



Development of an Operational TS Dataset Production System for the Data Assimilation System

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An operational TS (Temperature and Salinity) dataset production system was developed to provide near real-time data to the data assimilation system periodically. It collects the latest 15 days' TS data of the north western pacific area (20°N - 55°N, 110°E - 150°E), applies QC tests to the archived data and supplies them to numerical prediction models of KIOST (Korea Institute of Ocean Science and Technology). The latest real-time TS data are collected from Argo GDAC and GTSPP data server every week. Argo data are downloaded from /latest_data directory of Argo GDAC. Because many duplicated data exist when all profile data are extracted from all Argo netCDF files, DB system is used to avoid duplication. All metadata (float ID, location, observation date and time, etc) of all Argo floats is stored into Database system and a Matlab program was developed to manipulate DB data, to check the duplication and to exclude duplicated data. GTSPP data are downloaded from /realtime directory of GTSPP data service. The latest data except ARGO data are extracted from the original data. Another Matlab program was coded to inspect all collected data using 10 QC tests and produce final dataset which can be used by the assimilation system. Three regional range tests to inspect annual, seasonal and monthly variations are included in the QC procedures. The C program was developed to provide regional ranges to data managers. It can calculate upper limit and lower limit of temperature and salinity at depth from 0 to 1550m. The final TS dataset contains the latest 15 days' TS data in netCDF format. It is updated every week and transmitted to numerical modeler of KIOST for operational use.