

WORLD METEOROLOGICAL ORGANIZATION

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INTERGOVERNMENTAL OCEANOGRAPHIC  
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JOINT WMO/IOC TECHNICAL COMMISSION FOR  
OCEANOGRAPHY AND MARINE METEOROLOGY  
(JCOMM)

SHIP OBSERVATIONS TEAM (SOT)

SEVENTH SESSION

VICTORIA, CANADA, 22-26 APRIL 2013

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ITEM: 8.2

Original: ENGLISH

## SOOP PROGRAMME STATUS AND IMPLEMENTATION

*(Submitted by Gustavo Goni (USA), SOOPIP Chairperson)*

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### Summary and purpose of the document

This document provides information in the SOOP Programme Implementation issues, including:

- (i) The status of SOOP implementation,
- (ii) The review of the sampling scheme according to user requirements,
- (iii) The review of XBT transect responsibilities and International Collaborations,
- (iv) XBT Science Team and SOOPIP

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### ACTION PROPOSED

The Team 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.

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- Appendices:** A. Status of the current sampling programme  
B. XBT transect implementation responsibilities (draft)

**- A - DRAFT TEXT FOR INCLUSION IN THE FINAL REPORT**

**8.2.1 Status of SOOP implementation, sampling scheme**

8.2.1.1 The Technical Co-ordinator of the SOT reported on the results of the SOOP Semestrial Surveys for 2011 and 2012 and on the timely submission of data by SOOP participants for the survey. The Panel identified the gaps with regard to programme implementation with the view to achieve optimal sampling using available resources.

8.2.1.2 The Panel discussed the status of implementation of OceanObs'09<sup>1</sup> recommended transects for XBT deployments. From a total of 53 transects recommended by the international scientific community, a total of 38 (72%) were active during 2010, with deployments in frequently repeated (FR) mode in 42% of these and deployments in high density (HD) mode in 79%, including several transects with deployments in both modes. The number of active transects during 2011-2012, by basins, was as follows:

- a) Atlantic Ocean: 14 (88%) active, with 29% in FR and 86% in HD;
- b) Indian Ocean: 9 (75%) active, with 56% in FR and 56% in HD;
- c) Pacific Ocean: 15 (68%) active, with 40% in FR and 87% in HD.

8.2.1.3 Additionally the Panel noted that 8 non-recommended transects were active in 2011-2012, some of them for specific scientific or operational interest.

8.2.1.4 The XBT network implementation continues to be mostly a multi-institutional and international collaboration. There were 12 countries participating in XBT deployments during 2011-2012: Argentina, Canada, Germany, Japan, Australia, Cyprus, India, South Africa, Brazil, France, Italy, and USA. These countries were involved in one or more aspects of the operation, providing probes, equipments, logistics, riders and/or data management, quality control and distribution. From the active transects during 2011-2012, 70% of the transects were implemented with the participation of more than one institution or country. The strengthening of these collaborations is critical for the maintenance of the SOOP operation.

8.2.1.5 SOOP transects also provided platforms for the deployment of Data Buoy Cooperation Panel (DBCP) surface drifters and Argo floats. Increasing this collaboration will help all. Collaboration with Port Meteorological Officers (PMOs) from the VOS program has also been fruitful.

8.2.1.6 The Panel reviewed the provisional table provided in Appendix B with information on the institutions participating in one or more aspects of the implementation of the XBT transects. This table is updated every year.

8.2.1.7 The Panel reviewed the status of the current sampling programme. Due to the complementary nature of the XBT SOOP, Argo, Tropical Moorings, and OceanSITES, and considering the outcome of the OceanOBS'09 Conference, and the recommendations from the XBT Science Team, the Panel discussed possible adjustments to the global sampling scheme ...

8.2.1.8 The Panel discussed requirements and implementation aspects for the XBT frequently repeated subset of the SOOP network ...

8.2.1.9 The last SOOPIP Meeting reviewed the line responsibilities assigned to participating agencies or countries. It was recalled that line responsibility implies investigating ship opportunities for the line, and coordinating the logistics, training, and negotiations with shipping companies and ships ...

8.2.1.10 On the basis of previous discussions during this Session, the Panel discussed international collaborations in the framework of the SOOP, and reviewed the line responsibilities.

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<sup>1</sup> <http://www.oceanobs09.net/>

The Panel agreed on the responsibilities detailed in Appendix B.

8.2.1.11 The Panel discussed how other programmes such as the Scientific Committee on Oceanic Research (SCOR) OceanScope, the Global Ocean Ship-Based Hydrographic Investigations Programme (GO-SHIP), the International Ocean Carbon Coordination Project (IOCCP, doing pCO<sub>2</sub> transects), and World Ocean Council (WOC), and Argo programme, could cooperate further with the SOOP and synergies developed in terms of: (i.) information exchange on common issues such as satellite data telecommunication, Global Telecommunication System (GTS), instrumentation and best practices; and (ii.) programme implementation such as logistics, ship recruitment and assistance with deployment opportunities ...

## 8.2.2 XBT Science Team and SOOPIP

8.2.2.1 Dr Goni briefly reported on the activities of the XBT Science Team, including outcome of the meeting that took place in Melbourne, Australia in July 2011, and the plans for organizing a second meeting of the Science Team in mid 2013. The Panel considered the recommendations by Dr Goni and made the following recommendations:

- (i) The scientific community needs recommendations for XBT Fall Rate Equation issues;
- (ii) Corrected data need to be made available by distribution data centers (note that long term datasets must be clearly identified if corrections have been applied (e.g. World Ocean Database – WOD – standard level data has XBT correction applies, but observed level data has no corrections);
- (iii) To maintain a web site with literature and fall - rate comparison data;
- (iv) To implement yearly, global fall - rate comparisons tests (to augment Naval Postgraduate School annual testing since 1999);
- (v) To develop and document criteria for performance to be used to assess the XBT network status; and
- (vi) To continue with the preparation of a summary white paper with recommendations for moving forward that also clearly describes each method so that users can easily choose the method most appropriate for them.

8.2.2.2 The Panel supported the XBT Science Team (XST), which was created to make recommendations on the implementation, maintenance, and enhancement of the XBT network and data management practices, relying therefore on a single overseeing body to make recommendations and to set up priorities. The Panel also supported the XST coordination with other operational groups, such as Ocean Observation Panel for Climate (OOPC), SOOPIP, etc.

8.2.2.2 The meeting decided on the following action items:

- (i) To draft a plan for distributing corrected XBT data to the science and modeling community (**action; G. Goni; ASAP**);
- (ii) To support and organize a Science Workshop or Science Team meeting to be hosted approximately every two years, perhaps linked to SOOPIP or Argo science meetings (**action; G. Goni; SOT-8**);
- (iii) To complete and maintain a dedicated web page with information about the XBT Steering Team, and with products on ocean currents and meridional heat transport, distribution of quality control data (e.g. with links to data distribution centers). The web page should also clearly describe recommendations for XBT data corrections,

meetings and links to various XBT sites (**action; AOML; ASAP & ongoing**); and

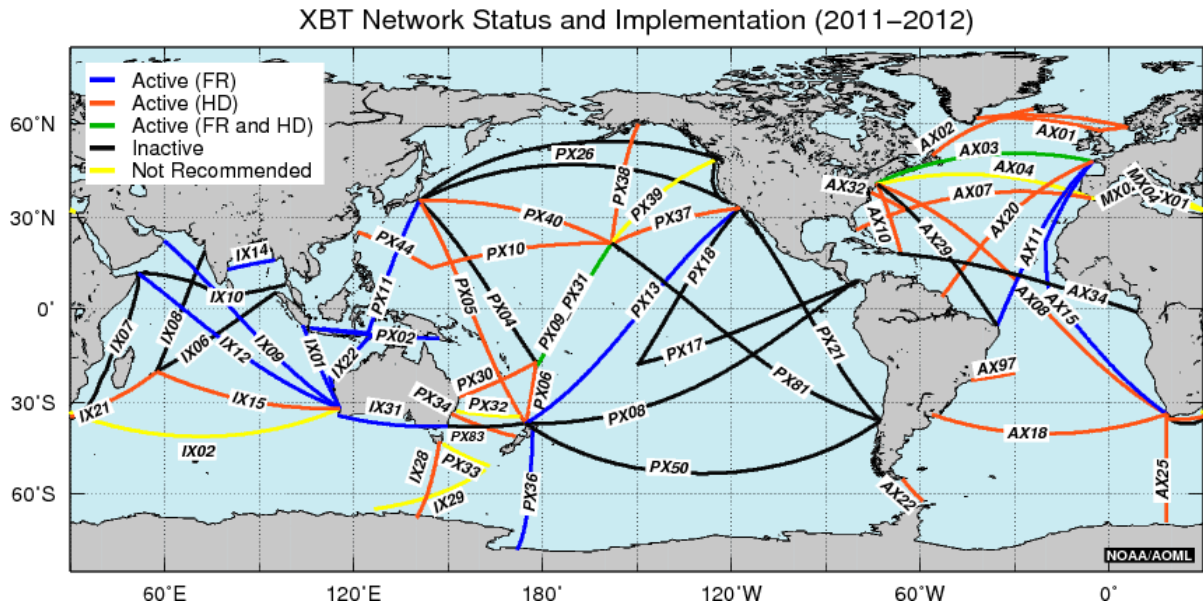
- (iv) To assess the importance to carry out transects on marginal seas (Mediterranean, Gulf of Mexico) that could be critical because of lack of other type of sustained hydrographic observations (**action; XST; SOT-8**).

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Appendices: 2

### APPENDIX A

## STATUS OF THE CURRENT SAMPLING PROGRAMME



XBT Network Status and Implementation for the 2011-2012 period, prepared by NOAA/AOML, showing the lines recommended by the OceanObs'09 XBT Community White Paper and their implementation status, including mode of deployment as well as non-recommended transects that were active during this period.

**APPENDIX B****XBT TRANSECT IMPLEMENTATION RESPONSIBILITIES (DRAFT)**

The table below provides information on the institutions participating in one or more aspects of the implementation of the XBT transects as proposed to be agreed at SOT-7, based on the activity reported for 2011 and 2012. The mode of deployment (FR-frequently repeated or HD-high density) as well as the target (recommended as 18 times a year for FR and 4 times a year for HD) are also indicated. OceanObs09 recommended transects are shaded in green, while non-recommended transects are shaded in yellow.

See the SOOPIP website<sup>2</sup> under “Network operations” for the definition of the SOOP transects.

Transect	Agency	Mode (Target)	Status	Year
AX01	5, 1, 23	HD (4)	Active	1997
AX02	1, 23, 3	HD (4)	Active	
AX03	10, 25	FR (2) / HD (5)	Active	1989
AX04	1	FR (1)	Targeted	
AX07	1	HD (5)	Active	1995
AX08	1, 6	HD (4)	Active	2000
AX10	1	HD (5)	Active	1997
AX11	10	FR (8)	Active	1990
AX15	5	FR (5)	Inactive	1997-2010
AX18	1, 11, 6	HD (4)	Active	2002
AX20	5, 1, 23	HD (4)	Active	
AX22	2, 1, 11	HD (7)	Active	1996
AX25	1, 6	HD (2)	Active	2004
AX32	1, 3	HD (8)	Active	1981
AX97	1, 13	HD (4)	Active	2004
IX01	9, 1	FR (37)	Active	1987
IX02	2, 1	HD (2)	Targeted	
IX09	9	FR	Active	
IX12	9, 2, 1	FR (14)	Active	1986
IX14	12	FR	Inactive	1990
IX15	2, 4, 6, 1	HD (3)	Active	1994
IX21	2, 4, 6, 1	HD (3)	Active	1994
IX22	9	FR (7)	Active	1986
IX28	4, 2, 1	HD (5)	Active	1993
IX29	4	HD (1)	Active	
IX31	2, 4	FR	Targeted	2006
MX01	21, 1	HD	Active	1999
MX02	21, 1	HD	Active	1999
MX04	21, 1	HD	Active	1999
MX05	21, 22		Suspended	1999-2010
MX07	21, 24		Suspended	1999-2010
PX02	9	FR (12)	Active	1983
PX05	2, 7, 1	HD (4)	Active	2009
PX06	2, 7, 1	HD (4)	Active	1986
PX09	2, 1	FR (2) / HD (1)	Suspended	1987
PX10	2, 1	HD (4)	Active	1991
PX11	9	FR (8)	Active	1986
PX13	2, 7, 1	FR (8)	Suspended	1986
PX30	4, 2, 7, 1	HD (4)	Active	1991

<sup>2</sup> <http://www.jcommops.org/soopip>

PX31	2, 7, 1	HD (4)	Active	1986
PX32	4	HD (2)	Inactive	
PX33	4	HD (1)	Active	
PX34	4, 2	HD (1)	Active	1991
PX36	4, 18	FR	Targeted	
PX37	2, 1	HD (5)	Active	1991
PX38	2, 1	HD (1)	Active	1993
PX39	25	FR (1)	Targeted	
PX40	8, 1	HD (4)	Active	1998
PX44	2, 1	HD (4)	Active	1991

1 USA-NOAA/AOML  
 2 USA-SIO  
 3 USA-NMFS  
 4 AUS-CSIRO  
 5 FRA-IRD/BREST  
 6 ZAF-UCT  
 7 FRA-IRD/NOUMEA  
 8 JPN-TOHOKU-U

9 AUS-BOM  
 10 GER-BSH  
 11 ARG-SHN  
 12 IND-NIO  
 13 BRA-FURG  
 15 IND  
 16 JPN-JMA  
 17 JPN-JAMSTEC

18 NZL-MSNZ  
 19 JPN  
 21 IT-ENEA  
 22 IT-INOGS  
 23 FRA-UP  
 24 CY-U.Cyprus  
 25 CAN-DFO

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