

WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC  
COMMISSION (OF UNESCO)

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JOINT WMO/IOC TECHNICAL COMMISSION FOR  
OCEANOGRAPHY AND MARINE METEOROLOGY (JCOMM)  
SHIP OBSERVATIONS TEAM

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ITEM I-5.1

GENEVA, SWITZERLAND, 16 TO 21 APRIL 2007

Original: ENGLISH

## **SUPPORT INFRASTRUCTURE**

### **JCOMM *in situ* Observing Platform Support Centre (JCOMMOPS)**

*(Submitted by the Secretariats with input from Mike Johnson, Coordinator, JCOMM Observations Programme Area and Graeme Ball, Chairperson of JCOMM Ship Observations Team)*

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### **Summary and purpose of document**

This document contains a report from the informal JCOMMOPS Roundtable discussion that took place 9 May 2006 in Silver Spring MD, USA. The session examined the importance and the role of an operational center for the ocean observing system. The document also considers operational issues relating to WMO NO. 47 and makes a number of recommendations, including a change to the hosting arrangements of WMO No. 47.

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### **ACTION PROPOSED**

The Ship Observations Team is invited to:

- (a) review the information contained in this report and comment as appropriate;
  - (b) identify the SOT-wide and individual panel requirements for an expanded JCOMMOPS; and provide feedback to the OPA Coordinator;
  - (c) discuss and agree on JCOMMOPS activities and, where possible, areas of potential development during the next intersessional period
  - (d) make recommendations to the OCG regarding the future of JCOMMOPS
  - (e) approve the recommendations regarding Publication No. 47 for endorsement by WMO;
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## DISCUSSION

### 1. Summary of discussions at the informal JCOMMOPS Roundtable, 9 May 2006, Silver Spring MD, USA *(input provided by Mike Johnson)*

**1.1 Background:** Representatives of the various observing programmes (those already involved in JCOMMOPS plus those that might benefit from future involvement) met 09 May 2006 in Silver Spring, USA, to discuss their programme's requirements and future needs for an observing program support centre. The former JCOMMOPS Coordinator also summarized the present status of JCOMMOPS including relevant background information. The meeting explored advantages and disadvantages of having a consolidated JCOMMOPS to service all ocean systems. Informal proposals from potential hosts (following an informal survey by JCOMM co-president Peter Dexter) were reviewed. A brainstorming session followed to examine whether or not an operational centre is important for an ocean observing system, and if so what are the requirements for an integrated observational system and how an operational support centre can best meet those needs on an international basis in the future.

\* Participants: Mike Johnson (roundtable chair and JCOMM Observations coordinator), David Meldrum (DBCP chair), Graeme Ball (SOT chair), Howard Freeland and Dean Roemmich (Argo co-chairs), Mark Merrifield (GLOSS chair), Maria Hood (IOCCP coordinator), Uwe Send (OceanSITES co-chair), Ed Harrison (OOPC chair), Shubha Sathyendranath (POGO executive director), Eric Lindstrom (via telephone - JCOMM satellite expert), JCOMM secretariat.

### 1.2 Discussion (general agreement unless noted):

The participants generally agreed on the following points (unless noted otherwise):

1.2.1. There is value in an operational centre, although there was some disagreement on the definition of "operational". A support centre for the implementation of the observing programmes will be essential to enable the sustained deployment of an ocean observing system over the next 5-10 years, and JCOMMOPS holds a seed for this evolution.

1.2.2. JCOMMOPS should be further developed to extend its responsibilities for other observing programmes beyond DBCP, SOT and Argo, including e.g., OceanSITES, IOCCP, GLOSS, and the POGO research cruise database.

1.2.3. The level of services provided by JCOMMOPS should be proportional to the level of commitments made by each programme/panel, with JCOMMOPS perhaps acting as a "black box" with two or more Technical Coordinators (TCs) providing services to multiple programmes/panels. For example, a TC could work half time for Argo and half time for one or more other panels (e.g., SOT, OceanSITES), provided adequate funding was provided by each programme.

1.2.4. Each programme representative presented estimated requirements for an implementation support centre, and estimated future needs for fully sustained observing system support at JCOMMOPS. It is essential that these requirements be refined and documented as part of the next steps in this process. Summary points include:

- Argo: TC (less than full-time) should be co-located with Argo PO Director (full-time). TC meets deployment notification requirements as specified in IOC-Resolution XX.6.
- OceanSITES: Cooperation and integration with JCOMMOPS could be cost-effective (e.g., TC could assist with tracking status of individual sites; pressuring operators to provide data and information; getting data from ARGO and onto GTS; acting as clearing house for technical information about sensors, handling, calibration, QC procedures; collecting information about planned cruises with mooring work).
- IOCCP: IOCCP neither has nor aims to have a separate operational system; rather the goal is to use existing platforms for multiple purposes, and there may be a future role for JCOMMOPS in this. The current arrangement at IOC for IOCCP coordination has both advantages (e.g.,

Member States' concerns over data exchange, direct links to UN conventions and observing system development, direct links to National, Regional and World Data Center systems, and UN system visibility for big issues) and disadvantages (e.g., lack of necessary technical capabilities, financial inflexibility to implement activities, and precarious funding schemes for staff support.).

- POGO cruise Data Base: POGO estimated that a half-time TC would be necessary (see table below), but that because this function would be primarily collecting information from POGO member institutes, that the TC could be recruited at a lower level than that required for DBCP or Argo.
- GLOSS: currently little need for a TC-type function within JCOMMOPS. There are some benefits in international technical coordination but precise needs have not been evaluated and much of the work is already being done at the University of Hawaii Sea Level Centre and by the Technical Secretary (IOC -- Thorkild Aarup).
- DBCP and SOT: JCOMMOPS support should be maintained at current level (see table).

1.2.5. For future (5-10 years) needs (summarized in table below), three working levels were introduced:

- 1 for high level programme managerial functions (e.g., Argo Project Office Director)
- 2 for mid-level type of coordination (e.g., current DBCP/SOT or Argo TC)
- 3 for information technology system operations (IT support).

For the purpose of this exercise, JCOMMOPS would include at least levels 2 and 3. Level 1 support needs to be further clarified and the participants did not yet decided whether a Project Manager function should be included within JCOMMOPS or not. However, JCOMMOPS should include an overall managerial function (probably one person) if its functions expand to other programmes/panels beyond DBCP, SOT, and Argo. The following table summarizes estimates.

level	DBCP	Argo	SOT	GLOSS	IOCCP	OceanSITES	Cruise DB	Total
1 (PO director/chair)		1			1	0.25		2.25 *
2 (user support)	0.7	0.7	0.5	0.1	0.5	0.5	0.5	3.5
3 (routine ops/IT)	0.2	0.3	0.2	0.1	0.2	0.2	0.2	1.3
Total	0.9	2.0	0.7	0.1	1.7	0.95	0.7	7.05

1.2.6. A process should be started to thoroughly evaluate and enumerate the requirements for: (i) a JCOMMOPS that can respond to the evolving needs for a sustained ocean observing programme, as well as (ii) the best host organization to meet these requirements. It would be preferable to co-locate within a National centre but not within a service provider, although there was not unanimity on the last point. Both requirements documents should be as specific as possible, e.g., a requirement for the host to provide for level 3 support as well as provide either an Oracle database or funding for the transition to another database.

1.2.7. Concerns were expressed that moving JCOMMOPS would have associated costs, both financial and in diverting the TC's attention from their normal day-to-day coordination work. It would be essential to allow for a sufficient transition period, probably two years from the decision point, to ensure adequate continuity. Another concern regarded the four-year UNESCO contract limit (terminating 06/2010) under which the current TC for DBCP and SOT is employed.

**1.3 Funding:** There was general recognition that for the short-term, DBCP has a slight surplus as a result of a five-month gap in TC employment as well as a lower pay-scale for the new TC. It is possible that this cost-savings could be used to support a TC for another programme or be applied towards an eventual re-location and associated transition costs. However, only the DBCP can make decisions regarding the use of this surplus. No new funding was identified for the medium- or long-term. The suggestion was for consolidated TC and IT support, with resource sharing across the programmes. A

dedicated trust fund for JCOMMOPS might be highly desirable, and a proposal for same should be included in the next steps.

**1.4 Next steps and time-line:** The idea of evolving JCOMMOPS into a global observing program support center was discussed at the October 2006 JCOMM Management Committee meeting, and was endorsed. At the 23-25 April 2007 OCG meeting, the OCG will consider a requirements specification and a solicitation for proposals from interested host centres.

## **2. JCOMMOPS Portal for WMO Publication No. 47** *(input provided by Graeme Ball)*

### **2.1 Background**

WMO No. 47 was originally provided to NMSs once every year as a book. Not surprisingly the details it contained quickly became outdated.

Since about 1999, WMO No. 47 has been available electronically on the WMO website. Initially the electronic version was updated infrequently, much to the frustration of VOS operators and was a topic for discussion at both VOSclim-IV and SOT-II (London, 2003). At the same time, users also complained that in its current displayed form, WMO No. 47 was not user friendly and requested an improved web interface with a search facility. These concerns and complaints were noted by WMO. Thankfully the updates became more regular, however the improved user interface failed to materialise, despite assurances and projected completion dates.

The primary requirement of VOS operators is the timely availability of up-to-date Pub 47 metadata in a usable form. The research community has a requirement for a digital archive of historical metadata that can be used with climate datasets to allow the identification and correction of spurious climate signals that may result from changes in VOS instrumentation. It is also important to note the increasing demand for up-to-date metadata to support the monthly global monitoring statistics produced by the RSMC, as well as support the QCRelay System for the VOS at JCOMMOPS.

### **2.2 Discussion**

The imminent introduction of WMO No. 47 Metadata version 3, combined with concerns about ship security, has raised a number of important issues in areas such as access, usability, availability, archiving and hosting,

#### **2.2.1. Access**

The WMO policy on data availability is free and open access to everybody, regardless of whether there is a legitimate reason to access the data or not. The increasing concerns about ship security heightened by the open availability on the WMO website of callsign and matching ship name, has caused some members of the SOT to question the WMO policy regarding WMO No. 47.

#### **2.2.2. Usability**

The electronic version of WMO No. 47 provided on the WMO website exists as a text file containing over 5000 records, with each record containing over 100 metadata elements each separated by a semi-colon. The file must be downloaded in its entirety into a web browser for viewing. In its current form however, the metadata cannot be easily queried. The variable length of some fields combined with missing data means that a particular metadata element does not align vertically from row to row. Furthermore there are no headings provided for the metadata elements which makes a visual inspection of the metadata extremely difficult. In effect WMO No. 47 is far from user friendly as was noted at VOSclim-IV and SOT-II (London, 2003).

One option available to VOS Operators is to download the text file and import the data into a database or spreadsheet and then add column headings for easier manipulation. The inbuilt search function in common database or spreadsheet programs makes querying the data relatively straightforward. The problem with this approach however, is that each VOS Operator must repeat this process each quarter

as a new metadata file becomes available. It is highly desirable that the metadata are presented on the web in a format that can be easily interpreted and queried.

### **2.2.3. Availability**

As stated in the background, there is an increasing demand for up-to-date metadata to satisfy the requirements of a diverse range of users. At the time of writing, the last update to WMO No. 47 available on the WMO website is dated 30 June 2006, despite 2 quarterly updates since and another quarter about to end.

The lack of updates made available on the WMO website severely impacts on the operational requirements of VOS Operators, the RSMC and JCOMMOPS. The lack of updates is also very frustrating to the Task Team on Metadata for WMO No. 47, which has been successful in getting more countries to submit their quarterly metadata for WMO No. 47.

### **2.2.4. Archiving**

It is vitally important that all past metadata contained in WMO No. 47 are retained for future reference and for use in climate studies.

These metadata may co-exist in the WMO No. 47 database together with the current metadata as long as authorized users can easily retrieve the past metadata on request. Alternatively the past metadata maybe exported as separate entities or reports and stored elsewhere.

### **2.2.5. Hosting**

WMO uses an MS Access database to store the WMO No. 47 metadata.

WMO is now committed to provide an updated version of the database to accept national submissions in WMO 47 metadata version 3 as of 1 July 2007 and has taken steps to make the necessary developments, including the consideration of inputs provided in XML. However, alternative hosting arrangements should be considered in case WMO agrees to devolve responsibility.

JCOMMOPS has a requirement for up-to-date metadata for its VOS QCRelay. JCOMMOPS is also proposed to host the centralized database of **MASK v REAL** callsigns as part of the implementation of masked callsigns (doc. IV-4.1.2). In consideration of the current and planned activities at JCOMMOPS that require up-to-date ship's metadata, and recognizing that JCOMMOPS is the operational support centre for the marine programmes in JCOMM, there is a realistic expectation that JCOMMOPS is much better equipped than WMO to support the operational requirements of all users of WMO No. 47.

## **2.3. Recommendations**

1. Access to the WMO No. 47 be restricted to authorized users or agencies.
2. The WMO No. 47 be presented as a searchable database on the web.
3. The compiled list of national WMO No. 47 submissions be available within one month of the due date for quarterly national submissions.
4. Past metadata contained in WMO No. 47 must continue to be archived and be easily available to authorized users.
5. JCOMMOPS to be the designated host centre of the WMO No. 47 if WMO is willing to devolve responsibility for managing the database.

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Appendix: None