

WORLD METEOROLOGICAL ORGANIZATION

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INTERGOVERNMENTAL OCEANOGRAPHIC  
COMMISSION (OF UNESCO)

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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

SOT-7/ Doc. 4 Rev. 1  
(15.04.2013)

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ITEM: 4

Original: ENGLISH

## REVIEW OF ACTION ITEMS FROM SOT-6

*(Submitted by the Secretariat)*

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### Summary and purpose of the document

This document provides for a review of the action items that arose from the sixth Session of the SOT.

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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 action items from SOT-6

**References:** A. Final report<sup>1</sup>, sixth Session of the SOT, Hobart, Australia, April 2011

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1: <ftp://ftp.wmo.int/Documents/PublicWeb/amp/mmop/documents/JCOMM-MR/JCOMM-MR-84-SOT-VI.pdf>

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

4.1 The Secretariat reviewed the list of action items from the fifth Session of the SOT, Hobart, Australia, April 2011 (annotated with completion status in Appendix A). The meeting noted that about 57% of the actions had been successfully completed, or addressed. A number of the open or ongoing action items are being addressed during this Session (SOT, VOSP, SOOPIP chairpersons' reports, reports by the Task Teams).

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Appendix: 1

## APPENDIX A

## STATUS OF ACTION ITEMS FROM SOT-6

Those action items which should remain ongoing or require the Team's attention are highlighted in yellow.

## Part 1 – Action items undertaken by individuals or the Task Teams

No	Ref	Action item	By	Lead	Deadline	Status	% completed
<b>AVERAGE PERCENTAGE OF ACTIONS COMPLETED:</b>							<b>57.39</b>
4	2.2(6-3) 10.1	The Team agreed that the roles of JCOMM and OceanScope with regard to the WOC had to be clarified relatively quickly	SOT Chair	G. Ball	June 2011	Done. Completed in preparation for WOC sponsored meeting attended by Sarah North for SOT.	100
8	3.1.4.3(c)	The TT-IS to complete the production of a JCOMM Technical Report to include guidelines on standards for instruments (including a list of related WMO, UNESCO/IOC, and national publications for each of the SOT programme components) and high quality best practices for the Voluntary Observing Fleet (VOF) and the Ship Of Opportunity Programme (SOOP)	TT-IS	H. Kleta	end 2011	Agreed to produce a webpage listing relevant existing documentation, and to keep it updated as needed.	90
10	3.1.4.3(e)	The TT-Satcom to consider the technical implications related to the compatibility between AIS equipments and observation stations	TT-SATCOM	P. Blouch	end 2014	See also action No. 77. Proposed realistic way is to assure communication between S-AWS and AIS. S. North suggested to change deadline to end 2014 (instead of end 2013)	30
12	3.1.4.4(b)	Continued review of relevant chapters of the WMO Publications No. 8, No. 471, and No. 488	TT-IS	H. Kleta	SOT-7	Review of WMO No. 8 underway per action item No. 118	70
15	3.1.4.4(e)	The Team also strongly supported the DBCP/SOT drifter donation programme in support of the VOS Scheme for developing countries (VOS-DP) and requested the Programme Evaluation Committee (PEC) of the VOS-DP to act proactively in this context	PEC	S. North	ongoing	Included in SOT Implementation Strategy. However, while the programme is well defined, documented, and the PEC ready to act, it has not lead to effective use of the offered resources yet.	75

No	Ref	Action item	By	Lead	Deadline	Status	% completed
16	3.1.4.4(g)	Contribute to the completion and updating of the JCOMM Cookbook for the submission of ocean data in real time and delayed mode	TT-IS	H. Kleta	asap & ongoing	Completed	100
18	3.1.4.9	The integration of in situ/satellite/model field data management, including match-up databases (e.g. ICOADS) was also discussed and better collaboration with the satellite community proposed. The Team requested the RTMC to collaborate actively in this process	RTMC	C. Parrett	JCOMM-4	Ongoing as part of MCDS developments	50
19	3.4.9(2)	The SOT TC to propose a list of essential and mandatory metadata for Pub47 to the SOT TT-Pub47	SOT TC	M. Kramp	May 2011	Probably outdated	0
20	3.4.11	JCOMMOPS to issue quarterly reminders to Team members through the SOT mailing list, with information about the REAL/MASK scheme and related requirements, including how to submit appropriate information to JCOMMOPS	JCOMMOPS	M. Kramp	ongoing	To be started after SOT-7	0
21	3.4.12	The Team agreed that the mailing lists need to be synchronized between those maintained by JCOMMOPS and those maintained on the JCOMM web site, and requested the Secretariat and JCOMMOPS to discuss the issue and propose practical solution	Secretariat & JCOMMOPS	M. Kramp	SOT-7	Done manually; mechanism to synchronize the lists automatically yet to be addressed. TC proposes to replace the web formula link by a mailto link to the related jcommops mailing lists. These lists would follow the structure on the jcomm.info site, as it is the case for most groups and teams already. ANY change on jcomm.info must provoke the transmission of a logfile to the TC. Discussion scheduled in April 2013	75
22	3.4.13	the SOT TC to assist in making Research Vessel marine meteorological and oceanographic data available on GTS	TC	M. Kramp	ongoing		50
23	5.1.1.7	to work with the JCOMM OPA Coordinator develop metrics of intensity of effort in maintenance of the observing networks - on the PMO network, on VOSclim class growth, or on SOOP line maintenance, recalling the need to keep the metrics simple to calculate	SOT, VOSP, SOOPIP chairs, and SOT TC	M. Kramp	ahead of JCOMM-4	Not done. To be addressed at SOT-7	0

No	Ref	Action item	By	Lead	Deadline	Status	% completed
24	5.1.2.2(4)	TT-IS to address feasibility of developing automated wave/sea state sensors	TT-IS	H. Kleta	SOT-7		0
25	5.1.2.2(5)	DMPA TT-TDC to address the inclusion of VOS current data as part of the BUFR template for VOS data	DMPA TT-TDC	K. Stroker	asap	Not done	0
26	5.1.2.3	The Team agreed to review the SOT overarching implementation plan that was adopted at SOT-III, and to include in it an SOT strategy for addressing the full range of observational data requirements (drawn essentially from the RRR, and including those of WMO, OOPC, GCOS, operational oceanography and other applications) and gaps in terms of ship observations, and requested the Chair, in liaison with the VOSP and SOOPIP Chairs, and the Secretariat to update the document for review at SOT-7	SOT Chair	G. Ball	SOT-7	Done. Drafted by SOT Chair in consultation with VOSP & SOOPIP Chairs, and the Secretariat	100
27	5.2.1.4	to consider making commitments to permit the transmission of Temperature and Salinity data of IOCCP ships from ship to shore, and requested Maciej Telszewski to bring this information to the IOCCP and provide feedback to the SOT Chair on practical steps that might then be taken to permit this collaboration	Maciej Telszewski	M. Telszewski	SOT-7	The IOCCP SSG members representing the wider marine biogeochemistry observing community recognize that real-time T/S data transfer could help other communities with their data needs. The IOCCP SSG agreed that real-time T/S transmissions could be arranged providing that the interested party(ies) i.e. data users, would support, technically and financially an implementation process. As with many aspects of biogeochemical research, T/S data transmission would have to be supported from research grants and as such transmission is not directly relevant for marine biogeochemistry, one cannot expect that funding agencies would positively consider potential increase in research cost due to this issue.	100
28	5.2.1.5	SOOPIP Chair and the IOCCP Director to	G. Goni & G. Goni		SOT-7	Initial communications, but not action	10

No	Ref	Action item	By	Lead	Deadline	Status	% completed
		communicate on common issues during the next intersessional period	Telszewski			followed.	
29	5.2.2.3	Mr. Smith will coordinate this activity (SAMOS ship data on GTS) with the U.S. VOS program	Smith and US VOS program manager	S. Smith	August 2011	Initiated conversation with U.S. VOS coordinator (Wasserman). Compared data transmitted via GTS by vessels participating in SAMOS that are also recruited to VOS. Noted vessels that need to be contacted by U.S.VOS to determine why data are not being transmitted. Funding cuts have not allowed SAMOS data center to pursue placing subset of SAMOS observations on GTS to date.	30
30	5.2.2.4	Investigating using the PMO to collect the R/V metadata, including identifying challenges and benefits of a potential joint activity	Smith & Wasserman	J. S. Smith	SOT-7	Initiated conversation with U.S. VOS coordinator, but no action has been taken. May be topic of conversation during SOT-7.	30
32	5.2.2.6	The SAMOS data center is willing to implement the full GOSUD automated quality control (if desired), but requires up-to-date quality procedures and codes from GOSUD	SOOP Chair	G. Goni	August 2011	Initiated	10
33	5.2.2.7	Gustavo Goni and Shawn Smith to clarify the role between SAMOS and SOOP for thermosalinographs on NOAA vessels	G. Goni & S. Smith	G. Goni	SOT-7	Being discussed	10
34	5.2.2.8	the SOT Chair to contact the US VOS Program Manager in relation to the SAMOS Project and encourage a close cooperation between the US PMOs and SAMOS ships	G. Ball	G. Ball	SOT-7	Done. Contact made with Chair SAMOS and US VOS Program Manager	100
35	5.2.5.2	The Team noted the positive energy of the OceanScope Working Group, but stressed that it was important to build a future program also based on existing infrastructure and institutions, including the work of the Team. It was desirable to present a unified voice of all actors in ocean observations from commercial ships to the shipping industry. The Team decided to comment along these lines when the OceanScope report was made public for comment	SOOPIP, VOSP, and SOT chairs	G. Ball	by OceanScope comment deadline presumed mid-2011	No action. No recollection of the Oceanscope report being provided.	0

No	Ref	Action item	By	Lead	Deadline	Status	% completed
36	5.2.6.3	Ian Barton and the SOT Chair to identify people for the proposed ad hoc working group and decide on the opportunity to establish a SOT/GHRSST pilot project	I. Barton & G. Ball	I. Barton	SOT-7		0
38	6.1.8(1)	The new list of Inmarsat-C Land Earth Stations accepting SAC-41 messages to be published on the WMO website	Secretariat	E. Charpentier	asap	Done	100
39	6.1.8(2)	TT-SatCom to establish comprehensive statistics on the ways used by VOS to report their observations ashore, thanks to the prST communication types entered into Pub47 by VOS operators	TT-SatCom	P. Blouch	SOT-7	The report will be presented at SOT-7. Its value will depend on VOS operators to correctly enter prST metadata into Pub47 for their individual VOS. Updated version of Pub47 documentation issued.	50
41	6.2.10	The Team agreed that Research Vessels, and navy ships should be more often used as platforms for the making of ASAP soundings, and their data reported on GTS, and invited Shawn Smith to contact the relevant US Research Organizations – with assistance from Team members – and US navy in order to seek their cooperation in this regard	S. Smith	S. Smith	SOT-7	Contacted U.S. Navy regarding sounding data. Presently no US Navy gray hull or research vessels conduct routine soundings. The Office of Naval Research expressed some interest in present state-of-the-art sounding systems so I provided them with costs for ASAP system and radar wind profilers. No further progress has been made. Smith received no input on ASAP from other Team members.	100
42	6.3.7(1/1)	WMO to resume high level discussions on a regular basis with IMO to promote VOS issues	WMO	E. Charpentier	asap	Some limited progress with regard to the ship design issue. See also action no. 76	20
43	6.3.7(1/2)	The JCOMM Management Committee was invited to support the initiative of WMO resuming high level discussions on a regular basis with IMO to promote VOS issues	MAN	J. Stander	Sept 2011	Some limited progress with regard to the ship design issue. See also action no. 76	20
44	6.3.7(2)	The VOS brochure and/or a Poster to be updated by the Secretariat to reflect current VOS status and other related activities, and new draft version submitted to TT-VRPP Chair for review, further editing, and approval by the Task Team	WMO Secretariat	E. Charpentier	Dec 2011	Draft completed in July 2012. Now need to be finalized, printed, and distributed	80
45	6.3.7(3)	That a VOSclim Focal Point be appointed to join TT-VRPP	TT-VRPP	S. North	asap	done	100
46	6.3.7(4)	The TOR for TT-VRPP be amended to include	TT-VRPP	S. North	asap	Done at SOT-6	100

No	Ref	Action item	By	Lead	Deadline	Status	% completed
47	6.3.7(5)	an emphasis on VOSClim class requirements TT-VRPP membership to be expanded to include that the VOSClim FP, the DAC and the scientific advisors	TT-VRPP	S. North	asap	Done at SOT-6	100
48	6.3.7(6)	The new focal point on VOSClim was requested to contact the scientific advisors for further advice, in particular regarding the need to continue to maintain the list of VOSClim National Focal Points	VOSClim FP (J. Wasserman)	J. Wasserman	SOT-6		0
50	6.4.6(2)	TT-Satcom to maintain the list of prST communication types on the E-SURFMAR website	TT-Satcom	P. Blouch	asap & ongoing	Done. The table is available at <a href="ftp://esurfmar.meteo.fr/pub/Pub47/Table_prST.pdf">ftp://esurfmar.meteo.fr/pub/Pub47/Table_prST.pdf</a>	100
52	6.4.6(4)	TT-Pub47 to publish the URL of the prST list in the next update of WMO No. 47	TT-Pub47	G. Ball	asap	Done	100
53	6.4.6(6)	TT-Pub47 to prepare a submission to JCOMM-4 regarding the proposed changes to Pub47 for (1) spd – maximum operating speed of the vessel on normal service, and (2) changes to the element prST from a text field to a formal table and the introduction of an associated footnote field	TT-Pub47	G. Ball	JCOMM-4	Done	100
55	6.4.6(8)	The ETMC should continue being responsible for proposing metadata elements as part of the ODAS metadata format	ETMC	N. Scott	ongoing	Ongoing This is understood as an ETMC responsibility although new metadata data elements have been proposed yet (but will be when deemed necessary)	50
56	6.4.7	TT-Pub47, the ETMC, and the DBCP TT on Moored Buoys to coordinate between themselves in liaison with the DMCG and make sure that the requirements for Rigs and Platforms metadata, and for automated systems installed on offshore platforms in particular are well considered	TT-Pub47	G. Ball	SOT-7	No action. No request from DBCP for assistance.	0
57	6.5.3	TT-IS to continue to collect information from AWS systems used by SOT members in the view to have sufficient materials to eventually perform the intercomparison and be able draw significant conclusions from the available	TT-IS	H. Kleta	SOT-7		0



No	Ref	Action item	By	Lead	Deadline	Status	% completed
58	6.5.7	information The Team invited Japan to provide information on their AWS to the Chair of the Task Team IS	Japan	S. Ogawa	end 2011	Done	100
59	6.6.8(1)	TT-Masking to liaise with the JCOMM DMPA Task Team on Table Driven Codes (TT-TDC), consult with operational users of the data and GTS routing centres (e.g. AOML/SEAS, NOAA Gateway, ECMWF), Japan, and update the proposal to reflect the SOT preference for option 'b' and to elaborate in more detail the governance regarding the management of the keys.	TT-Masking	G. Ball	Aug. 2011	Limited progress due to timing of, and approval from JCOMM-4, to adopt option 'b'.	30
60	6.6.8(1)	TT Masking was also invited to consider whether it would be realistic to propose that all automated systems eventually use MASK	TT Masking	G. Ball	Ongoing	No action	0
61	6.6.8(2)	The new BUFR descriptors, templates, and BUFR table entries constituting the proposal shall then be submitted to the CBS Inter Programme Expert Team on Data Representation and Codes (IPET-DRC) for its meeting in Geneva, Switzerland, September 2010 in the view to have the proposal endorsed by the CBS-XV in 2012 for inclusion of appropriate elements in the WMO Manual on Codes	SOT Chair	G. Ball	Sept 2011	Not done	0
62	6.6.8(3)	The Team also requested TT-Masking to find, or possibly develop, and propose standard software for the encoding and decoding of encrypted callsigns	TT Masking	G. Ball	Sep 2011	No action	0
64	6.7.7(1)	Logo and certificate: a new logo should be proposed by the new VOSClim Focal Point (VFP). The certificate is useful and should be preserved. The VFP was invited to redesign the logo and certificate	VOSClim focal point	J. Wasserman	end 2011	New logo proposed. Certificate redesigned.	100
65	6.7.7(3)	Ship list: the list is still needed. E-SURFMAR was invited to provide sub-lists of VOSClim ships to the DAC	new VOSClim focal point to liaise with Pierre Blouch	J. Wasserman		Action closed. Pub47 metadata for VOSClim are extracted from the E-SURFMAR database on a daily basis and made available through FTP	100

No	Ref	Action item	By	Lead	Deadline	Status	% completed
						at <a href="http://esurfmar.meteo.fr/pub/Pub47/">http://esurfmar.meteo.fr/pub/Pub47/</a> . Criteria to build this sub-list is vssIM equal to 30 (manned) or to 35 (automated).	
67	7.1.2.3	the Secretariat to promote the VOS-DP with WMO Members by mean of a letter to the Permanent Representatives of the WMO	WMO Secretariat	E. Charpentier	SOT-7	Done. Letter issued in February 2013. Developing countries invited to participate and to contact the SOT Coordinator. Developed countries invited to offer resources.	100
68	7.1.2.4	Secretariat to liaise with Chile regarding PMO-V	Secretariat and Chile	E. Charpentier	2014	Offer from Chile to host PMO-V in Valparaiso in June 2014.	100
71	7.2.1.7	JCOMMOPS to develop and make routinely available dedicated monitoring tools for the VOSclim status	TC	M. Kramp	SOT-7	These tools are developed within the new JCOMMOPS website and tools, prototype should be live by June 2013.	25
76	7.3.2.3	Sarah North to pursue and lead the ship design issue and relationship with ICS and IMO with the support of the WMO Secretariat and report on progress at the next SOT Session	Secretariat & S. North	S. North	SOT-7	Some limited progress See also actions 42 and 43.  S. North made presentations to the ICS in 2010 and WOC in 2011 but these unfortunately haven't borne any fruit.	20
77	7.3.3.4	Noting that E-SURFMAR was planning to use and evaluate the AIS binary format for the collection of VOS data from ship to shore, the Panel requested E-SURFMAR to report back to the Panel via its Chair on its experience and recommendations	P. Blouch	P. Blouch	SOT-7	SOT-7 invited to formally agree to make a WMO submission to IMO requesting that they pursue this issue in the interests of ensuring continued observations and safety of life at sea. See also action No. 10. Little to report at SOT-7	10
78	8.1.2.2	The Panel agreed to collect data on the common pool of old probes (AOML, CSIRO, NZ?) that could be used in further collaborative FRE experiments	SOOPIP chair and secretariat	G. Goni	end 2011	Done. Experiment was carried out in 2012. Data being analyzed.	100

No	Ref	Action item	By	Lead	Deadline	Status	% completed
80	8.2.3.6	The Panel reviewed and agreed the provisional table provided in <u>Annex XVI</u> with information on the institutions taking the lead in one or more aspects of the implementation of the XBT transects. The Panel asked the Chairperson to update the table of transect responsibilities periodically	Chairperson	G. Goni	once yearly	New list to be reviewed at SOT-7	100
81	8.2.5.3(2)	promoting the use of external temperature sensor data for GHRSSST by exploring how to start collaboration with GHRSSST group by providing observations of underway SSTs with SBE 38 and SBE 48 external temperature sensors a) within the NOAA fleet, and b) within the current SOOP fleet, which may be enhanced if the data is acknowledge to have an impact in GHRSSST work	SOOPIP chair and members	G. Goni	SOT-7	New external sensors are being installed when is scientifically justifiable and budget allows. Underway data are always distributed.	100
82	8.2.5.3(4)	standardizing data management practices for insertion into the GTS, quality control, and archiving at GTSPPP [note need equiv action for TSG/GOSUD]	GTSPPP members (June 2011)	C. Sun	report by SOT-7	The data management practices for quality control and archive were reviewed and discussed at an <i>ad hoc</i> GTSPPP meeting on June 2011 and the first session of the of the Joint IODE-JCOMM Steering Group for the GTSPPP on April 2012. The issues of standardizing data insertion into GTS were not discussed but will be reviewed at the next GTSPPP session, if any.	90
83	8.2.5.3(5)	creating and maintaining a bibliography of publications using TSG data	Chair to negotiate with IRD and/or Coriolis to host	G. Goni	SOT-7	In Progress	50
84	8.2.5.3(6)	Initiate interaction with IOCCP to provide collaboration for the installation of pCO <sub>2</sub> systems in cargo ships (see also Item 10.1	Action for SOOPIP chair and IOCCP	G. Goni	by SOT-7	Dormant	0
85	8.3.1.4	The Panel decided the following actions towards implementation of more regular real-time (monthly) monitoring of all XBT lines: to investigate possibilities of funding such a comprehensive monitoring of implementation	for SOOPIP chair and SOT TC	G. Goni	by SOT-7	Underway	50

No	Ref	Action item	By	Lead	Deadline	Status	% completed
86	8.3.3.5	and feedback to operators effort The Panel expressed willingness to find ship time with a CTD to work cooperatively with Sippican on their tests. [separate action below] Sippican also requested feedback on technical requirements and potential market for improved probes.	for SOOP to explore cooperation and provide feedback to Sippican through SOOPIP chair	G. Goni	continuous with report by SOT-7		0
87	8.3.4.5(1)	AOML to transmit identified problems with XBT deployment to the responsible center [link to 89]	AOML	G. Goni	continuous		0
88	8.3.4.5(2)	Encourage all agencies to transmit their data into the GTS. AOML will collaborate in the training and/or insertion of data	SOOPIP chair	G. Goni	report by SOT-7	Underway	50
90	8.3.5.2(1-1)	AOML will provide assistance and training to implement BUFR tables	AOML	G. Goni	continuous	The training material will be presented at SOT-7 and consequent actions will be discussed.	100
92	8.3.5.2(1-3)	Identify main players to accomplish a successful transition to BUFR (AT, JT, Japanese, French, etc)	SOOPIP chair and members	G. Goni	asap	Partner organizations and corresponding PoCs have been identified. Through them, we expect to reach the technical team to provide support during migration, if needed.	50
93	8.3.5.2(1-4)	Investigate modifying SEAS and other software to transmit in all the information necessary needed for inclusion in the BUFR format	AOML and other SOOPIP members	G. Goni	2012	Tasks have been identified and efforts to implement them are underway	50
94	8.3.5.2(1-5)	Study and evaluate the need for the enhancement of the current BUFR tables to accommodate for new data sets (underway data, TSG, pCO <sub>2</sub> , color, etc)	TT-TDC	K. Stroker	SOT-7	AOML is working on a new TSG BUFR template. Details to be provided during SOT-7	30
98	9.1.1.10	The Team also requested the WMO Secretariat to share the list of contact points authorized to access the JCOMMOPS database of REAL vs. MASK callsigns with JCOMMOPS	WMO Secretariat	E. Charpentier	ongoing	Done	100
99	9.1.1.11	Instead of sending links to those lists, the RSMC, Exeter to provide the monitoring statistics to the VOS Focal Points	RSMC Exeter	C. Parrett	ongoing	The RSMC Exeter began providing the monitoring statistics and suspect lists to the VOS Focal Points in 2011.	100

No	Ref	Action item	By	Lead	Deadline	Status	% completed	
100	9.1.1.12	The Team also requested the VOS Focal Points to make sure that these lists are forwarded to the PMOs for immediate action	VOS Points	Focal	VOSP FP	ongoing	Included in the SOT Implementation Strategy	75
101	9.1.1.13	The Team agreed that it would be useful to introduce separate graphs/tables on the UK Metoffice website to show the relative performance of national VOS fleets, and requested the RSMC to investigate this possibility	RSMC		C. Parrett	SOT-7	The RSMC started producing monthly scores for all individual ships and for national fleets, separately for automatic and manual ships, in mid-2012. The latest monthly national VOS fleet scores are available from the UK Met Office web site at <a href="http://research.metoffice.gov.uk/research/nwp/observations/monitoring/marine/VOSranking/Month/index.html">http://research.metoffice.gov.uk/research/nwp/observations/monitoring/marine/VOSranking/Month/index.html</a> .	100
102	9.1.1.14	The Team invited the RTMC to review the possibility of tightening the criteria for the VOSclim and AWS, and to propose new criteria if needed Taking into account Australian criterias	RTMC		C. Parrett	SOT-7	The RTMC has looked at this and will propose new criteria for 'suspect' VOSclim and AWS ships for consideration at SOT-7.	50
103	9.1.1.14	The Team noted that Australia is also using tighter criteria for its VOS, and requested G. Ball to provide these criteria to the RTMC	G. Ball		G. Ball	asap	Done	100
104	9.1.1.15	the VOSclim Focal Point to consider whether the VOSclim website should be closed, related information included in the VOS web site, including monitoring information, and list of ships	VOSclim FP		J. Wasserman	SOT-7		0
105	9.1.3.4(1)	All CMs are recommended to begin recording observations in IMMT-4 format quality checked to MQCS-6 making use of its increased coding capabilities	CMs		N. Scott	asap	Recommendation made by JCOMM-4 Many CMs already using IMMT-4/MQCS-6. But also now in use (and the preferred format) is the IMMT-5/MQCS-7 (JCOMM-5)	100
106	9.1.3.5 (1)	Electronic logbook programmers to upgrade logbook software to allow coding in IMMT-4 format	e-logbook developers		H.Y. Mok	asap	TurboWin ver 5.0 and SEAS ver 9.0 can allow coding in IMMT-4 format. OBSJMA ver 2.0 can only allow coding in IMMT-2 format. JMA is planning to upgrade OBSJMA in 2014 to allow coding in the IMMT-5 format.	70
107	9.1.3.5 (2)	All CMs that did not submit data during 2010 should do so in 2011 or alternatively contact	CMs		N. Scott	July 2012	Done The GCCs have encouraged all CMs	100

No	Ref	Action item	By	Lead	Deadline	Status	% completed
		the GCC for advice				to contribute and with much effort from the DWD many observations have been made available that wouldn't have been possible otherwise allowing 19 CMs to contribute in 2012.	
108	9.1.3.6	the SOT and VOSP Chairs to play an active role in TT-DMVOS discussions and provide SOT input as appropriate regarding the modernization of the MCSS	G. Ball & J. Fletcher	G. Ball	asap	Done (participation in TT-MCDS)	100
109	9.1.6.6 (1) (3).	continue its operations, and in particular to acquire profiles and make real-time & delayed mode profile data available. convene a three-day workshop for design and requirements of the GTSPP NetCDF format revision	GTSPP Steering Group	C. Sun	June 2011	Completed	100
110	9.1.6.6 (2).	continue the production of metrics in support of the JCOMM Observations Programme Area (OPA) and the SOT	GTSPP Steering Group	C. Sun	ongoing	Ongoing	0
111	9.1.6.6 (4).	complete the evaluation of the use of a CRC in real-time and delayed mode duplicates identification	US NODC	C. Sun	September 2011	Completed	100
112	9.1.6.6 (5).	design the GTSPP DVD for using in the IODE training/outreach programs.	US NODC	C. Sun	March 2012	Completed	100
113	9.1.6.6 (6).	complete the bi-annual GTSPP report for 2009-2010.	US NODC	C. Sun	April 2011	Completed	100
114	9.1.6.7	The SOT encouraged national funding bodies to consider on-going funding of this WOCE type QC a high priority because of the importance of this data globally	AOML & SIO & CSIRO	G. Goni	SOT-7	Underway	50
116	9.1.7.7 (1)	Loic Petit de la Villéon and Francis Bringas to set back the connection in order to deliver again data from NOAA ships to GOSUD	L. Petit de la Villeon / F. Bringas	L. Petit de la Villeon	Dec 2011		0
117	9.1.7.7(2)	Loic Petit de la Villéon to investigate the link between IMOS <sup>2</sup> (Australia) and GOSUD	L. Petit de la Villeon	L. Petit de la Villeon	Dec 2011		0
118	9.2.1.2	the TT-IS to look at those ship-based related practices elements from WMO No. 306, identify appropriate publication(s) to which the	TT-IS	H. Kleta	Sep 2011	Review has been undertaken and is nearing completion. Work to be completed under leadership of E. Kent	75

No	Ref	Action item	By	Lead	Deadline	Status	% completed	
		identified observation practices should be relocated, and make recommendations to the CBS as appropriate				(UK).		
119	9.2.1.3(1)	January – June 2011: Validation of BUFR template for VOS data	candidate operational centres	J. Trinanes	end 2012	AOML fully validated the interface and it is currently operational. AOML is already routinely putting XBT data on the GTS in BUFR format.	100	
124	9.2.1.6	Pierre Blouch (France), Etienne Charpentier (WMO Secretariat), Julie Fletcher (New Zealand), and Graeme Ball (Australia) to consider the essential additional metadata elements to be sent by TurboWin in real-time	P. Blouch, J. Fletcher, G. Ball, E. Charpentier	J. G. E.	P. Blouch	end June 2011	E-SURFMAR is promoting the use of the half compression technique to cost effectively report observations from conventional VOS ashore. The dataformat doesn't include any metadata. These latest are made available ashore (in the E-SURFMAR metadata database) and added to the observation data prepared by TurboWin and received through Inmarsat, before GTS transmission in BUFR.	50
125	9.2.5.7	The Team invited E-SURFMAR to make its database of VOS metadata available in real-time to all VOS operators for the benefit of the WMO and IOC Applications, and requested the WMO Secretariat to write to E-SURFMAR in this regard	WMO Secretariat	E. Charpentier	asap	Secretariat wrote to E-SURFMAR in February 2013 requesting to make DB available in real-time, and to report at SOT-7. <a href="ftp://esurfmar.meteo.fr/pub/Pub47/PUB_47_export_esurfmar_database_active_vos_v3a.csv">ftp://esurfmar.meteo.fr/pub/Pub47/PUB_47_export_esurfmar_database_active_vos_v3a.csv</a>	50	
126	9.2.5.8	The Team encouraged the VOS operators / NMHSs to download VOS metadata from the E-SURFMAR database via FTP for inserting appropriate metadata into the new BUFR template for VOS	VOS operators / NMHSs	VOSP FP	2012		0	
128	9.2.4.4(3)	The Team emphasized the importance for marine climatology of safeguarding old (expired) e-logbook documentation, formats, and software, including through the efforts of the Task Team on Instrument Standards	TT-IS & ETMC	H. Kleta	SOT-7	Considered by ETMC-4. Included in the SOT Implementation Strategy	75	
129	9.2.4.5(1)	The Team agreed to liaise with the E-SURFMAR's VOS Technical Advisory Group (VOS-TAG) and try to reconcile the different views and methods of ship to shore real-time transmission	TT-IS & Satcom	TT-	H. Kleta	SOT-7	0	
130	9.2.4.5(3)	the TT-IS to liaise with the ETMC ad hoc	TT-IS	H. Kleta	SOT-7		0	



No	Ref	Action item	By	Lead	Deadline	Status	% completed
131	9.2.4.6(1)	group in the view to make further recommendations to the Team at its Seventh Session The Team strongly recommend the adoption of features of the new VOS BUFR template that support recommendations from the JCOMM Data Management Strategy including for BUFR to “more fully incorporate JCOMM considerations, including software reliability, human readability, and the archival and exchange of historical and delayed-mode data in its originally reported form.” the DMPA Task Team on Table Driven Codes to address these issues	DMPA TT-TDC	K. Stroker	SOT-7		0
133	9.3.5	the TT- Pub47 metadata to liaise with the DBCP, the ETMC, and the DMCG as appropriate in the view to make progress on the metadata requirements for Marine Climatology	TT-Pub47	G. Ball	SOT-7	No action	0
134	9.3.6	The Team invited the NMDIS to provide the ICOADS with a suitable sample of representative sample metadata (e.g. two years of <u>all</u> archived metadata for each of those years, with the years possibly bracketing the full available period of record of the stored metadata; i.e. separately from the ODASMS web-based interface, such as via ftp)	NMDIS	S. Lin	end 2011	ODASMS now obsolete. To be discussed at SOT-7, and possibly considered by the trial CMOC (China)	100
135	9.3.7	In line with the recommendation from the third JCOMM Session, the National Marine Data and Information Service (NMDIS, China) to ensure that the ODASMS has taken over metadata formerly managed in the On-line Information Service Bulletin on Non-drifting ODAS and operated by the Integrated Science Data Management (ISDM, Canada)	NMDIS	S. Lin	asap		0
137	9.3.9 (2)	DMCG should be invited to establish a JCOMM DMPA Task Team focused on exploring web based technologies and that	DMCG	S. Iona	SOT-7	In progress. EU/FP7 Project Ocean Data Interoperability Platform (ODIP,	90



No	Ref	Action item	By	Lead	Deadline	Status	% completed
		could leverage TT-TDC efforts and extend them with web-services that provide deeper functionality than the GTS can currently deliver				<a href="http://www.odip.org">http://www.odip.org</a> ) will be a mechanism for that. TT-TDC to be involved regarding real-time transmission of data/metadata with web-services.	
138	9.3.11	The Team invited JCOMMOPS to discuss the details of the ASAP metadata proposal with the ASAP Task Team, and the WMO Secretariat in the view to submit it at the next SOT Session and later to the CBS	JCOMMOPS	M. Kramp	SOT-7	Proposal drafted to be presented at SOT.7	100
139	9.3.12	the Secretariat to consult with operational users of the ASAP data (e.g. NWP, seasonal to inter-annual climate forecasting) and research users of the historical data (e.g. climate change), as well as the Commission for Basic Systems (CBS) Expert Team on the Evolution of the Global Observing System (ET-EGOS) in the view to receive information about their requirements for ASAP metadata and permit the integration of ASAP metadata in the WMO No. 9 and the WMO Catalogue	Secretariat	E. Charpentier	end 2011	Done	100
140	9.3.17	the Task Team on Pub47 metadata to liaise with the Center for Ocean-Atmospheric Prediction Studies (COAPS) and continue to work towards a more suitable integrated and interoperable scheme for the management of Research Vessel metadata as related to SOT and WMO Pub. 47 and to report on progress at the next SOT Session	TT-Pub47	G. Ball	SOT-7	Initial contact made. No further action	10
141	9.3.18	Gustavo Goni (USA) to address the issue of collecting and exchanging SOOP ship metadata, liaise with TT-Pub47 and JCOMMOPS, and report at the next SOT Session on recommended actions	G. Goni	G. Goni	SOT-7		0
142	9.4.5 (1)	That SOT continues to take an active role in TT-DMVOS activities, and engage with TT-MOCS in the future as appropriate	SOT	SOT NFP	ongoing	Included in the SOT Implementation Strategy (TT-DMVOS & TT-MOCS now integrated into TT-MCDS)	75
143	9.4.5 (2)	That the ETMC continues to investigate appropriate archiving format(s) at the GCCs taking into account the IMMT format and the	TT-DMVOS	N. Scott	GCCs, ongoing	Ongoing This work now being addressed as part of the MCDS	100

<b>No</b>	<b>Ref</b>	<b>Action item</b>	<b>By</b>	<b>Lead</b>	<b>Deadline</b>	<b>Status</b>	<b>% completed</b>	
144	9.4.5 (3)	modernized IMMA format That the SOT in collaboration with the ETMC provides views on the emerging new HQC standard, and also continues to suggest how data and products will most effectively be served to a broad spectrum of users, e.g., through possibly complementary roles of the GCCs, RMs, and ICOADS	SOT, DMVOS, MOCS	TT- TT-	G. Ball	ongoing	Considered by ETMC-4. Ongoing.	80
145	10.1.2 (1)	Develop simple information to bring to industry at a high level on what is being done by which companies, what the potential is, where the scientific need is	SOT, VOSP, and SOOPIP chairs in collaboration with IOCCP, OceanScope, and World Ocean Council		G. Ball	by fall 2011	Partly done. Continuing to work with WOC	30
146	10.2.2(2)	Try to positively use the energy of all the initiatives to approach the shipping industry, the IMO and ICS in a coordinated way	SOT, VOSP, and SOOPIP chairs in collaboration with IOCCP, OceanScope, and World Ocean Council		G. Ball	SOT-7	Partly done. Continuing to work with WOC. Some contact with ICS.	30
147	10.2.1(1)	to legacy recommendation 2, the Team agreed to contribute to the review of WMO and IOC Publications through its Task Team on Instrument Standards, and other Task Teams as appropriate	TT-IS		H. Kleta	SOT-7	David Meldrum working on the Publications and consulting with OPA Panels.	50
149	10.2.1(3)	Referring to legacy recommendation 4, the Team agreed to contribute to the development of JCOMM guidelines for marine instrument intercomparisons through its Task Team on Instrument Standards, and liaise with the JCOMM Observations Coordination Group (OCG) as appropriate	TT-IS		H. Kleta	SOT-7	Included in the SOT Implementation Strategy	75
154	10.2.1(8)	Referring to legacy recommendation 12, the Team invited the satellite data	satcom operators		D. Meldrum	SOT-7	Preparatory workshop with participation of satellite operators	100

No	Ref	Action item	By	Lead	Deadline	Status	% completed
		telecommunication system operators used for the collection of ship-based observations to participate in the international forum of users of satellite data telecommunication systems for environmental use once established				organized in April 2012. Ad hoc Forum planned in Sept. 2013	
156	10.2.3	The Team invited all RMICs to take into account standard instrument practices for ship-based observations when developing their activities	RMICs	E. Charpentier	SOT-7	Done (RMICs informed)	100
158		Chair to investigate establishment of an SOT TT or working group on emerging technology developments and to report at SOT-7	Chair	G. Ball	SOT-7	Done. Will propose at SOT-7 that a Working Group, under TT-IS, be established to review/report on new and emerging technologies.	100
159	10.2.7	The SOT requested the TT-IS, in liaison with other Task Teams as appropriate, and in a way consistent with the strategy proposed by the JCOMM Pilot Project for WIGOS, to participate in the efforts to further update the above publications as well as IOC M&G No. 4 & 26, WMO No. 544 & 488	TT-IS	H. Kleta	SOT-7		0
160	10.2.10	the SOT Technical Coordinator to investigate whether Morocco could be interested to participate in the VOS-DP before the RMIC workshop in Morocco in 2012	SOT TC	M. Kramp	Jan 2012	RMIC workshop postponed to July 2013. No answer from Morocco so far.	50
161	11.1.1.4	The Team recalled that the LRIT system could potentially be used by the PMOs to know where the VOS ships are provided they has access to the system. The WMO Secretariat to contact IMSO and investigate under what condition the PMOs could access ship's location carrying LRIT	WMO Secretariat	E. Charpentier	Oct 2011	Letter sent to IMSO in February 2012.	70
162	11.1.5.2	Pending receipt of information, Candyce Clark (USA) to follow up the situation regarding whether artificial delays of 48h delay is introduced for making the GTS VOS data available via the Sailwx and others, and provide feedback if needed	C. Clark	C. Clark	asap		0
163	11.2.6 (1).	Ad hoc committee (G. Ball, J. Fletcher, G. Goni, C. Clark, M. Belbeoch, S. North,	Ad hoc committee	G. Ball	end 2011	Completed. Ship Coordinator recruited	100

No	Ref	Action item	By	Lead	Deadline	Status	% completed
		Secretariat) to review the proposal for the establishment of a Cruise Technical Coordinator position within JCOMMOPS, propose ToR, and provide feedback to the OCG, and consider funding part of it as of 2012, and generic yearly budget.					
164	2.2(3-3) 11.2.6 (2).	The SOT Chair to encourage SOT participating countries to augment their contributions to JCOMMOPS for eventually achieving appropriate support to the ship-based observation programmes	SOT chair	G. Ball	on-going	Ongoing	0
165	3.4.9(1) 11.2.6 (3).	The SOT Chair to consult with the VOSP Chair, the SOOPIP Chair, and the ASAP Task Team Chair, and provide a list of reasonable priorities to the SOT TC & JCOMMOPS for the next intersessional period, with regard to SOT support.	SOT chair	G. Ball	end 2011	Done	100
166	11.2.9	Graeme Ball to contact the GDC in the view to possibly install a drifter onboard the Lady Amber and use it as a simple AWS	G. Ball	G. Ball	asap	No spare buoys were available in Fremantle, plus PMO Fremantle was no available.	100
167	12.1.3	the VOSP, SOOPIP, and ASAP TT Chairpersons to comment and provide feedback to the SOT Chairperson regarding changes to the format of the National Report	VOSP, SOOPIP, ASAP TT chairs	G. Ball	Sept 2011	No changes requested	100
168	12.1.4	JCOMMOPS to provide the WMO Secretariat with a link where the SOOP survey for 2010 will be available, and for inclusion in the SOT annual report for 2010	SOT TC	M. Kramp	asap	Done	100
169		AOML to provide SOOP status report to the Secretariat for inclusion in the SOT annual report for 2010	G. Goni	G. Goni	asap	Done	100
170	(to SOOP section)	TC to discuss with SOOPIP Chair the content of the SOOP semestrial yearly survey, and how the work for its production can be shared	SOT TC & G. Goni	M. Kramp	asap	Discussion schedulded April 2013.	0
172	12.2.4	JCOMMOPS to replace its list of SOOPIP contacts on the JCOMMOPS web site by a link to the same list maintained on the JCOMM web site	JCOMMOPS	M. Kramp	asap	To be completed by SOT-7	80
174	12.3.2	The Team noted that the JCOMMOPS mailing	Secretariat &	M. Kramp	end 2011	To be completed by 3 April 2013	75

No	Ref	Action item	By	Lead	Deadline	Status	% completed
		lists were not consistent with the lists of contact maintained on the JCOMM web site. It requested the Secretariat and JCOMMOPS to find a solution to this problem	JCOMMOPS				
175	12.3.3	The Team agreed that the TT-VOSclim and VOSclim National Contact Point e-mailing lists was no longer needed and requested JCOMMOPS to delete it	JCOMMOPS	M. Kramp	asap	To be completed by SOT-7	50
176	12.4.1	The Team recalled the recommendations from the TT-VRPP, reviewed all current publications, and requested Sarah North to look at the suitability of using the UK Metoffice posters as a basis for VOS promotion	S. North	S. North	SOT-7	S. North has had a look at the suitability of using such posters.	10
177	13.1.2	In light of the discussions and recommendations arising during the week, the Team reviewed its Terms of Reference, and agreed with the changes proposed in <u>Annex XV</u> . The Team recommended that the proposed changes be submitted to JCOMM-4 for endorsement	Secretariat	E. Charpentier	JCOMM-4	Done	100
178	3.1.4.4(f) 13.3.4	the Secretariat to seek new contributions from Members/Member States in support of the SOT, including through the WMO and IOC Executive bodies.	Secretariat	E. Charpentier	SOT-7	Recommendations made via JCOMM and WMO EC	100
179	13.3.4	the DBCP to credit any new SOT contribution, or increments to existing contributions, to the SOT budget line	DBCP	A. Wallace	ongoing	Done at DBCP-28	100
181	14.4	The Team agreed that the national reports provided by the Members to the WMO Secretariat as well as the PowerPoint presentations made at this meeting should eventually be published on CD-Rom within the SOT annual report for 2010	Secretariat	E. Charpentier	asap	Done	100

## Part 2 – Action items undertaken by SOT, VOS, SOOPIP members, PMOs, and manufacturers

No	Ref	Action item	By	Lead	Deadline	Status	% completed
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No	Ref	Action item	By	Lead	Deadline	Status	% completed
<b>AVERAGE PERCENTAGE OF ACTIONS COMPLETED:</b>							<b>56.73%</b>
1	2.2(1-2)	to review the Initial Science and Implementation Strategy and assist in the implementation and experimental design of SOOS	SOT members	SOT NFP	SOT-7		0
2	2.2(1-3)	The Team agreed that the VOSP should take the lead in approaching Tourism ships sailing to Antarctica, and liaise with the Chairs of the SCAR/SCOR Expert Group in Oceanography, John Gunn (Antarctic Division, Australia) and Mike Meredith (BAS, United Kingdom), and the SOOPIP in the view to agree on a common SOT/SOOP strategy for having some of those vessels participate in the SOT and contribute data to the SOOS	VOSP members	VOSP FP	ongoing	Included in the SOT Implementation Strategy	75
3	2.2(3-2)	To reach gaps in the array Argo programs work together to lease time on inexpensive platforms to reach regions SOOP do not visit – an opportunity for some SOT programs. The Team noted the potential to share the costs in this regard and invited its members to collaborate if and where appropriate	SOT members	SOT NFP	SOT-7	Included in the SOT Implementation Strategy	75
5	3.1.2.2	to discuss the issue nationally in the view promote the commitments of WMO Members to PANGEA activities through the VCP	SOT members	SOT NFP	ongoing	Included in the SOT Implementation Strategy	75
6	3.1.4.3(a)	VOS operators should pay particular attention to the issue of producing, collecting, and recording the VOSclim additional metadata and quality control elements	VOS operators	VOSP FP	SOT-7	Included in the SOT Implementation Strategy	75
7	3.1.4.3(b)	VOS operators to consider the requirements for recording the traditional manually observed variables from the VOS	VOS operators	VOSP FP	SOT-7	HK, China: done Included in the SOT Implementation Strategy	75
9	3.1.4.3(d)	SOT members to continue and expand, where possible, the PMO network	SOT members	SOT NFP	SOT-7	Included in the SOT Implementation Strategy	75
11	3.1.4.4(a)	Continued development of the VOSclim fleet to maximize the number of VOSclim class vessel within the VOS Fleet	VOS operators	VOSP FP	Ongoing	Included in the SOT Implementation Strategy	75
13	3.1.4.4(c)	VOS Operators are encouraged to make as	VOS operators	VOSP FP	ongoing	HK, China: considered	75

No	Ref	Action item	By	Lead	Deadline	Status	% completed
14	3.1.4.4(d)	much visual observations possible, including waves Increased use of high data rate satellite data telecommunication on-board ships (e.g. Iridium)	SOT members	SOT NFP	ongoing	Included in SOT Implementation Strategy Included in SOT Implementation Strategy	75
17	3.1.4.7	The Team concurred with these developments and urged VOS operators currently submitting their ship metadata to the WMO Publication No. 47 to submit them to the JCOMM ODAS Metadata Services (ODASMS, China) from now on	VOS operator	VOSP FP	ongoing	ODASMS obsolete and integrated into China's trial CMOC JCOMM-4 adopted Recommendation 1 (JCOMM-4) – Provision of Ocean Instrument/Platform Metadata ; and Recommendation 2 (JCOMM-4) – Marine Climate data System (MCDS)	100
31	5.2.2.5	to contact Mr. Smith if they wish to contribute to the SAMOS professional development program for in-service marine technicians	SOT members	SOT NFP	June 2011	No one contacted Mr. Smith by the deadline. Note: The professional development program has been implemented in the U.S. by NOAA and the SAMOS program. Materials are available on the SAMOS web site	100
37	6.1.7(1)	VOS operators should endeavour to restrict the use of SAC 41 to manual VOS observations.	VOS operators	VOSP FP	asap	HK, China: considered	0
40	6.2.8	to investigate potential co-operations with other Met Services to set up and operate ASAP stations on board merchant vessels in line service	SOT members	SOT NFP	ongoing	Included in the SOT Implementation Strategy	75
49	6.4.6(1)	VOS Operators to use the list of approved prST communication types when submitting their national VOS lists to WMO	VOS members	VOSP FP	ongoing	HK, China: done Included in the SOT Implementation Strategy	75
51	6.4.6(3)	VOS Operators to contact TT-Satcom if additional communication types are required	VOS members	VOSP FP	ongoing		0
54	6.4.6(7)	The Team reaffirms that VOS Operators, in particular those outside of E-SURFMAR, submit their national VOF list monthly if possible	VOS members	VOSP FP	ongoing	Included in the SOT Implementation Strategy	75
63	6.7.3 7.1.1.4 7.2.1.3	The Team recommended to follow example of the UK efforts to upgrade ships to the VOSclim standard to other Member/Member states in order to raise the climate quality of	VOS members & PMOs	VOSP FP	ongoing	Included in the SOT Implementation Strategy	75



No	Ref	Action item	By	Lead	Deadline	Status	% completed
		data from the wider VOS, and thereby contribute to the Global Climate Observing System (GCOS). The Team therefore invited VOS operators to consider adapting the UK plan as detailed in Annex 4 of <u>Annex VII</u> to their needs as appropriate					
66	7.1.1.5	New tools such as the Network of European Meteorological Services (EUMETNET) generated 'Observations Monitoring Report' for individual ships, and the UK VOS ranking lists, were demonstrated and VOS operators were urged to become familiar with the tools and use them as appropriate. VOS Operators to check the metadata of their VOS ships within the E-SURFMAR database and make changes directly if necessary.	VOS operators	VOSP FP	ongoing	HK, China: done Included in the SOT Implementation Strategy	75
69	7.1.2.4	Members to consider providing financial resources through the VCP in support of PMO workshops	SOT members	SOT NFP	2014	No feedback as of January 2013	0
70	7.2.1.6	that national VOS Programme Managers ensure that the monthly VOSclim suspect list is provided to PMOs for immediate action as necessary	VOS operators & PMOs	VOSP FP	ongoing	Included in the SOT Implementation Strategy	75
72	7.2.4.1(1)	That the Panel works to upgrade as many ships as practicable to VOSclim class with the aim that 25% of global active VOS <sup>3</sup> will be VOSclim class by SOT-7. (Quantity)	VOS operators	VOSP FP	2013	Included in the SOT Implementation Strategy	100
73	7.2.4.1(2)	That all VOS ships aim to meet the reporting criteria of an 'Active ship' by providing an average of 20 Observations per month. (Quantity)	VOS operators	VOSP FP	SOT-7	Included in the SOT Implementation Strategy	100
74	7.2.4.1(3)	That the Panel aims for less than 3% of VOSclim class ships per month being flagged on the Suspect List for Air Pressure. (Quality – this is something PMOs can directly influence)	VOS operators & PMOs & RTMC	VOSP FP	SOT-7	Included in the SOT Implementation Strategy	100
75	7.2.4.1(4)	That the Panel aims for 95% of VOSclim	VOS operators	VOSP FP	SOT-7	Included in the SOT Implementation Strategy	100

3: The global active VOS is defined as the number of VOS registered in the Pub47 and reporting at least once per month – Today there are about 2000 such ships.



No	Ref	Action item	By	Lead	Deadline	Status	% completed
		class observations to be received within 120 minutes. (Timeliness)	& RTMC			Strategy	
79	8.1.3.6 (3)	the workshop and the Panel consider developing web pages of major circulation metrics, using the XBTs to show short timescale changes in heat and mass fluxes through basins	All SOOPIP members	SOOPIP FP	SOT-7		0
89	8.3.4.5(3)	Continue collaboration with GTSP and WOA projects to provide quality controlled data	all SOOP members	SOOPIP FP	report by SOT-7		0
91	8.3.5.2(1-2)	Establish a list of parameters that each agency making XBT deployments (BOM, CSIRO, SIO, NOAA, ...) needs to submit (may be as deployment logs), containing for each deployment: date, time, call sign, transect No., mode, probe type, launch height, operator name, sea state, etc.	SOOPIP members	SOOPIP FP	End 2011		0
95	9.1.1.7	VOS operators were invited to consider the value of the proposed performance ranking system and to advise the Met Office if they considered that the parameters used were appropriate	VOS operators	VOSP FP	end 2011		0
96	9.1.1.7	VOS operators were also invited to consider performance rankings when issuing awards to their individual VOS fleets	VOS operators	VOSP FP	ongoing	HK, China: done Included in the SOT Implementation Strategy	75
97	9.1.1.9	The Team stressed that the JCOMMOPS REAL vs. MASK Database needs to be kept up to date. VOS operators using REAL masking scheme to provide quarterly up to date information on REAL vs MASK to JCOMMOPS	VOS operators	VOSP FP	ongoing	Included in the SOT Implementation Strategy	75
100	9.1.1.12	The Team also requested the VOS Focal Points to make sure that these lists are forwarded to the PMOs for immediate action	VOS Focal Points	VOSP FP	ongoing	Included in the SOT Implementation Strategy	75
115	9.1.7.6(1)	The SOT recommends that its members support the project by distributing the GOSUD report presented at this SOT Session in their country and to identify potential contributors either by providing data to the project or by	SOT members	SOT NFP	SOT-7		0

No	Ref	Action item	By	Lead	Deadline	Status	% completed
		providing scientific or data management expertise that could enhance the quality of the GOSUD dataset and /or enlarge the network. First priority must be put on research vessels or on merchant ships that operate on regular lines					
120	9.2.1.3(2)	July – December 2011: Software developments by SOT members for the adaptation of national data processing systems to permit the encoding of BUFR reports for VOS data, and beginning of operational distribution of VOS reports in BUFR format	members	SOT NFP	end 2011	HK, China: done	50
121	9.2.1.3(3)	2012: Transition period where the VOS data will be distributed in both FM-13 SHIP and FM-94 BUFR format	members	SOT NFP	end 2012		0
122	9.2.1.3(4)	End of 2012: Migration to BUFR completed, and stopping of GTS distribution of VOS data in FM13 SHIP format	members	SOT NFP	end 2012		0
123	9.2.1.4	Following the recommendations from PMO-IV in this regard, its members to alert their PMOs about (i) Understanding the basics of BUFR and the requirements for the reporting of new variables, and (ii) Providing feedback as appropriate on possible problems and issues to the JCOMM Task Team on Table Driven codes through their SOT National Focal Points.	PMOs	SOT NFP	end 2012	HK, China: done	50
126	9.2.5.8	The Team encouraged the VOS operators / NMHSs to download VOS metadata from the E-SURFMAR database via FTP for inserting appropriate metadata into the new BUFR template for VOS	VOS operators / NMHSs	VOSP FP	2012		0
127	9.2.4.2	The Team invited SOT members to access and decode those distributed reports encoded according to the BUFR templates in validation, and to report any issue and/or discrepancy to the JCOMM Task Team on Table Driven Codes (TT-TDC) Chair, Mr Bill	SOT members	SOT NFP	ongoing		0

No	Ref	Action item	By	Lead	Deadline	Status	% completed
132	9.3.4	Burnett (USA, <a href="mailto:Bill.Burnett@noaa.gov">Bill.Burnett@noaa.gov</a> ) The meeting invited its members to provide feedback to the WMO Secretariat, E-SURFMAR, and JCOMMOPS regarding any remaining timeliness or residual WMO resource issues to ensure continuing satisfactory metadata availability for marine climatology in the future	SOT members	SOT NFP	ongoing		75
136	9.3.8	The Team emphasized again the importance of the rescue of historical buoy and ODAS metadata, which may be at risk of permanent loss due to media degradation, organizational changes, etc. The Team invited its members, and DBCP members to make sure that those metadata are properly rescued	SOT & DBCP members	SOT NFP	ongoing	Included in the SOT Implementation Strategy	75
142	9.4.5 (1)	That SOT continues to take an active role in TT-DMVOS activities, and engage with TT-MOCS in the future as appropriate	SOT	SOT NFP	ongoing	Included in the SOT Implementation Strategy (TT-DMVOS & TT-MOCS now integrated into TT-MCDS)	75
148	10.2.1(2)	Referring to legacy recommendation 3, to make sure that instrument/platform metadata related to ship-based observations are properly collected and made available through the appropriate channels, taking particular attention to SST and SSS data	SOT members	SOT NFP	ongoing	Included in the SOT Implementation Strategy	75
150	10.2.1(4)	Referring to legacy recommendation 5, to use the facilities offered at the WMO-IOC Regional Marine Instrument Centres (RMIC) in the view to ensure better traceability of ship observations to international standards	SOT members	SOT NFP	ongoing	Included in the SOT Implementation Strategy	75
151	10.2.1(5)	Referring to legacy recommendation 6, the Team invited the manufacturers of ship-based observation instrumentation to participate in the HMEI	manufacturers	S. Karpov	asap		0
152	10.2.1(6)	Referring to legacy recommendation 9, to make sure that discovery metadata about ship-based observational data-sets, including in particular those collected through the associated programmes (IOCCP, GO-SHIP, FerryBox, OceanScope, etc.), are properly	SOT members	SOT NFP	ongoing	Included in the SOT Implementation Strategy	75

<b>No</b>	<b>Ref</b>	<b>Action item</b>	<b>By</b>	<b>Lead</b>	<b>Deadline</b>	<b>Status</b>	<b>% completed</b>
		compiled and made available through the ODP and the WIS using the required ISO-19115 profiles					
153	10.2.1(7)	Referring to legacy recommendation 11, to comply with the WMO Quality Management Framework (QMF) and quality management principles	SOT members	SOT NFP	ongoing	Included in the SOT Implementation Strategy	75
155	10.2.3	The Team encouraged SOT members from these respective regions to participate at the RMIC workshops once organized	SOT members	SOT NFP	ongoing	HK, China: done Included in the SOT Implementation Strategy	75
157	10.2.5	The Team encouraged its members to install infrared radiometers on-board ships and sustain such observations in the view to support Satellite calibration and validation strategies and provide observations which are independent of individual satellite instrument programmes to ensure the ability to link climate records across potential satellite data gaps	SOT members	SOT NFP	ongoing	Included in the SOT Implementation Strategy	75
171	12.1.4	The Team urged the SOOP operators to provide the SOT TC as soon as possible with the required SOOP metadata permitting the compilation of the SOOP survey	SOOP operators	SOOPIP FP	asap	Included in the SOT Implementation Strategy	75
173	12.2.5	the VOS National Focal Points to provide Graeme Ball with links of national VOS or PMO web sites for their inclusion in the VOS website	VOS NFP	VOSP FP	ongoing	HK, China: done Included in the SOT Implementation Strategy	75
180	13.3.5.2	The Team noted that no contribution had been made to the Ship Consumables Trust Fund at this point. The Team invited its member to investigate at the national level whether it would be appropriate for them to contribute to the Trust Fund	SOT members	SOT NFP	ongoing	Included in the SOT Implementation Strategy	75