Korea TCODE Report
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Key Institutions

National Fisheries Research and Development Institute (NFRDI)
http://www.nfrdi.re.kr/
National Oceanographic Research Institute (NORI)
http://www.nori.go.kr
Korea Ocean Research and Development Institute (KORDI)
http://www.kordi.re.kr/
Korea Meteorological Administration (KMA)
http://www.kma.go.kr/

NFRDI has carried out the serial oceanographic observation since 1921, which is nowadays implemented bimonthly for the waters around the Korean Peninsula and 4 times a year in the East China Sea. The collected and analyzed data such as water temperature, salinity, dissolved oxygen, nutrients, zooplankton biomass and meteorological factors are published by the Annual Report of Oceanographic Observations and also provided through the Korean DMDB of NEAR-GOOS (http://kodc2.nfrdi.re.kr:8001/home/eng/near-goos/step1.php). NFRDI has provided real-time oceanographic information for pelagic fishery based on Argo data which are downloaded daily from the global Argo data centers since 2004. It has contents of horizontal distribution, vertical section and vertical profile of temperature for fishing grounds in the world (http://kodc2.nfrdi.re.kr:8001/home/kor/fishery/main.php). NFRDI has also established the self-controlled ocean observing networks in the coastal area since 2003. The automatic observing systems are installed on the light buoys and the platforms of aquacultural farm, and gather surface water temperature, salinity and dissolved oxygen data in every 30 minutes interval and transmit those data to land station data server (computer) in an e-mail form. In the server, those data are processed, quality-controlled and stored in the database, and are immediately served to users (http://kodc2.nfrdi.re.kr:8001/home/eng/main/realtime_main.php). NFRDI has 25 sites of this network around Korea coast. The Korea Oceanographic Data Center (KODC), operated by NFRDI, has built metadatabase of Korean oceanographic data and information since 2000 which has been updated regularly. Users are able to retrieve and

access those data in its website (http://kodc2.nfrdi.re.kr:8001/home/eng/metadata/metaIntro.php).

NORI has collected various oceanographic, hydrographic and geographic data around Korean peninsula. Those data are processed and used to publish nautical charts, tide table, tidal current charts, ocean current charts and other publications, and finally stored into the databases (http://mdc.nori.go.kr/). NORI has endeavored to set up real-time data collecting networks for tidal data and other ocean physical parameters since 2001. There are 30 tidal stations around main ports of Korea, which are operated by telemetering system and access those data in website (http://mdc.nori.go.kr/korea/K040101/k040101_00.asp). The collected data has been used for the predictions of tide and shoreline change. NORI has deployed more than 40 Surface Velocity Program (SVP) drifters every year on the East Sea and western Pacific, also sets up real-time data gathering system by Internet e-mails for sea surface current data. The results have been used for producing ocean current charts since 2003 (http://mdc.nori.go.kr/current/myweb/nori/recent.pdf?menu=tide_menu04). Also, the HF-Radar system for real-time surface current monitoring was installed at the Yeosu bay on south coast of Korea and the data is distributed through website (http://mdc.nori.go.kr/korea/K040201/k040201_01.asp?hangGubun=KWAN). NORI has produced electronic navigational charts (ENC) since 1995, and completed 212 ENCs. Now, these digital charts are distributed and contributed to prevention of marine accidents, and also used as fundamental geographic information for ocean observation.

KORDI has established a real-time coastal monitoring system using light towers, coastal piers, ocean buoys and coastal towers during the past several years, and also developing an integrated system of the real-time data acquired by several Korean institutions. These works has been done as the mid- or long-term projects according to the national plan. The real-time data are provided to Internet users through the Korean RTDB of NEAR-GOOS (http://near-goos.kordi.re.kr/). KORDI also has been developing the data management system of multidisciplinary survey program in Saemangeum area under the support from MOMAF (Ministry of Maritime Affairs and Fisheries). From this program, several kinds of observed data such as seasonal observation data (e.g. temperature, salinity, DO, phyto/zoo plankton etc.), biweekly CTD observation data and real-time buoy observation data are being collected (http://www.saemangeum.re.kr/). The data management system is consisted of 4 parts; metadata management, observed data management, real-time data management and

geographic information system. Data converting and archive is done through C programming and wireless Internet technology. For data query and queried data display, ASP, java applet and Active-X controls are used during the process.

KMA has operated a total of five ocean data buoys on the adjacent seas of the Korean Peninsula since 1996. One of them is a 6-m NOMAD buoy; it is 70 km off the eastern coast of Korea, and the ocean depth is about 1,500 m. The other four buoys are a 3-m DISCUS type, two in the western coastal area and others in the southern coastal area of the Korean Peninsula. All five buoys have been registered in the Ocean Data Acquisition System (ODAS) already. All data are the distributed in real-time to WMO member countries via the GTS (Global Telecommunication System) for the meteorological telecommunication networks. Observed data are also accumulated in the database and distributed through KMA main website (http://www.weather.go.kr). The Meteorological Research Institute, METRI/KMA has received all ARGO data from the real-time mode and distribute the data through own web-based system (http://argo.metri.re.kr). METRI has also operated the RTQC (Real Time Quality Control) system since 2003, which delivers the quality-controlled data with TESAC and NETCDF format to WMO countries and GDACs (Global Data Assembly Centers) via GTS and ftp, as a function of DAC (Data Assembly Center), the name of “KM”.

Data exchange policies in Korea are based on the Marine Scientific Research Act enacted by the MOST(Ministry of Science and Technology) in 1995. Basically, every marine organizations have the responsibility to submit oceanographic data inventories to responsible data center (Designated National Oceanographic Data Management Agency, KODC/NFRDI) each year, and should open and share their data after certain periods of time in case which those data are collected using public funds from the governments. Normally, governmental organizations open their data immediately after data processing or within one year period in the form of digital data or annual report. But, in the case of research organizations or universities three years of periods are permitted to data investigators (project managers or members of the team) for their exclusive uses for writing report, paper or thesis, etc.