WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (OF UNESCO)

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

EIGHTH SESSION

CAPE TOWN, SOUTH AFRICA, 20-24 APRIL 2015

SOT-8 / Doc. 3.4(1)
(09.04.2015)

ITEM: 3.4

Original: ENGLISH

REPORT FROM THE SOT TECHNICAL COORDINATOR

(Submitted by Martin Kramp (SOT Technical Coordinator, JCOMMOPS))

Summary and purpose of the document

This document also provides information on the role of the JCOMMOPS ship coordinator and tasks of interest to the SOT, including the support that Mr Kramp has provided to the SOT and its component Panels during the last intersessional period.

ACTION PROPOSED

The Team will be providing further guidance to the SOT Technical Coordinator regarding the kind of support he can provide to the Team.

Appendices: **A.** General SOT Map and Scorecard

- A - DRAFT TEXT FOR INCLUSION IN THE FINAL REPORT

Report by the SOT Technical Coordinator

3.4.1. The JCOMMOPS Ship Coordinator, Mr Martin Kramp reported on his activities for SOT the last intersessional period, and used the opportunity to thank the Team for its good cooperation and feedback since SOT-7.

3.4.2 While not being a formal member of most of the SOT Task Teams, Mr Kramp worked closely with the different groups (ex officio). Merged with international missions of the Ship Coordinator, *ad-hoc* meetings with chairs, vice-chairs or national managers of the different SOT panels took place as appropriate during the intersessional period.

3.4.3. Because of the integrated character of the Ship Coordinator position, Mr Kramp attended a number of international meetings from other groups, and in particular of the Data Buoy Cooperation Panel (DBCP), the Global OCean Ship-Based Hydrographic Investigations Programme (GO-SHIP), the International Ocean Carbon Coordination Project (IOCCP), the Argo profiling float programme, the International Research Ship Operators (IRSO) forum, the JCOMM Data Management Coordination Group (DMCG), and the Surface Marine Operational Service (E-SURFMAR) of the Economic Interest Group (EIG) grouping of European National Meteorological Services (EUMETNET). He represented the SOT as required in- and outside of the observing community, and contributed to SOT related publications.

3.4.4 Mr Kramp resumed the production of Global Telecommunication System (GTS) - based monitoring reports for the SOT, which are available via JCOMMOPS viewer, FTP or Google+. Low-resolution images are accompanied by links to high-resolution & multi-layer versions in PDF format. In addition to the visualization of spatial data distribution in maps, he introduced a “Scorecard” with more numeric information and Key Performance Indicators (KPIs).

3.4.5 The TC explained that the WMO migration to Table Driven Codes (TDCs) has created problems[1] with regard to the data distributed on the GTS (not only for SOT data). This is leading to missing observations in some cases, and to duplication of data in other cases using multiple formats (e.g. TDCs, and Traditional Alphanumeric Codes). Analyzing the problem in order to solve it is difficult. All JCOMMOPS coordinators will work on this issue in a joint and cross-cutting effort after the OCG-6 meeting.

3.4.6 Mr Kramp reported that the new JCOMMOPS website and information system comprises panel-related views/subsites (see also agenda items 7.3 and 8.5.2). The structures for the different panels are identical, and users can easily switch from e.g. DBCP to SOT, or combine queries. He invited the team to discuss whether or not individual websites for SOT, SOOP, VOS, etc. should be maintained, or merged here. The move of the VOS pages from BOM to JCOMMOPS is underway.

3.4.7 The TC explained that the JCOMMOPS Quality Control Relay (QCR) tool is still operational, but has not been updated anymore, because it will shortly be fully re-implemented as cross-programme tool in the new system.

3.4.7 Mr Kramp introduced the ASAP platform metadata mechanism established in close cooperation with the ASAP Task Team Chair. Metadata are available through the URL proposed at SOT-6[2] and will be incorporated in the new JCOMMOPS system. (see also agenda item 10.4).

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1 Some data are injected only in Traditional Alphanumeric Codes (TACs), some already only in TDCs, and some in both, with some data centers using old or ad hoc BUFR templates, and some centers partly converting data injected by other centers only in TAC into TDC, and reinjecting those data. Additionally, data from centers using the SHIP to mask true identities on the GTS are transferred unmasked to other centers in bilateral agreements, where they are merged with all other data, processed and thereby also partly reinjected on the GTS, in TAC and TDC, unmasked and referencing to a different GTS center. For the same platform, up to 4 bulletins could be found, but the duplications are not systematic, and in different observing periods there are sometimes more bulletins in TAC than TDC for the same platform, but sometimes also more in TDC than in TAC.

2 http://www.jcommops.org/asap-metadata.html

3.4.8 Mr Kramp reported on the status of the VOS Real/Mask list. Updates are either i) sent to the TC by national platform operators in appropriate timely intervals, or ii) most often extracted from E-Surfmar on a day-to-day basis. Given that E-ASAP uses unique identifiers similar to VOS masks, an additional Real/Mask list for ASAP is now maintained at the same location.

3.4.9 The TC stressed that using Pub47 as ship reference list for other panels (such as ASAP) or programs raises serious issues if i) no IMO number is provided, complicating the tracking of a ship hull when the call sign changes, or ii) if a ship hull has no or multiple entries in Pub47, e.g. two NMS are using the same hull for different VOS stations with two different IDs. Given that all in-situ observing systems are using ships, Mr Kramp suggested that they should ideally all refer to the same, unique JCOMM ship list.

3.4.10 Beyond the problem with a unique ship hull reference list, Mr Kramp also raised the issue of unique identifiers for non-masked VOS and SOOP platforms hosted by these ship hulls. Mr Kramp reported on JCOMMOPS involvement in WMO-OSCAR (see also agenda item 3.1), and alerted the team that the present practice could provoke problems when migrating to WIGOS-IDs.

3.4.11 The Team reviewed the status of the different SOT mailing lists (SOT, VOS, SOOPIP, PMO, all Task Teams), which have always been updated as soon as changes occurred, in close cooperation with the JCOMM secretariat. Mr Kramp recommended a more systematic use of the lists, given that messages are archived and thus allow new members an easier integration.

3.4.12 Mr Kramp reported on cross-programme recruiting activities, with ship operators, owners, builders and the sailing community. A number of formal partnerships have been established (essentially through the IOC at this point) or are underway. They target undersampled ocean regions, and comprise also innovate solutions with rather unconventional vessel types, without necessarily involving a NMS, and can go beyond in-kind support.

3.4.13 Mr Kramp reported that a proposed final version of the VOS brochure had been submitted to the VOSRPP Task Team (see also agenda item 7.3). In the need of appropriate pictures, and supported by a German PMO, he visited several ships and took high quality pictures, and also video footage, which are now available to the Team. A shorter, and between the different panels more balanced brochure and video, was considered being a reasonable project for the future.

3.4.14 The Team noted the good progress and developments of the SOT Technical Coordination and thanked Mr Kramp for continuous support.

3.4.15 The Team made the following recommendations:

(i) Include the SOT TC ex officio in all SOT Task Teams;

(ii) Schedule intersessional Task Team web conferences through the SOT TC, with review of Task Team related action items (***action; M. Kramp; ongoing***);

(i) Continue with the concept of a scorecard; and the SOT Technical Coordinator to routinely update the SOT scorecard (***action; M. Kramp; ongoing***);

(iii) Continue with innovative and cross-cutting recruiting concepts (e.g. sailing community); and

(iv) Develop a standardized cross-programme cooperation agreement or label for volunteer ships, under an appropriate umbrella (such as OCG, JCOMM, GOOS, WMO, IOC-UNESCO, JCOMMOPS).

3.4.16 The Team decided on the following action items:

(ii) The SOT Technical Coordinator to coordinate with the relevant SOT Task Teams, and investigate how unique ship hull and station identifiers could or must be

achieved to match future requirements of an integrated observing system (***action; M. Kramp; asap***);

(iii) The SOT Technical Coordinator, to work with the TT-VOSRPP and corresponding members from other programmes and panels in the need of volunteer ships (in particular DBCP and Argo) to draft and edit a JCOMM OPA brochure (***action; M. Kramp; SOT-9***); and

(iv) The SOT Technical Coordinator to work with the TT-VOSRPP to create a TurboWin Videoclip (***action; M. Kramp; April 2016***).

(v) The SOT Technical Coordinator to merge the individual SOT, VOS, ASAP and SOOP pages into simplified SOT starting pages with basic information, brochures and videos for a broader public, and linked to the new JCOMMOPS website with all operational information and resources for the SOT community. (***action; M. Kramp; April 2016***).

- B - BACKGROUND INFORMATION

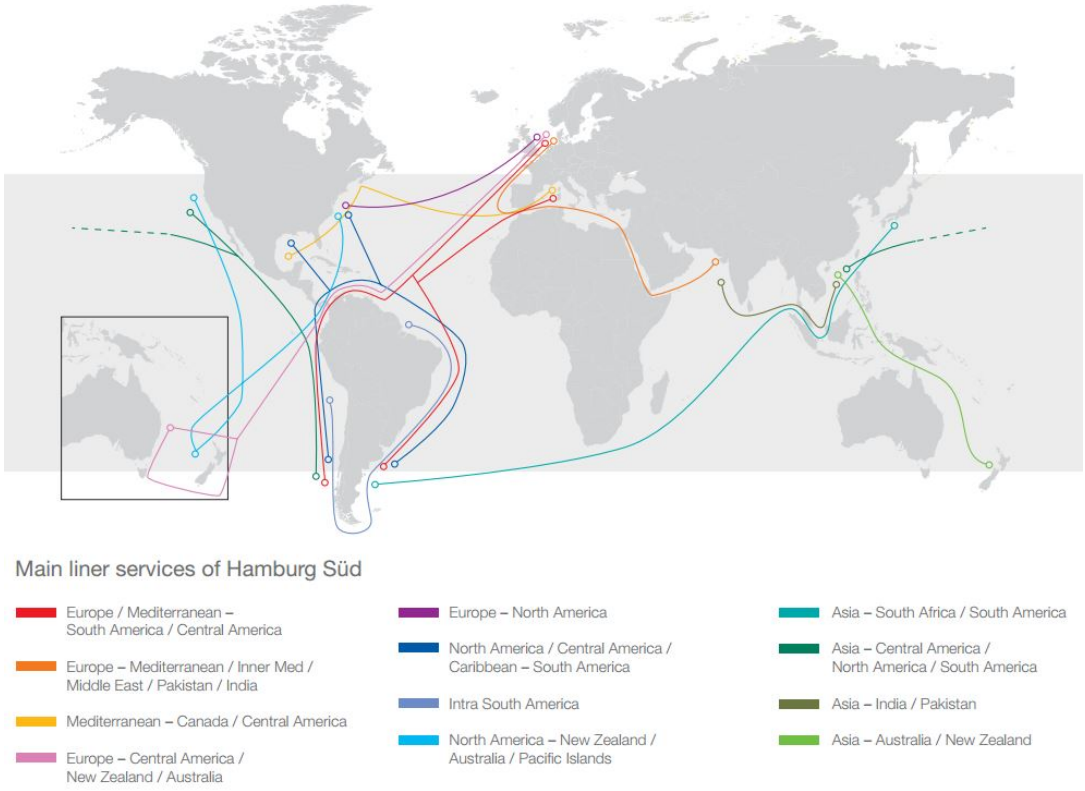
JCOMMOPS operation activities

Martin Kramp reported on activities and developments in JCOMMOPS regarding deployment and operation opportunities; he highlighted several items that may be of interest to the meeting.

JCOMMOPS gathers cruise and vessel information from different communities and has initialized new pilot projects in the last intersessional period, with i) ship owners (e.g. Hamburg Süd, 45 owned / 58 chartered container vessels), ii) ship builders (e.g. STX, MSC liners / Queen Mary 2), iii) schedule coordinators (e.g. UNOLS) iv) ship operators (e.g. ProLarge) and v) event managers (e.g. Cornell Sailing). These agreements are established top-down, in general with the board of directors, and target long-term and wide-spread activities.

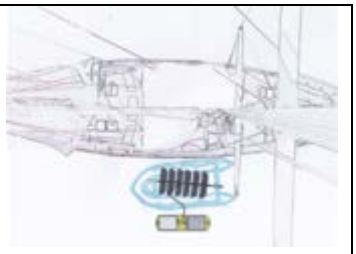
Synchronization mechanisms with key metadata sources from above organizations are currently set up by the new JCOMMOPS IT engineer. Tools to easily provide cruise information and operation or maintenance requests are also under construction.

Hamburg Süd is already an important contributor, but has now agreed to contribute to the observing system with its entire fleet. All JCOMM and associated programs, including rather difficult applications such as SOOP or ASAP, are welcome. The company will also support logistics through its ship suppliers. Mr Kramp requested the meeting to submit more details on requirements. Drifter deployments are underway, and since the end of March, IOCCP is investigating the installation of carbon underway equipment. After successful results, it is planned to set up more company-wide agreements.

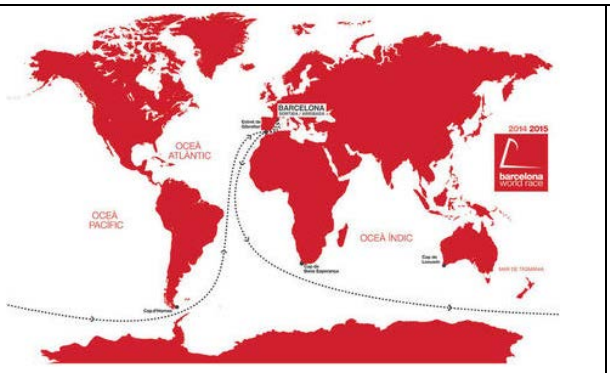


The Ship Coordinator reported that Sailing Vessel Lady Amber is still available in South Africa for substantial, cross-programme and low cost operations. After training activities and some technical modifications (in particular a crane module is now available) the vessel has in the meantime also successfully proven its capacities in the deployment and recovery of larger instruments, such as wave gliders. The vessel will probably be involved in Spurs-2, and could already on its way to the operation zone transit undersampled areas.





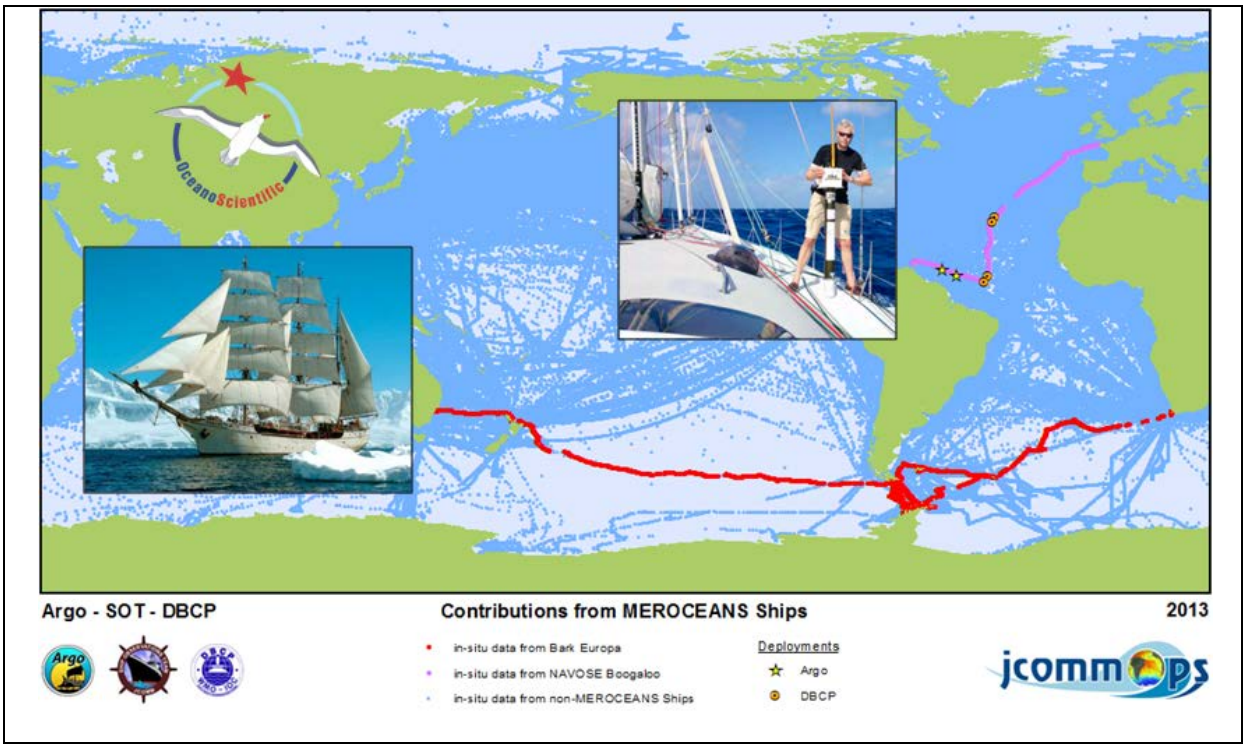
Regarding further progress with the sailing community, Mr. Kramp reported on deployments in the Barcelona World and Volvo Ocean Races. All boats deployed instruments in high-value positions. In addition to their willingness to deploy in remote areas, these events are also willing to co- or fully fund some instruments in the future, including AWS (fed by NMEA data of onboard instruments) and underway systems. Such contributions would go beyond former in-kind contributions from volunteer ships, and they also achieve good media coverage.



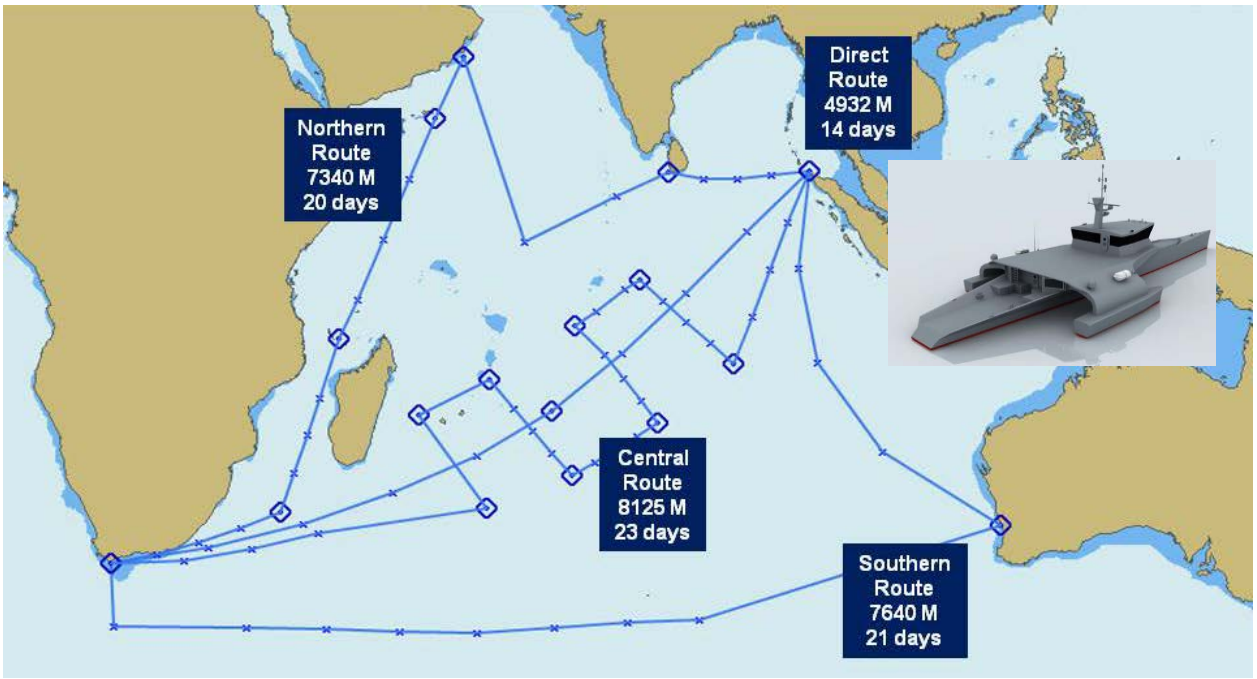
Mr Kramp showed a video of a successful, but nevertheless violent deployment at racing speed. He stressed that these are basically the only “free” deployments in the Southern Ocean with recurrent opportunities from non-research vessels. A partnership with the biannual Clipper Round the World Race is underway, targeting also manual observations with TurboWin (3rd party equipment).

In sailing rallies, which lead family crews on pleasure yachts around the world (such as the Blue Planet Odyssey), floats and drifters are continuously and successfully deployed, very smoothly, and ships even agreed to change their direct routes significantly, in order to sail through high priority areas. As with races, these so-called rallies also take place regularly. Ships also contribute to VOS, with third party equipment, comprising a self-made AWS: It takes NMEA data from the ship’s systems and submits through the satellite email client.

Mr Kramp also reported on the OceanoScientific Programme, which has already successfully shown the potential of sailing ships in terms of spatial distribution, and cross-cutting operations, through the involvement of different vessel types (high-tech racing and traditional tall ship) in VOS, SOOP, DBCP and Argo. It is hoped that third party funding can be secured for a long-term OceanoScientific Campaign, comprising yearly circumnavigations of Antarctica.



As alternative to “free” opportunities, Mr Kramp presented possible charter missions organized in cooperation with the marine operator ProLarge. A new type of multihull survey vessel (Ocean Eagle 43) is now under construction and allows for cost-effective operations in perfect conditions and positions; the operator will agree to deroute the ship(s) on transocean passages in order to get into undersampled areas, and would only invoice the additional costs (extra ship-time, insurance etc.). A pilot project could take place in late 2015.



APPENDIX A

SOT MAPS AND SCORECARD

Ship Observations Team - Scorecard 01/2015

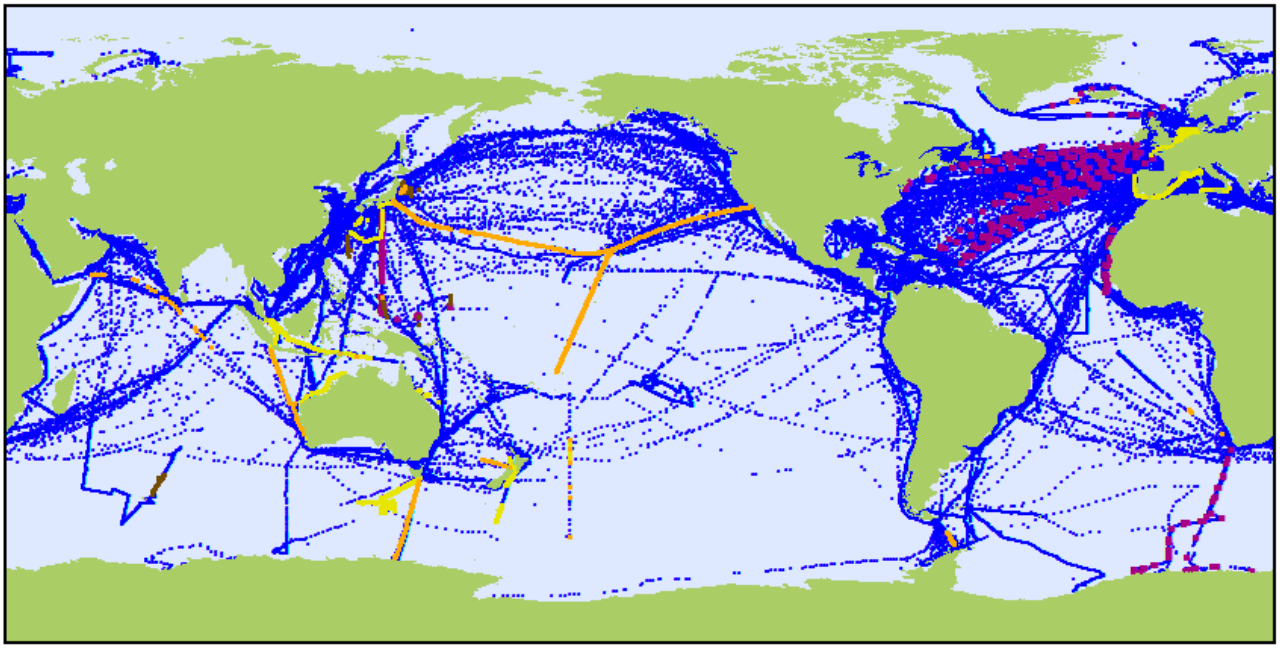
VOS KPIs	Target	12 / 2014	01 / 2015
VOSClim Ids in global active VOS	>25%	28%	28%
VOS Ids providing at least 20 obs	100%	64%	63%
VOSClim SLP Suspects (MetOffice)	<3%	<1%	2.50%
VOSClim obs received within 120'	>95%	98%	98%

Global platform / metadata status		
TC-validated VOS platforms (Esurfmar based)	3176	3180
Non-VOS or invalid platforms (Esurfmar based)	168	167
VOS Ids on Suspect List for SLP (MetOffice)	27	54
VOSClim Ids on Suspect List for VOSClim SLP (MetOffice)	2	10
TC-validated VOS Ids with at least 20 obs	911	908

Focus	Item		
VOS (without 'SHIP')	Active Ids	1416	1447
	Obs	153128	156833
'SHIP' (number of active platforms unknown)	Obs	26124	28674
VOSClim	Active IDs	403	399
	Obs	57582	60680
VOSClim > 120' GTS	Active IDs	167	175
	Obs	932	1009
Automated Systems AWS	Active IDs	241	255
	Obs	103679	108491
ASAP (all SHIPTEMP and BUFR headers)	Active IDs	20	19
	Reports	816	781
SOOP	Active IDs	33	28
	XBT	672	592
	XCTD	41	50
	TSG	38717	62857
Masked platforms (without 'SHIP')	Active IDs	120	123
	Obs	39741	39895
No atmospheric pressure available (without 'SHIP')	Active Ids	177	202
	Obs	4832	3993
No atmospheric pressure available ('SHIP')	Obs	1817	1070
EUMETNET Area global VOS fleet	Active Ids	624	627
	Obs	76410	81271
EUMETNET Area regional VOS fleet	Active Ids	441	444
	Obs	58897	62125

Detailed platform metadata status

RCNTY	In Esurfmar, but not taken into account (non VOS and/or metadata issue)	In Esurfmar and in conformity with Pub47 V4 format, taken into acount	Taken into account after TC control	Registered platforms total (01/2015)	Active Ids 01/2015 including M2R list, but not 'SHIP'	Observations 01/2015 (availability MF; without 'SHIP')
AU	0	63	0	63	38	2870
CA	3	55	0	58	45	30500
CL	0	2	0	2	0	0
DE	5	618	0	623	353	20981
EC	0	1	0	1	0	0
ES	0	1	0	1	1	620
EU	1	30	0	31	26	9790
FR	0	62	0	62	47	16668
GB	111	303	2	416	236	29243
GR	0	6	0	6	1	44
HK	0	57	0	57	43	1599
HR	0	30	0	30	0	0
IE	0	10	0	10	2	24
IL	0	20	0	20	4	60
IN	11	50	0	61	1	8
IS	0	6	0	6	2	109
JP	0	539	12	551	24	1020
KR	0	33	0	33	2	2
MY	0	17	0	17	4	65
NL	0	96	0	96	68	2901
NO	9	5	0	14	4	2102
NZ	0	33	0	33	18	1668
PL	0	46	0	46	0	0
RU	0	149	0	149	23	715
SE	0	30	0	30	17	2248
SG	0	1	0	1	0	0
US	0	838	1	839	463	32364
ZA	0	5	0	5	0	0
ZY	27	0	40	67	15	830
ZZ	0	0	19	19	10	402
	167	3106	74	3347	1447	156833



Ship Observations Team — **VOS (1447) - SOOP (28) - ASAP (19)** — **January 2015**

(Active platform-IDs per panel and number of observations per type of instrument in period)

VOS (156833) · XBT (592) · XCTD (50) · TSG (62857) · ASAP (781)

This map shows only in-situ data available on the GTS. A large number of TSG data are not available on the GTS anymore.

APPENDIX B

ASAP PLATFORM METADATA

JCOMM-SOT-VOS-(E-)ASAP station metadata per 20 October 2014, in SOT recommended format. For related Ship Information, please contact JCOMMOPS Ship TC Martin Kramp, mkramp@jcommops.org

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
ver	chgd	rcntry	stn	stnP	rte	rte	rte	rte	rte	rte	rte	rte	rte	rte	rte	alert p	InH	EqTp1	EqTp2	Bin	rcv	rds	prST	trms	freq	rem
0	14102014	EU	ASEU01		R92											INT	15	Semi automatic 10ft container launcher		350	Vaisala SPS311	R892-SGP(	iridium	Email	OPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASEU02		R62	R44	R41	R13								DIS	22	Semi automatic 10ft container launcher		350	Vaisala SPS311	R892-SGP	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASEU03		R62	R44	R41									DIS	29	Semi automatic 10ft container launcher		350	GRAW GS-E	DFM-09	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASEU04		R62	R44	R41									DIS	22	Semi automatic 10ft container launcher	Portable manual deck launcher	350	Vaisala SPS311	R892-SGP	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASEU05		R62	R44	R41									DIS	29	Semi automatic 10ft container launcher		350	GRAW GS-E	DFM-09	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASEU06	n.a.	R62	R44	R41									DIS	29	Semi automatic 10ft container launcher		350	Vaisala SPS311	R892-SGP	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASDE01		R62	R44	R41									DIS	25	Fixed manual deck launcher		200	GRAW GS-E	DFM-09	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASDE02		R62	R44	R41									INT	6	Semi automatic 20ft container launcher		200	Vaisala SPS311	R892-SGP	iridium	Email	OPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASDE03		R62	R44	R41									DIS	25	Portable manual deck launcher	Portable manual deck launcher	200	GRAW GS-E	DFM-09	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASDE04		R62	R44	R41	R13								DIS	22	Fixed manual deck launcher		200	Vaisala SPS311	R892-SGP	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASFRL	n.a.	R62	R44	R41	R13								DIS	27	Fixed manual deck launcher	Fixed manual deck launcher	300	MODEM SR10	M10	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASFR2	n.a.	R62	R44	R41	R13								DIS	27	Fixed manual deck launcher	Fixed manual deck launcher	300	MODEM SR10	M10	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASFR3	n.a.	R62	R44	R41	R13								DIS	27	Fixed manual deck launcher	Fixed manual deck launcher	300	MODEM SR10	M10	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASFR4	n.a.	R62	R44	R41	R13								DIS	27	Fixed manual deck launcher	Fixed manual deck launcher	300	MODEM SR10	M10	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASDK01	n.a.	R62	R44	R64	R65								DIS	18	Semi automatic 10ft container launcher		300	Vaisala SPS311	R892-SGP	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASDK02	n.a.	R62	R44	R64	R65								DIS	15	Built-in semi automatic launcher		300	Vaisala SPS311	R892-SGP	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASDK3	n.a.	R62	R44	R64	R65								DIS	18	Semi automatic 10ft container launcher		300	GRAW GS-E	DFM-09	iridium	Email	TPD	ASAP operations only > 75 nm off mainland
0	14102014	EU	ASES01		R13											INT	12	Semi automatic 10ft container launcher		350	Vaisala SPS311	R892-SGP	iridium	Email	OPD	ASAP operations only > 75 nm off mainland
0	14102014	DE	DBUK	n.a.	R92											DIS							Meteosat	Email	IRR	ASAP operations mainly in polar regions