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

SHIP OBSERVATIONS TEAM

FIFTH SESSION

GENEVA, SWITZERLAND, 18-22 MAY 2009

SOT-V/Doc. III-2.1
(19.04.2009)

ITEM III-2.1

Original: ENGLISH

VOS AUTOMATION AND ELECTRONIC LOGBOOK SOFTWARE

(Submitted by Julie Fletcher, VOSP Chairperson)

Summary and purpose of the document

This document provides up to date information regarding the status of global VOS automation, as well as on recent developments regarding electronic logbook software (e.g., TurboWin, SEAS and ObsJMA).

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.

Appendices: A. Table 1: Status of VOS Automated Observing Systems (AWS)
B. Table 2: Status of VOS using (non-AWS) Electronic Logbook Software

- A - DRAFT TEXT FOR INCLUSION IN THE FINAL REPORT

III-2.1.1 Status of VOS automation

III-2.1.1.1 Ms Julie Fletcher, VOS Panel Chairperson presented the VOS Automated Status report for 2008, with details of national VOS automation being taken from national SOT Annual Reports.

III-2.1.1.2 She reported that the number and type of fully automated shipboard weather observing systems had increased to 270 operational AWS systems at the end of 2008, while almost 1800 manual VOS ships were using Electronic Logbook Software.

III-2.1.1.3 Information on the status of automation by country was presented in two categories:

- Status of VOS Automated Observing Systems (AWS) - Table 1 **Appendix A**
- Status of VOS using (non-AWS) Electronic Logbook Software - Table 2 **Appendix B**

III-2.1.1.4 The Panel noted that challenges with respect to installing automated systems on board VOS ships continued to include:

(i.) Funding restraints
(ii.) Problems in finding 'long term' ships – the length of charter is often insufficient to justify AWS installation
(iii.) Difficulties in siting equipment for best exposure
(iv.) Volatility of ship routes
(v.) Lack of warning of withdrawal of ships and potential loss of AWS equipment.

III-2.1.1.5 Regarding the Ship AWS data on GTS, the Team noted that the number and type of VOS AWS installations was increasing globally, with many AWS sending back raw data to NMS for processing. The Panel reminded NMHS of the importance of inserting the ship AWS data onto the GTS, and especially to ensure that hourly data if available was disseminated in non-synoptic hour bulletins. The meeting recommended that NMHS operating VOS AWS make arrangements to ensure that all observations, including hourly observations are inserted onto the GTS for global dissemination (***action; NMHS; ongoing***).

III-2.1.1.6 The meeting requested NMHS to provide details of VOS Automation to VOS Panel chair if their data required updating (***action; NMHS; ongoing***).

III-2.1.2 Status of Electronic logbooks

ObsJMA

III-2.1.2.1 The Panel noted with appreciation that JMA released the new electronic logbook software OBSJMA for WIN ver. 2.00 in March 2009. The software can work with Windows Vista Operating System (OS) in addition to the previous version of the OS. Moreover, it has new added features including a more detailed pressure correction scheme and screens to aid in the selection of correct code figures for Visibility (VV) and Height base of lowest cloud (h) for accurate reporting.

TurboWin

III-2.1.2.2 The Panel noted that in December 2008 a new TurboWin 4.5 beta version was distributed to a selected number of Meteorological Services. This new TurboWin version for the VOF will be released June 2009 after the implementation of the comments on the beta version and the SOT meeting (wave coding issue). Most important new features in TurboWin 4.5 are:

- Added TurboWin User Guide;
- Option to show monthly user statistics;
- To insert/change (masked) call sign, now a password is required;
- Added chapters of Marine Observers Handbook;
- Redesign waves data input pages.

III-2.1.2.3 First half of 2009 TurboJWS 1.0 beta will be made available to testers. This version can be compared to the basics of TurboWin. The main difference with TurboWin will be the Java Web Start mechanism and - because it is programmed in Java - it can run on several operating systems (Windows, Linux, Mac OS, and Solaris). Quite simply, Java Web Start is a mechanism for program delivery through a standard web server. Typically initiated through the browser, these programs are deployed to the client and executed outside the scope of the browser. Once deployed, the programs do not need to be downloaded again. They can automatically download updates on start-up without requiring the user to go through the whole installation process again.

SEAS

III-2.1.2.4 The Panel noted that in conjunction with the E-Logbook comparison review, SEAS version 8.0 dated 19 September, 2009 now encodes and displays the dew point to the tenth of a degree. Other updates to the software include reporting parameters input can be either, feet or meters, Fahrenheit or Celsius, and either hecto-Pascals or Inches of Mercury. SEAS 8.0 can now work with and Windows operating system of Vista and below and is still the only E- Logbook that can process the observation for output vis INMARSAT Code 41, binary, or even electronic mail (E-mail).

- B - BACKGROUND INFORMATION

1. Background

1.1 The VOSP-III meeting in London in 2003, noted the importance of enhancing the automation of all aspects of shipboard procedures, from observation to message transmission, using readily available software and hardware. The VOS Panel Chair was assigned the task of collating information on global VOS automation for presentation at subsequent VOS Panel sessions.

1.2 The first VOS Automation report was compiled in 2003 based on data as at 31 December 2002. The report has been updated annually since 2004, with details of national VOS automation being extracted from national SOT Annual Reports. This report is based on input from national SOT Annual Reports for 2008.

2. Present Status

2.1 Information on the status of automation by country is presented in two categories:

- Status of VOS Automated Observing Systems (AWS) - Table 1
- Status of VOS using (non-AWS) Electronic Logbook Software - Table 2

2.2 The number and type of fully automated shipboard weather observing systems is increasing, with 270 systems operational at the end of 2008. Seven countries indicated plans to expand their ship AWS networks in 2009.

2.3 Since 2003, most of the sixteen countries using Electronic Logbook Software, reported an increase in the numbers of VOS using the software. The total number of global VOS using electronic logbooks dipped in 2007 when Denmark withdrew from VOS, and the USA changed their reporting methodology to count only the ships which use SEAS for VOS. Prior to 2007, the USA numbers had included the ships which used SEAS for XBT. At the end of 2008, almost 1800 ships were using Electronic Logbook Software.

3. Challenges

3.1 Challenges with respect to installing automated systems on board VOS ships continue to include:

(i) Funding restraints
(ii) Problems in finding 'long term' ships – the length of charter is often insufficient to justify AWS installation
(iii) Difficulties in siting equipment for best exposure
(iv) Volatility of ship routes
(v) Lack of warning of withdrawal of ships and potential loss of AWS equipment

4. Ship AWS data on GTS

4.1 There are now many types of VOS AWS installations in operation. These vary from basic AWS e.g. a SVPB buoy transmitting from the deck of a ship; to complex systems with many sensors, which log data and transmit it in real time. Some AWS transmit at intervals of one minute, some hourly and some three hourly, and the communications method varies from coastal cellular communications to satellite communications. Many AWS are proprietary systems which report raw data back to the NMS for processing and insertion on to the GTS for global consumption. In the past, NMS set up routines to generate GTS bulletins containing ship observations at three hourly intervals, because these captured reports made at the main and intermediate synoptic times. Today, many AWS are reporting hourly and because the global models can ingest hourly data, it is important to make arrangements to insert the hourly AWS data onto GTS in 'non-synoptic' hour bulletins. E.g. NZKL SNVE01

5. Recommendation

- That NMS operating VOS AWS arranges to ensure that all observations, including hourly observations are inserted onto the GTS for global dissemination.

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Appendices: 2

APPENDIX A

TABLE 1: STATUS OF VOS AUTOMATED OBSERVING SYSTEMS (AWS)

Country	Type of AWS (at 31/12/2008)	Method of Comms	Manual Entry Facility	Number of Ship equipped with AWS as at 31 December						Plans
				2002	2004	2005	2006	2007	2008	
Australia	Vaisala Milos 500	Inmarsat C (Data Mode)	Yes	9	11	10	8	9	9	3 new AWS
Canada	AVOS – AXYS Technologies	Inmarsat C Iridium	Yes	13	14	14	39	41 1	45 1	8 AVOS, 4 with Iridium
Denmark	BATOS	Inmarsat C (Data Mode)	Yes	-	-	-	2	See EUMETNET		
EUMETNET	BATOS BAROS	Inmarsat C (Data Mode) Iridium SBD	Yes No					5 0	5 4	3 BATOS 10 BAROS
France	BATOS Mini BATOS MINOS BAROS	Inmarsat C (Data Mode) Inmarsat C (Data Mode) Argos Iridium	Yes No No No	19	30 1 6	39 2 7	45 3 8	48 3 8 1	54 1 7 -	7 BATOS
Germany	Vaisala Milos 500	Meteosat	No	23	21	21	17	18	17	
Ireland	Vaisala Milos	Meteosat	No	1	1	1	1 **	1**	1	
Japan	Koshin Denki Kogyo Co., Ltd (Japan) Ogasawara Keiki Seisakusho Co (Japan)	Inmarsat Inmarsat Inmarsat C Inmarsat C Inmarsat F	Some No Some Yes No	13	12	13	9 3 4 1	9 1 5 1 1	9 1 5 1 1	

	Nippon Electric Instrument Inc. (Japan) Brookhaven National Laboratory (USA) JRCS MFG. Co. Ltd (Japan)									
New Zealand	Sutron 9000RTU mSTAR-SHIP	MTSAT GPRS Cell	Yes No	1	1	1	1	1 1	1 1	1 mSTAR-SHIP
Norway	AWS	-	Some	-	-	17	17	18	16	
Russia	GM6	Inmarsat C	Yes	-	38	38 *	38 *	38*	38*	
South Africa	Vaisala Milos 520	Inmarsat C	Yes	-	-	1	1 **	1	1	2 planned
Spain	Vaisala Milos	Inmarsat C	Yes	1	1	1 *	1	1	1	
United Kingdom	Automet MINOS –GP MINOS-GPW BATOS AVOS MILOS/MAWS Metpod MetOcean Deck Buoy	Inmarsat Argos Argos Inmarsat C (Data Mode) Inmarsat Iridium Iridium Iridium	No No No Yes Yes Yes No No	1 - - -	1 - - -	1 1 1 -	1 2 2 1	1 6 3 1	0 5 1 3 1 - 1 2	Redeploy in 09 3 MINOS-GP 1 MINOS-GPW 1 BATOS 1 MILOS/MAWS 1 Metpod 2 Buoys on deck
United States	SEAS-AutoImet	SEAS	Some	-	3	3 *	0	3	41	
TOTALS				**81**	**140**	**171**	**204**	**226**	**270**	**48 AWS planned for 09**

***** Data from 31/12/2004 ** Data from 31/12/2005

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APPENDIX B

TABLE 2: STATUS OF VOS USING (NON-AWS) ELECTRONIC LOGBOOK SOFTWARE

Country	E-Logbook type	Number of Ships as at 31 December					
		2002	2004	2005	2006	2007	2008
Australia	TurboWin	33	41	50	51	64	61
Croatia	TurboWin	3	4	3	7	7**	7**
Denmark	TurboWin	-	-	-	32	0	Finished
France	TurboWin	-	7	6	7	10	4
Germany	TurboWin	315	412	556	600	709	730
Greece	TurboWin	2	0	0	0	1	3
Hong Kong	TurboWin	-	-	1	2	2	2
India	TurboWin	-	21	28	33	33**	33**
Japan	OBSJMA1.01	-	49	61	70	74	95
Netherlands	TurboWin	200	259	198	195	193	195
New Zealand	TurboWin	0	12	15	22	20	19
Singapore	TurboWin	-	-	2	3	1	1
South Africa	TurboWin	5	5	8	8*	8	14
Sweden	TurboWin	-	-	-	-	-	1
United Kingdom	TurboWin	82	104	147	241	261	286
United States	SEAS	353	439	447	622	129	344
TOTALS		**993**	**1353**	**1522**	**1893**	**1512**	**1795**

* Data from 31/12/2005 ** Data from 31/12/2006

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