

Status of Global VOS Automation as at December 2007

Background

VOSP-II, London, 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 tasked with collating information on global VOS automation for presentation at subsequent VOS Panel sessions.

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 2007.

Present Status

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

The number and type of fully automated shipboard weather observing systems is increasing slowly, with 226 systems operational at the end of 2007. Nine countries plan to expand their ship AWS networks in 2008.

Since 2003, there has in general been a steady increase in the numbers of VOS using electronic logbook software. However the total number of global VOS using electronic logbooks in 2007 decreased because Denmark withdrew from VOS in late 2007 and the USA changed their reporting 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.

Challenges

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

Table 1 : Status of VOS Automated Observing Systems (AWS)

Country	Type of AWS (as at 31/12/2007)	Method of Comms	Manual Entry Facility	Number of Ships with AWS at 31/12/2002	Number of Ships with AWS at 31/12/2004	Number of Ships with AWS at 31/12/2005	Number of Ships with AWS at 31/12/2006	Number of Ships with AWS at 31/12/2007	Plans for 2008
Australia	Vaisala Milos 500 AWS	Inmarsat C (Data Mode)	Yes	9	11	10	8	9	3 new AWS
Canada	AVOS – AXYS Technologies	Inmarsat C Iridium	Yes	13	14	14	39	41 1	8 AVOS with VOSclim
Denmark	BATOS	Inmarsat C (Data Mode)	Yes	-	-	-	2	See EUMETNET	
EUMETNET	BATOS	Inmarsat C (Data Mode)	Yes					5	4 BATOS
	BAROS	Iridium SBD	No					0	10 BAROS
France	BATOS	Inmarsat C (Data Mode)	Yes	19	30	39	45	48	8 BATOS
	Mini BATOS	Inmarsat C (Data Mode)	No		1	2	3	3	
	MINOS BAROS	Argos Iridium	No No		6	7	8	8 1	
Germany	Vaisala Milos 500 AWS	Meteosat	No	23	21	21	17	18	2 Replacements
Ireland	Vaisala Milos AWS	Meteosat	No	1	1	1	1 **	1**	
Japan	Koshin Denki Kogyo Co., Ltd (Japan)	Inmarsat	Some	13	12	13	9	9	
	Ogasawara Keiki Seisakusho Co (Japan)	Inmarsat	No				3	1	
	Nippon Electric Instrument Inc. (Japan)	Inmarsat C	Some				4	5	
	Brookhaven National Laboratory (USA)	Inmarsat C	Yes				1	1	
	JRCS MFG. Co. Ltd (Japan)	Inmarsat F	No					1	
New Zealand	Sutron 9000RTU	MTSAT	Yes	1	1	1	1	1	1 mSTAR-SHIP
	mSTAR-SHIP	GPRS Cell	No					1	
Norway	AWS	-	some	-	-	17	17	18	1 new ship
Russia	GM6	Inmarsat C	Yes	-	38	38 *	38 *	38*	
South Africa	Vaisala Milos 520	Inmarsat C	Yes	-	-	1	1 **	1	2 planned
Spain	Vaisala Milos	Inmarsat C	Yes	1	1	1 *	1	1	
United Kingdom	Automet	Inmarsat	No	1	1	1	1	1	

	MINOS –GP	Argos	No	-	-	1	2	6	3 MINOS-GP
	MINOS-GPW	Argos	No	-	-	1	2		1 MINOS-GPW
	BATOS	Inmarsat C (Data Mode)	Yes	-	-	-	1	3	2 BATOS
	AVOS	Inmarsat	Yes					1	
	MILOS/MAWS	Iridium	Yes						1 MILOS/MAWS
United States	SEAS-Autolmet	SEAS	Yes	-	3	3 *	0	3	
TOTALS				81	140	171	204	226	46 AWS for 2008

* Data from 31/12/2004

** Data from 31/12/2005

Table 2 : Status of VOS using (non-AWS) Electronic Logbook Software

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

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