Irish National Report

1. The status of implementation (major achievements and problems in 2009) - floats deployed and their performance

Four floats were deployed during 2009 on the R.V. Celtic Explorer and carried out a combined total of 133 profiles. Their distribution can be seen on the maps below.





Figure 1: WMO 6900651

Figure 2: WMO 6900652





Figure 3: WMO 6900653

Figure 4: WMO 6900654

- technical problems encountered and solved

The four remaining floats awaiting deployment were returned to Webb Research for replacement of pressure sensor.

- status of contributions to Argo data management

BODC is currently carrying out the delayed mode data management for Irish floats although when last checked, had not had an opportunity to deal with Irish float data due to backlogs.

- status of delayed mode quality control process

BODC are currently carrying out the delayed mode quality control process for the Irish floats (see note above).

2. Present level of and future prospects for national funding for Argo including a summary of the level of human resources devoted to Argo.

The funding for Euro-Argo floats beyond the lifetime of the PP project has not yet been agreed. Ireland is interested in becoming an observer member of the Euro-Argo ERIC. The MI have been in discussions with the Irish national ESFRI delegates regarding the procedure to sign up to the legal form. We remain committed to the Euro-Argo project.

One section manager (Glenn Nolan), one team leader (Fiona Grant) and two Science and Technical Officers (Kieran Lyons and Sheena Fennell) are responsible for the delivery of the Euro Argo programme in Ireland. The programme is overseen by the Director of Ocean Science Services, Michael Gillooly.

3. Summary of deployment plans (level of commitment, areas of float deployment) and other commitments to Argo (data management) for the upcoming year and beyond where possible.

During February 2010 two more Argo floats were deployed during the standard section ICES cruise on the R.V. Celtic Explorer in the Rockall Trough. The JCOMMMOps float density map was consulted prior to choosing the deployment locations. In the latter part of February during the IWDG (Irish Whale and Dolphin Group) survey a third float was deployed in the Porcupine Sea Bight.

4. Summary of national research and operational uses of Argo data as well as contributions to Argo Regional Centers.

In 2010, the MI are consulting with oceanographic researchers in NUIG to develop a research project using Argo data. Further information will be supplied when available.

As part of WP5, a project was developed to routinely compare Argo profiles with the Marine Institute North East Atlantic ROMS Model. On a weekly basis, the ARGO temperature and salinity profiles are compared with model temperature and salinity profiles from the same location and closest timestamp. Profile plots and validation metrics are created (bias, skewness and RMS of difference; correlation coefficient). These are all available on http://www.marine.ie/home/services/operational/oceanography/ModelValidation.htm

Some analysis was recently conducted on Argo floats in the southern entrance to Rockall Trough to discern water mass variability at this location. Float 6900653 has traversed from Porcupine Bank to Rockall Bank over the past 12 months. The data below show the gradual transition from intermediate water masses dominated by Mediterranean Outflow Water to Sub Arctic Intermediate water over that period. Further analysis will be conducted in 2010 to examine Mixed Layer Depth in this region from Argo float profiles.



Figure 5. Argo derived Temperature and salinity diagram as a function of longitude showing transition from MOW influenced waters in the eastern Rockall Trough (red and orange) and SAIW influenced waters in the western Rockall Trough during 2009.



5. Issues that your country wishes to be considered and resolved by the Argo Steering Team regarding the international operation of Argo. These might include tasks performed by the AIC, the coordination of activities at an international level and the performance of the Argo data system. If you have specific comments, please include them in your national report.

All issues currently being raised through Euro-Argo PP.

6. To continue improving the number of CTD cruise data being added to the reference database by Argo Pls, it is requested that you include the number and location of CTD cruise data uploaded by Pls within your country to the CCHDO website in the past year. These cruises could be used for Argo calibration purposes only or could be cruises that are open to the public as well.

The MI, through the work of Kieran Lyons, submitted all available CTD cruise data to Christine Coatanoan in April 2009. The archive of CTD data (to end of year 2008) was processed and quality controlled using Seabird processing software. It was binned to 1 metre and then imported

to a SQL Server database where it goes through some final quality control checks (e.g. density inversion) before being written to a final database.

The data sent had 2 files:

- CTD_Header.csv: this contains a unique identifier for each cast, and the date and location of the cast
- CTD_Data.csv: this contains a unique identifier to link each record with a cast, and the depth, temperature and salinity for each record.

7. Keeping the Argo bibliography (<u>http://www.argo.ucsd.edu/FrBibliography.html</u>) up to date and accurate is an important part of the Argo website. This document helps demonstrate the value of Argo and can possibly help countries when applying for continued Argo funding. Please include a list of all papers published by scientists within your country in the past year using Argo data, including non-English publications. Not aware of any publications nationally using Argo data.

8. An action item from AST-10 asked for more statistics on the commitments table, focusing especially on how well countries are predicting their deployments for the year. I am also attaching a spreadsheet of the commitments table which I updated on January 6, 2010 using the AIC website. I understand the statistics this year will be skewed given the break in float deployments due to pressure leaks. However, I have included the statistics for 2007-2009. Please correct any errors on float totals in the past year and send me an estimate of the expected number of deployments for 2010. Excel sheet attached for information.