

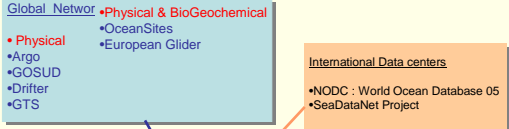
Providing an ocean *in situ* data service for the needs of operational oceanography

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Coriolis Data Center

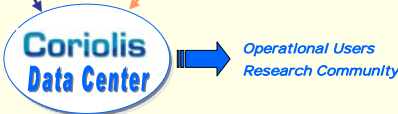
Originally developed to serve the French Mercator project, the Coriolis data centre has been upgraded to serve some European projects (especially the Mersea project). Further on, the Coriolis data centre activities have been extended to a wider community. The objective is to propose *in situ* ocean data services that fit the needs of Operational Oceanography projects. Its activities can be described as follows:

- Data collection** : Coriolis data center receives data either from platforms at sea via satellite telecommunication or from other national data centers
- Data quality control**: All data are quality controlled before being included into Coriolis database.
- Data Distribution** : Coriolis distributes via various means in order to cope with the users needs. It provides viewing service and sub-setting tools via WWW server <http://www.coriolis.eu.org> It provides also FTP distribution for operational users or Opendap access for research community.



Regional Networks through EuroGOOS alliance

- Arctic (Arctic-GOOS)
- North-West Shelves (NOOS)
- South-West Shelves (IBI-ROOS)
- Baltic (BOOS)
- Med Sea (MOON)
- Physical & Biochemical parameters



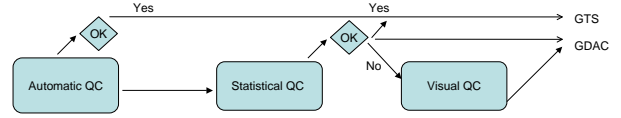
Quality Control Procedures

Temperature and Salinity measurements from Argo Profilers, XBT, CTD, Thermosalinograph, Gliders, Moorings and drifters

Real Time Quality control

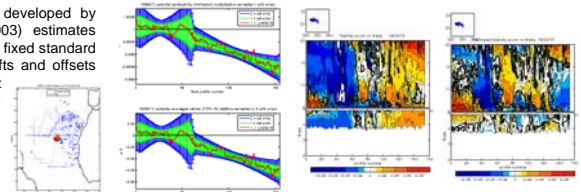
All Temperature and Salinity data are quality controlled in real-time before being included into the Coriolis database. This real-time quality control consist of three steps :

- Automated checks to detect gross errors, density inversion, unrealistic gradients, struck values and sensor drift.
- Statistical test using residual of optimal interpolation to detect profiles that are not consistent with the neighbours
- Visual checks of the data that have been detected by the two previous test to determine if the data are bad or good.



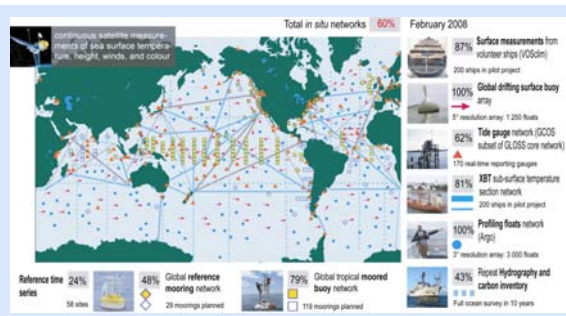
Delayed mode QC of Argo Salinity measurements

An integrated statistical tool developed by Wong, Johnson, Owens (2003) estimates background salinity on a set of fixed standard isotherms, then calculates drifts and offsets by time-varying weighted least squares fits between vertically interpolated float salinity and estimated background salinity.



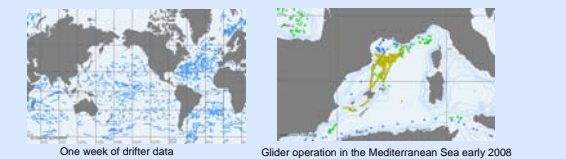
Coriolis:

A Global Data Center for major International Networks with JCOMM



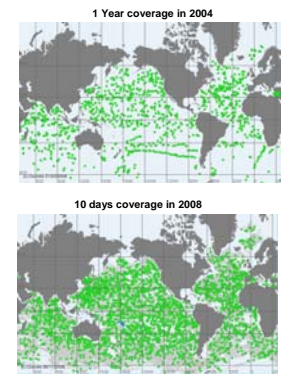
JCOMM, the Joint commission between IOC and WMO, coordinates the international implementation of the global ocean observing system. The challenges is not only to deploy and maintain these networks but also to provide an easy integrated access to these data both in real-time and in delayed mode.

Coriolis Center is participating to this effort in setting up a Global Data Center for three of these networks. With the help of Meteo-France it also extracts from the GTS the drifter data and makes them available every week. In collaboration with european partners and other European laboratories, Coriolis also integrates and distributes Gliders data.



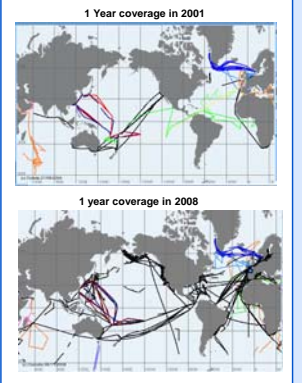
ARGO

Argo is an international program that aims at deploying 3000 floats in the whole ocean on a 3°x3° grid cycling to 2000m every 10 days for about 4 years. Deployment started in 2000 and the 3000 float goal was reached in November 2007. The goal is presently to sustained this network by deploying 800 float per Year. Coriolis is operating one of the Two Global Data Centers for Argo and providing both FTP and WWW access to the data.



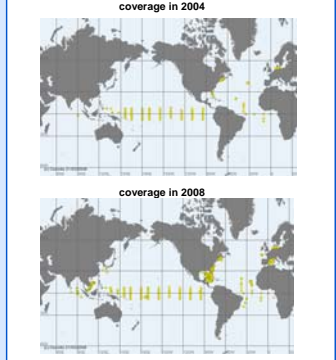
GOSUD

GOSUD is an international program that aims at collecting Thermosalinograph data from research vessels and to transmit them in real-time. The program started in 2002 with French research vessels and VOS coordinated by IRD and was extended to European vessels within Mersea. Coriolis is operating one of the two Global Data Centers for Argo and providing both FTP and WWW access to the data.



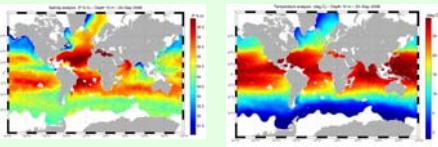
OceanSites

OceanSITES is an international program that aims at maintaining fixed point observatories in reference areas. It also aims at improving access to these reference data. The Animate and M3A sites are part of this network. Coriolis is setting up one of the two Global Data Centers for Argo and providing both FTP and WWW access to the data. It has first integrated the TAO/TRITO/PIRATA networks and the European Sites operated within MERSEA. It should be extended to more USA sites in 2008.



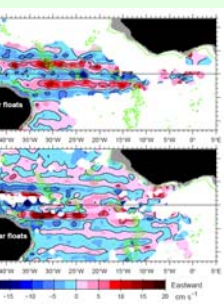
Value added Products

Weekly gridded temperature and salinity fields



Each week, Coriolis produces Temperature and Salinity fields for the global ocean on a 0.5° grid, 59 levels from 5 to 2000m. These fields are calculated in real-time since May 2005.

Toward a Velocity Product from ARGO



Floets Acoustically tracked at 750 - 850 m

ARGO floets 950 - 1050 dbars

A Catalog of Products

Real Time Products

- Coriolis-Daily**: Daily delivery of the T&S data quality control received in the past 30 days.
- Coriolis-Analysis**: Weekly Gridded fields on Global Ocean.
- Coriolis-Validation**: Weekly Delivery of the T&S quality control data generated with one week delay for model validation process within MERSEA.
- Coriolis-Argo**: Portal to Argo data on FTP and OPeNDAP.
- Coriolis-GOSUD** : Portal for the GOSUD (TSG) data:FTP & Web
- Coriolis-Drifter**: Portal for Drifter Data on FTP.
- Coriolis-Oceansites**: Portal for OceanSITES data (under development).

Delayed Mode Products

- Coriolis-Yearly-DM**: yearly updated dataset, fully qualified for reanalysis purposes; presently cover 2002-2006- Release 2008 (expected end september 2008) will include 1990 to 2007 data.
- Coriolis-Argo-DM**: Portal for Argo delayed mode data.
- Coriolis-Analysis-DM**: Weekly Gridded field on Global Ocean built with Coriolis-Yearly-DM.
- Coriolis-Velocity**: Velocity field build from Argo ; planned in 2008.

Next Steps

- Continue the effort to integrate new sources of data
- Improve the procedures to quality control the data and check consistency between the data
- Deliver on a yearly basis, new releases of reference dataset to be used for re-analysis purposes
- Implement the new procedure that has been developed to be able to distribute a delayed mode dataset of sea surface salinity data from thermo-salinograph
- Integration of some bio-chemical data (O₂, Chla, nutrients) and develop the appropriate quality control procedures