



International Civil Aviation Organization

**NINTH MEETING OF THE ASIA/PACIFIC OPMET MANAGEMENT
TASK FORCE (OPMET/M TF/9)**

Bangkok, Thailand, 21 – 23 March 2011

Agenda Item Conjoint a): SIGMET Tests

PROGRESS WITH SIGMET TESTS - WC and WV

(Presented by Japan)

SUMMARY

This paper presents the results of the ASIA/PAC SIGMET tests conducted in November 2010 for TC and VA.

This paper relates to

Strategic Objectives:

A: Safety – Enhance global civil aviation safety

D: Efficiency – Enhance the efficiency of aviation operations

Global Plan Initiatives:

GPI-19 Meteorological Systems

1. INTRODUCTION

1.1 The MET Divisional Meeting (2002) formulated Recommendation 1/12 b), *Implementation of SIGMET requirements*, which called, *inter alia*, for the relevant planning and implementation regional groups (PIRGs) to conduct periodic tests of the issuance and reception of SIGMET messages, especially those for volcanic ash.

1.2 The OPMET Management Task Force (OPMET/M TF) 8th meeting reviewed the results of SIGMET tests in the Asia/Pac Region held in November 2010. The meeting decided that the WC, WV and WS SIGMET tests would be conducted on 10, 17, and 24 November 2010, respectively.

1.3 The Regional SIGMET tests were conducted as follows:

	2005	2006	2007	2008	2009	2009	2010
SIGMET for volcanic ash	1/18	1/19	1/22	1/22	2/17	11/17	11/17
SIGMET for tropical cyclones	2/18	1/26	1/15	1/15	2/10	11/10	11/10

2. PREPARATION FOR THE TEST

2.1 ICAO APAC Office sent a state letter, *Follow-up of the APANPIRG Conclusion 15/42 --- Conducting SIGMET tests in the Asia/Pacific region*, dated 16 September 2010, notifying the schedule and the procedure of the sixth Regional SIGMET tests as follows:

- Test for SIGMET for tropical cyclones (WC SIGMET) – 10 November 2010, start time (time of issuance of the triggering tropical cyclone advisory by the TCACs concerned) 0200 UTC;
 - ✧ Note that for TCAC New Delhi, test tropical cyclone advisories will be issued at 0200 UTC for the ASIA/PAC Region and 0800 UTC for the MID Region;
- Test for SIGMET for volcanic ash (WV SIGMET) – 17 November 2010, start time (time of issuance of the triggering volcanic ash advisory by the VAACs concerned) 0200UTC;
- Test for SIGMET for other weather phenomena (WS SIGMET) – 24 November 2010, start time 0200 UTC.

2.2 RODB Tokyo forwarded 10 Russian WV SIGMETs messages received via GTS to the other RODBs via AFTN, as the follow-up of discussion on SIGMET Tests at the OPMET/M TF/5.

3. TEST RESULTS AND ANALYSIS

3.1 Four RODBs in the Region sent the summary of the reception of the TC and VA tests to Japan, Rapporteur of the VA/TC/I TF. The combined information of the reception of the bulletins during the test on TC and VA is shown in Appendix A and B, respectively.

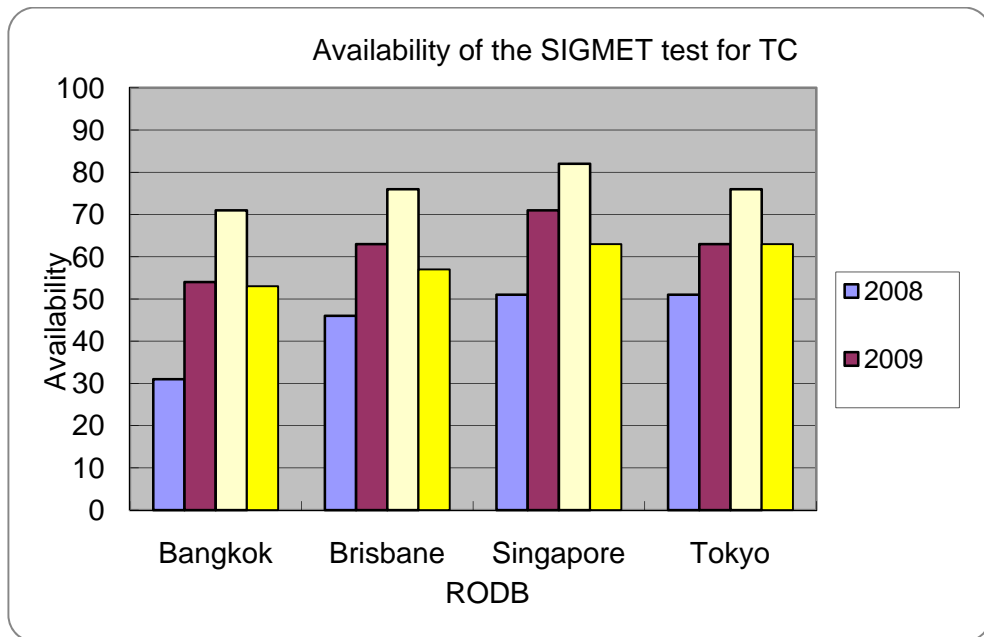
3.2 Summary of WC SIGMET test

3.2.1 The total numbers of WC SIGMET bulletins expected to be reported during the test was increased from 34 to 42. This is due to the increase of WMO SIGMET headings according to the amendment of Asia/Pac Regional SIGMET Guide in September 2010 as well as the change in the counting; in the 2010 test, the same SIGMET bulletin reported to the different FIRs were counted as such while it was treated as one bulletin in the previous years. Blue-colored lines in Appendix A are newly added bulletins.

3.2.2 42 test WC SIGMETs including duplicated bulletins were received. Without duplication, 28 test WC SIGMET while 44 expected were received although there were bulletins with incorrect formats or WMO headings. Thus the overall availability of the test WC SIGMETs from ASIA/PAC States was about 64%.

- As a result of 3.2.1, The number of availability was lower than the previous test in November 2009
- There were still incorrect formats or WMO headings. Marked yellow lines are incorrect format
- There were wrong settings of priority in use of SIGMET test (GG, DD)

- Availability of the SIGMET test for TC since 2008 are as follows



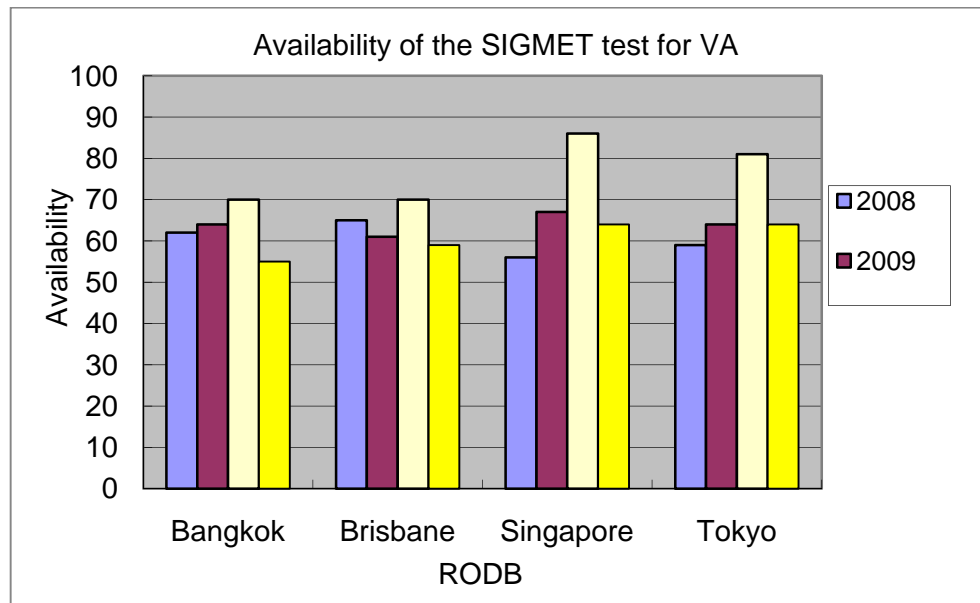
3.3 Summary of WV SIGMET test

3.3.1 The total numbers of WV SIGMET bulletins expected to be reported during the test was increased from 36 to 51. This is due to the increase of WMO SIGMET headings according to the amendment of Asia/Pac Regional SIGMET Guide in September 2010 as well as the change in the counting; in the 2010 test, the same SIGMET bulletin reported to the different FIRs were counted as such while it was treated as one bulletin in the previous years. Blue-colored lines in Appendix B are newly added bulletins.

3.3.2 48 test WV SIGMETs including duplicated bulletins were received. 11 SIGMETs were issued by MWOs in the Russian Federation. Without duplication, 32 test WV SIGMET while 51 expected were received although there were bulletins with incorrect formats or WMO headings. Thus the overall availability of the test WV SIGMETs from ASIA/PAC States was about 63%.

- As a result of 3.3.1, The number of availability was lower than the previous test in November 2009
- The participation of the following 9 Russian MWOs: UIAA, UHHH, UHMM, UHMP, UHSS, UHWW, UHMA, UELL, and UHBB, were satisfactory. RODB Tokyo relayed the Russian WV SIGMETs from GTS to the RODBs
- Not all the test VAA reached all RODBs
- There were still incorrect formats or WMO headings. Marked yellow lines are incorrect format
- There were wrong settings of priority in use of SIGMET test (GG, DD)

- Availability of the SIGMET test for VA since 2008 are as follows



4. ACTION BY THE MEETING

4.1 The meeting is invited to note the results of the SIGMET tests presented above and discuss on the future improvement of the SIGMET exchange in the region.

4.2 The meeting is also invited to discuss, if necessary, revision of the test procedure.

ASIA/PAC SIGMET TEST Summary (Reception time at RODBs)									
Name of RODB		Bangkok, Brisbane, Singapore and Tokyo							
Date of Test		11/10/2010							
Target (VA or TC)		TC							
TCA	Header			Received time(UTC)					
	TTAAii	CCCC	YYGGgg	Bangkok	Brisbane	Singapore	Tokyo		
	FKAU01	ADRM	100200	01:58	01:58	01:58:12	01:58:18		
	FKAU03	ADRM	100200	02:01	02:00	02:00:26	02:00:39		
	FKAU05	ADRM	100200	02:03	02:01	02:12:23	02:12:27		
	FKIO20	FMEE	100200	02:01	02:00	02:01:33	02:00:51		
	FKIN20	VIDP	100200	02:07	02:05	02:07:45	02:05:14		
	FKPQ30	RJTD	100200	02:01	02:00	02:00:19	02:00:10		
	FKPS01	NFFN	100000	02:06	02:04	02:04:12	01:56:34		
	FKPA21	PHFO	100200			02:03:38	02:00:28*		
	FKPZ21	KNHC	100150			01:53:36	01:51:07*		
	FKNT21	KNHC	100150			01:53:36	01:51:07*		
	FKIN21	VIDP	100800	08:06		08:05:37	08:03:09		
SIGMET	Header			Received time(UTC)					
	TTAAii	CCCC	YYGGgg	MWO	FIR/UIF	Bangkok	Brisbane	Singapore	Tokyo
	WCAU01	ADRM	100205	YBRF	YBBB	02:07	02:05	02:05:29	02:05:30 ABRF
	WCAU01	ABRF	100250	YBRF	YBBB	02:50	02:50	02:50:31	02:50:32
	WCAU01	ADRM	100159	YPDM	YBBB	02:00	01:59	01:59:39	01:59:41 YDRM
	WCAU01	APRF	100203	YPRF	YBBB	02:04	02:03	02:03:30	02:03:18
	WCAU01	APRF	100203	YPRF	YMMM	02:05	02:04	02:04:11	02:04:04
	WCKP31	ZUUU	100205	ZUUU	VDPP	02:12	02:08	02:08:13	02:08:12
	WCCI35	ZGGG	100201	ZGGG	ZGZU	02:09	02:06	02:06:24	02:06:23
	WCCI35	ZJHK	100202	ZJHK	ZJSA	02:02	02:00	02:00:36	02:00:41
	WCCI34	ZSSS	100205	ZSSS	ZSHA	02:03	02:01	02:01:53	02:01:52
	WCCI31	RCTP	100202	RCTP	RCAA	02:04	02:03	02:03:24	02:03:06
	WCCI31	RCTP	100202	RCTP	RCAA	02:37	02:37	02:37:08	02:36:52 RRA
	WCSS20	VHHH	100203	VHHH	VHHK	02:05	02:04	02:04:13	02:03:55
	WCFJ01	NFFN	100000	NFFN	NFFF	02:11	02:07	02:07:40	02:07:57 **
	WCIN31	VECC	100201	VECC	VECF			04:27:59	
	WCIN31	VECC	100801	VECC	VECF			08:25:06	08:29:43
	WCIN31	VOMM	100209	VOMM	VOMF	02:13	02:09	02:09:53	02:09:44
	WCIN31	VOMM	100802	VOMM	VOMF	08:03		08:02:46	08:02:39
	WCIN31	VIDP	100200	VIDP	VIDF	02:19	02:13	02:14:30	02:07:50
	WCIN31	VIDP	100800	VIDP	VIDF	08:15		08:16:36	08:07:43
	WCIN31	VABB	100200	VABB	VABF	01:19	01:18	01:19:10	01:19:16
	WCIN31	VABB	100800	VABB	VABF	08:02		08:01:38	08:01:46
	WCJP31	RJTD	100205	RJTD	RJJJ	02:09	02:06	02:06:16	02:06:09
	WCLA31	VLVT	100200	VLVT	VLVT	01:51	01:51	01:51:13	01:51:54
	WCMS31	WMKK	100204	WBKK	WBFC	02:09	02:06	02:06:32	02:06:24
	WCMS31	WBKK	100204	WBKK	WBFC	02:18	02:12		02:12:29
	WCMS31	WMKK	100205	WMKK	WMFC	02:12	02:08	02:08:28	02:08:31
	WSMV31	VRMM	100204	VRMM	VRMM			02:11:51	02:12:03
	WCPS21	NZKL	100205	NZKL	NZZO	02:08	02:05	02:06:00	02:06:05
	WCPH31	RPLL	100227	RPLL	RPHI	02:28	02:28	02:28:07	02:28:03
	WCSS20	WSSS	100205	WSSS	WSJC	02:08	02:05	02:05:55	02:06:00

WCTH31	VTBS	100202	VTBS	VTBB	02:07	02:05	02:05:03	02:05:06
WCTH31	VTBS	100202	VTBS	VTBB	02:11	02:07	02:07:34	02:07:47
WCTH31	VTBS	100208	VTBS	VTBB	02:13	02:09	02:09:48	02:09:48
WCTH31	VTBS	100208	VTBS	VTBB	02:18	02:12	02:12:34	02:12:40
WCTH31	VTBS	100218	VTBS	VTBB	02:23	02:20	02:20:41	02:20:50
WCTH31	VTBS	100226	VTBS	VTBB	02:28	02:27	02:27:32	02:27:37

WCPA01	PHFO	100201	PHFO	KZOA		02:01	02:03:39	02:01:28*
WCPA01	PHFO	100210	PHFO	KZOA		02:10	02:13:38	02:10:30*
WCPN01	KKCI	100200	KKCI	KZAK		01:56	01:58:22	01:56:47*
WCPN01	KKCI	100210	KKCI	KZAK		02:08	02:11:11	02:08:29*

WCVS31	VVGL	100201	VVGL	VVNB	02:04	02:03	02:03:25	02:03:17
WCVS31	VVGL	100203	VVGL	VVTS	02:06	02:04	02:04:27	02:04:16

WCSD20	OEJD	100800	OEJD	OEJD	08:04		08:03:59	08:04:07
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*indicates received from ISCS and GTS

**Many redundant linefeeds at the end of message

ASIA/PAC SIGMET TEST Summary (ROBEX Availability Index for TC)									
Availability = No of aerodromes for which one more or more non-NIL data type are received									
Index		No of aerodromes required for the bulletin							
ROBEX Availability Index (TC test)									
WMO Header	TC	ICAO	WMO Header	CCCC	FIR	VTBB	YBZZ	WSZZ	RJTD
1	WCAU01	YBRF	WCAU01	ADRM	YBBB	1	1	1	1
2	WCAU01	YBRF	WCAU01	ADRM	YMMM				
3	WCAU01	YDRM	WCAU01	ADRM	YBBB	1	1	1	1
4	WCAU01	YDRM	WCAU01	ADRM	YMMM				
5	WCAU01	YPRF	WCAU01	APRF	YBBB	1	1	1	1
6	WCAU01	YPRF	WCAU01	APRF	YMMM	1	1	1	1
7	WCBW20	VGZR							
8	WCKP31	ZUUU	WCKP31	ZUUU	VDPP	1	1	1	1
9	WCCI33	ZBAA	WCCI33	ZBAA	ZBPE				
10	WCCI35	ZGGG	WCCI35	ZGGG	ZGZU	1	1	1	1
11	WCCI35	ZJHK	WCCI35	ZJHK	ZJSA	1	1	1	1
12	WCCI34	ZSSS	WCCI34	ZSSS	ZSHA	1	1	1	1
13	WCCI31	RCTP	WCCI31	RCTP	RCAA	1	1	1	1
14	WCSS20	VHHH	WCSS20	VHHH	VHHK	1	1	1	1
15	WCKR31	ZKPY							
16	WCFJ01, ...	NFFN	WCFJ01	NFFN	NFFF	1	1	1	1
17	WCPF21	NTAA							
18	WCIN31	VECC	WCIN31	VECC	VECF			1	1
19	WCIN31	VOMM	WCIN31	VOMM	VOMF	1	1	1	1
20	WCIN31	VIDP	WCIN31	VIDP	VIDF	1	1	1	1
21	WCIN31	VABB	WCIN31	VABB	VABF	1	1	1	1
22	WCID20	WIII							
23	WCID21	WAAA							
24	WCJP31	RJTD	WCJP31	RJTD	RJJJ	1	1	1	1
25	WCLA31	VLVT	WCLA31	VLVT	VLVT	1	1	1	1
26	WCMS31	WMKK	WCMS31	WMKK	WBFC	1	1	1	1
27	WCMS31	WMKK	WCMS31	WMKK	WMFC	1	1	1	1
28	WCMV31	VRMM	WCMV31	VRMM	VRMF			1	1
29	WCBM31	VYYY							
30	WCNW20	AYPY							
31	WCNZ21	NZKL	WCNZ21	NZKL	NZZC				
32	WCPS21	NZKL	WCPS21	NZKL	NZOO	1	1	1	1
33	WCPK31	OPKC							
34	WCNG20	AYPY	WCNG01	AYPY	AYPY				
35	WCPH31	RPLL	WCPH31	RPLL	RPHI	1	1	1	1
36	WCKO31	RKSI	WCKO31	RKSI	RKRR				
37	WCSR20	WSSS	WCSR20	WSSS	WSJC	1	1	1	1
38	WCSO20	AYPY							
39	WCSB31	VCBI							
40	WCTH31	VTBS	WCTH31	VTBS	VTBB	1	1	1	1
	WCAK01-09	PAWU							
41	WCPA01-13	PHFO	WCPA01	PHFO	KZAK		1	1	1
	WCNT01-13	KKCI							
42	WCPN01-13	KKCI	WCPN01	KKCI	KZAK		1	1	1
43	WCVS31	VVGL	WCVS31	VVGL	VVNB	1	1	1	1
44	WCVS31	VVGL	WCVS31	VVGL	VVTS	1	1	1	1
Availability Index for RODBs						0.55	0.59	0.64	0.64

ASIA/PAC SIGMET TEST Summary (Reception time at RODBs)										
Name of RODB		: Bangkok, Brisbane, Singapore and Tokyo								
Date of Test		: 11/17/2010								
Target (VA or TC)		: VA								
VAA	Header				Received time(UTC)					
	TTAAii	CCCC	YYGGgg		Bangkok	Brisbane	Singapore	Tokyo		
	FVAK23	PAWU	170159				01:59:21	1:59:29*		
	FVAU01	ADRM	170201			02:01	02:01:48	02:01:53		
	FVFE01	RJTD	170200		02:00		02:00:25	02:00:09		
	FVXX02	LFPW	170202		02:07		02:02:37	02:02:41		
	FVXX25	KNES	170200				02:01:22	02:02:01		
	FVPS01	NZKL	170207		02:15		02:07:54	02:08:27		
SIGMET	Header				Received time(UTC)					
	TTAAii	CCCC	YYGGgg	MWO	FIR/UIR	Bangkok	Brisbane	Singapore	Tokyo	
	WVAU01	ADRM	170201	YPDM	YMMM	02:02	02:02	02:02:00	02:02:04	YDRM
	WVAU01	ADRM	170202	YPDM	YBBB	02:04	02:02	02:02:41	02:02:48	YDRM
	WVKP31	ZUUU	170206	ZUUU	VDPP	02:20	02:09	02:12:24	02:12:23	
	WVCI33	ZBAA	170205	ZBAA	ZBPE	02:09	02:05	02:05:33	02:05:26	
	WCCI35	ZGGG	170205	ZGGG	ZGZU	02:06	02:04	02:03:22	02:03:17	Incorrect TT in AHL
	WVCI35	ZJHK	170201	ZJHK	ZJSA	02:06	02:03	02:03:35	02:03:34	
	WVCI35	ZJHK	170201	ZJHK	ZJSA	02:09	02:05		02:05:22	
	WVCI36	ZUUU	170205	ZUUU	ZPKM	02:20	02:08	02:11:04	02:11:04	
	WVCI37	ZLXY	170205	ZLXY	ZLHW	02:13	02:09	02:07:54	02:07:44	
	WVCI34	ZSSS	170205	ZSSS	ZSHA	02:04	02:02	02:02:34	02:02:34	
	WVCI38	ZYTX	170205	ZYTX	ZYSH	02:02	02:01	02:01:44	02:01:50	
	WVCI31	RCTP	170205	RCTP	RCOA	02:08	02:05	02:05:33	02:04:58	
	WVCI39	ZWWW	170202	ZWWW	ZWQU	02:04	02:02	02:02:41	02:02:40	
	WVCI45	ZHHH	170204	ZHHH	ZHHH	02:08		02:04:57	02:04:55	ZHHH
	WVCI45	ZHHH	170204	ZHHH	ZHWH	02:16		02:08:52	02:08:52	
	WSCI45	ZHHH	170204	ZHHH	ZHHH	02:12		02:07:16	02:07:22	Incorrect TT in AHL
	WVSS20	VHHH	170202	VHHH	VHHK	02:02	02:02	02:03:13	02:03:05	
	WVFJ01	NFFN	170000	NFFN	NFFF	02:29	02:15	02:15:38	02:15:46	
	WVIN31	VOMM	170201	VOMM	VOMF	02:17	02:09	02:10:09	02:09:57	
	WVJP31	RJTD	170205	RJTD	RJJJ	02:11	02:05	02:06:25	02:06:24	
	WVLA31	VLVT	170200	VLVT	VLVT		02:01	02:00:57	02:01:03	
	WVMS31	WBKK	170204	WBKK	WBFC	02:07	02:04	02:04:41	02:04:37	WMKK
	WVMS31	WMKK	170205	WMKK	WMFC	02:07	02:04	02:04:32	02:04:28	
	WSMV31	VRMM	170200	VRMM	VRMF			02:19:25	02:19:26	Incorrect TT in AHL
	WSNZ21	NZKL	170232	NZKL	NZZC	02:33	02:32	02:32:21	02:32:23	Incorrect TT in AHL
	WSPS21	NZKL	170232	NZKL	NZZO	02:39	02:32	02:32:46	02:32:47	Incorrect TT in AHL
	WVPH31	RPLL	170210	RPLL	RPHI	02:15	02:08	02:08:47	02:08:43	
	WVSR20	WSSS	170205	WSSS	WSJC	02:09	02:05	02:05:33	02:05:38	
	WVTH31	VTBS	170211	VTBS	VTBB	02:21	02:13	02:13:44	02:13:53	
	WVTH31	VTBS	170215	VTBS	VTBB	02:22	02:16	02:16:52	02:16:58	
	WVAK01	PAWU	170200	PANC	PAZA			02:02:25	2:00:11*	PAWU
	WVPA01	PHFO	170201	PHFO	KZOA		02:02	02:04:52	2:02:09*	KZAK
	WVFN01	KKCL	170200	KKCL	KZAK		02:00	02:02:26	2:00:11*	
	WVVS31	VVGL	170200	VVGL	VVNB	02:08	02:04	02:05:33	02:05:06	
	WVVS31	VVGL	170208	VVGL	VVNB	02:21	02:14	02:14:43	02:14:38	
	WVVS31	VVGL	170200	VVGL	VVTS	02:09	02:04	02:05:33	02:05:27	
	WVVS31	VVGL	170208	VVGL	VVTS	02:22	02:14	02:15:03	02:14:58	
	WVRA31	RUCH	170205	UIAA	UIAA	02:14	02:08	02:08:04	2:08:01*	
	WVRA31	RUHB	170206	UHMH	UHMH	02:13	02:07	02:07:44	02:07:57	
	WVRA31	RUMG	170205	UHMH	UHMH				02:08:59	
	WVRA31	RUPV	170200	UHMP	UHMP				2:09:13*	

WVRA31	RUSH	170205	UHSS	UHSS	02:07	02:04	02:04:24	2:04:22*
WVRA31	RUSH	170205 CCA	UHSS	UHSS	02:21	02:13	02:13:42	2:13:40*
WVRA31	RUSH	170205 CCB	UHSS	UHSS	02:27	02:25	02:25:33	2:25:31*
WVRA31	RUVV	170202	UHWW	UHWW	02:06	02:03	02:03:15	2:03:13*
WVRA32	RUPV	170200	UHMA	UHMA				2:06:01*
WVRA32	RUYK	170207	UELL	UELL	02:13	02:07	02:07:44	2:07:28*
WVRA33	RUHB	170202	UHBB	UHBB	02:06	02:02	02:02:53	2:02:49*

*indicates received from ISCS and GTS

ASIA/PAC SIGMET TEST Summary (ROBEX Availability Index for VA)									
Availability Index = $\frac{\text{No of aerodromes for which one more or more non-NIL data type are received}}{\text{No of aerodromes required for the bulletin}}$									
ROBEX Compliance Index (VA test)									
	WMO Header VA	ICAO	WMO Header	CCCC	FIR	VTBB	YBZZ	WSZZ	RJTD
1	WVAH31	OAKB							
2	WVAU01	YDRM	WVAU01	ADRM	YBBB	1	1	1	1
3	WVAU01	YDRM	WVAU01	ADRM	YMMM	1	1	1	1
4	WVBW20	VGZR							
5	WVKP31	ZUUU	WVKP31	ZUUU	VDPP	1	1	1	1
6	WVCI33	ZBAA	WVCI33	ZBAA	ZBPE	1	1	1	1
7	WVCI35	ZGGG	WVCI35	ZGGG	ZGZU	1	1	1	1
8	WVCI35	ZJHK	WVCI35	ZJHK	ZJSA	1	1	1	1
9	WVCI36	ZUUU	WVCI36	ZUUU	ZPKM	1	1	1	1
10	WVCI37	ZLXY	WVCI37	ZLLL	ZLHW	1	1	1	1
11	WVCI34	ZSSS	WVCI34	ZSSS	ZSHA	1	1	1	1
12	WVCI38	ZYTX	WVCI38	ZYTX	ZYSH	1	1	1	1
13	WVCI31	RCTP	WVCI31	RCTP	RCOA	1	1	1	1
14	WVCI39	ZWWW	WVCI39	ZWWW	ZWUQ	1	1	1	1
15	WVCI45	ZHHH	WVCI45	ZHHH	ZHWH	1		1	1
16	WVSS20	VHHH	WVSS01	VHHH	VHHK	1	1	1	1
17	WVKR31	ZKPY							
18	WVFJ01, 02...	NFFN	WVFJ01	NFFN	NFFF	1	1	1	1
19	WVPF21	NTAA							
20	WVIN31	VECC	WVIN31	VECC	VECF				
21	WVIN31	VOMM	WVIN31	VOMM	VOMF	1	1	1	1
22	WVIN31	VIDP	WVIN31	VIDP	VIDF				
23	WVIN31	VABB	WVIN31	VABB	VABF				
24	WVID20	WIII							
25	WVID21	WAAA							
26	WVJP31	RJTD	WVJP31	RJTD	RJJJ	1	1	1	1
27	WVLA31	VLVT	WVLA31	VLVT	VLVT		1	1	1
28	WVMS31	WMKK	WVMS31	WMKK	WBFC	1	1	1	1
29	WVMS31	WMKK	WVMS31	WMKK	WMFC	1	1	1	1
30	WVMV31	VRMM	WVMV31	VRMM	VRMF			1	1
31	WVMO31	ZMUB							
32	WVBM31	VYYY							
33	WVNW20	AYPY							
34	WVNP31	VNKT							
35	WVNZ21	NZKL	WVNZ21	NZKL	NZZC	1	1	1	1
36	WVPS21	NZKL	WVPS21	NZKL	NZZO	1	1	1	1
37	WVPK31	OAKC							
38	WVPK31	OPLA							
39	WVNG20	AYPY							
40	WVPH31	RPLL	WVPH31	RPLL	RPHI	1	1	1	1
41	WVKO31	RKSI	WVKO31	RKSI	RKRR	1	1	1	1
42	WVSR20	WSSS	WVSR21	WSSS	WSJC	1	1	1	1
43	WVSO20	AYPY							
44	WVSB31	VCBI							
45	WVTH31	VTBS	WVTH31	VTBS	VTBB	1	1	1	1
46	WVAK01-09	PAWU	WVAK01	PAWU	PAZA			1	1
47	WVPA01-13	PHFO	WVPA01	PHFO	KZAK		1	1	1
48	WVNT01-13	KKCI							
49	WVPO01-13	KKCI	WVPO01	KKCI	KZAK		1	1	1
50	WVVS31	VVGL	WCVS31	VVGL	VVNB	1	1	1	1
51	WVVS31	VVGL	WCVS31	VVGL	VVTS	1	1	1	1
Availability Index for RODBs						0.53	0.57	0.63	0.63