International Civil Aviation Organization

WORKING PAPER

Asia and Pacific (APAC)
Twenty-first Meeting of the Meteorological Information Exchange Working Group (MET/IE WG/21)

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Conjoint session MET/IE WG/21 and MET/S WG/13
Agenda Item 2: SIGMET tests

REVIEW OF SIGMET TEST 2022

(Presented by Singapore)

SUMMARY

This paper presents the analysis of the data collected during the WS SIGMET Test that was conducted on 23 November 2022.

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 on the issuance and reception of SIGMET messages, particularly 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 (9th edition Oct 2021). This document also outlines the procedures for conducting SIGMET tests. The test procedures encompass the three types of SIGMETs, namely

- SIGMET for Volcanic ash (WV SIGMET)
- SIGMET for Tropical cyclones (WC SIGMET)
- SIGMET for other weather phenomena (WS SIGMET)

2. DISCUSSION

2.1 WS SIGMET Test 2022 data

2.1.1 The WS SIGMET Test 2022 was conducted on 23 November 2022.

2.1.2 RODB Bangkok, RODB Brisbane, RODB Tokyo, RODB Nadi, RODB Singapore and the Regional OPMET Centre (ROC) London provided reception summaries of the WS SIGMET Test 2022 to RODB Singapore, which is the WS SIGMET test focal point in the Asia/Pacific region. The summarized data reception of the five Asia/Pacific RODBs and ROC London is shown in Appendix 1.

2.2 **Test results and data analysis**

2.2.1 State and MWO Issuance

- 25 of the possible 29 States listed in the Asia/Pacific SIGMET Guide participated in WS SIGMET Test 2022. The following four States did not issue WS SIGMET test messages in 2022:

1	**AFGHANISTAN, KABUL (OAKB)**
2	DPR KOREA, SUNAN (ZKPY)
3	NAURU, NAURU (ANYN)
4	**PAPUA NEW GUINEA, PORT MORESBY (AYPY)**

Table 1: States that did not participate in WS SIGMET Test 2022

- Two States (Afghanistan and Papua New Guinea (for Port Moresby FIR)) have yet to participate in any WS SIGMET Tests to date.

- The State participation rate was 86%, which is an improvement when compared to WS SIGMET test 2021 (79%) and WS SIGMET test 2020 (79%).

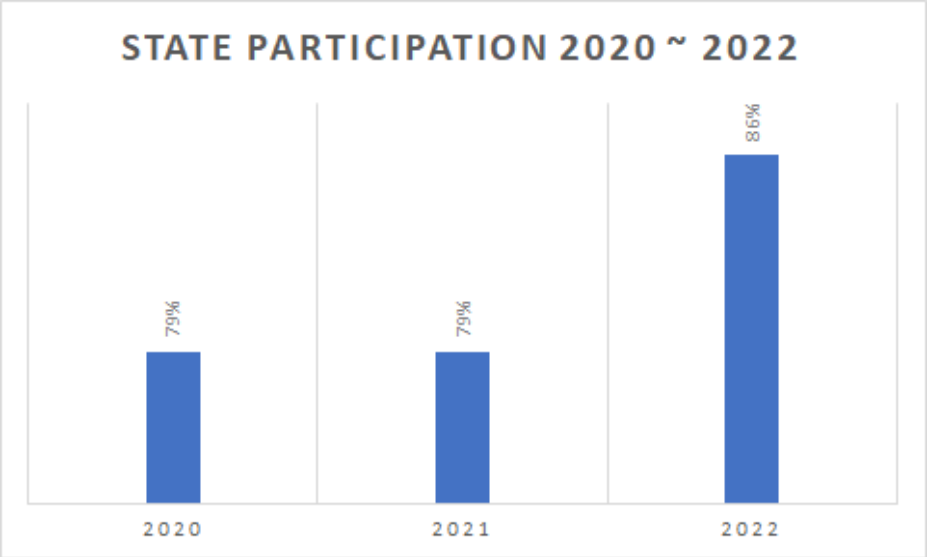

Figure 1: Comparison of state participation for WS SIGMET test

- Disregarding the four States that did not participate, 48 WS SIGMET test messages were issued by the MWOs in the WS SIGMET Test 2022.

2.3 **WS Test SIGMET Reception**

2.3.1 The reception of WS test SIGMET by the five Asia/Pacific RODBs and ROC London is listed in Table 2 below:

WS SIGMET Test 2022	RODB Bangkok	RODB Brisbane	RODB Singapore	RODB Tokyo	RODB Nadi	ROC London	Total

Number of Reception	47 of 48	48 of 48	48 of 48	48 of 48	31 of 48	47 of 48	269 of 288
Percentage of Reception	98%	100%	100%	100%	65%	98%	93%

Table 2: Asia Pacific RODBs' and ROC London's Reception of WS Test SIGMET

2.3.2 A comparison of the WS SIGMET test reception rate between 2020 and 2022 is presented in Figure 2. It shows the reception rate remains high over the years, with majority of the reception rate achieving 90% or more.

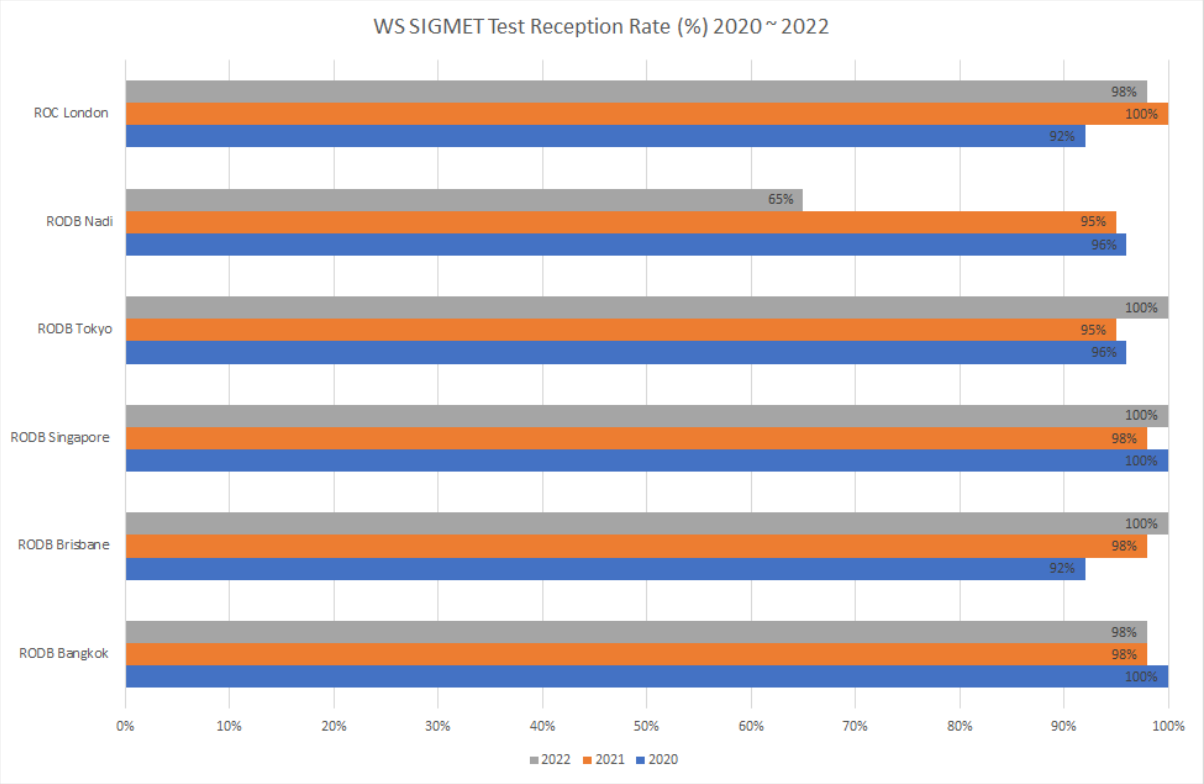

Figure 2: WS SIGMET Test Reception Rate for Past 3 Years

2.4 ICAO meteorological information exchange model (IWXXM)

2.4.1 Following the provisions of ICAO Annex 3, the test messages (for SIGMET and for volcanic ash and tropical cyclone advisory information) should be disseminated in the ICAO meteorological information exchange model (IWXXM) form in addition to the dissemination of the test messages in abbreviated plain language and alphanumeric form following the templates provided in Annex 3.

2.4.2 For the WS SIGMET test 2022, the following MWOs disseminated the test messages in IWXXM format in addition to Traditional Alphanumeric Code (TAC) format: Hong Kong China, Taibei, Nadi, Tokyo, Wellington, Manila, Singapore, Honiara and Bangkok.

3. CONCLUSION

3.1 Four of the 29 States, namely Afghanistan, DPR Korea, Nauru and Papua New Guinea did not participate in WS SIGMET Test 2022. The State participation rate was 86%, which is an

improvement when compared to WS SIGMET test 2021 (79%) and WS SIGMET test 2020 (79%).

3.2 The average reception rate of the WS SIGMET test 2022 messages of the five Asia/Pacific RODBs and ROC London was 93%, four percent lower than the WS SIGMET test 2021 result of 97%.

3.3 The issues on incorrect use of the priority and formatting errors in the text of the test messages persist in WS SIGMET test 2022.

4. ACTION BY THE MEETING

4.1 The meeting is invited to discuss the following:

a) the results of the WS SIGMET test presented above; and
b) the necessary follow-up issues arising from the WS SIGMET Test 2022.

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APPENDIX [A]: Summary of WS SIGMET Test 2022 Results Received from Asia Pacific RODBs and ROC London

State	Meteorological Watch Office (MWO)		SIGMET Guide			Transmitted Header						RODB and EUR ROC Reception						Remark
	Location	MWO	TTAAii	CCCC	FIR	Priority	TTAAii	CCCC	YYGGgg	MWO	FIR	VTBB	YBBN	WSSS	RJTD	NFFN	EBBR	
AFGHANISTAN	KABUL	OAKB	WSAH31	OAKB	OAKX													
AUSTRALIA	BRISBANE	YBRF	WSAU21	YBRF	YBBB	FF	WSAU21	YBRF	230201	YBRF	YBBB	02:01	02:02	02:01	02:01	02:01	02:02	
	BRISBANE	YBRF	WSAU21	YBRF	YMMM	FF	WSAU21	YBRF	230201	YBRF	YMMM	02:02	02:03	02:01	02:01	02:01	02:05	
	MELBOURNE (RFC)	YMRF	WSAU21	YMRF	YMMM	FF	WSAU21	YMRF	230226	YMRF	YMMM	02:26	02:27	02:26	02:26		02:27	
	MELBOURNE (WMC)	YMMC	WSAU21	YMMC	YBBB	FF	WSAU21	YMMC	230200	YMMC	YBBB	02:00	02:02	02:01	02:00	02:00	02:01	
	MELBOURNE (WMC)	YMMC	WSAU21	YMMC	YMMM	FF	WSAU21	YMMC	230200	YMMC	YMMM	02:01	02:02	02:01	02:01	02:00		
BANGLADESH	DHAKA	VGHS	WSBW20	VGHS	VGFR	FF	WSBW20	VGHS	230200	VGHS	VGFR	02:00	02:01	02:01	02:00	02:00	02:00	
CAMBODIA	PHNOM PENH	VDPP	WSKP31	VDPP	VDPF	KK	WSKP31	VDPP	230200	VDPP	VDPF	01:59	02:00	01:59	01:59	01:59	02:00	Incorrect priority (KK)
CHINA	BEIJING	ZBAA	WSCI33	ZBAA	ZBPE	FF	WSCI33	ZBAA	230205	ZBAA	ZBPE	02:02	02:03	02:02	02:02	02:02	02:03	
	CHENGDU	ZUUU	WSCI36	ZUUU	ZPKM	FF	WSCI36	ZUUU	230202	ZUUU	ZPKM	02:02	02:02	02:02	02:02	02:02	02:03	
	GUANGZHOU	ZGGG	WSCI35	ZGGG	ZGZU	FF	WSCI35	ZGGG	230200	ZGGG	ZGZU	02:01	02:02	02:01	02:01	02:00	02:01	
	HAIKOU	ZJHK	WSCI35	ZJHK	ZJSA	FF	WSCI35	ZJHK	230201	ZJHK	ZJSA	02:02	02:03	02:02	02:02	02:02	02:03	
	HONG KONG	VHHH	WSSS20	VHHH	VHHK	FF	WSSS20	VHHH	230200	VHHH	VHHK	02:00	02:01	02:00	02:00	02:00	02:01	
	SHANGHAI	ZSSS	WSCI34	ZSSS	ZSHA	FF	WSCI34	ZSSS	230200	ZSSS	ZSHA	02:04	02:04	02:02	02:03		02:03	
	SHENYANG	ZYTX	WSCI38	ZYTX	ZYSH	FF	WSCI38	ZYTX	230205	ZYTX	ZYSH	02:06	02:07	02:05	02:05		02:06	
	TAIBEI	RCTP	WSCI31	RCTP	RCAA	FF	WSCI31	RCTP	230206	RCTP	RCAA	02:06	02:07	02:06	02:06		02:07	
	URUMQI	ZWWW	WSCI39	ZWWW	ZWUQ	FF	WSCI39	ZWWW	230201	ZWWW	ZWUQ	02:01	02:02	02:01	02:01	02:00	02:02	
	WUHAN	ZHHH	WSCI45	ZHHH	ZHWH	FF	WSCI45	ZHHH	230201	ZHHH	ZHWH	02:04	02:04	02:03	02:02		02:04	
	XI'AN	ZLXY	WSCI37	ZLXY	ZLHW	FF	WSCI37	ZLXY	230200	ZLXY	ZLHW	02:02	02:03	02:01	02:01	02:00	02:02	
DPR KOREA	SUNAN	ZKPY	WSKR31	ZKPY	ZKKP													
FIJI	NADI	NFFN	WSFJ01,02..	NFFN	NFFF	FF	WSFJ03	NFFN	230200	NFFN	NFFF	01:59	02:01	01:59	01:59	01:59	02:00	
FRENCH POLYNESIA	TAHITI	NTAA	WSPF21,22	NTAA	NTTT	FF	WSPF21	NTAA	230205	NTAA	NTTT	02:06	02:07	02:06	02:06		02:07	
INDIA	CHENNAI	VOMM	WSIN31	VOMM	VOMF	FF	WSIN31	VOMM	230200	VOMM	VOMF	02:00	02:02	02:00	02:00	01:59	02:01	
	KOLKATA	VECC	WSIN31	VECC	VECF	FF	WSIN31	VECC	230200	VECC	VECF	02:01	02:03	02:01	02:01		02:02	
	MUMBAI	VABB	WSIN31	VABB	VABF	FF	WSIN31	VABB	230200	VABB	VABF	02:01	02:02	02:01	02:01	02:00	02:02	
	NEW DELHI	VIDP	WSIN31	VIDP	VIDF	FF	WSIN31	VIDP	230200	VIDP	VIDF	02:00	02:02	02:00	02:00	02:00	02:01	
INDONESIA	JAKARTA	WIII	WSID20	WIII	WIIF	FF	WSID20	WIII	230205	WIII	WIIF	02:05	02:06	02:05	02:05		02:06	
	MAKASSAR	WAAA	WSID21	WAAA	WAAF	FF	WSID21	WAAA	230200	WAAA	WAAF	02:00	02:01	02:00	02:00	02:00	02:01	
JAPAN	TOKYO	RJTD	WSJP31	RJTD	RJJJ	FF	WSJP31	RJTD	230205	RJTD	RJJJ	02:05	02:06	02:05	02:05		02:06	
LAO PDR	VIENTIANE	VLVT	WSLA31	VLVT	VLVT	FF	WSLA31	VLVT	230200	VLVT	VLVT	02:08	02:08	02:08	02:08		02:09	
MALAYSIA	KUALA LUMPUR	WMKK	WSMS31	WMKK	WBFC	FF	WSMS31	WMKK	230200	WMKK	WBFC	02:00	02:02	02:00	02:00	02:00	02:01	
	KUALA LUMPUR	WMKK	WSMS31	WMKK	WMFC	FF	WSMS31	WMKK	230200	WMKK	WMFC	02:00	02:01	02:00	02:00	02:00	02:05	
MALDIVES	MALE	VRMM	WSMV31	VRMM	VRMF	FF	WSMV31	VRMM	230201	VRMM	VRMF	02:02	02:04	02:02	02:02		02:03	
MONGOLIA	ULAANBAATAR	ZMUB	WSMO31	ZMUB	ZMUB	FF	WSMO31	ZMUB	230200	ZMUB	ZMUB	02:04	02:06	02:03	02:03		02:04	
MYANMAR	YANGON	VYYY	WSBM31	VYYY	VYYF	FF	WSBM31	VYYY	230200	VYYY	VYYF	02:02	02:03	02:02	02:02	02:00	02:03	
NAURU	NAURU	ANYN	WSNW20	ANYN	ANAU													
NEPAL	KATHMANDU	VNKT	WSNP31	VNKT	VNSM	FF	WSNP31	VNKT	230200	VNKT	VNSM	02:00	02:01	02:00	02:00	02:00	02:00	
NEW ZEALAND	WELLINGTON	NZKL	WSNZ21	NZKL	NZZC	FF	WSNZ21	NZKL	230202	NZKL	NZZC	02:02	02:04	02:02	02:02		02:03	
	WELLINGTON	NZKL	WSPS21	NZKL	NZZO	FF	WSPS21	NZKL	230202	NZKL	NZZO	02:03	02:04	02:03	02:03		02:04	
PAKISTAN	KARACHI	OPKC	WSPK31	OPKC	OPKR	FF	WSPK31	OPKC	230200	OPKC	OPKR	01:59	02:00	01:59	01:59	01:59	02:00	
	LAHORE	OPLA	WSPK31	OPLA	OPLR	FF	WSPK31	OPLA	230200	OPLA	OPLR	01:55	01:56	02:02	01:55	01:55	01:55	
PAPUA NEW GUINEA	PORT MORESBY	AYPY	WSNG20	AYPY	AYPM													
PHILIPPINES	MANILA	RPLL	WSPH31	RPLL	RPHI	FF	WSPH31	RPLL	230202	RPLL	RPHI		02:03	02:02	02:02	02:02	02:03	
REPUBLIC OF KOREA	INCHEON	RKSI	WSKO31	RKSI	RKRR	FF	WSKO31	RKSI	230200	RKSI	RKRR	02:00	02:02	02:01	02:00	02:00	02:01	
SINGAPORE	SINGAPORE	WSSS	WSSR20	WSSS	WSJC	FF	WSSR20	WSSS	230203	WSSS	WSJC	02:03	02:04	02:03	02:03		02:04	
SOLOMON ISLANDS	HONIARA	AGGH	WSSO20	AGGH	AGGG	FF	WSSO20	AGGH	230205	AGGH	AGGG	02:06	02:07	02:05	02:05		02:07	
SRI LANKA	COLOMBO	VCBI	WSSB31	VCBI	VCCF	FF	WSSB31	VCBI	230210	VCBI	VCCF	02:11	02:12	02:11	02:11		02:12	
THAILAND	BANGKOK	VTBS	WSTH31	VTBS	VTBB	FF	WSTH31	VTBS	230200	VTBS	VTBB	02:00	02:01	02:00	02:00	02:00	02:00	
UNITED STATES	HONOLULU	PHFO	WSPA01-13	PHFO	KZAK	FF	WSPA11	PHFO	230200	PHFO	KZAK	02:00	02:02	02:01	02:00	02:00	02:02	Invalid format
	KANSAS CITY	KKCI	WSPN01-13	KKCI	KZAK	FF	WSPN08	KKCI	230218	KKCI	KZAK	02:18	02:20	02:18	02:18	02:19	02:19	Invalid format
VIET NAM	GIA LAM	VVGL	WSVS31	VVGL	VVHN	FF	WSVS31	VVGL	230200	VVGL	VVHN	02:01	02:02	02:01	02:01	02:00	02:01	
	GIA LAM	VVGL	WSVS31	VVGL	VVHM	FF	WSVS31	VVGL	230201	VVGL	VVHM	02:01	02:03	02:01	02:01	02:01	02:02	