International Civil Aviation Organization

THE ELEVENTH MEETING OF ASIA/PACIFIC ROBEX WORKING GROUP (ROBEX WG/11)

Bangkok, Thailand, 11 – 13 March 2013

Agenda Item Conjoint C2 a) SIGMET Test (Activity 3 – ROBEX WG)

REVIEW OF WS SIGMET TEST 8

(Presented by Singapore RODB)

SUMMARY

This paper analyses the data collected during WS SIGMET Test 8 carried out on 21 November 2012

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 October 2012). This document also outlines the procedures for conducting SIGMET tests. The test procedures encompass all the three types of SIGMET, as follows:

- SIGMET for volcanic ash (WV SIGMET)
- SIGMET for tropical cyclones (WC SIGMET)
- SIGMET for other weather phenomena (WS SIGMET)

2. PREPARATION FOR THE EIGHTH WS SIGMET TEST

2.1 The 10th meeting of the OPMET Management Task Force (OPMET/M TF/10), held in Bangkok in April 2012, agreed that 2012 WS SIGMET test take place on 21 November 2012 at 0200UTC.

2.2 ICAO APAC Office sent a State letter titled 'T 4/7.5: AP127/12 (MET)– Schedule for SIGMET tests in the Asia/Pacific Region – November 2012' dated 29 September 20121, notifying the schedule and procedures for the seventh WS SIGMET test and the seventh WV and WC SIGMET tests. The letter was sent to the Meteorological Authority, and to the Meteorological Service Provider where known to help promote awareness of the test.

3. WS SIGMET TEST DATA

3.1 All five RODBs in the Region, Bangkok, Brisbane, Tokyo, Singapore and Nadi and WAFC London 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 reception is shown in Appendix 1.

3.2 The Regional OPMET Centre (ROC) Vienna also provided a summary report on the reception of the WS SIGMET test messages in the EUR region. Both ROC London and Vienna had reviewed the SIGMET distribution using this monitoring result and made the SIGMET routing more efficient and streamlined.

4. WS SIGMET TEST 8 ISSUANCE (November 2012)

4.1 State and MWO Issuance

- A total of 16 of the possible 29 States listed in the Asia/Pacific SIGMET Guide participated in SIGMET Test 8.

- A total of 7 States (Afghanistan, Bangladesh, Nauru, Nepal, Papua New Guinea, Solomon Islands and Sri Lanka) have not participated in any of the SIGMET test conducted. One of the non-participating States, Papua New Guinea, has responsibility for SIGMET issuance on behalf of Nauru and the Solomon Islands.

- A total of 13 of the possible 51 MWOs did not issue a test WS SIGMET for at least one of their FIRs, 7 of these did not participate in any of the eight tests (with bold indicating in the Table 1).

1	**Afghanistan, Kabul (OAKB)**
2	Australia, Cairns (YBCS) for YBBB FIR
3	**Bangladesh, Dhaka (VGHS)**
4	French Polynesia, Tahiti (NTAA)
5	Indonesia, Jakarta (WIII)
6	Mongolia, Ulaanbaatar (ZMUB)
7	**Nauru, by Port Moresby (AYPY)**
8	**Nepal, Kathmandu (VNKT)**
9	**Papua New Guinea, Port Moresby (AYPY)**
10	Philippines, Manila (RPLL)
11	**Solomon Islands, by Port Moresby (AYPY)**
12	**Sri Lanka, Colombo (VCBI)**
13	DPR Korea, Sunan (ZKPY)

Table 1: States/MWOs did not participate in WS SIGMET Test 8

4.2 WAFC and RODB Reception

- WAFC London and Asia Pacific RODB Reception of WS SIGMET Test 8

SIGMET Test 8	WAFC London	RODB Reception	Bangkok RODB	Brisbane RODB	Singapore RODB	Tokyo RODB	Nadi RODB
Test 8	39 of 48	218	44 of 48	45 of 48	48 of 48	38 of 48	43 of 48
(Nov 2012)	81%	91%	92%	94%	100%	79%	90%

Table 2: WAFC and RODB Reception of WS SIGMET Test 8

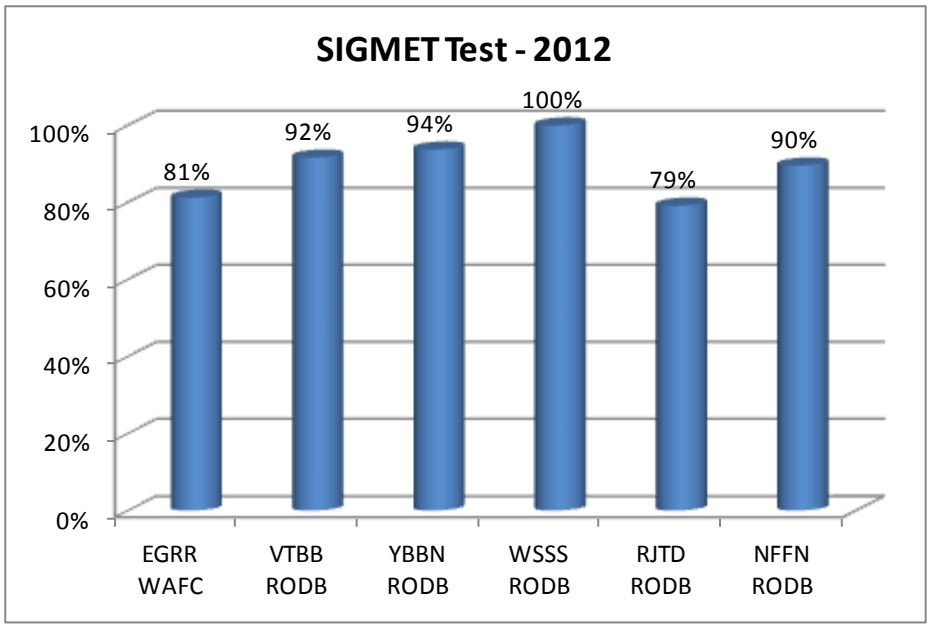


Figure 1: WAFC and RODB Reception of 2012 SIGMET Test

4.3 EUR ROCs, RODB and SADIS User Reception

4.3.1 The Regional OPMET Centre (ROC) Vienna provided a summary report on the reception of the WS SIGMET Test 8 to the focal point for the WS SIGMET Tests in the Asia/Pacific region.

4.3.2 The WS SIGMET Test result was collected from ROCs, Vienna, London and Toulouse, RODB Brussels and De Bilt (EHDB), The Netherlands as a SADIS User. An overview of the data reception is shown in Appendix 2.

4.3.3 Summary of the WS SIGMET Test results in the EUR region:

- ROC, RODB and SADIS User reception of SIGMET Test 8

SIGMET TEST	Vienna (LOWM) ROC	Toulouse (LFPW) ROC	London (EGGY) ROC	De Bilt (EHDB) SADIS User	Brussels (EBBR) RODB
TEST 8	44 of 48	38 of 48	44 of 48	42 of 48	35 of 48
(Nov 12)	92%	79%	92%	88%	73%

Table 3: EUR ROC, RODB and SADIS User Reception of WS SIGMET Test 8

- Comparison of the WS SIGMET TEST reception between WAFC, RODB and ROC

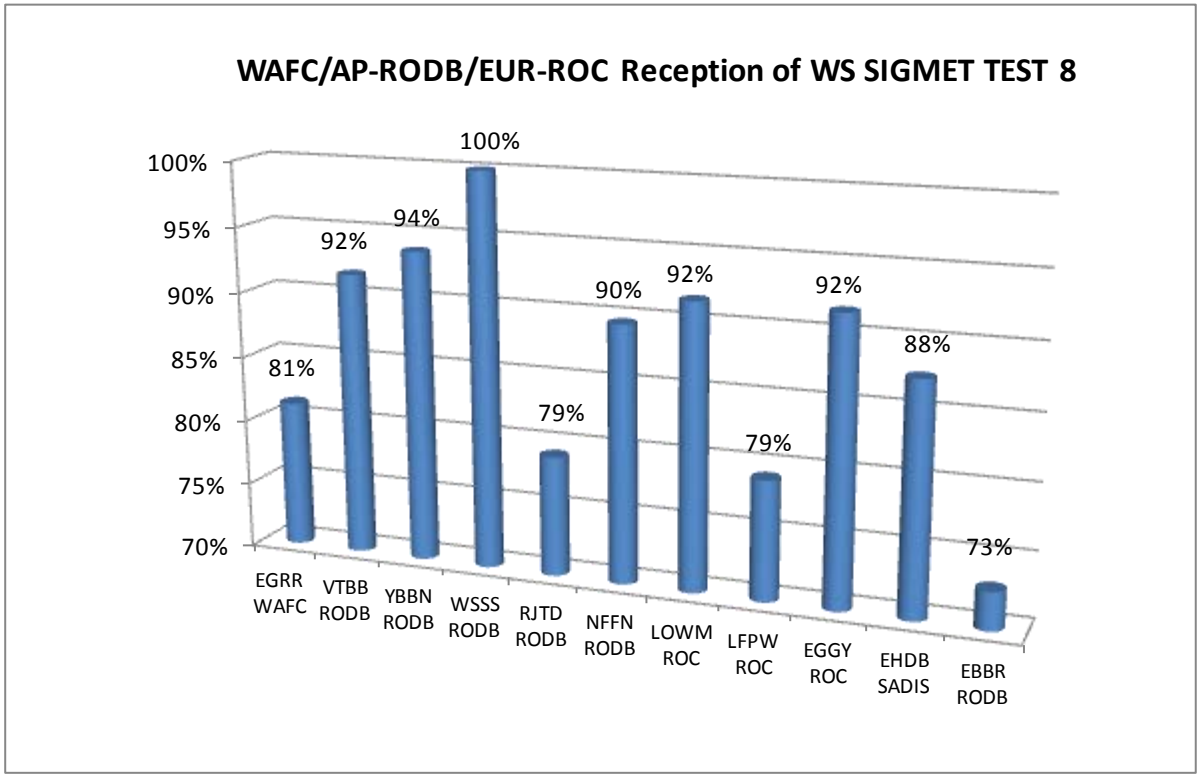


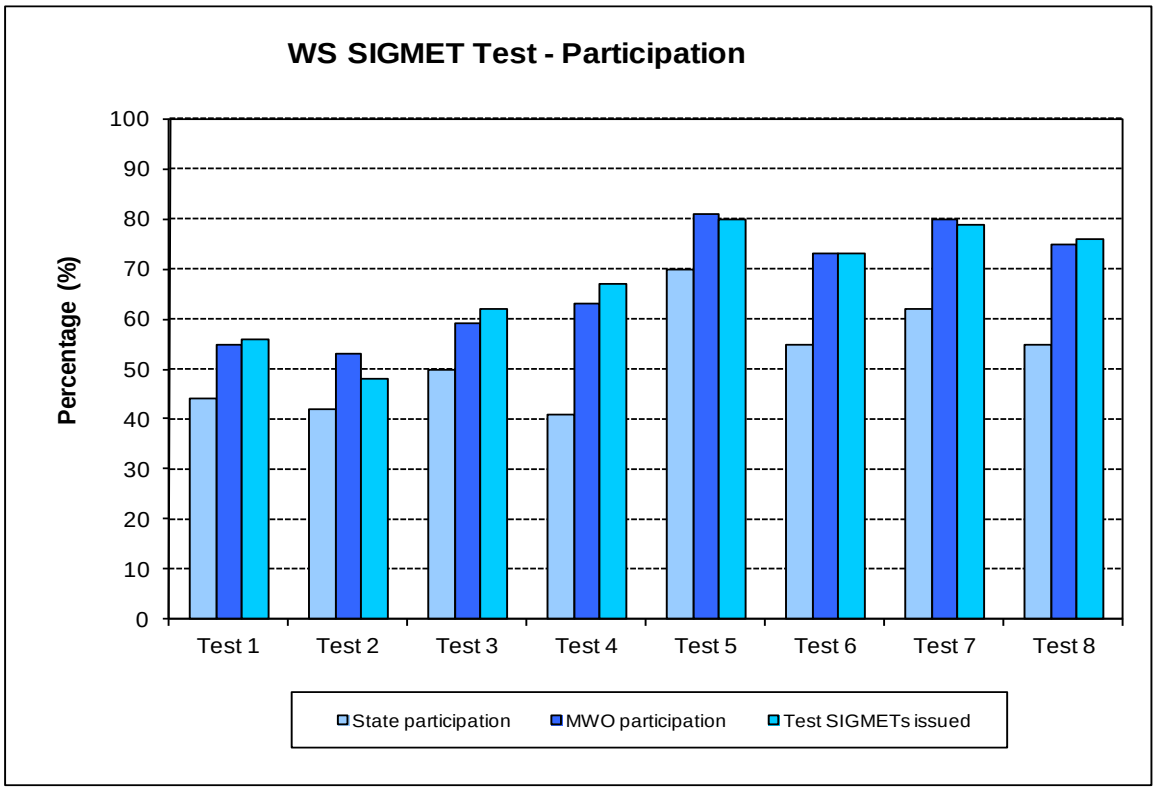
Figure 2: Comparison of WS SIGMET Test Reception

5. Participation of WS SIGMET Test 1-8

- States and MWOs

SIGMET Test 1-8		State participation	MWO participation	Test SIGMETs issued
Test 1	(Feb 2006)	44%	55%	56%
Test 2	(Feb 2007)	42%	53%	48%
Test 3	(Jan 2008)	50%	59%	62%
Test 4	(Feb 2009)	41%	63%	67%
Test 5	(Nov 2009)	70%	81%	80%
Test 6	(Nov 2010)	55%	73%	73%
Test 7	(Nov 2011)	62%	80%	79%
Test 8	(Nov 2012)	55%	75%	76%

Table 4: Participation (States & MWOs) in SIGMET Test 1-8



Figures 3: States/MWOs Participation in the WS SIGMET Test 8

- WAFC London and Asia Pacific RODB Reception of the WS SIGMET Test 1-8

SIGMET Test 1-8	WAFC London	RODB Reception	Bangkok RODB	Brisbane RODB	Singapore RODB	Tokyo RODB	Nadi RODB
Test 1 (Feb 2006)		75%	45%	90%	80%	85%	
Test 2 (Feb 2007)		84%	68%	90%	94%	84%	
Test 3 (Jan 2008)		91%	76%	95%	100%	92%	
Test 4 (Feb 2009)		93%	86%	93%	100%	93%	
Test 5 (Nov 2009)		90%	82%	90%	98%	90%	
Test 6 (Nov 2010)		90%	87%	98%	100%	98%	67%
Test 7 (Nov 2011)		89%	84%	90%	100%	94%	76%
Test 8 (Nov 2012)	81%	91%	92%	94%	100%	79%	90%

Table 5: WAFC & RODB Reception of SIGMET Test 1-8

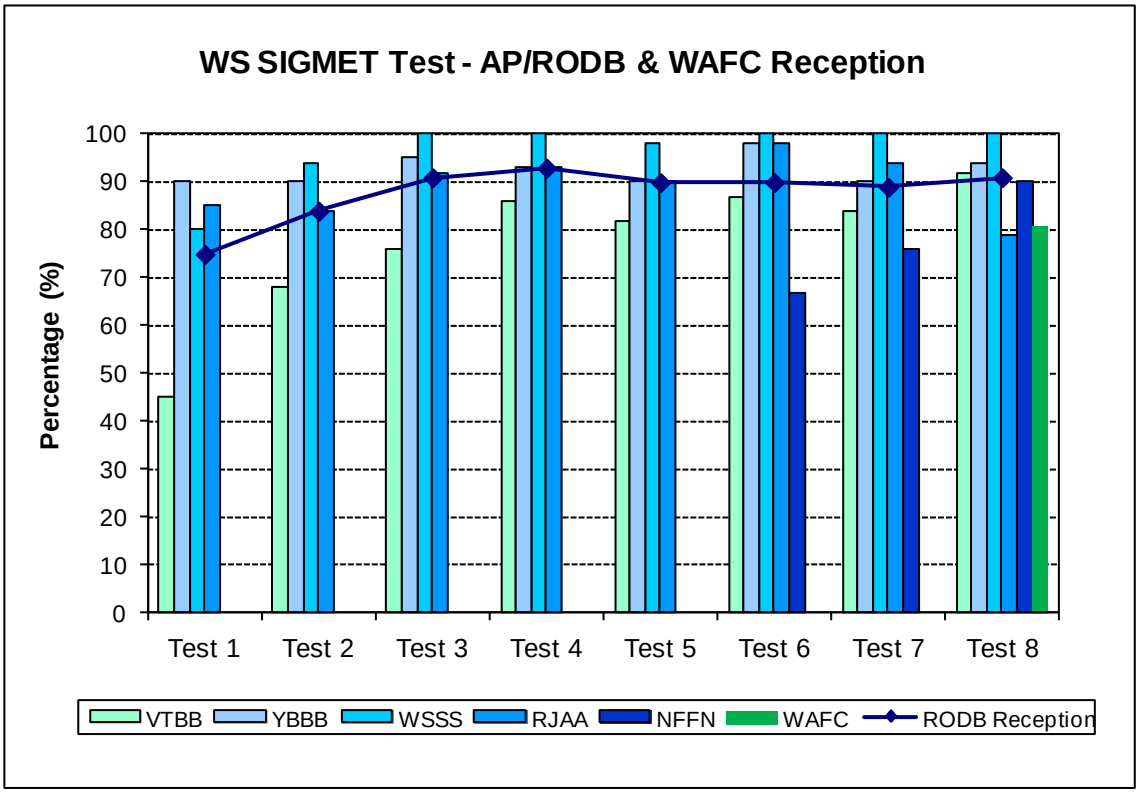


Figure 4: WAFC and RODB Reception of WS SIGMET TEST 1-8

6. FORMATTING ERRORS in WS SIGMET TEST 8

6.1 Headers

- Received one SIGMET test message with invalid DTG in the WMO Heading:

State, MWOs (FIR)	DTG (YYGGgg)	Received DTG
Fiji, NADI/Nadi Intl (Nadi FIR & SRR)	**210200**	Invalid DTG : **210000** (Time received: 22/0202) Message content: FF WSSSYMYX 210202 NFFNYMYX WSFJ03 NFFN **210000** NFFF SIGMET Z99 VALID 210200/210210 NFFN- THIS IS A TEST SIGMET, PLEASE DISREGARD=

6.2 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 8 revealed that incorrect message priorities were used by the following MWOs.

MWO Location	FIR	Priority	Message Content
LAHORE/Allama Iqbal Intl	OPLR	GG	**GG** WSSSYMYX 210201 OPLAYMYX WSPK31 OPLA 210200 OPLR SIGMET 299 VALID 210200/210210 OPLA- TEST SIGMET PLEASE DISREGARD=
SHANGHAI/Hongqiao	ZSHA	GG	**GG** WSSSYMYX 210200 ZSSSYMYX WSCI34 ZSSS 210205 ZSHA SIGMET Z99 VALID 210205/210215 ZSSS- THIS IS A TEST SIGMET,PLEASE DISREGARD=
URUMQI/Diwopu	ZWQU	GG	**GG** WSSSYMYX 210201 ZWWWYZYX WSCI39 ZWWW 210200 ZWUQ SIGEMET Z99 VALID 210200/210210 ZWWW- THIS IS A TEST SIGMET, PLEASE DISREGARD=

6.3 Sequence Numbers

- A maximum of 3 characters is allowed for the SIGMET sequence numbers. Most of MWOs used the Z99 as sequence number for their WS test messages.

- WS SIGMETs issued by MWO Perth and United States had incorrect sequence numbers.

MWO Location	MWO	Incorrect Sequence No.	Message Content
PERTH/Perth	YPRF	PH01	FF WSSSYMYX 210201 YPRFYMYX WSAU21 APRF 210201 YBBB SIGMET PH01 VALID 210201/210211 YPRF- YBBB BRISBANE FIR THIS IS A TEST SIGMET PLEASE DISREGARD STS:NEW FF WSSSYMYX 210202 YPRFYMYX WSAU21 APRF 210202 YMMM SIGMET PH01 VALID 210201/210211 YPRF- YMMM MELBOURNE FIR THIS IS A TEST SIGMET PLEASE DISREGARD STS:NEW
ANCHORAGE/Anchorage Intl	PAWU	INDIA 1	WSAK01 PAWU 210200 SIGAK1 ANCI WS 210200 PAZA SIGMET INDIA 1 VALID 210200/210210 PANC- ANCHORAGE FIR. THIS IS A TEST SIGMET. PLEASE DISREGARD=
HONOLULU/Honolulu Intl	PHFO	NOVEMBER 1	WSPA01 PHFO 210200 SIGPAN KZAK SIGMET NOVEMBER 1 VALID 210200/210215 PHFO- OAKLAND OCEANIC FIR. TEST TEST TEST. THIS IS A TEST SIGMET. PLEASE DISREGARD.
KANSAS CITY	KKCI	ALFA 1	WSPN01 KKCI 210200 SIGP0A KZAK SIGMET ALFA 1 VALID 210200/210215 KKCI- OAKLAND OCEANIC FIR. TEST TEST TEST. THIS IS A TEST SIGMET.

6.4 End of Message

- The SIGMET should end with an equals sign (=).
- Some SIGMETs issued by Australia contained an invalid characters '??' at the end of message. (Commented by London WAFC, AFTN message switch will not accept unknown character of '??')

MWO Location	MWO	Message Content
DARWIN/Darwin	YPDM	FF WSSSYMYX 210201 YPDMYMYX WSAU21 ADRM 210201 YBBB SIGMET Z99 VALID 210200/210210 YPDM- YBBB BRISBANE FIR THIS IS A TEST SIGMET PLEASE DISREGARD= STS:THIS IS A TEST SIGMET PLEASE DISREGARD FF WSSSYMYX 210201 YPDMYMYX WSAU21 ADRM 210201 YMMM SIGMET Z99 VALID 210200/210210 YPDM- YMMM MELBOURNE FIR THIS IS A TEST SIGMET PLEASE DISREGARD= STS:THIS IS A TEST SIGMET PLEASE DISREGARD
HOBART/Hobart	YMHF	FF WSSSYMYX 210200 YMHFYMYX WSAU21 AMHF 210200 YMMM SIGMET Z99 VALID 210200/210210 YMHF- YMMM MELBOURNE FIR THIS IS A TEST SIGMET PLEASE DISREGARD STS: ??
MELBOURNE/Melbourne	YMRF	FF WSSSYMYX 210159 YMRFYMYX WSAU21 AMRF 210159 YBBB SIGMET Z99 VALID 210200/210210 YMRF- YBBB BRISBANE FIR THIS IS A TEST SIGMET PLEASE DISREGARD STS:?? FF WSSSYMYX 210159 YMRFYMYX WSAU21 AMRF 210159 YMMM SIGMET Z99 VALID 210200/210210 YMRF- YMMM MELBOURNE FIR THIS IS A TEST SIGMET PLEASE DISREGARD STS: ??
PERTH/Perth	YPRF	FF WSSSYMYX 210202 YPRFYMYX WSAU21 APRF 210202 YMMM SIGMET PH01 VALID 210201/210211 YPRF- YMMM MELBOURNE FIR THIS IS A TEST SIGMET PLEASE DISREGARD STS:NEW FF WSSSYMYX 210201 YPRFYMYX WSAU21 APRF 210201 YBBB SIGMET PH01 VALID 210201/210211 YPRF- YBBB BRISBANE FIR THIS IS A TEST SIGMET PLEASE DISREGARD STS:NEW

SYDNEY/Sydney	YSRF	FF WSSSYMYX 210157 YSRFYMYX WSAU21 ASRF 210157 YMMM SIGMET Z99 VALID 210200/210210 YSRF- YMMM MELBOURNE FIR THIS IS A TEST SIGMET PLEASE DISREGARD STS:TEST FF WSSSYMYX 210157 YSRFYMYX WSAU21 ASRF 210157 YBBB SIGMET Z99 VALID 210200/210210 YSRF- YBBB BRISBANE FIR THIS IS A TEST PLEASE DISREGARD STS: THIS IS A TEST PLEASE DISREGARD
Mumbai FIR & SRR	VABF	FF WSSSYMYX 210125 VABBYMYX WSIN31 VABB 210205 VABB SIGMET Z99 VALID 210205/210215 VABB- THIS IS TEST SIGMET,PLEASE DISREGARD.
Karachi FIR & SRR	OPKR	FF WSSSYMYX 210159 OPKCYNYA WSPK31 OPKC 210200 OPKR SIGMET Z99 VALID 210200/210210 OPKC- THIS IS A TEST SIGMET, PLEASE DISREGARD.
KANSAS CITY	KKCI	WSPN01 KKCI 210200 SIGP0A KZAK SIGMET ALFA 1 VALID 210200/210215 KKCI- OAKLAND OCEANIC FIR. TEST TEST TEST. THIS IS A TEST SIGMET.
HONOLULU/Honolulu Intl	PHFO	WSPA01 PHFO 210200 SIGPAN KZAK SIGMET NOVEMBER 1 VALID 210200/210215 PHFO- OAKLAND OCEANIC FIR. TEST TEST TEST. THIS IS A TEST SIGMET. PLEASE DISREGARD.

6.5 Other formatting errors

Invalid FIR Identifier	Mumbai FIR & SRR	FF WSSSYMYX 210125 VABBYMYX WSIN31 VABB 210205 **VABB** SIGMET Z99 VALID 210205/210215 VABB- THIS IS TEST SIGMET,PLEASE DISREGARD.
Invalid Data Type (using WC for WS SIGMET Test)	Mumbai FIR & SRR	FF WSSSYMYX 210132 VABBYMYX **WC**IN31 VABB 210205 VABB SIGMET Z99 VALID 210205/210215 VABB- THIS IS TEST SIGMET,PLEASE DISREGARD.=
Invalid Data Type and WMO Heading not listed in Appendix H of SIGMET Guide		GG WSSSYMYX 210212 WBSBYMYX **WV**BD31 WBSB 210204 WBSB SIGMET Z99 VALID 210210/210220 WBSB- THIS IS A TEST SIGMET PLEASE DISREGARD=

7. CONCLUSION

7.1 The participation for State and MWO in WS SIGMET Test 8 dropped 2 to 5 percent compared to the previous test (States: 55% vs 62% ; MWOs: 75% vs 80%).

7.2 Nadi RODB's WS tests reception had increased by 14 percent compared to 2011 result. (2011: 76% ; 2012: 90%).

7.3 The WS SIGMET Test result from WAFC London was compiled based on reception at Secured SADIS FTP. Its result is quite good but could still improve substantially (WAFC: 81%; RODB average: 91%).

7.4 ROC London and Vienna have been providing great support to Singapore RODB in term of OPMET exchange in both regions. It is an excellent effort for ROC Vienna to provide a very comprehensive and well laid summary report on the WS SIGMET tests. It is very pleasing to see high rate of reception at the EUR ROCs. (ROC averages: 88% ; RODB average: 91%)

8. ACTION BY THE MEETING

8.1 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.

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APPENDIX 1 – Summary of WS SIGMET Test Results received from WAFC London and RODBs

State	Meteorological Watch Office (MWO)		Area Served	SIGMET Guide			Transmitted Header						WAFC	RODB Reception					
	Location	MWO	Name	TTAAii	CCCC	FIR	Priority	TTAAii	CCCC	YYGGgg	MWO	FIR / UIR	EGRR	VTBB	YBBN	WSSS	RJTD	NFFN	Remarks
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	FF	WSAU21	APRM	210202	YPRM	YMMM	√	02:03	02:04	02:02	02:02	02:02	
	BRISBANE/Brisbane	YBRF	Brisbane FIR	WSAU21	ABRF	YBBB	FF	WSAU21	ABRF	210204	YBRF	YBBB	√	02:05	02:06	02:04	02:04	02:04	
	BRISBANE/Brisbane	YBRF	Melbourne FIR	WSAU21	ABRF	YMMM	FF	WSAU21	ABRF	210205	YBRF	YMMM	√	02:06	02:08	02:05	02:05	02:05	
	CAIRNS/Cairns Intl	YBCS	Brisbane FIR	WSAU21	ABCS	YBBB													
	DARWIN/Darw in	YPDM	Brisbane FIR	WSAU21	ADRM	YBBB	FF	WSAU21	ADRM	210201	YPDM	YBBB	√	02:02	02:04	02:01	02:01	02:01	
	DARWIN/Darw in	YPDM	Melbourne FIR	WSAU21	ADRM	YMMM	FF	WSAU21	ADRM	210201	YPDM	YMMM		02:02	02:02	02:02	02:02	02:01	
	HOBART/Hobart	YMHF	Melbourne FIR	WSAU21	AMHF	YMMM	FF	WSAU21	AMHF	210200	YMHF	YMMM	√	02:01	02:01	02:00	02:00	02:00	
	MELBOURNE/Melbourne	YMRF	Brisbane FIR	WSAU21	AMRF	YBBB	FF	WSAU21	AMRF	210159	YMRF	YBBB		02:00		01:59		01:59	
	MELBOURNE/Melbourne	YMRF	Melbourne FIR	WSAU21	AMRF	YMMM	FF	WSAU21	AMRF	210159	YMRF	YMMM	√	02:00	02:00	01:59		01:59	
	MELBOURNE/World Met. Centre	YMMC	Brisbane FIR	WSAU21	AMMC	YBBB	FF	WSAU21	AMMC	210201	YMMC	YBBB	√	02:04	02:05	02:03	02:03	02:03	
	MELBOURNE/World Met. Centre	YMMC	Melbourne FIR	WSAU21	AMMC	YMMM	FF	WSAU21	AMMC	210204	YMMC	YMMM	√	02:08	02:07	02:07	02:08	02:07	
	PERTH/Perth	YPRF	Brisbane FIR	WSAU21	APRF	YBBB	FF	WSAU21	APRF	210201	YPRF	YBBB	√	02:02	02:03	02:01	02:01	02:01	
	PERTH/Perth	YPRF	Melbourne FIR	WSAU21	APRF	YMMM	FF	WSAU21	APRF	210202	YPRF	YMMM		02:03	02:03	02:02	02:02	02:02	
	SYDNEY/Sydney	YSRF	Brisbane FIR	WSAU21	ASRF	YBBB	FF	WSAU21	ASRF	210157	YSRF	YBBB	√	01:58	01:59	01:57		01:57	
	SYDNEY/Sydney	YSRF	Melbourne FIR	WSAU21	ASRF	YMMM	FF	WSAU21	ASRF	210157	YSRF	YMMM	√	01:58	01:59	01:57		01:57	
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	210205	ZUUU	VDPP	√	02:05	02:08	02:05	02:05	02:05	
China	BEIJING/Capital	ZBAA	Beijing FIR & SRR	WSCI33	ZBAA	ZBPE	FF	WSCI33	ZBAA	210205	ZBAA	ZBPE	√	02:02	02:02	02:01	02:01	01:59	
	GUANGZHOU/Baiyan	ZGGG	Guangzhou FIR & SRR	WSCI35	ZGGG	ZGZU	FF	WSCI35	ZGGG	210205	ZGGG	ZGZU	√	02:05	02:13	02:03	02:04	02:02	
	CHENGDU/Shuangliu	ZUUU	Kunming FIR & SRR	WSCI36	ZUUU	ZPKM	FF	WSCI36	ZUUU	210200	ZUUU	ZPKM	√	02:01	02:01	02:00	02:00	02:01	
	XI'AN/Xianyang	ZLXY	Lanzhou FIR and SRR	WSCI37	ZLXY	ZLHW	FF	WSCI37	ZLXY	210200	ZLXY	ZLHW	√	02:08	02:04	02:07	02:08	02:01	
	HAIKOU/Meilan	ZJHK	Sanya FIR & SRR	WSCI35	ZJHK	ZJSA	FF	WSCI35	ZJHK	210205	ZJHK	ZJSA	√	02:09	02:12	02:07	02:08	02:08	
	SHANGHAI/Hongqiao	ZSSS	Shanghai FIR & SRR	WSCI34	ZSSS	ZSHA	GG	WSCI34	ZSSS	210205	ZSSS	ZSHA	√	02:01	02:02	02:00	02:00	02:00	
	SHENYANG/Taoxian	ZYTX	Shenyang FIR & SRR	WSCI38	ZYTX	ZYSH	FF	WSCI38	ZYTX	210205	ZYTX	ZYSH	√	02:13	02:09	02:13	02:06	02:13	
	TAIBEI/Taibei Intl	RCTP	Taibei FIR & SRR	WSCI31	RCTP	RCAA	FF	WSCI31	RCTP	210205	RCTP	RCAA	√	02:06	02:07	02:05	02:05		
	URUMQI/Diw opu	ZWWW	Urumqi FIR & SRR	WSCI39	ZWWW	ZWUQ	GG	WSCI39	ZWWW	210200	ZWWW	ZWUQ		02:01	02:34	02:00	02:10	02:00	
	WUHAN/Tianhe	ZHHH	Wuhan FIR & SRR	WSCI45	ZHHH	ZHWH	FF	WSCI45	ZHHH	210200	ZHHH	ZHWH	√	02:02	02:33	02:02	02:02	02:12	
	HONG KONG/Hong Kong Intl	VHHH	Hong Kong FIR & SRR	WSSS20	VHHH	VHHK	FF	WSSS20	VHHH	210200	VHHH	VHHK	√	02:01	02:02	02:01	02:00	02:00	
DPR Korea	SUNAN	ZKPY	Pyongyang FIR & SRR	WSKR31	ZKPY	ZKKP													
Fiji	NADI/Nadi Intl	NFFN	Nadi FIR & SRR	WSFJ01,02..	NFFN	NFFF	FF	WSFJ03	NFFN	210000	NFFN	NFFF	√	02:03	02:04	02:02	02:02	02:02	incorrect DTG in 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	210205	VOMM	VOMF	√	02:06	02:07	02:06	02:06	02:06	
	DELHI/Indira Ghandi Intl	VIDP	Delhi FIR & SRR	WSIN31	VIDP	VIDF	FF	WSIN31	VIDP	210205	VIDP	VIDF		05:25	05:26	05:24	05:24	05:24	
	KOLKATA	VECC	Kolkata FIR & SRR	WSIN31	VECC	VECF	FF	WSIN31	VECC	210200	VECC	VECF	√	02:01	02:02	02:00	02:01	02:01	
	MUMBAI/Chhatrapati Shivaji Intl.	VABB	Mumbai FIR & SRR	WSIN31	VABB	VABF	FF	WSIN31	VABB	210205	VABB	VABB		01:28	01:29	01:28	02:03	01:27	
Indonesia	JAKARTA/Soekamo-Hatta	WIII	Jakarta FIR/UIR & SRR	WSID20	WIII	WIIF													
	UJUNG PANDANG/Hasanuddin	WAAA	Ujung Pandang FIR/UIR & SRR	WSID21	WAAA	WAAF	FF	WSID21	WAAA	210205	WAAA	WAAF			02:09	02:07			
Japan	TOKYO (CITY)	RJTD	Fukuoka FIR & Tokyo SRR	WSJP31	RJTD	RJJJ	FF	WSJP31	RJTD	210205	RJTD	RJJJ	√	02:06	02:06	02:05	02:05	02:05	
Lao PDR	VIENTIANE/Wattay	VLVT	Vientiane FIR & SRR	WSLA31	VLVT	VLVT	FF	WSLA31	VLVT	210205	VLVT	VLVT		01:57	01:57	01:56		01:56	
Malaysia	SEPANG/KL International Airport	WMKK	Kota Kimabalu FIR & SRR	WSMS31	WMKK	WBFC	FF	WSMS31	WMKK	210157	WMKK	WBFC	√	01:58	01:59	01:57	02:40	01:57	RJTD received AHL as WSMS31 WMKK 210240
	SEPANG/KL International Airport	WMKK	Kuala Lumpur FIR & SRR	WSMS31	WMKK	WMFC	FF	WSMS31	WMKK	210200	WMKK	WMFC	√	02:02	02:02	02:01	02:01	02:01	
Maldives	MALE/Intl	VRMM	Male FIR & SRR	WSMV31	VRMM	VRMF													
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	NZZC	210200	NZKL	NZZC	√	02:01	02:01	02:00	02:00	02:00	
	WELLINGTON (Aviation Weather Centre)	NZKL	Auckland Oceanic FIR & SRR	WSPS21	NZKL	NZZO	FF	WSPS21	NZKL	210200	NZKL	NZZO	√	02:01	02:02	02:00	02:00	02:00	
Pakistan	KARACHI/Jinnah Intl	OPKC	Karachi FIR & SRR	WSPK31	OPKC	OPKR	FF	WSPK31	OPKC	210200	OPKC	OPKR	√	01:56	01:56	01:59		01:55	
	LAHORE/Allama Iqbal Intl	OPLA	Lahore Fir & SRR	WSPK31	OPLA	OPLR	GG	WSPK31	OPLA	210201	OPLA	OPLR	√	02:02	02:03	02:01	02:01	02:01	
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													
Republic of Korea	INCHEON	RKSI	Incheon FIR & SRR	WSKO31	RKSI	RKRR	FF	WSKO31	RKSI	210200	RSKI	RKRR	√	02:01	02:02	02:00	02:00	02:00	
Singapore	SINGAPORE/Changi	WSSS	Singapore FIR & SRR	WSSR20	WSSS	WSJC	FF	WSSR20	WSSS	210200	WSSS	WSJC	√	02:01	02:02	02:00	02:00	02:00	
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	210200	VTBS	VTBB	√	02:01	02:02	02:01	02:01	02:01	
United States	ANCHORAGE/Anchorage Intl	PAWU	Anchorage FIR	WSAK01-09	PAWU	PAZA	DD	WSAK01	PAWU	210200	PAWU	PAZA				02:04			
	HONOLULU/Honolulu Intl	PHFO	Oakland Oceanic & Honolulu SRR	WSPA01-13	PHFO	KZAK	DD	WSPA01	PHFO	210200	PHFO	KZAK	√		02:01	02:04			
	KANSAS CITY	KKCI	Oakland Oceanic FIR	WSPN01-13	KKCI	KZAK	DD	WSPN01	KKCI	210200	KKCI	KZAK	√		02:02	02:04			
Vietnam	Gia Lam	VVGL	Hanoi FIR & SRR	WSVS31	VVGL	VVNB	FF	WSVS31	VVGL	210200	VVGL	VVNB	√	02:02	02:03	02:01	02:01	02:01	
	Gia Lam	VVGL	Ho-Chi-Minh FIR & SRR	WSVS31	VVGL	VVTS	FF	WSVS31	VVGL	210200	VVGL	VVTS	√	02:05		02:04	02:01	02:04	

APPENDIX 2 – Summary of WS SIGMET Results received from EUR ROC, RODB and SADIS User

State	Meteorological Watch Office (MWO)		Area Served	SIGMET Guide			Transmitted Header						WAFC	RODB Reception					EUR ROC, RODB & SADIS Reception					Remarks
	Location	MWO	Name	TTAAii	CCCC	FIR	Priority	TTAAii	CCCC	YYGGgg	MWO	FIR / UIR	EGRR	VTBB	YBBN	WSSS	RJTD	NFFN	LOWM	LFPW	EGGY	EHDB	EBBR	
Afghanistan	KABUL AD	OAKB	Kabul FIR and SSR	WSAH31	OAKB	OAKX																		
Australia	ADELAIDE/Adelaide	YPRM	Melbourne FIR	WSAU21	APRM	YMMM	FF	WSAU21	APRM	210202	YPRM	YMMM	√	02:03	02:04	02:02	02:02	02:02	02:04	02:02	02:02	02:02	02:02	
	BRISBANE/Brisbane	YBRF	Brisbane FIR	WSAU21	ABRF	YBBB	FF	WSAU21	ABRF	210204	YBRF	YBBB	√	02:05	02:06	02:04	02:04	02:04	02:05	02:04	02:04	02:04	02:04	
	BRISBANE/Brisbane	YBRF	Melbourne FIR	WSAU21	ABRF	YMMM	FF	WSAU21	ABRF	210205	YBRF	YMMM	√	02:06	02:08	02:05	02:05	02:05	02:06	02:05	02:05	02:05	02:05	
	CAIRNS/Cairns Intl	YBCS	Brisbane FIR	WSAU21	ABCS	YBBB																		
	DARWIN/Darw in	YPDM	Brisbane FIR	WSAU21	ADRM	YBBB	FF	WSAU21	ADRM	210201	YPDM	YBBB	√	02:02	02:04	02:01	02:01	02:01	02:02	02:01	02:01	02:02	02:01	
	DARWIN/Darw in	YPDM	Melbourne FIR	WSAU21	ADRM	YMMM	FF	WSAU21	ADRM	210201	YPDM	YMMM		02:02	02:02	02:02	02:02	02:01	02:03	02:02	02:02	02:02	02:02	
	HOBART/Hobart	YMHF	Melbourne FIR	WSAU21	AMHF	YMMM	FF	WSAU21	AMHF	210200	YMHF	YMMM	√	02:01	02:01	02:00	02:00	02:00	02:02	00:56	02:00	02:02	02:01	
	MELBOURNE/Melbourne	YMRF	Brisbane FIR	WSAU21	AMRF	YBBB	FF	WSAU21	AMRF	210159	YMRF	YBBB		02:00		01:59		01:59	02:00	02:00	01:59	01:36	01:59	
	MELBOURNE/Melbourne	YMRF	Melbourne FIR	WSAU21	AMRF	YMMM	FF	WSAU21	AMRF	210159	YMRF	YMMM	√	02:00	02:00	01:59		01:59	02:00		01:59	01:59	01:59	
	MELBOURNE/World Met. Centre	YMMC	Brisbane FIR	WSAU21	AMMC	YBBB	FF	WSAU21	AMMC	210201	YMMC	YBBB	√	02:04	02:05	02:03	02:03	02:03	02:04	02:03	02:03	02:03	02:03	
	MELBOURNE/World Met. Centre	YMMC	Melbourne FIR	WSAU21	AMMC	YMMM	FF	WSAU21	AMMC	210204	YMMC	YMMM	√	02:08	2:10	02:07	02:08	02:07	02:08		02:03	02:07	02:07	
	PERTH/Perth	YPRF	Brisbane FIR	WSAU21	APRF	YBBB	FF	WSAU21	APRF	210201	YPRF	YBBB	√	02:02	02:03	02:01	02:01	02:01	02:03		02:01	02:02	02:02	
	PERTH/Perth	YPRF	Melbourne FIR	WSAU21	APRF	YMMM	FF	WSAU21	APRF	210202	YPRF	YMMM		02:03	02:03	02:02	02:02	02:02	02:03	13:58	02:01	02:02	02:02	
	SYDNEY/Sydney	YSRF	Brisbane FIR	WSAU21	ASRF	YBBB	FF	WSAU21	ASRF	210157	YSRF	YBBB	√	01:58	01:59	01:57		01:57	01:58	01:57	01:57	01:57	01:57	
	SYDNEY/Sydney	YSRF	Melbourne FIR	WSAU21	ASRF	YMMM	FF	WSAU21	ASRF	210157	YSRF	YMMM	√	01:58	01:59	01:57		01:57	01:58	01:57	01:57	01:57	01:57	
Bangladesh	DHAKA/Zia Intl	VGHS	Dhaka FIR & SRR	WSBW20	VGHS	VGFR																		EUR users recieved actual SIGMET at 03:04/ 03:05
Cambodia	CHENGDU/Shuangliu for PHNOM-PENH (VDPP)	ZUUU	Phnom-Penh FIR & SRR	WSKP31	ZUUU	VDPP	FF	WSKP31	ZUUU	210205	ZUUU	VDPP	√	02:05	02:08	02:05	02:05	02:05	02:06	02:05	02:05	02:05		
China	BEIJING/Capital	ZBAA	Beijing FIR & SRR	WSCI33	ZBAA	ZBPE	FF	WSCI33	ZBAA	210205	ZBAA	ZBPE	√	02:02	02:02	02:01	02:01	01:59	02:02	02:01	02:01	02:01	02:01	
	GUANGZHOU/Baiyan	ZGGG	Guangzhou FIR & SRR	WSCI35	ZGGG	ZGZU	FF	WSCI35	ZGGG	210205	ZGGG	ZGZU	√	02:05	02:13	02:03	02:04	02:02	02:04	02:03	02:03	02:03	02:03	
	CHENGDU/Shuangliu	ZUUU	Kunming FIR & SRR	WSCI36	ZUUU	ZPKM	FF	WSCI36	ZUUU	210200	ZUUU	ZPKM	√	02:01	02:01	02:00	02:00	02:01	02:01	02:00	02:00	02:00	02:00	
	XI'AN/Xianyang	ZLXY	Lanzhou FIR and SRR	WSCI37	ZLXY	ZLHW	FF	WSCI37	ZLXY	210200	ZLXY	ZLHW	√	02:08	02:04	02:07	02:08	02:01	02:04	02:03	02:04	02:03	02:03	
	HAIKOU/Meilan	ZJHK	Sanya FIR & SRR	WSCI35	ZJHK	ZJSA	FF	WSCI35	ZJHK	210205	ZJHK	ZJSA	√	02:09	02:12	02:07	02:08	02:08	02:09	02:08	02:08	02:08	02:08	
	SHANGHAI/Hongqiao	ZSSS	Shanghai FIR & SRR	WSCI34	ZSSS	ZSHA	GG	WSCI34	ZSSS	210205	ZSSS	ZSHA	√	02:01	02:02	02:00	02:00	02:00	02:02		02:00	02:01	02:00	
	SHENYANG/Taoxian	ZYTX	Shenyang FIR & SRR	WSCI38	ZYTX	ZYSH	FF	WSCI38	ZYTX	210205	ZYTX	ZYSH	√	02:13	02:09	02:13	02:06	02:13	02:07	02:06	02:10	02:06	02:06	
	TAIBEI/Taibei Intl	RCTP	Taibei FIR & SRR	WSCI31	RCTP	RCAA	FF	WSCI31	RCTP	210205	RCTP	RCAA	√	02:06	02:07	02:05	02:05		02:06	02:05	02:05	02:05	02:05	
	URUMQI/Diw opu	ZWWW	Urumqi FIR & SRR	WSCI39	ZWWW	ZWUQ	GG	WSCI39	ZWWW	210200	ZWWW	ZWUQ		02:01	02:34	02:00	02:10	02:00		02:02	02:00			
	WUHAN/Tianhe	ZHHH	Wuhan FIR & SRR	WSCI45	ZHHH	ZHWH	FF	WSCI45	ZHHH	210200	ZHHH	ZHWH	√	02:02	02:33	02:02	02:02	02:12	02:03		02:02	02:02	02:02	
	HONG KONG/Hong Kong Intl	VHHH	Hong Kong FIR & SRR	WSSS20	VHHH	VHHK	FF	WSSS20	VHHH	210200	VHHH	VHHK	√	02:01	02:02	02:01	02:00	02:00	02:02	02:01	02:01	02:00	02:00	
DPR Korea	SUNAN	ZKPY	Pyongyang FIR & SRR	WSKR31	ZKPY	ZKKP																		
Fiji	NADI/Nadi Intl	NFFN	Nadi FIR & SRR	WSFJ01,02..	NFFN	NFFF	FF	WSFJ03	NFFN	210000	NFFN	NFFF	√	02:03	02:04	02:02	02:02	02:02	02:03		02:02	02:02	02:02	incorrect DTG in 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	210205	VOMM	VOMF	√	02:06	02:07	02:06	02:06	02:06	02:07	02:06	02:06	02:06	02:06	
	DELHI/Indira Ghandi Intl	VIDP	Delhi FIR & SRR	WSIN31	VIDP	VIDF	FF	WSIN31	VIDP	210205	VIDP	VIDF		05:25	05:26	05:24	05:24	05:24		01:44	05:17			
	KOLKATA	VECC	Kolkata FIR & SRR	WSIN31	VECC	VECF	FF	WSIN31	VECC	210200	VECC	VECF	√	02:01	02:02	02:00	02:01	02:01	02:02	02:01	02:00	02:01	02:00	
	MUMBAI/Chhatrapati Shivaji Intl.	VABB	Mumbai FIR & SRR	WSIN31	VABB	VABF	FF	WSIN31	VABB	210205	VABB	VABB		01:28	01:29	01:28	02:03	01:27	01:28	01:44	01:28			
Indonesia	JAKARTA/Soekamo-Hatta	WIII	Jakarta FIR/UIR & SRR	WSID20	WIII	WIIF																		
	UJUNG PANDANG/Hasanuddin	WAAA	Ujung Pandang FIR/UIR & SRR	WSID21	WAAA	WAAF	FF	WSID21	WAAA	210205	WAAA	WAAF			02:09	02:07								
Japan	TOKYO (CITY)	RJTD	Fukuoka FIR & Tokyo SRR	WSJP31	RJTD	RJJJ	FF	WSJP31	RJTD	210205	RJTD	RJJJ	√	02:06	02:06	02:05	02:05	02:05	02:06	02:05	02:05	02:05	02:05	
Lao PDR	VIENTIANE/Wattay	VLVT	Vientiane FIR & SRR	WSLA31	VLVT	VLVT	FF	WSLA31	VLVT	210205	VLVT	VLVT		01:57	01:57	01:56		01:56						
Malaysia	SEPANG/KL International Airport	WMKK	Kota Kimabalu FIR & SRR	WSMS31	WMKK	WBFC	FF	WSMS31	WMKK	210157	WMKK	WBFC	√	01:58	01:59	01:57	02:40	01:57	01:58	01:57	01:57	01:57		RJTD received AHL as WSMS31 WMKK 210240
	SEPANG/KL International Airport	WMKK	Kuala Lumpur FIR & SRR	WSMS31	WMKK	WMFC	FF	WSMS31	WMKK	210200	WMKK	WMFC	√	02:02	02:02	02:01	02:01	02:01	02:02	02:01	02:01	02:01	02:01	
Maldives	MALE/Intl	VRMM	Male FIR & SRR	WSMV31	VRMM	VRMF																		
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	NZZC	210200	NZKL	NZZC	√	;02:01	02:01	02:00	02:00	02:00	02:01	02:00	02:00	02:00	02:00	
	WELLINGTON (Aviation Weather Centre)	NZKL	Auckland Oceanic FIR & SRR	WSPS21	NZKL	NZZO	FF	WSPS21	NZKL	210200	NZKL	NZZO	√	02:01	02:02	02:00	02:00	02:00	02:03	02:00	02:00	02:00		
Pakistan	KARACHI/Jinnah Intl	OPKC	Karachi FIR & SRR	WSPK31	OPKC	OPKR	FF	WSPK31	OPKC	210200	OPKC	OPKR	√	01:56	01:56	01:59		01:55	01:56	02:01	01:55	01:55	01:55	
	LAHORE/Allama Iqbal Intl	OPLA	Lahore Fir & SRR	WSPK31	OPLA	OPLR	GG	WSPK31	OPLA	210201	OPLA	OPLR	√	02:02	02:03	02:01	02:01	02:01	02:02		02:01	02:01	02:01	
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																		
Republic of Korea	INCHEON	RKSI	Incheon FIR & SRR	WSKO31	RKSI	RKRR	FF	WSKO31	RKSI	210200	RSKI	RKRR	√	02:01	02:02	02:00	02:00	02:00	02:01	02:00	02:00	02:00	02:00	
Singapore	SINGAPORE/Changi	WSSS	Singapore FIR & SRR	WSSR20	WSSS	WSJC	FF	WSSR20	WSSS	210200	WSSS	WSJC	√	02:01	02:02	02:00	02:00	02:00	02:01	02:00	02:00	02:00	02:00	
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/Suvarnabhumi Intl Airport	VTBS	Bangkok FIR & SRR	WSTH31	VTBS	VTBB	FF	WSTH31	VTBS	210200	VTBS	VTBB	√	02:01	02:02	02:01	02:01	02:01	02:02	02:01	02:01	02:01		
United States	ANCHORAGE/Anchorage Intl	PAWU	Anchorage FIR	WSAK01-09	PAWU	PAZA	DD	WSAK01	PAWU	210200	PAWU	PAZA				02:04			02:03	02:01				
	HONOLULU/Honolulu Intl	PHFO	Oakland Oceanic & Honolulu SRR	WSPA01-13	PHFO	KZAK	DD	WSPA01	PHFO	210200	PHFO	KZAK	√		02:01	02:04			02:11	02:10	02:12	02:10		
	KANSAS CITY	KKCI	Oakland Oceanic FIR	WSPN01-13	KKCI	KZAK	DD	WSPN01	KKCI	210200	KKCI	KZAK	√		02:02	02:04			02:12	02:11	02:11	02:11		
Vietnam	Gia Lam	VVGL	Hanoi FIR & SRR	WSVS31	VVGL	VVNB	FF	WSVS31	VVGL	210200	VVGL	VVNB	√	02:02	02:03	02:01	02:01	02:01	02:02	02:01	02:01	02:01	02:01	
	Gia Lam	VVGL	Ho-Chi-Minh FIR & SRR	WSVS31	VVGL	VVTS	FF	WSVS31	VVGL	210200	VVGL	VVTS	√	02:05		02:04	02:01	02:04	02:05			02:04		