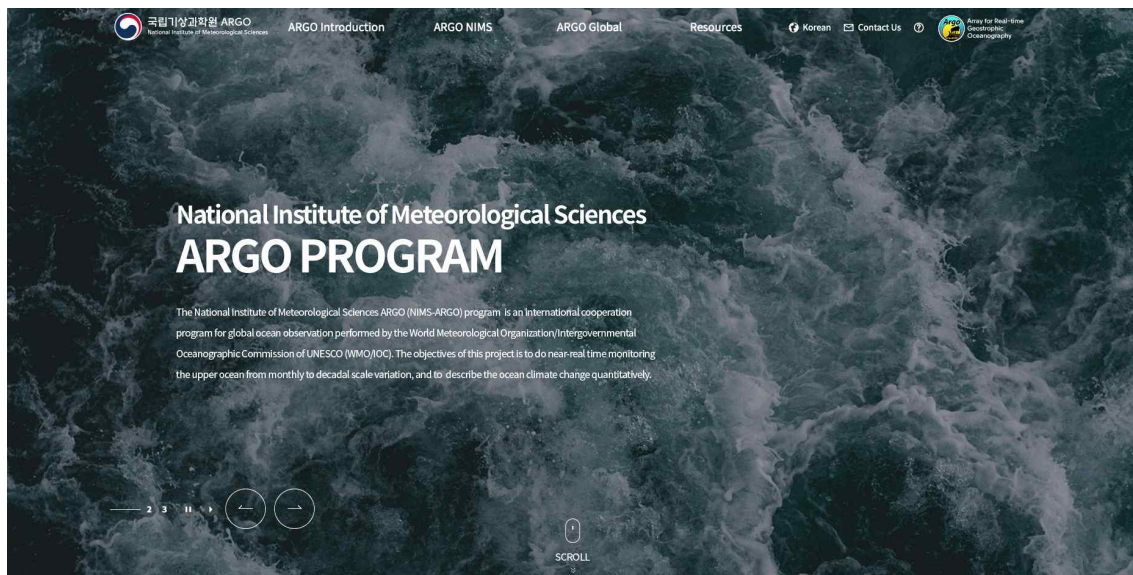


Fig. 2. Argo homepage of NIMS/KMA (<http://argo.nims.go.kr>)

1.5. Deployment plan for 2022

In 2022, 7 Argo floats will be deployed around Yellow Sea and East Sea in Korea (see Fig. 3). The red square shows a possible area for the floats to be deployed next year aiming at covering the regional seas of Korea.

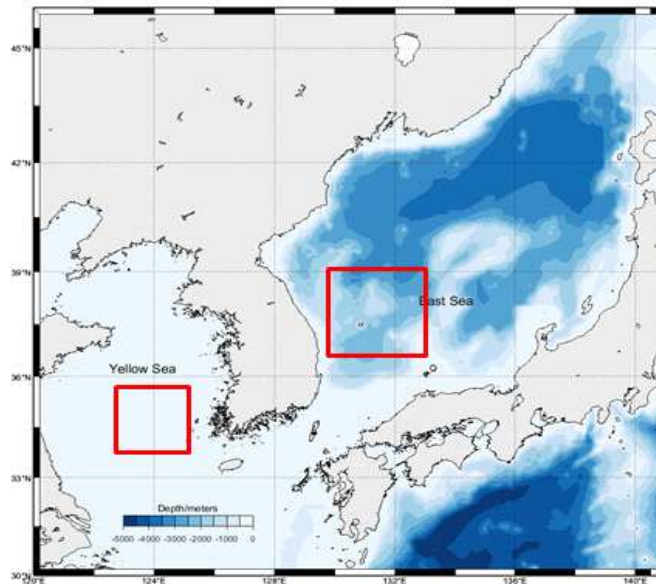


Fig. 3. NIMS/KMA's deployment area in 2022

1.6. etc

The NIMS published the NIMS' Argo Float Operation Report in 2001-2020 and there is a research paper published titled "Assessment of assimilation impact of Argo float observations in marginal seas around Korean peninsula through observing system experiments" (Choo et al., 2021, Atmosphere Vol. 31 (3))

2. Delayed Mode QC

We completed DMQC operation on 1,866 profiles (701 profiles from the East Sea, 37 profiles from the western North Pacific, 1,128 from the Yellow Sea), which had been observed until September 2021. We used the OWC (ver. 3.0.0) for the East Sea and the Northwestern Pacific data with new parameters (spatio-temporal correlation scales etc). The profiles had been sent to the GDAC on November 3, 2021 with the NetCDF format after the successful D-files update. We found the constant salinity offset right after deployment in the Yellow Sea and the salinity offset was obtained from shipboard CTD data. As the Argo floats in the Yellow Sea were observing in a short period of time, we only corrected the offset by LAUNCH_OFFSET in "MAIN_write_dmqc_files"(matlab code). Since the Yellow Sea is prone to change its unusual salinity characteristic every season, only shipboard CTD data collected at the similar time and location were needed to use for OWC. This DMQC prototype could be improved after collecting the enough quantity of shipboard CTD data.

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