KOREA Argo National Data Management Report
ADMT-21
Virtual Meeting, Nov 29 – Dec 4, 2020

1. Status

1.1. Data acquired from floats

In 2020, the National Institute of Meteorological Sciences of Korea Meteorological Administration (NIMS/KMA) deployed 6 floats around Korea: 4 for the East Sea, 2 for the Yellow Sea (Fig. 1). The NIMS/KMA has deployed 253 Argo floats in the North Pacific Ocean and East Sea since 2001, and 19 floats are in active as of November 25, 2020. 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 profiles obtained from the floats are transmitted to GDAC in the NetCDF format using BUFR data after the real-time quality-control process on operational system.
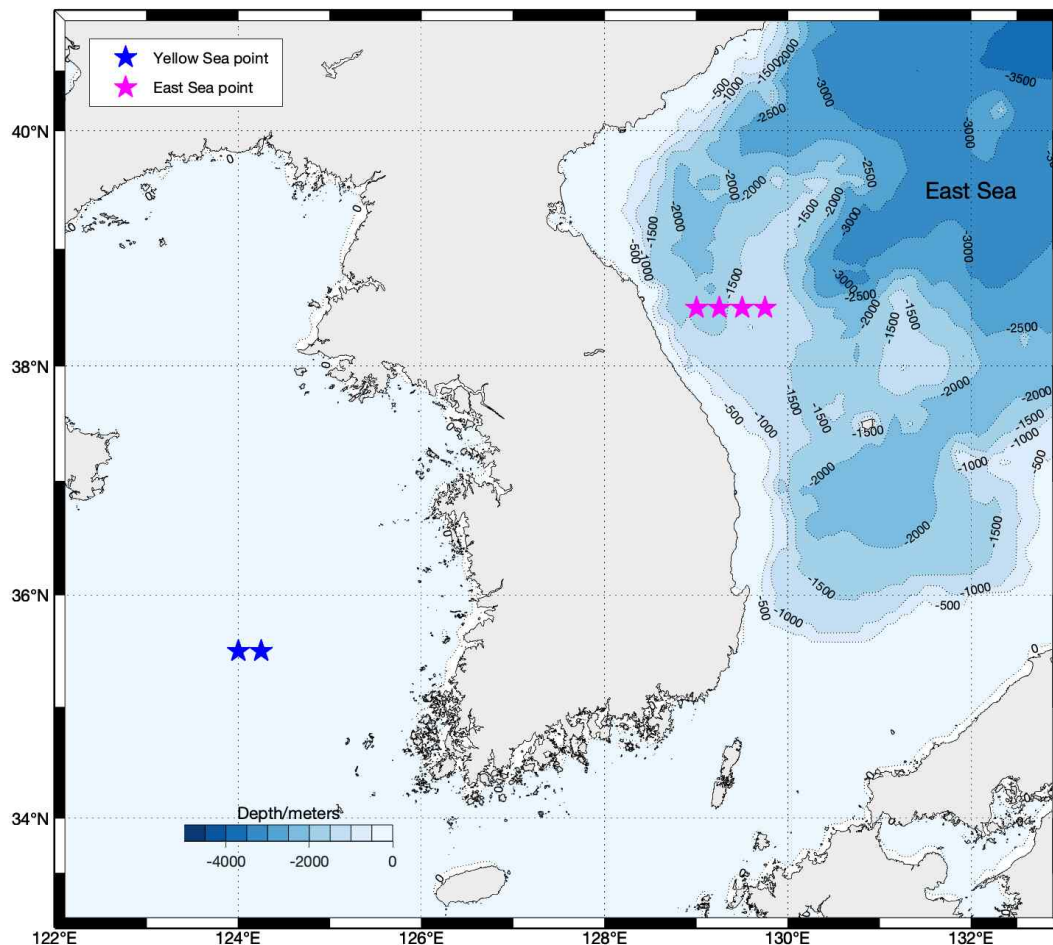

Fig. 1. Deployment position of Argo floats around Korea in 2020

1.2. Data issued to GDAC

Total **1,169 profiles** were acquired during January through November in 2020 and sent to the GDAC by real-time after the RTQC 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 KMA floats in the East Sea.
· Real-time and delayed-mode shallow sea quality control development.

1.3 Shallow Argo

This year, it was successfully observed through Argo deployed in the Yellow Sea. In November 8, 2019, two floats were deployed. In particular, The float (ID: 2901797) achieved 190 profiles (> 380 days) observation from November 8, 2019 to November 23, 2020. It is surprising result from a 2-day cycle of shallow sea observation. The NIMS/KMA will try to keep this kind of shallow Argo observation network in around Korean peninsular area. In addition, a research paper using shallow Argo data was published on the subject of "Ocean responses to typhoon Soulik(1819) around Korea" (Kang, K., Jo, H. J. & Kim, Y., Ocean Sci. J. 55, 445-457).

1.4. Web pages

The NIMS/KMA operates the Korea Argo web page (http://argo.nims.go.kr). This year, the NIMS Argo website has been extensively renewed. In particular, the trajectory data was expressed using the Google dynamic map, and provides profile data and status of Argo floats to the public. It has shown **39,903 hits** by visitors in monthly average, and provides figures of vertical profile, spatial distribution and T-S diagram.
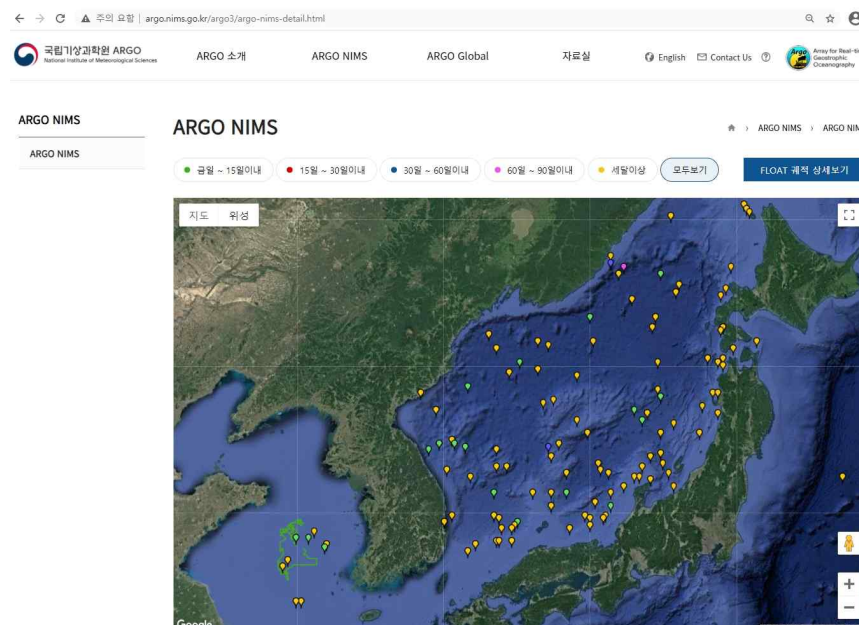

Fig. 2. Argo homepage of NIMS/KMA (http://argo.nims.go.kr)

1.5. Deployment plan 2021

The NIMS/KMA will continue to deploy the 6 Argo floats around Korea such as Yellow Sea and East Sea (see Fig. 4). The red square shows a possible area for the floats to be deploy in 2021 aiming at covering the regional seas of Korea.
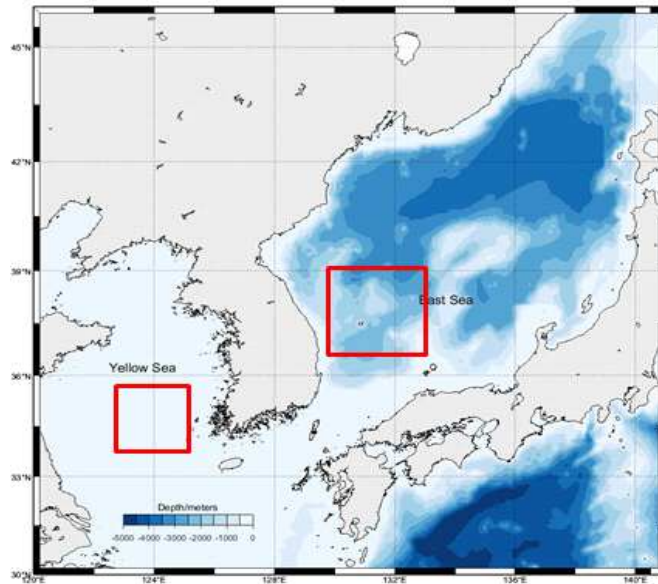

Fig. 3. NIMS/KMA's deployment area in 2021

2. Delayed Mode QC

We completed DMQC operation on 1,875 profiles (1,524 from the East Sea and 351 profiles from the western North Pacific), which had been observed until early July 2020. The profiles had been sent to the ifremer GDAC on November 19, 2020 in NetCDF format. However, we noticed 22,477 D-files submitted to the Ifremer GDAC in 2018 and 2019 had not been updated successfully. We contacted Ifremer in October, and they found our submitted files in their internal eftp directory. We are keeping closely in touch with ifremer, and will fix this issue as soon as possible.

We also developed DMQC prototype for the shallow sea near the Korean peninsula, and tested it on 793 profiles observed from September 2017 to July 2020. We used OW version 1.1.2 (the same OW version used in the East Sea and the Northwestern Pacific), with new reference data-base and new parameters (spatio-temporal correlation scales etc). Since the shallow sea is prone to change its distinctive salinity characteristic every season, only shipboard CTD data collected at the similar time and location were used for OW. We will be improving this DMQC prototype and sending the completed shallow sea D-files to the GDAC by next year.