Canadian National Report on Argo-2008

1. Status of implementation (Major achievements and problems encountered in 2008)

1.1 Floats deployed and their performance

During 2008, Canada deployed 25 floats: all were APEX floats and of these 11 were deployed in the Atlantic and 14 in the Pacific. Significant financial support from the Canadian Ice Service, Environment Canada permitted enhanced coverage of the northern Labrador Sea and northern North Pacific. As of writing in February 2009 three floats seem to have failed with the rest continuing to supply good data. Two of the failures appear to be instrumental since the floats failed after only 1 and 3 profiles respectively. The third float had moved into shallow water on the Labrador Slope where sea ice was present. This float may return later in the spring. One of the floats deployed in the Pacific Ocean was our first attempt to track a float communicating through the CLS/America RUDICS interface to Iridium. We consider this to be a great success. We thank Steve Riser's group for their assistance training a technician to prepare a float for deployment with Iridium comms and lithium batteries.

The Atlantic effort focussed on the Slope Water and Labrador Sea. The Pacific effort included deployments in the Gulf of Alaska and the Bering Sea. We are grateful to JAMSTEC for allowing us to deploy 6 floats from the R/V Mirai. At the time of writing we expect to have 20 floats on hand at the start of the new fiscal year. We are hoping to use assistance from Russia to deploy 6 floats in the far western Bering Sea and we welcome other international collaboration.

1.2 Status of contributions to Argo data management

ISDM (formerly MEDS) continues to acquire data from 110 active Argo floats of which 3 floats are presently late in reporting. Data are issued to the GTS and GDACs every 6 hours. We increase the frequency of acquiring data from the Argos server to hourly if we fail to access the system at a specific 6 hour interval. On average 84% of 2008 data were issued to the GTS within 24 hours of the float reporting. We sent approximately 3870 delayed mode quality-controlled profiles to GDACs in February 2008. We have roughly 6 month's worth of profiles ready for delayed mode quality control at this time. Our website is updated daily automatically. Several MatLab routines used to generate maps and tracks for the website were revamped during a migration of MatLab codes from UNIX to Windows. The website located at http://www.meds-sdmm.dfo-mpo.gc.ca/isdm-gdsi/argo/index-eng.html displays float tracks, temperature, salinity and oxygen contour plots and technical information for each float.

ISDM has been transmitting Argo data in BUFR format under header IOPX02 since January 19, 2009. We offer assistance to data centers that would like us to verify their BUFR messages before putting them on the GTS. So far we have verified BUFR messages generated by CLS and US Argo. The development of Java software to write Argo NetCDF file has been completed. We adjusted pressure and recorded adjusted pressure in the PRES_ADJUSTED field of the NetCDF file for our entire set of real-time data. We also created software to decode data from our first Iridium float (Q4901105) communicating via the CLS/America RUDICS interface.

The next Argo development activity for ISDM is to set up a process to receive Argo BUFR messages and detect time delays and discrepancies between Argo messages transmitted in BUFR and TESAC format. We also need to develop a decoding program for newly- purchased APEX floats with APF9 controllers.

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

During 2008 the Canadian Argo program was primarily funded as a research effort. It has been our early intention to move funding to a more routine or operational basis but that has not yet occurred. We are continuing to pursue this. The funding in 2008 including the much appreciated contribution from the Canadian Ice Service was adequate to maintain and slightly enhance the Canadian contribution to the international effort.

Funds to purchase floats typically appear very late in our fiscal year and at the moment we know we will have 28 floats available for launch starting March 31st, 2009.

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

Detailed deployment plans are not yet known as it was only very recently that it became known how many floats we would have on hand. We expect to deploy 14 floats in each of the Atlantic and Pacific sectors with deployments biased towards the far northern regions of both oceans, with most going into the Bering and Labrador Seas. We are hoping to collaborate with Russia to achieve the deployments in the far western Bering Sea.

4. Issues that Canada wishes to be considered and resolved by AST regarding the international operation of Argo.

The delivery of delayed mode, quality controlled Argo data to GDACs has improved significantly in the past 12 months. Despite this, we believe that there is still some room for improvement in the timely delivery of delayed mode data.

We are very keen to see a permanent Argo program office established and wish to encourage the Argo Executive and IAST to make this happen. We believe that the ATC (Argo Technical Coordinator) and AD (Argo Director) positions should be co-located. We note that JCOMM is working to provide an Observing Programme Support Centre. This may be a suitable location as operations will be run in concert with other ocean observation programs.

As noted above, our current funding is still without long-term stability. We feel that it may be useful to hold an Argo Steering Team meeting some time in the foreseeable future in Canada. Specifically, we offer to host the AST-11 meeting at the Bedford Institute of Oceanography in Dartmouth, Nova Scotia.

Appendix – summary of Canadian float launches during calendar 2008.

	Launch Date	WMO-ID	Comms	Ocean Basin	Launching Vessel	Still Operating?
1	03/02/2008	4901064	Argos	P	Tully	Yes
2	10/02/2008	4901072	Argos	P	Tully	Yes
3	11/02/2008	4901065	Argos	P	Tully	Yes
4	16/05/2008	4901090	Argos	A	Hudson	No
5	23/05/2008	4901095	Argos	A	Hudson	No (?)
6	23/05/2008	4901094	Argos	A	Hudson	Yes
7	25/05/2008	4901093	Argos	A	Hudson	Yes
8	27/052008	4901092	Argos	A	Hudson	Yes
9	28/05/2008	4901091	Argos	A	Hudson	Yes
10	01/06/2008	4901102	Argos	A	Hudson	Yes
11	02/06/2008	4901101	Argos	A	Hudson	Yes
12	07/06/2008	4901105	Iridium	P	Tully	Yes
13	09/07/2008	4901097	Argos	P	Laurier	No (ice)
14	10/07/2008	4901104	Argos	A	Teleost	Yes
15	11/07/2008	4901096	Argos	P	Laurier	Yes
16	16/08/2008	4901099	Argos	P	Tully	Yes
17	23/08/2008	4901100	Argos	P	Tully	Yes
18	12/10/2008	4901085	Argos	P	Mirai	Yes
19	12/10/2008	4901086	Argos	P	Mirai	Yes
20	16/10/2008	4901087	Argos	P	Mirai	Yes
21	16/102008	4901088	Argos	P	Mirai	Yes
22	18/10/2008	4901078	Argos	A	Hudson	Yes
23	21/10/2008	4901089	Argos	P	Mirai	Yes
24	30/10/2008	4901098	Argos	P	Mirai	Yes
25	06/12/2008	4901103	Argos	A	Hudson	Yes