

WORLD METEOROLOGICAL ORGANIZATION

**INTERGOVERNMENTAL OCEANOGRAPHIC
COMMISSION (OF UNESCO)**

DATA BUOY COOPERATION PANEL

DBCP-XXVII/Doc. 9.2 Rev. 1
(22-Sep-11)

TWENTY-SEVENTH SESSION

ITEM: 9.2

GENEVA, SWITZERLAND
26-30 SEPTEMBER 2011

ENGLISH ONLY

DEPLOYMENT OPPORTUNITIES AND STRATEGIES

(Submitted by Mathieu Belbeoch, Kelly Stroker, Technical Coordinators, JCOMMOPS)

Summary and purpose of the document

This document provides information on drifting, floats and moored buoy deployment strategies and explains mechanisms for exchanging information on opportunities both by ship and air. Information is collected by JCOMMOPS and made available via its web site and email. The document also explores possible solutions in terms of deployment opportunities for improving global coverage for the drifter array and all JCOMMOPS programmes.

ACTION PROPOSED

The Panel will review the information contained in this report and comment and make decisions or recommendations as appropriate. See part A for the details of recommended actions.

-
- Appendices:**
- A. Lady Amber Indian Ocean cruises
 - B. Drifters/floats density maps
 - C. Argo Deployment plans (and planned cruises)

-A- DRAFT TEXT FOR INCLUSION IN THE FINAL REPORT

9.2.1 The Argo Technical Coordinator, Mr Mathieu Belbeoch (JCOMMOPS), reported on activities and developments in JCOMMOPS regarding deployment opportunities and highlighted several items of interest to the panel. In particular, the panel noted that JCOMMOPS is working on the design of a relational database to handle cruises metadata occurring in GOOS/JCOMM networks.

9.2.2 Mr Belbéoch recalled to the panel that JCOMMOPS has been providing information on deployment opportunities on an *ad-hoc* basis without any strong commitments and means. However, such activities are viewed as crucial to assist implementers in the maintenance of the global arrays and JCOMMOPS has explored a number of medium term solutions (communication, logistics coordination) and funding sources to develop and sustain such activity.

9.2.3 He then reported on the use of the new mailing list set up in 2011 to share deployment opportunities amongst Argo, DBCP, SOT and OceanSITES communities: ships@jcommops.org and invited all DBCP/OceanSITES deployment and operation managers to subscribe on the list and systematically post their deployment opportunities on the list as well (***action; Panel members; ASAP***);

9.2.4 The panel noted the success of the Lady Amber experiment achieving its third cruise¹ in the Indian Ocean and deployment for 60 floats for the CSIRO and preparing to operate in the Pacific Ocean in 2012. However, the panel noted that no drifters were deployed during those cruises, but that two RAMA moorings were controlled (14046, 14042) on the way. The panel welcomed the JCOMMOPS experiment of using low cost and green platforms for instruments deployment. Panel members were invited to consider using the Lady Amber on a cost-shared basis for the deployment of drifters in the Southern Hemisphere data sparse areas (***action; Panel members; ongoing***).

9.2.5 The panel noted that JCOMMOPS finalized its proposal to set up a position dedicated to those activities: "Ship Logistics Coordinator". The panel agreed in principle to help fund this activity so that a pilot experiment can begin in 2012 (related decision on funding is deferred to agenda item 12). This is considering that the finalized Terms of Reference would answer DBCP direct needs, that most of the necessary resources were generated by the activity incomes (ship chartering - Argo 2011) and that the SOT agreed to support the activity at its last session. See also DBCP-27 preparatory document No. 11.2. The Panel invited its members to review the Terms of Reference of the JCOMMOPS "Ship Logistics Coordinator" position, provide feedback, and consider funding part of it as of 2012 (***action; Panel members; Nov. 2011***).

9.2.6 The panel recommended that JCOMMOPS continue its efforts in developing products and services on deployment opportunities.

1: http://w3.jcommops.org/FTPRoot/JCOMMOPS/Cruises/JCOMMOPS_ZR2335.kml

-B- BACKGROUND INFORMATION

1. Ships are the common denominator of all observing systems. They provide observations (e.g. CTD) and are used for deploying instruments or maintenance operations (e.g. ~1000 floats, ~1000 buoys, ~500 moorings). There is a need to optimize the use of existing opportunities (in particular below 40°S) and identify new opportunities to address regional gaps. While ship time funding is substantial for some countries, it is impossible to deploy all those instruments without a strong cooperative effort (for logistics but also funding). In a global economical context under pressure the use of low cost (and green) platform for deployments (or retrieval when needed) will be more and more required.

2. The key issue is that there is no international central node to gather cruise plans enough in advance, even though there are good national resources. In addition, about 2 months are required to deploy a few units, while 6-12 months are needed for a batch deployment of 50 units.

3. So there is some progress to be made for cruise metadata sharing and the TC proposed some elements of solution:

- **Metadata & products:** specific information needs to be handled rationally, synchronized or linked with other metadata sources (Pub47, CCHDO, POGO, etc) and appropriate products developed. JCOMMOPS has designed its future database to answer those needs (work initiated with the former TC H. Viola).
- **Communication:** JCOMMOPS set up a dedicated mailing list for float/buoy/mooring operators and “deployment managers”: ships@jcommops.org
Any opportunity, any new ship recruited should be promoted through this channel in a timely manner.
- **Cross-program cooperation:** while Argo maintains deployment plans on-line, the DBCP is invited to do the same. The Argo TC will encourage the new DBCP TC to address this issue and the team will work together on an integrated system.
The monitoring of ~3000 SOT ships needs to be improved and Port Meteorological Officers expertise could be used further (professionals of ship recruitment for ocean observations). The DBCP/VOS start up program is a good example.
- **International cooperation,** (like the “donor programmes”) has to be developed so that partners can offer us ship time at regional levels while we can offer instruments, experts, trainers, etc. Such initiatives should be conducted with a JCOMM oriented approach (very “time demanding” for modest results).
To be noted that Colombia and Morocco will soon deploy floats and the DBCP is invited to join those initiatives and provide drifters.
- **Specific chartering opportunities** can make the difference. The Kaharoa (28m length, 5 crew) that has deployed more than 800 units, including drifters, is a good example. JCOMMOPS is also chartering a sailing ship (Lady Amber, 20 m, 4 crew) that is operating for now in the Indian Ocean for CSIRO. This charter can operate anywhere for 20k€ per month (overhead included for coordination at JCOMMOPS) or 500€/unit given ship capacity and autonomy. The ship will be ready for new contracts in December in Perth and will probably operate in the Indian Ocean. Two large cruises are evaluated to fill gaps in the North and South Pacific.

The ship is equipped with Iridium communications (to send email for eventual launch location changes, and receive launches acknowledgements) and a real-time tracking beacon (with an alarm, provided by CLS for security). [Follow the Lady Amber](#)

JCOMMOPS thanks the CSIRO for having taken the risk of funding this experiment, and the crew for its full dedication, with already more than 6 months at sea in sometimes very rough conditions. Deploying instruments from a sailing vessel can be sporty when the weather is on (one crew broke her leg during the journey).

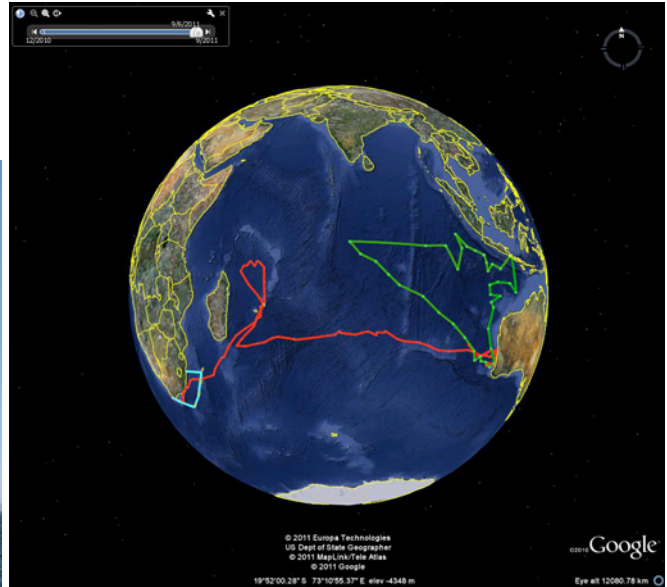
To be noted that the crew has gained a high technical expertise via transfer of technology from CSIRO engineers. The ship was deploying floats around Mauritius during the DBCP Capacity Building workshop (May 2011) and an opportunity of a practical training session was missed, despite TC proposition.

Similarly and following up on Maria Hood (former IOC/IOCCP Project Office) suggestions and contact points in the sailing community, JCOMMOPS is trying to set up deployment opportunities through sailing races or individuals (Yves Parlier was interested in launching floats on his around-the-world trip in 2012 or 13, and [Mike Horn](#), the Swiss explorer, as well). These connections could be useful in the long run also for instrument retrieval. A NGO « voiles sans frontières » has an ambassador ship that could deploy units every year between Med. Sea and Dakar/Senegal. In addition, they recruit sailing ships every year to participate in their humanitarian activity and bring material from France to Africa. Those ships generally continue to Caribbean sea. Here again, the outreach potential is enormous as those activities are much more visible than ocean observations.

- **Dedicated resource:** we will also need a focal point, tracking existing ships, one by one, identifying new ships including charters, coordinating logistics when necessary, and channeling the information as appropriate within the community. the work initiated by JCOMMOPS on that regard deserves to be continued. Such “Ship Logistics Coordinator” position is being documented and funded. See. Doc. 11.2.

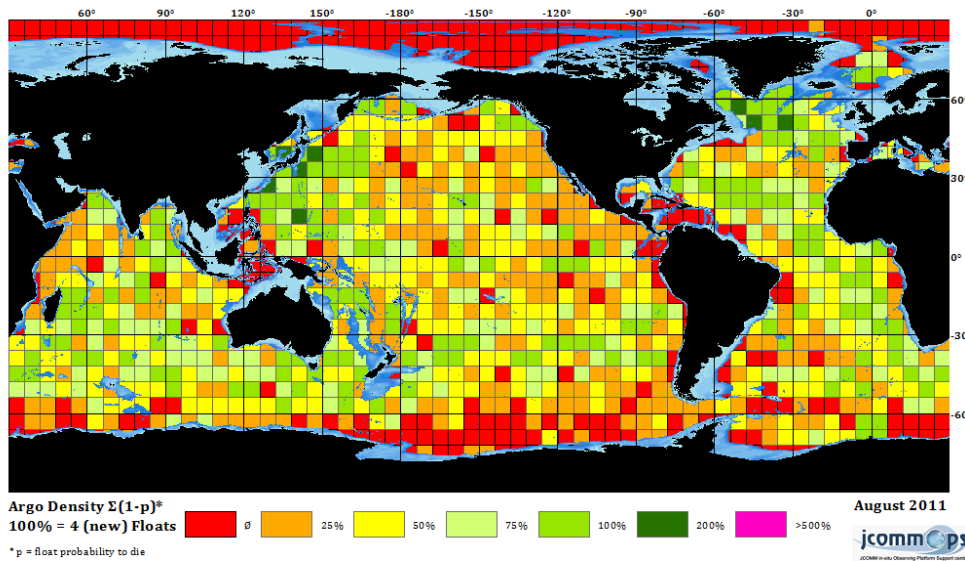
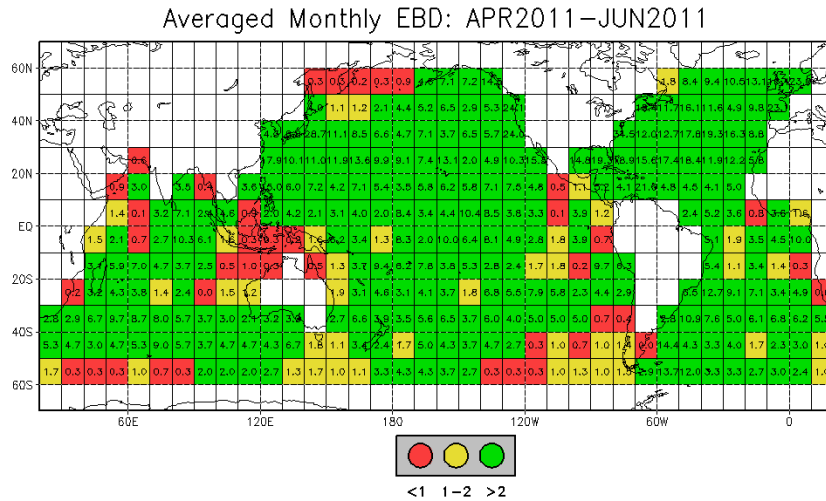
Appendices: 3

APPENDIX A

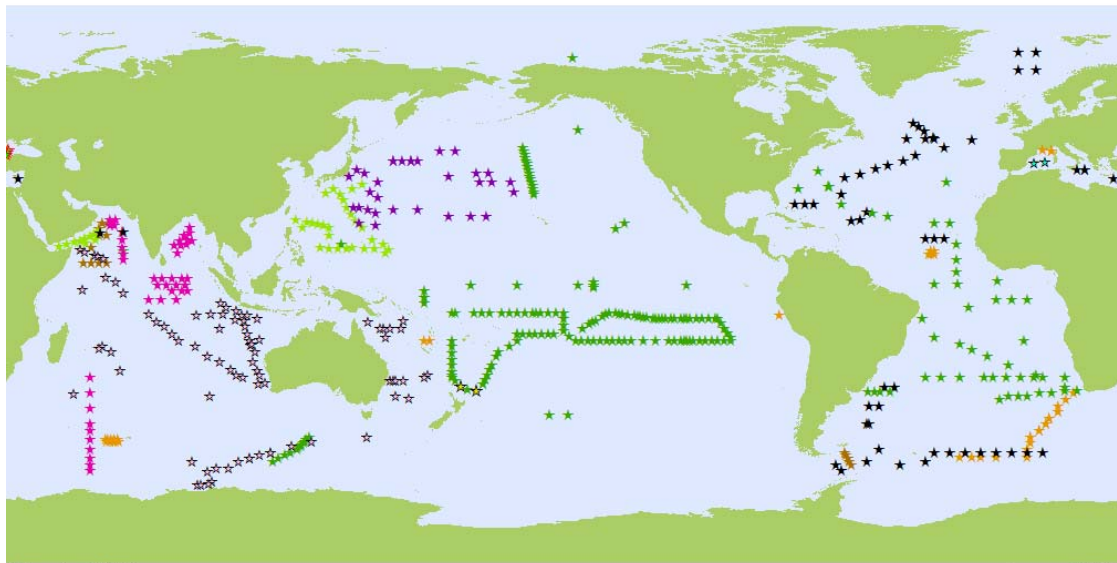


*Lady Amber Operates anywhere for 20 000 Euros/month, all included
Indian Ocean cruises, 2011*

*Such initiatives have also a strong outreach potential. The crew flies the flag of global ocean
observation, on a green platform and participates in “humanizing the GOOS”.*



Density Maps for DBCP (source: NOAA) and Argo
A fusion of both maps to highlight common gaps and organize joint cruises would be a useful tool.
To be noted that the Lady Amber could have deployed drifters to fill gaps in the West Indian Ocean.



Planning (524)

August 2011

- ☆ AUSTRALIA (82) ☆ CHINA (39) ☆ GERMANY (56) ☆ JAPAN (32) ☆ SPAIN (2) ☆ UNITED STATES (207)
- ☆ BULGARIA (3) ☆ FRANCE (41) ☆ INDIA (45) ☆ NEW ZEALAND (2) ☆ UNITED KINGDOM (15)



Argo Planning, regularly updated by Argo operators through the centralized [JCOMMOPS interface](#), or [Google Earth](#) with TC assistance: useful information for the DBCP operations.
