An operational oceanographic system is being developed in France to monitor and forecast ocean behavior. It is composed of three projects:

- Se-surface observation using satellite sensors
- In-situ measurements from ships, moored or drifting autonomous systems.
- Assimilation of in-situ and satellite data in an ocean circulation model.

Coriolis contributes to the in-situ part of this system, with the objective of developing continuous, automatic, and permanent observation networks. The data collected will enable water properties to be mapped, such as temperature, and ocean circulation.

**INSTRUMENT DEVELOPMENT**

- PRO/VOY: a self ballasted float able to drift at a given parking depth and then to dive down to 2000m before profiling up to the surface where data are transmitted through the ARGOS link. More than 100 cycles are performed during its 3 year lifetime.
- A new generation profiler; less expensive, which may be deployed by non specialized operators, from vessels or planes.
- Integration of new sensors (acoustic - oxygen).

**REAL TIME DATA FROM RESEARCH VESSELS**

Coriolis partners have research vessels that are able to make temperature and salinity measurements routinely. This was not made because of a lack of procedures between vessels and data center. Procedures are now set up for XBT and Thermo-salinograph. ADCP will be transferred routinely in 2006.

**FLOAT DEPLOYMENT**

Within the Coriolis Project, up to 400 floats will be bought by IFREMER, INSU, SHOM before end 2006. Most of these floats will be deployed using opportunities on research vessels. The deployments will be made essentially in Atlantic Ocean and some in Indian Ocean. These deployments must meet Argos objectives in order to have a 3x3° coverage of the global ocean.

Coriolis relies on a group of scientists from different research laboratories. The scientific group provides its expertise in measurement techniques, data processing and data analysis on a short time scale. It also ensures that Coriolis is integrated in scientific programs at national and international levels.

**SCIENCE**

Temperature and salinity gridded fields

| Temperature and salinity grid at 10° and 150m, on March 2006. Black dots are the measurements used.
| Temperature analysis / CTD - Depth - 10°: 28584921 | Salinity analysis / CTD - Depth - 150m: 28584920 |

Analysis of temperature & salinity profiles from Coriolis database. Temperature and salinity fields: weekly temperature and salinity fields are objectively analyzed on a grid with 0.3 degrees resolution in latitude and longitude at 51 levels from 5 to 2000 m. Analysis are performed once a week. Each analysis takes into account the data measured within -21+21 days intervals around the date of the estimation. These analyses are available on a LAS Server at: [http://www.ifremer.fr](http://www.ifremer.fr)

**AN EASY ACCESS TO DATA:**

[www.coriolis.eu.org](http://www.coriolis.eu.org)

The Coriolis data center provides both in real-time, less than 24 hours, and delayed mode, qualified data from floats but also from XBT, XCTD, Thermo-salinograph. Data are available on WWW together with interactive visualization tools (maps, profile visualisation with QC flags, meta-data, trajectories...)

**Quality Control**

Real time: flag suspicious data

Delayed mode: determine & propose correction for sensor offsets and sensor drifts

**Coriolis, the French contribution to Argo Data Management Network**

Together with the US Godae center in Monterey, Coriolis provides a centralized homogeneous access to Argo data acquired all over the world. National Argo data centers validate the data for the floats they deploy according to quality control procedures defined by the Argo data management team. This team is chaired by IFREMER/IFREMER/FRance and MEEDS/Canada.

Since the beginning of Argo, more than 2500 floats have been deployed and nearly 1500 are still active. The oldest ones have been at sea for more than 3 years.

These floats are mainly located in the northern oceans but deployments are slowly moving to the southern hemisphere.

More than 95% of the data are transmitted within 24 hours both to GTS and Global DACS providing an efficient access to Argo data to most of the potential users. Since October 2003 MERCATOR is assimilating the Argo float data and saw significant improvements in the model outputs.