International Civil Aviation Organization

WORKING PAPER

Asia and Pacific (APAC)
Twenty-second Meeting of the Meteorological Information Exchange Working Group (MET/IE WG/22)

Bangkok, Thailand, 18 to 21 March 2024

Agenda Item 3: Quality control, monitoring and management of meteorological information exchange

IWXXM EXCHANGE ISSUES WITH SIGMET TESTS

(Presented by Hong Kong, China)

SUMMARY

This paper presents issues in the dissemination of SIGMET test messages in IWXXM form encountered during ICAO Asia and Pacific (APAC) SIGMET tests in 2023 and suggests ways for improving SIGMET tests for IWXXM formatted SIGMETs.

1. INTRODUCTION

1.1 Meteorological Watch Offices (MWOs) that have implemented the ICAO meteorological information exchange model (IWXXM) should disseminate the SIGMET test messages in the IWXXM form in addition to disseminating the test messages in Traditional Alphanumeric Code (TAC) form.

1.2 A neighbouring MWO of Hong Kong, China, reported a number of issues and observations during the Asia and Pacific (APAC) SIGMET tests. These issues highlighted the discrepancies between the dissemination of SIGMET test messages in TAC and IWXXM formats. Further guidance would be required to enhance the effectiveness of this year's SIGMET tests for IWXXM messages.

2. DISCUSSION

Issues encountered

2.1 A neighbouring MWO of Hong Kong, China, which disseminates both the SIGMET messages in TAC and IWXXM formats through VHHH under the ROBEX scheme (**APPENDIX A**) during normal operations, reported that all test SIGMET messages in TAC format could be sent successfully to the five designated Regional OPMET Data Banks (RODBs) or two World Area Forecast Centres (WAFCs) in ICAO Asia and Pacific (APAC) SIGMET tests 2023. They are Brisbane (YBBBYPYX), Nadi (NFFNYPYX), Tokyo (RJTDYPYX), Singapore (WSSSYZYX), Bangkok (VTBBYPYX), London (EGZZMASI), and Washington (KWBCYMYX). However, the MWO received Non-Delivery Reports (NDRs) from YBBBYPYX, NFFNYPYX, RJTDYPYX, EGZZMASI, and KWBCYMYX when disseminating the SIGMET test messages in IWXXM format during the tests.

2.2 The neighbouring MWO of Hong Kong, China confirmed that they adhered to the tasks outlined in the ICAO APAC Regional SIGMET Test Procedures (**APPENDIX B** to this paper). The addresses for IWXXM used in the tests were checked correct, and the issues encountered were not related to any internal technical problems.

2.3 According to the lists of participating RODBs and WAFCs in the ICAO APAC Regional SIGMET Test Procedures, the neighbouring MWO of Hong Kong, China was required to send the SIGMET test messages directly to the aforementioned seven addresses during the tests. However, the results were different for TAC and IWXXM messages. There were no problems reported with the dissemination of TAC messages. However, the aforementioned NDRs were received for the IWXXM message dissemination.

2.4 On the other hand, the IWXXM test message dissemination was functioning properly and was able to reach the above RODBs and WAFCs when the neighbouring MWO of Hong Kong, China, disseminated the SIGMET test messages in IWXXM formats through ROC Hong Kong following the procedures for normal operations.

Suggested improvement to IWXXM SIGMET test procedures

2.5 It was observed that the dissemination behaviour of TAC and IWXXM messages were different in the regional SIGMET tests. This could be attributed to the different forwarding settings of the point-to-point connection between RODBs, ROCs and NOCs for TAC and IWXXM message disseminations. It is likely that not all TAC forwarding settings used in RODBs and ROCs along the dissemination path were applicable and available for IWXXM message, which might have resulted in the direct dissemination of IWXXM messages not being successfully sent from MWO to all the destinations as designated in the SIGMET test procedures, unlike TAC messages.

2.6 In reality, the designated destinations (RODBs and WAFCs) for the SIGMET tests might not be applicable for IWXXM formatted SIGMET exchange in daily operations, as MWOs should disseminate the IWXXM messages through ROCs or NOCs instead of sending them directly to RODBs and WAFCs. This highlights a discrepancy between the testing procedures and the actual live operation in the dissemination of IWXXM SIGMET message.

2.7 The test procedures in the ICAO APAC REGIONAL SIGMET TEST PROCEDURES, in particular the designated destinations indicated in **APPENDIX B** to this paper, would require review and revision to address the above identified issues to ensure it is aligned with the operational procedures for IWXXM SIGMET dissemination, i.e., (i) MWOs sending IWXXM formatted SIGMET to ROCs only and (ii) ROCs forwarding them to RODBs.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) consider proposed action of conducting review of the destinations of IWXXM formatted SIGMET issued by MWOs in SIGMET test procedures; and

c) discuss any relevant matters as appropriate.

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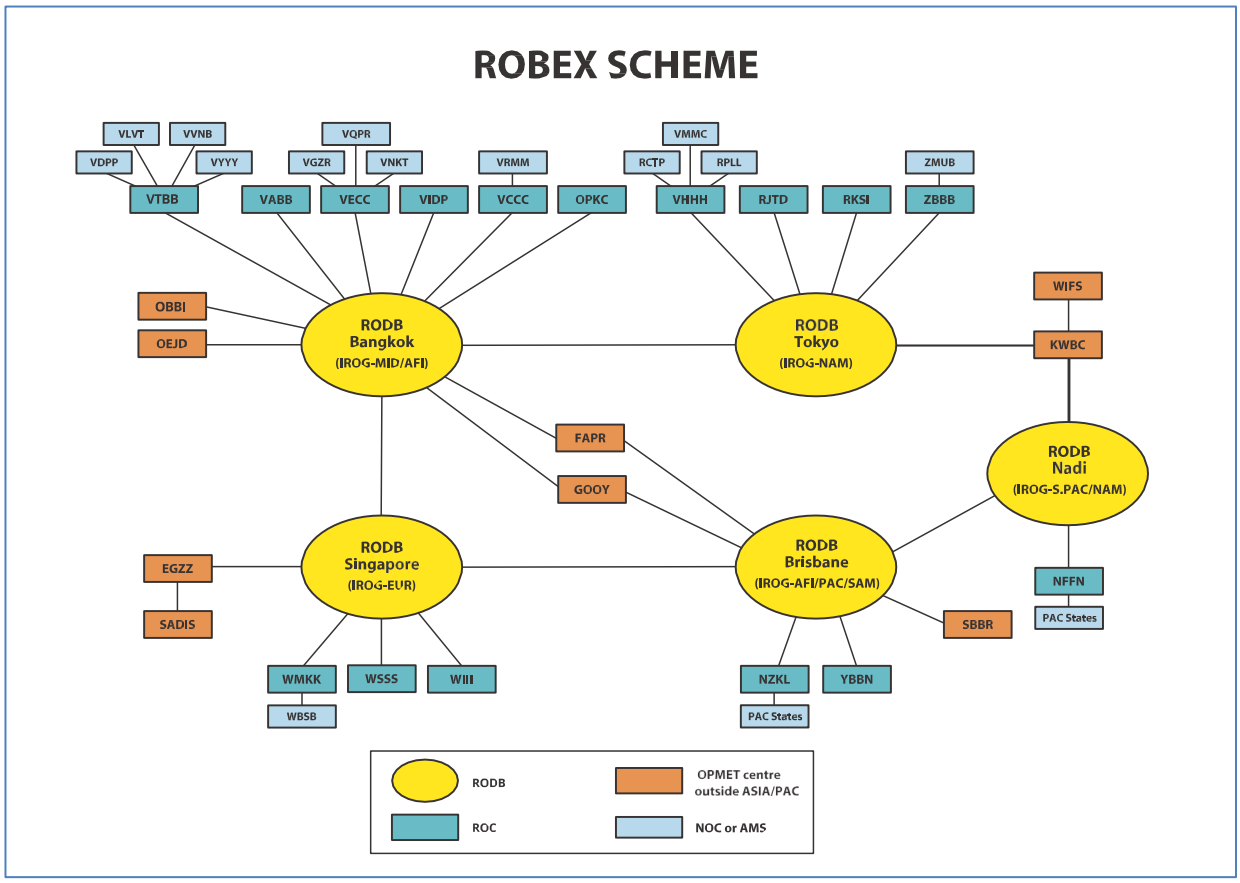
APPENDIX A


ROBEX SCHEME
VLVT
VVNB
VDPP
VYYY
VTBB
VQPR
VGZR
VNKT
VABB
VECC
VRMM
VIDP
VCCC
OPKC
VMMC
RCTP
RPLL
VHHH
RJTD
RKSI
ZMUB
ZBBB
OBBI
OEJD
RODB Bangkok (IROG-MID/AFI)
RODB Tokyo (IROG-NAM)
WIFS
KWBC
FAPR
GOOY
RODB Nadi (IROG-S.PAC/NAM)
EGZZ
SADIS
RODB Singapore (IROG-EUR)
RODB Brisbane (IROG-AFI/PAC/SAM)
NFFN
PAC States
SBBR
WMKK
WBSB
WSSS
WIII
NZKL
PAC States
YBBN
RODB
ROC
OPMET centre outside ASIA/PAC
NOC or AMS

APPENDIX B

ICAO APAC REGIONAL SIGMET TEST PROCEDURES — 2023

MWO DETAILS				REQUIRED SIGMET TEST TASK ID (Refer Table 6 for further details)													
				Associated TCAC WC/LY SIGMET test							Associated VAAC WV/LV SIGMET test					WS/LS SIGMET test
ICAO Region*	STATE	MWO NAME	ICAO Location Indicator	Darwin	Nadi	La Réunion	New Delhi	Tokyo	Honolulu	Miami	Darwin	Toulouse	Tokyo	Wellington	Washington	
A	CHINA	BEIJING	ZBAA	-	-	-	-	WC/LY 1.1	-	-	-	-	WV/LV 1.1	-	-	WS/LS 1.0
		CHENGDU	ZUUU	-	-	-	-	WC/LY 1.1	-	-	-	WV/LV 1.1	WV/LV 1.1	-	-	WS/LS 1.0
		GUANGZHOU	ZGGG	-	-	-	-	WC/LY 1.1	-	-	-	-	WV/LV 1.1	-	-	WS/LS 1.0
		HAIKOU	ZJHK	-	-	-	-	WC/LY 1.1	-	-	-	-	WV/LV 1.1	-	-	WS/LS 1.0
		HONG KONG	VHHH	-	-	-	-	WC/LY 1.1	-	-	-	-	WV/LV 1.1	-	-	WS/LS 1.0
		SHANGHAI	ZSSS	-	-	-	-	WC/LY 1.1	-	-	-	-	WV/LV 1.1	-	-	WS/LS 1.0
		SHENYANG	ZYTX	-	-	-	-	-	-	-	-	-	WV/LV 1.1	-	-	WS/LS 1.0
		TAIBEI	RCTP	-	-	-	-	WC/LY 1.1	-	-	-	-	WV/LV 1.1	-	-	WS/LS 1.0
		URUMQI	ZWWW	-	-	-	-	-	-	-	-	WV/LV 1.1	WV/LV 1.1	-	-	WS/LS 1.0
		WUHAN	ZHHH	-	-	-	-	-	-	-	-	-	WV/LV 1.1	-	-	WS/LS 1.0
		XI'AN	ZLXY	-	-	-	-	-	-	-	-	WV/LV 1.1	WV/LV 1.1	-	-	WS/LS 1.0

Partipcating MWOs extracted from Table 1 in the ASIA/PACIFIC REGIONAL SIGMET TEST PROCEDURES 2023

APPENDIX B (continued)

Table 6: SIGMET test tasks

Chronology and detailed description of tasks, listed by task ID

TASK ID.	WHO? Responsible unit/s	WHAT? Detailed description of the task	WHEN? Date/Time indicated in the following format: YYYYMMDD/HHMM UTC
WC/LY 1.1	**MWOs associated with one or more TCACs** listed in Table 3 except TCAC La Réunion.	**Send the WC/LY SIGMET test message** based on the TC advisory test message from each associated TCAC (see para. 7.3) to: **i.** RODBs listed in Table 2 (**Note**: this only applies to MWOs in the APAC Region); and **ii.** WAFCs listed in Table 5	**a. On receipt of the TC advisory test message** from each associated TCAC between 20231108/0200 and 20231108/0230; **and/or** **b. At** or as soon as practicable after **20231108/0230**, only when the MWO does not receive the TC advisory test message from an associated TCAC. Note: MWOs should send a test WC/LY SIGMET on receipt (or non-receipt) of a test TC advisory test message **for each TCAC that it is associated with.**
WV/LV 1.1	**MWOs associated with one or more VAACs,** as indicated in Table 1 and Table 4	**Send the WV/LV SIGMET test message** based on the VA advisory test message from each associated VAAC (see para. 7.4) to: **i.** RODBs listed in Table 2 (**Note**: this only applies to MWOs in the APAC Region); and **ii.** WAFCs listed in Table 5	**a. On receipt of the VA advisory test message** from an associated VAAC between 20231115/0200 and 20231115/0230; **and/or** **b. At** or as soon as practicable after **20231115/0230**, only when the MWO does not receive the VA advisory test message from an associated VAAC. MWOs should send a test WV/LV SIGMET on receipt (or non-receipt) of a test VA advisory test message **for each VAAC that it is associated with.**
WS/LS 1.0	**MWOs in the APAC Region** listed in Table 1	**Send the WS/LS SIGMET test message** (see para. 7.5) to: **i.** RODBs listed in Table 2; and **ii.** WAFCs listed in Table 5	20231122/0200

SIGMET test tasks extracted from Table 6 in the ASIA/PACIFIC REGIONAL SIGMET TEST PROCEDURES 2023

APPENDIX B (continued)

Table 2: Participating RODBs

RODBs listed by State and ICAO Region, with indication of the required SIGMET test tasks

STATE	ICAO REGION	RODB NAME	ICAO Location Indicator	AFTN ADDRESS	REQUIRED SIGMET TEST TASK (ID)*
AUSTRALIA	APAC	BRISBANE	YBBB	YBBBYPYX	WC/LY 4.0, WV/LV 2.0, WS/LS 2.0
FIJI	APAC	NADI	NFFN	NFFNYPYX	WC/LY 4.0, WV/LV 2.0, WS/LS 2.0
JAPAN	APAC	TOKYO	RJTD	RJTDYPYX	WC/LY 4.0, WV/LV 2.0, WS/LS 2.0
SINGAPORE	APAC	SINGAPORE	WSSS	WSSSYZYX	WC/LY 4.0, WV/LV 2.0, WS/LS 2.0
THAILAND	APAC	BANGKOK	VTBB	VTBBYPYX	WC/LY 4.0, WV/LV 2.0, WS/LS 2.0

*Refer Table 6 for details

Participating RODBs in Table 2 in the ASIA/PACIFIC REGIONAL SIGMET TEST PROCEDURES 2023

Table 5: Participating WAFCs

WAFCs listed by State and ICAO Region, with indication of the required SIGMET test tasks

STATE	ICAO REGION	WAFC NAME	ICAO Location Indicator	AFTN ADDRESS	TASK (ID)*
UNITED KINGDOM	EUR	LONDON	EGZZ	EGZZMASI	WC/LY 4.0, WV/LV 2.0, WS/LS 2.0
UNITED STATES	NAM	WASHINGTON	KWBC	KWBCYMYX	WC/LY 4.0, WV/LV 2.0, WS/LS 2.0

*Refer Table 6 for further details

Participating WAFCs in Table 5 in the ASIA/PACIFIC REGIONAL SIGMET TEST PROCEDURES 2023