



International Civil Aviation Organization

THE TENTH MEETING OF ASIA/PACIFIC OPMET MANAGEMENT TASK FORCE (OPMET/M TF/10)

Bangkok, Thailand, 17 – 19 April 2012

Agenda Item Conjoint: SIGMET

a) SIGMET tests (errors and follow-up)

WS SIGMET TEST 7

(Presented by Singapore)

SUMMARY

This paper analyses the data collected during WS SIGMET Test 7 carried out on 22 November 2011 and compares its result with previous tests.

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 Information on the requirements for the dissemination and exchange of SIGMET is published in the Asia/Pacific Regional SIGMET Guide (4th edition 2007, amended July 2011). This document also outlines the procedures for conducting SIGMET tests.

1.3 The ROBEX Handbook (12th edition 2004, amended April 2011) provides details on the procedures for OPMET exchange and defines the responsibilities of the ROBEX centres and the content and format of the ROBEX bulletins. It also outlines the procedures for OPMET quality control and procedures.

1.4 This paper presents an analysis of the seventh WS SIGMET test and a comparison with the previous tests that were conducted as follows:

Test Type	2006	2007	2008	2009	2009	2010	2011
WS SIGMET	9 Feb	9 Feb	29 Jan	24 Feb	24 Nov	24 Nov	22 Nov

2. PREPARATION FOR THE SEVENTH WS SIGMET TEST

2.1 ICAO APAC Office sent a State letter titled ‘T 4/7.5: AP 111/11 (MET) – Schedule for SIGMET tests in the Asia/Pacific Region – November 2011’ dated 25 August 2011, notifying the schedule and procedures for the seventh WS SIGMET test and the seventh WV and WC SIGMET tests.

2.2 The test date for WS SIGMET was set for 22 November 2011, with a start time of 0200 UTC.

3. WS SIGMET TEST DATA

3.1 All five RODBs in the Region, Bangkok, Brisbane, Tokyo, Singapore and Nadi provided summaries of the reception of the WS SIGMET tests to the focal point for the WS SIGMET Tests in the Asia/Pacific region. An overview of the data is shown in Appendix 1.

4. WS SIGMET TEST ISSUANCE

4.1 State Issuance

- A total of 18 of the possible 29 States (62%) listed in the Asia/Pacific Regional SIGMET Guide, Appendix H, participated in Test 7, by having at least one of their MWOs issue a test SIGMET. This is an increase from Test 6 when a total of 16 out of 29 States (55%) participated. A total of 11 States did not issue a WS SIGMET during the test period (see Table 1) in November 2011.
- There are 7 States (24%) that have not participated in any of the seven tests (these are given as underlined). It should be noted that Papua New Guinea has responsibility for SIGMET issuance on behalf of Nauru and the Solomon Islands.

States who did not participate in the seventh WS SIGMET test		
1. <u>Afghanistan</u>	5. <u>Mongolia</u>	9. <u>Papua New Guinea</u>
2. <u>Bangladesh</u>	6. <u>Myanmar</u>	10. <u>Solomon Islands</u>
3. <u>French Polynesia</u>	7. <u>Nauru</u>	11. <u>Sri Lanka</u>
4. <u>Lao PDR</u>	8. <u>Nepal</u>	

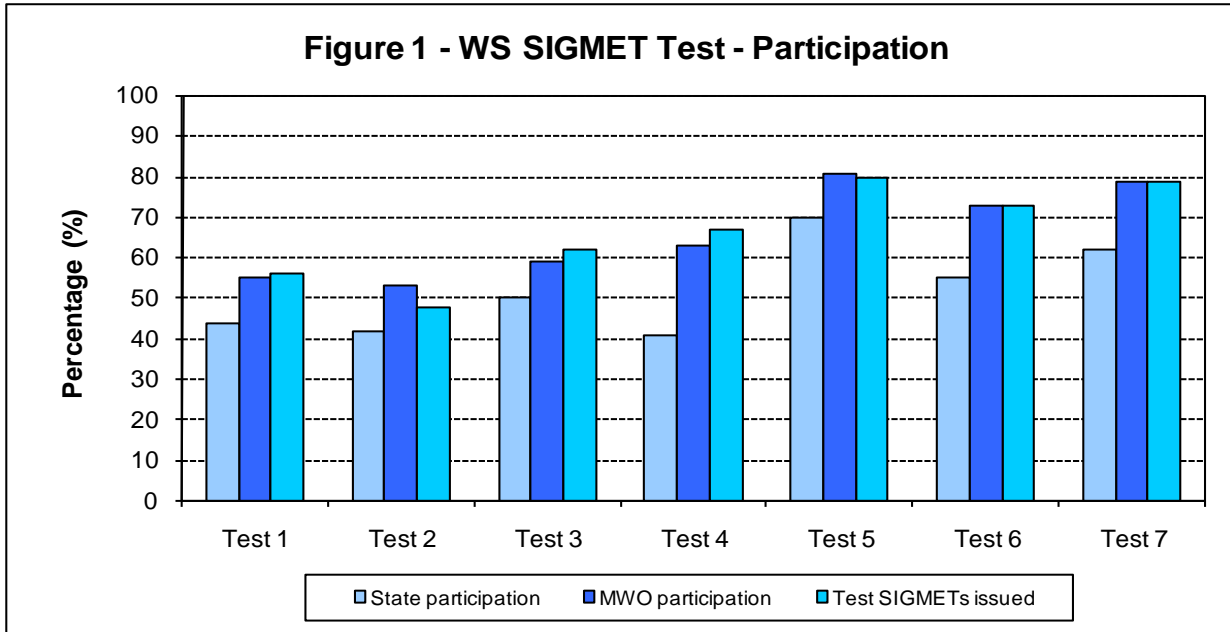
Table 1: States who did not participate in WS SIGMET Test 7.

4.2 MWO Issuance

- A total of 42 of the possible 53 MWOs (79%) listed in the Asia/Pacific Regional SIGMET Guide, Appendix H, issued a test WS SIGMET for at least one of their FIRs. This is an increase of 5 MWOs participated in the test as compared to the previous test.
- The 11 MWOs (21%) that did not participate in Test 7 are given in Table 2, with bold indicating the 7 MWOs (11%) that haven’t participated in any of the seven tests. Figure 1 highlights the changes in WS SIGMET participation over the last seven years.

MWOs who did not participate in the WS SIGMET Test 7		
1. KABUL AD	6. ULANBAATAR	9. LAHORE/Allama Iqbal Intl
2. BRISBANE/Brisbane	7. YANGON/Yangon International	10. PORT MORESBY/Intl
3. DHAKA/Zia Intl	8. KATHMANDU	11. COLOMBO/Bandaranaike Intl Airport Colombo
4. TAHITI/Faaa		
5. VIENTIANE/Wattay		

Table 2: MWOs who did not participate in WS SIGMET Test 7.



4.3 FIR Coverage

- Table 3 lists the 13 FIRs (or part thereof) not covered during WS SIGMET Test 7.
- The FIRs not covered by any of the seven WS SIGMET tests are given in bold and indicated on the map given in Appendix 2.

FIRs not covered by the WS SIGMET test		
MWO Location	FIR Name	FIR Ident
1. KABUL AD	Kabul FIR & SIR	OAKX
2. BRISBANE	Melbourne FIR	YMMM
3. DHAKA/Zia Intl	Dhaka FIR & SRR	VGFR
4. TAHITI/Faaa	Tahiti FIR & SRR	NTTT
5. VIENTIANE/Wattay	Vientiane FIR & SRR	VLVT
6. ULAN BAATAR	Ulaanbaatar FIR & SRR	ZMUB
7. YANGON/Yangon International	Yangon FIR & SRR	VYYY
8. PORT MORESBY on behalf of NAURU (ANYN)	Nauru FIR & SRR	ANAU
9. KATHMANDU	Kathmandu FIR & SRR	VNSM
10. LAHORE/Allama Iqbal Intl	Lahore FIR & SRR	OPLR
11. PORT MORESBY/Intl	Port Moresby FIR & SRR	AYPY
12. PORT MORESBY on behalf of HONIARA (AGGH)	Honiara FIR & SRR	AGGG
13. COLOMBO/Bandaranaike Intl Airport Colombo	Colombo FIR & SRR	VCBI

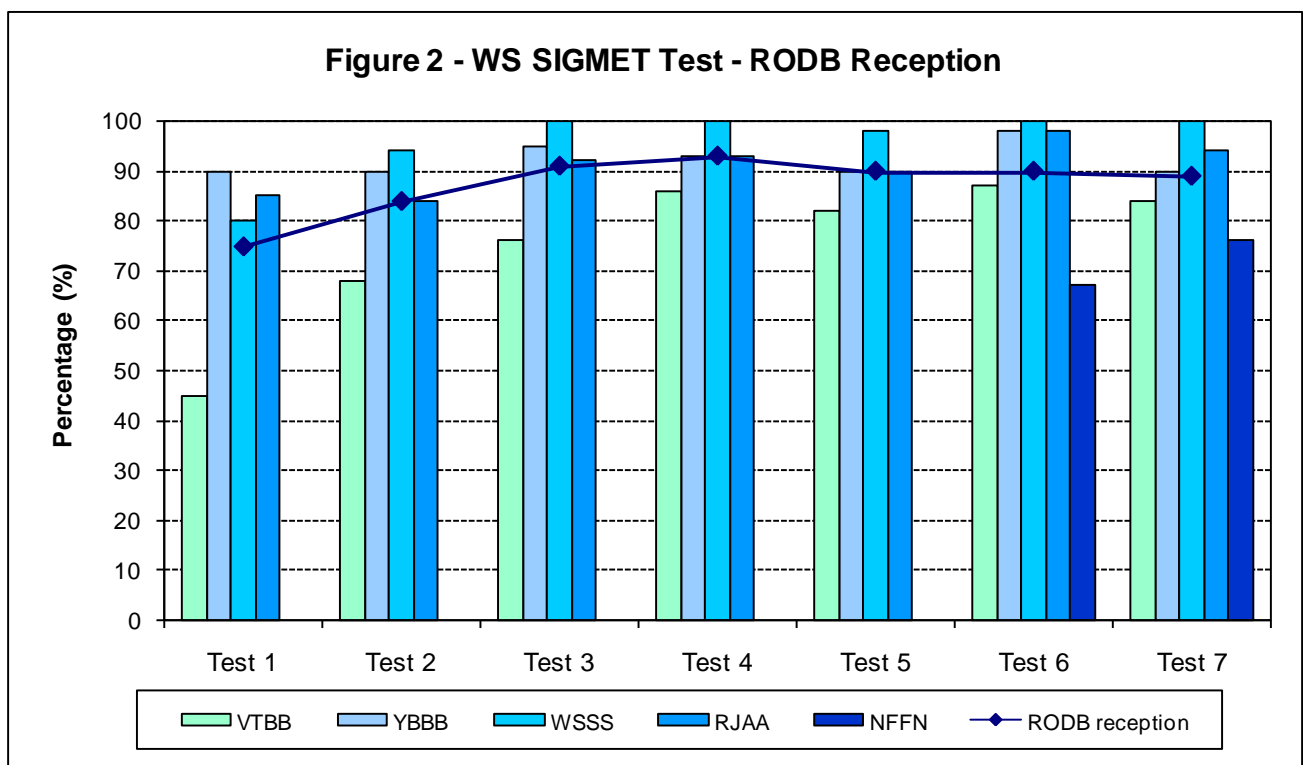
Table 3: FIRs not covered by WS SIGMET Test 7.

5. RODB RECEPTION OF WS SIGMET

5.1 Of the 50 test WS SIGMETs issued, not all reached each RODBs. All five RODBs took part in the test and a total of 223 test WS SIGMETs messages were received out of a possible 250 (89%). Therefore 11% of the SIGMETs issued were not received by RODBs (see Figure 2).

5.2 RODB Reception :

- RODB Bangkok received 42 (84%) of the 50 test WS SIGMETs issued.
- RODB Brisbane received 45 (90%),
- RODB Singapore received 50 (100%),
- RODB Tokyo received 47 (94%) and
- RODB Nadi received 39 (78%).



5.3 Table 4 outlines the MWO that are required to update their SIGMET dissemination lists to include one or more additional RODBs.

MWO Location	MWO	FIR	Add RODB
CAIRNS/Cairns Intl	YBCS	YBBB	RJTD
HOBART/Hobart	YMHF	YMMM	NFFN
URUMQI/Diwopu	ZWWW	ZWUQ	YBBN, NFFN
SUNAN	ZKKP	ZKKP	RJTD, NFFN
DELHI/Indira Ghandi Intl	VIDP	VIDF	NFFN
KOLKATA	VECC	VECF	VTBB, NFFN
UJUNG PANDANG/Hasanuddin	WAAA	WAAZ	VTBB, RJTD, NFFN
MALE/Intl	VRMM	VRMF	VTBB, YBBN, NFFN
WELLINGTON (Aviation Weather Centre)	NZKL	NZZC	VTBB, YBBN, NFFN
WELLINGTON (Aviation Weather Centre)	NZKL	NZZO	VTBB, YBBN, NFFN
ANCHORAGE/Anchorage Intl	PAWU	PAZA	VTBB, YBBN, NFFN
HONOLULU/Honolulu Intl	PHFO	KZAK	VTBB, NFFN
KANSAS CITY	KKCI	KZAK	VTBB, NFFN

Table 4: MWOs required to disseminate SIGMET to additional RODBs.

6. COMPARISON OF WS SIGMET TESTS

6.1 Comparison of the test results for all seven WS SIGMET Tests is given in Table 5 and Appendix 3.

	Test 7 (Nov 2011)	Test 6 (Nov 2010)	Test 5 (Nov 2009)	Test 4 (Feb 2009)
State participation	18 of 29 (62%)	16 of 29 (55%)	19 of 27 (70%)	12 of 29 (41%)
MWO participation	42 of 53 (79%)	37 of 51 (73%)	43 of 53 (81%)	34 of 54 (63%)
Test SIGMETs issued	50 of 63 (79%)	46 of 63 (73%)	49 of 61 (80%)	42 of 63 (67%)
RODB reception	223 of 250 (89%)	207 of 230 (90%)	176 of 196 (90%)	156 of 168 (93%)
Bangkok RODB reception	42 of 50 (84%)	40 of 46 (87%)	40 of 49 (82%)	36 of 42 (86%)
Brisbane RODB reception	45 of 50 (90%)	45 of 46 (98%)	44 of 49 (90%)	39 of 42 (93%)
Singapore RODB reception	50 of 50 (100%)	46 of 46 (100%)	48 of 49 (98%)	42 of 42 (100%)
Tokyo RODB reception	47 of 50 (94%)	45 of 46 (98%)	44 of 49 (90%)	39 of 42 (93%)
Nadi RODB reception	38 of 50 (76%)	31 of 46 (67%)	NA	NA

	Test 3 (Jan 2008)	Test 2 (Feb 2007)	Test 1 (Feb 2006)
State participation	14 of 28 (50%)	12 of 28 (42%)	13 of 29 (44%)
MWO participation	32 of 54 (59%)	30 of 57 (53%)	34 of 62 (55%)
Test SIGMETs issued	38 of 61 (62%)	31 of 64 (48%)	40 of 71 (56%)
RODB reception	138 of 152 (91%)	104 of 124 (84%)	120 of 160 (75%)
Bangkok RODB reception	29 of 38 (76%)	21 of 31 (68%)	18 of 40 (45%)
Brisbane RODB reception	36 of 38 (95%)	28 of 31 (90%)	36 of 40 (90%)
Singapore RODB reception	38 of 38 (100%)	29 of 31 (94%)	32 of 40 (80%)
Tokyo RODB reception	35 of 38 (92%)	26 of 31 (84%)	34 of 40 (85%)
Nadi RODB reception	NA	NA	NA

Table 5: Comparison of WS SIGMET tests.

7. INCORRECT WS SIGMETs

7.1 Message Headers

Discrepancies in the WMO SIGMET headings are given in Table 6.

State, MWOs (FIR)	SIGMET Guide designator	Received designator
Australia, DARWIN/Darwin (Brisbane & Melbourne FIRs)	MWO: YDRM	MWO: YPDM
State, MWOs (FIR)	SIGMET Guide WMO Header	Received WMO Header
DPR Korea, SUNAN (Pyongyang FIR & SRR)	WSKR31 ZKPY	WMO Header missing
State, MWOs (FIR)	DTG (YYGGgg)	Received DTG
Fiji, NADI/Nadi Intl (Nadi FIR & SRR)	220207	Invalid DTG : 220000 (Time received: 22/0207)

Table 6: Incorrect WS SIGMET headers during Test 7

7.2 Priorities

- The priorities of aviation weather messages are indicated by the use of DD, FF and GG, where the priority for SIGMET should be FF.
- The results for WS SIGMET Test 7 revealed that incorrect message priorities were used by many MWOs. These are given in Table 7.

MWO Location	FIR	Priority	MWO Location	FIR	Priority
ADELAIDE/Adelaide	YMMM	DD	SYDNEY/Sydney	YMMM	DD
BRISBANE/Brisbane	YBBB	DD	BEIJING/Capital	ZBPE	GG
CAIRNS/Cairns Intl	YBBB	DD	SHANGHAI/Hongqiao	ZSHA	GG
DARWIN/Darwin	YBBB	DD	JAKARTA/Soekamo-Hatta	WIIZ	GG
DARWIN/Darwin	YMMM	DD	TOKYO (CITY)	RJJJ	GG
HOBART/Hobart	YMMM	DD	SEPANG/KL International Airport	WBFC	DD
MELBOURNE/Melbourne	YBBB	DD	SEPANG/KL International Airport	WMFC	DD
MELBOURNE/Melbourne	YMMM	DD	MALE/Intl	VRMF	DD
MELBOURNE/World Met. Centre	YMMM	DD	KARACHI/Jinnah Intl	OPKE	DD
MELBOURNE/World Met. Centre	YBBB	DD	MANILA/Ninoy Aquino Intl, Pasay City, Metro Manila	RPHI	GG
PERTH/Perth	YBBB	DD	ANCHORAGE/Anchorage Intl	PAZA	DD
PERTH/Perth	YMMM	DD	HONOLULU/Honolulu Intl	KZAK	DD
SYDNEY/Sydney	YBBB	DD	KANSAS CITY	KZAK	DD

Table 7: Incorrect WS SIGMET message priorities.

7.3 Sequence Numbers

- A maximum of 3 characters is allowed for the SIGMET sequence numbers. Most of the MWOs used 'Z99' as sequence number for their WS test messages.
- None of the WS SIGMETs issued by Australia were compliant with SIGMET Guide as they all contained 4 character sequence numbers. WS SIGMETs issued by United States also had incorrect sequence numbers. These are all given in Table 8.

MWO Location	MWO	Incorrect Sequence No.
ADELAIDE/Adelaide	YPRM	AD01
BRISBANE/Brisbane	YBRF	BN01
CAIRNS/Cairns Intl	YBCS	CS01
DARWIN/Darwin	YDRM	DN01
HOBART/Hobart	YMHF	HB02
MELBOURNE/Melbourne	YMRF	ML01
MELBOURNE/World Met. Centre	YMMC	MM02
PERTH/Perth	YPRF	PH01
SYDNEY/Sydney	YSRF	SY01
ANCHORAGE/Anchorage Intl	PAWU	MIKE 1
HONOLULU/Honolulu Intl	PHFO	NOVEMBER 1
KANSAS CITY	KKCI	ALFA 1

Table 8: Incorrect WS SIGMET sequence numbers.

7.4 End of Message

- The SIGMET should end with an equals sign (=). None of the SIGMETs issued by Australia contained an equals (=) sign at the end of the message. They also contained a status line (STS) at the end of the message.
- Two SIGMETs issued by Indonesia did not contain an equals (=) sign at the end of the message too.

Sample of the messages received:

```
DD WSSSYMYX  
220202 YBRFMYX  
WSAU21 ABRF 220202  
YBBB SIGMET BN01 VALID 220201/220211 YBRF-  
YBBB BRISBANE FIR THIS IS A TEST SIGMET PLEASE DISREGARD  
STS:TEST
```

```
GG WSSSYMYX  
220204 WIIIMYX  
WSID20 WIII 220200  
M.913  
WIIZ SIGMET Z99 VALID 220205/220215 WIII-  
THIS IS A TEST SIGMET,PLEASE DISREGARD
```

7.5 Duplicates

- Messages with the same text and the same origin were considered as duplicates. MWOs sent duplicates are listed in Table 9.

MWO Location	MWO
BEIJING/Capital	ZBAA
GUANGZHOU/Baiyan	ZGGG
SHENYANG/Taoxian	ZYTX
URUMQI/Diwopu	ZWWW
INCHEON	RKSI
MUMBAI/Chhatrapati Shivaji Intl.	VABB

Table 9: MWOs sent duplicates during WS Test.

8. CONCLUSION

8.1 There was an increased in State and MWO participation and in the number of SIGMETs issues compared to the previous test.

8.2 It was very pleasing to see that Nadi RODB received more SIGMET messages in this test.

8.3 The RODB reception of the WS SIGMETs is quite good but could still be improved substantially.

9. ACTION BY THE MEETING

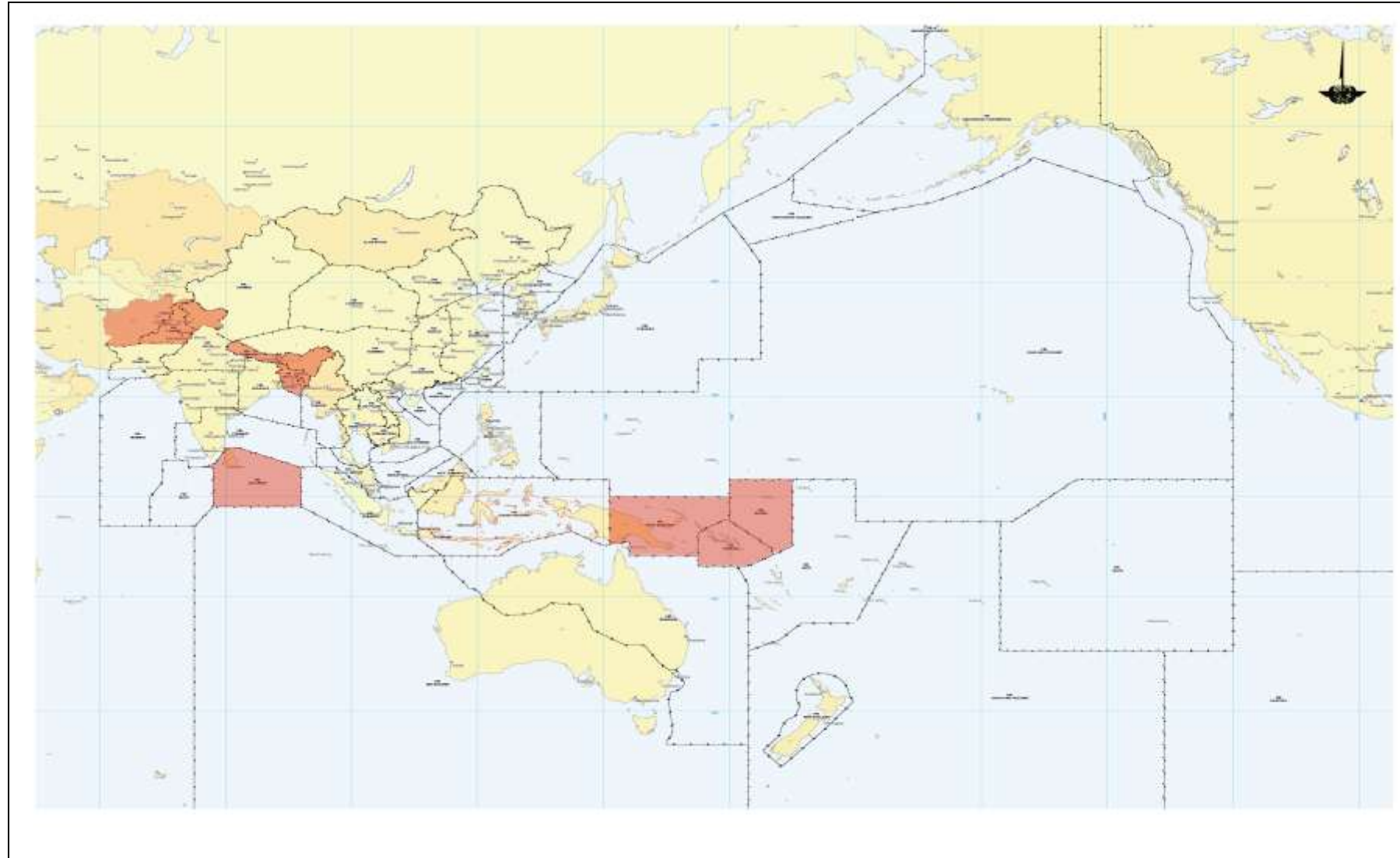
9.1 The meeting is invited to note the results of the WS SIGMET test presented above and discuss future improvement of the WS SIGMET exchange in the region, especially any strategies that could be deployed to increase the participation of States.

APPENDIX 1 – Summary of Results from ASIA/PAC WS SIGMET Test 6

State	Meteorological Watch Office (MWO)		Area Served Name	SIGMET Guide			Transmitted Header					RODB Reception					Remarks	
	Location	MWO		TTAAii	CCCC	FIR	Priority	TTAAii	CCCC	YYGGgg	MWO	FIR / UIR	VTBB	YBBN	WSSS	RJTD		NFFN
Afghanistan	KABUL AD	OAKB	Kabul FIR and SSR	WSAH31	OAKB	OAKX											Not in Asia/Pac Region	
Australia	ADELAIDE/Adelaide	YPRM	Melbourne FIR	WSAU21	APRM	YMMM	DD	WSAU21	APRM	220204	YPRM	YMMM	02:04	02:04	02:04	02:04	02:04	
	BRISBANE/Brisbane	YBRF	Brisbane FIR	WSAU21	ABRF	YBBB	DD	WSAU21	ABRF	220202	YBRF	YBBB	02:02	02:02	02:02	02:06	02:02	
	BRISBANE/Brisbane	YBRF	Melbourne FIR	WSAU21	ABRF	YMMM												
	CAIRNS/Cairns Intl	YBCS	Brisbane FIR	WSAU21	ABCS	YBBB	DD	WSAU21	ABCS	220201	YBCS	YBBB	02:02	02:01	02:02		02:02	
	DARWIN/Darwin	YDRM	Brisbane FIR	WSAU21	ADRM	YBBB	DD	WSAU21	ADRM	220240	YPDM	YBBB	02:41	02:41	02:41	02:46	02:41	
	DARWIN/Darwin	YDRM	Melbourne FIR	WSAU21	ADRM	YMMM	DD	WSAU21	ADRM	220241	YPDM	YMMM	02:44	02:44	02:44	02:44	02:44	
	HOBART/Hobart	YMHF	Melbourne FIR	WSAU21	AMHF	YMMM	DD	WSAU21	AMHF	220203	YMHF	YMMM	02:03	02:03	02:03	02:06		
	MELBOURNE/Melbourne	YMRF	Brisbane FIR	WSAU21	AMRF	YBBB	DD	WSAU21	AMRF	220251	YMRF	YBBB	02:51	02:51	02:51	02:38	02:51	
	MELBOURNE/Melbourne	YMRF	Melbourne FIR	WSAU21	AMRF	YMMM	DD	WSAU21	AMRF	220238	YMRF	YMMM	02:38	02:38	02:38	02:51	02:38	
	MELBOURNE/World Met. Centre	YMMC	Brisbane FIR	WSAU21	AMMC	YBBB	DD	WSAU21	AMMC	220200	YMMC	YBBB	02:00	02:00	02:00	02:04	02:00	
	MELBOURNE/World Met. Centre	YMMC	Melbourne FIR	WSAU21	AMMC	YMMM	DD	WSAU21	AMMC	220200	YMMC	YMMM	02:01	02:01	02:01	02:09	02:01	
	PERTH/Perth	YPRF	Brisbane FIR	WSAU21	APRF	YBBB	DD	WSAU21	APRF	220234	YPRF	YBBB	02:34	02:34	02:34	02:34	02:34	
	PERTH/Perth	YPRF	Melbourne FIR	WSAU21	APRF	YMMM	DD	WSAU21	APRF	220235	YPRF	YMMM	02:35	02:35	02:35	02:35	02:35	
	SYDNEY/Sydney	YSRF	Brisbane FIR	WSAU21	ASRF	YBBB	DD	WSAU21	ASRF	220200	YSRF	YBBB	02:00	02:00	02:00	02:00	02:00	
	SYDNEY/Sydney	YSRF	Melbourne FIR	WSAU21	ASRF	YMMM	DD	WSAU21	ASRF	220200	YSRF	YMMM	02:00	02:00	02:00	02:00	02:00	
Bangladesh	DHAKA/Zia Intl	VGHS	Dhaka FIR & SRR	WSBW20	VGHS	VGFR												
Cambodia	CHENGDU/Shuangliu for PHNOM-PENH (VDPP)	ZUUU	Phnom-Penh FIR & SRR	WSKP31	ZUUU	VDPP	FF	WSKP31	ZUUU	220200	ZUUU	VDPP	02:02	02:02	02:02	02:02	02:02	
China	BEIJING/Capital	ZBAA	Beijing FIR & SRR	WSCI33	ZBAA	ZBPE	GG	WSCI33	ZBAA	220200	ZBAA	ZBPE	02:00	02:00	02:00	02:00	02:00	
	GUANGZHOU/Baiyan	ZGGG	Guangzhou FIR & SRR	WSCI35	ZGGG	ZGZU	FF	WSCI35	ZGGG	220200	ZGGG	ZGZU	02:01	02:02	02:03	02:02	02:02	
	CHENGDU/Shuangliu	ZUUU	Kunming FIR & SRR	WSCI36	ZUUU	ZPKM	FF	WSCI36	ZUUU	220200	ZUUU	ZPKM	02:01	02:01	02:01	02:01	02:01	
	XI'AN/Xianyang	ZLXY	Lanzhou FIR and SRR	WSCI37	ZLXY	ZLHW	FF	WSCI37	ZLXY	220200	ZLXY	ZLHW	02:05	02:05	02:05	02:05	02:05	
	HAIKOU/Meilan	ZJHK	Sanya FIR & SRR	WSCI35	ZJHK	ZJSA	FF	WSCI35	ZJHK	220200	ZJHK	ZJSA	02:02	02:02	02:03	02:02	02:02	
	SHANGHAI/Hongqiao	ZSSS	Shanghai FIR & SRR	WSCI34	ZSSS	ZSHA	GG	WSCI34	ZSSS	220205	ZSSS	ZSHA	02:09	02:09	02:09	02:09	02:09	
	SHENYANG/Taoxian	ZYTX	Shenyang FIR & SRR	WSCI38	ZYTX	ZYSH	FF	WSCI38	ZYTX	220200	ZYTX	ZYSH	02:00	02:00	02:00	02:00	02:00	
	TAIBEI/Taibei Intl	RCTP	Taibei FIR & SRR	WSCI31	RCTP	RCAA	FF	WSCI31	RCTP	220200	RCTP	RCAA	02:02	02:02	02:02	02:02	02:02	
	URUMQI/Diwopu	ZWWW	Urumqi FIR & SRR	WSCI39	ZWWW	ZWUQ	FF	WSCI39	ZWWW	220200	ZWWW	ZWUQ	02:00		02:00	02:00		
	WUHAN/Tianhe	ZHHH	Wuhan FIR & SRR	WSCI45	ZHHH	ZHWH	FF	WSCI45	ZHHH	220200	ZHHH	ZHWH	02:02	02:03	02:03	02:02	02:03	
	HONG KONG/Hong Kong Intl	VHHH	Hong Kong FIR & SRR	WSSS20	VHHH	VHHK	FF	WSSS20	VHHH	220200	VHHH	VHHK	02:01	02:01	02:01	02:00	02:01	
DPR Korea	SUNAN	ZKPY	Pyongyang FIR & SRR	WSKR31	ZKPY	ZKPY	FF	?	?	?	ZKPY		02:04	02:04	02:04		WMO AHL missing	
Fiji	NADI/Nadi Intl	NFFN	Nadi FIR & SRR	WSFJ01,02..	NFFN	NFFF	FF	WSFJ01	NFFN	220000	NFFN	NFFF	02:07	02:07	02:07	02:07	02:07	incorrect DTG in the WMO AHL
French Polynesia	TAHITI/Faaa	NTAA	Tahiti FIR & SRR	WSPF21,22	NTAA	NTTT												
India	CHENNAI/Chennai	VOMM	Chennai FIR & SRR	WSIN31	VOMM	VOMF	FF	WSIN31	VOMM	220200	VOMM	VOMF	02:01	02:01	02:01	02:01	02:00	
	DELHI/Indira Ghandi Intl	VIDP	Delhi FIR & SRR	WSIN31	VIDP	VIDF	FF	WSIN31	VIDP	220200	VIDP	VIDF	02:07	02:06	02:08	02:04		
	KOLKATA	VECC	Kolkata FIR & SRR	WSIN31	VECC	VECF	FF	WSIN31	VECC	220200	VECC	VECF		02:00	02:03	02:03		
	MUMBAI/Chhatrapati Shivaji Intl.	VABB	Mumbai FIR & SRR	WSIN31	VABB	VABF	FF	WSIN31	VABB	220200	VABB	VABF	02:04	02:04	02:06	02:04	02:04	
Indonesia	JAKARTA/Soekamo-Hatta	WIII	Jakarta FIR/UIR & SRR	WSID20	WIII	WIIZ	GG	WSID20	WIII	220200	WIII	WIIZ	02:04	02:04	02:04	02:04	02:04	
	UJUNG PANDANG/Hasanuddin	WAAA	Ujung Pandang FIR/UIR & SRR	WSID21	WAAA	WAAZ	FF	WSID21	WAAA	220201	WAAA	WAAZ		02:01	02:01			
Japan	TOKYO (CITY)	RJTD	Fukuoka FIR & Tokyo SRR	WSJP31	RJTD	RJJJ	GG	WSJP31	RJTD	220205	RJTD	RJJJ	02:05	02:05	02:06	02:07	02:05	
Lao PDR	VIENTIANE/Wattay	VLVT	Vientiane FIR & SRR	WSLA31	VLVT	VLVT												
Malaysia	SEPANG/KL International Airport	WMKK	Kota Kimabalu FIR & SRR	WSMS31	WMKK	WBFC	DD	WSMS31	WMKK	220200	WMKK	WBFC	02:00	02:00	02:00	02:00	02:00	
	SEPANG/KL International Airport	WMKK	Kuala Lumpur FIR & SRR	WSMS31	WMKK	WMFC	DD	WSMS31	WMKK	220200	WMKK	WMFC	02:02	02:02	02:02	02:02	02:02	

Maldives	MALE/Intl	VRMM	Male FIR & SRR	WSMV31	VRMM	VRMF	DD	WSMV31	VRMM	220200	VRMM	VRMF			02:07	02:07	
Mongolia	ULAANBAATAR	ZMUB	Ulaanbaatar FIR & SRR	WSMO31	ZMUB	ZMUB											
Myanmar	YANGON/Yangon International	VYYY	Yangon FIR & SRR	WSBM31	VYYY	VYYY											
Nauru	PORT MORESBY on behalf of NAURU (ANYN)	AYPY	Nauru FIR & SRR	WSNW20	AYPY	ANAU											
Nepal	KATHMANDU	VNKT	Kathmandu FIR & SRR	WSNP31	VNKT	VNSM											
New Zealand	WELLINGTON (Aviation Weather Centre)	NZKL	New Zealand FIR & SRR	WSNZ21	NZKL	NZZC	FF	WSNZ21	NZKL	220200	NZKL	NZZC			02:00	02:00	
	WELLINGTON (Aviation Weather Centre)	NZKL	Auckland Oceanic FIR & SRR	WSPS21	NZKL	NZZO	FF	WSPS21	NZKL	220200	NZKL	NZZO			02:02	02:00	
Pakistan	KARACHI/Jinnah Intl	OPKC	Karachi FIR & SRR	WSPK31	OPKC	OPKR	DD	WSPK31	OPKC	220205	OPKC	OPKR	02:00	02:00	02:00	02:01	02:00
	LAHORE/Allama Iqbal Intl	OPLA	Lahore Fir & SRR	WSPK31	OPLA	OPLR											
Papua New Guinea	PORT MORESBY/Intl	AYPY	Port Moresby FIR & SRR	WSNG20	AYPY	AYPY											
Phillippines	MANILA/Ninoy Aquino Intl, Pasay City, Metro Manila	RPLL	Manila FIR & SRR	WSPH31	RPLL	RPHI	GG	WSPH31	RPLL	220200	RPLL	RPHI	02:00	02:00	02:00	02:00	02:00
Republic of Korea	INCHEON	RKSI	Incheon FIR & SRR	WSKO31	RKSI	RKRR	FF	WSKO31	RKSI	220205	RKSI	RKRR	02:05	02:05	02:05	02:05	02:05
Singapore	SINGAPORE/Changi	WSSS	Singapore FIR & SRR	WSSR20	WSSS	WSJC	FF	WSSR20	WSSS	220200	WSSS	WSJC	02:01	02:01	02:01	02:01	02:01
Solomon Islands	PORT MORESBY on behalf of HONIARA (Henderson - AGGH)	AYPY	Honiara FIR & SRR	WSSO20	AYPY	AGGG											
Sri Lanka	COLOMBO/Bandaranaike Intl Airport Colombo	VCBI	Colombo FIR & SRR	WSSB31	VCBI	VCBI											
Thailand	BANGKOK/Suvamabhumi Intl Airport	VTBS	Bangkok FIR & SRR	WSTH31	VTBS	VTBB	FF	WSTH31	VTBS	220207	VTBS	VTBB	02:13	02:13	02:13	02:13	02:13
United States	ANCHORAGE/Anchorage Intl	PAWU	Anchorage FIR	WSAK01-09	PAWU	PAZA	DD	WSAK05	PAWU	220200	PAWU	PAZA			02:02	02:04	
	HONOLULU/Honolulu Intl	PHFO	Oakland Oceanic & Honolulu SRR	WSPA01-13	PHFO	KZAK	DD	WSPA01	PHFO	220210	PHFO	KZAK		02:00	02:00	02:00	
	KANSAS CITY	KKCI	Oakland Oceanic FIR	WSPN01-13	KKCI	KZAK	DD	WSPN01	KKCI	220200	KKCI	KZAK		02:04	02:07	02:04	
Vietnam	Gia Lam	VVGL	Hanoi FIR & SRR	WSVS31	VVGL	VVNB	FF	WSVS31	VVGL	220200	VVGL	VVNB	01:57	01:57	01:58	01:57	01:57
	Gia Lam	VVGL	Ho-Chi-Minh FIR & SRR	WSVS31	VVGL	VVTS	FF	WSVS31	VVGL	220200	VVGL	VVTS	01:57	01:57	01:57	01:57	01:57

APPENDIX 2 – FIRs not covered by any of the seven WS SIGMET Tests (in pink/orange)



ASIA/PACIFIC REGIONAL SIGMET GUIDE. 4th edition (amended Sep 2010)				Bangkok				Brisbane				Singapore				Tokyo				Nadi	
				Test4	Test5	Test6	Test7	Test4	Test5	Test6	Test7	Test4	Test5	Test6	Test7	Test4	Test5	Test6	Test7	Test6	Test7
State	MWO Location	ICAO	FIR/ACC	VTBB	VTBB	VTBB	VTBB	YBBB	YBBB	YBBB	YBBB	WSSS	WSSS	WSSS	WSSS	RJAA	RJAA	RJAA	RJAA	NFFN	NFFN
Indonesia	JAKARTA/Soekarno-Hatta	WIII	WIIZ			1	1							1	1					1	1
	UJUNG PANDANG/Hasanuddin	WAAA	WAAZ											1							
Japan	TOKYO (CITY)	RJTD	RJJJ			1	1							1	1						1
Lao PDR	VIENTIANE/Wattay	VLVT	VLVT		1									1							
Malaysia	SEPANG/KL International Airport	WMKK	WBFC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	SEPANG/KL International Airport	WMKK	WMFC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maldives	MALE/Intl	VRMM	VRMF		1	1								1	1	1					1
Mongolia	ULAN BAATAR	ZMUB	ZMUB											1							
Myanmar	YANGON/Yangon International	VYYY	VYYY		1									1							
Nauru	PORT MORESBY on behalf of NAURU (ANYN)	AYPY	ANAU																		
Nepal	KATHMANDU	VNKT	VNSM																		
New Zealand	WELLINGTON (Aviation Weather Centre)	NZKL	NZZC	1	1	1		1	1	1		1	1	1	1	1	1	1	1	1	1
	WELLINGTON (Aviation Weather Centre)	NZKL	NZZO	1	1	1		1	1	1		1	1	1	1	1	1	1	1	1	1
Pakistan	KARACHI/Jinnah Intl	OPKC	OPKR								1										1
	LAHORE/Allama Iqbal Intl	OPLA	OPLR																		
Papua New Guinea	PORT MORESBY/Intl	AYPY	AYPY																		
Philippines	MANILA/Ninoy Aquino Intl, Pasay City, Metro Manila	RPLL	RPHI	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Republic of Korea	INCHEON	RKSI	RKRR	1	1			1	1			1	1			1					1
Singapore	SINGAPORE/Changi	WSSS	WSJC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Solomon Islands	PORT MORESBY on behalf of HONIARA (Henderson - AGGH)	AYPY	AGGG																		
Sri Lanka	COLOMBO/Bandaranaike Intl Airport Colombo	VCBI	VCBI																		
Thailand	BANGKOK/Suvarnabhumi Intl Airport	VTBS	VTBB	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
United States	ANCHORAGE/Anchorage Intl	PAWU	PAZA											1	1	1	1	1	1	1	1
	HONOLULU/Honolulu Intl	PHFO	KZAK					1	1	1	1	1	1	1	1	1	1	1	1	1	1
	KANSAS CITY	KKCI	KZAK					1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vietnam	Gia Lam	VVGL	VVNB	1		1	1	1				1		1	1					1	1
	Gia Lam	VVGL	VVTS	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1
No of SIGMET Received				36	40	40	42	39	44	45	45	42	48	46	50	39	44	45	47	31	38