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WORKING PAPER

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Exchange Working Group (MET/IE WG/20)**

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Conjoint session

Agenda Item 2: SIGMET tests

**APPLICATION OF MET DEFICIENCY IDENTIFICATION METHODOLOGY TO 2021
ANNUAL SIGMET TESTS**

(Presented by New Zealand)

SUMMARY

This paper describes how the MET deficiency identification methodology presented at MET SG/25 may be applied to the 2021 ICAO APAC SIGMET tests and makes recommendations for actions by both States involved and for the SIGMET test organisers.

1. INTRODUCTION

1.1 A methodology for identifying potential air navigation deficiencies in the meteorological field was presented at the Twenty-fifth Meeting of the Meteorology Sub-group of APANPIRG. This methodology has been applied to the 2021 ICAO APAC SIGMET test results presented at this conjoint meeting of the MET/Services and MET/Information Exchange working groups

1.2 Application of the methodology shows opportunities for MWOs, TCACs and VAACs to improve dissemination processes for their test messages and to consider whether those improvements also apply to their operational messages.

1.3 All States are encouraged to embrace the SIGMET test process as an easy and convenient way to test their systems each year, especially for those SIGMET types they may not issue often. As organisations upgrade systems or otherwise make system changes, there may be inadvertent errors made that can be uncovered by SIGMET test processes and then rectified.

2. DISCUSSION

TCAC and VAAC Opportunities for Improvement

2.1 WP/C02 provides the WC and WV SIGMET test results, including analysis of the test VAA and test TCA issued for these tests. The following opportunities for improvement have been identified for the participating TCACs and VAACs:

Organisation	Issue	Suggested action
TCAC Nadi	Incorrect priority indicator used for test TCA bulletin. Incorrect time stamp for TCA.	<ul style="list-style-type: none"> Reissue test TCA to demonstrate correct priority indicator for TCA or provide evidence of operational TCA with correct priority indicator to the ad hoc group on MET deficiencies. Consider updating operational guidance to request forecaster to check timestamp in test TCA.
TCAC New Delhi	Non-receipt of test TCA by RODB Nadi. Multiple test TCA issued under multiple headers (only two required).	<ul style="list-style-type: none"> Ensure all APAC RODBs are included in all TCA dissemination lists, for all originating centres. Determine which originating centre should issue a test TCA, as required under ICAO test instructions.
TCAC Reunion	Non-receipt of test TCA by RODBs Nadi, Brisbane and Bangkok.	<ul style="list-style-type: none"> Ensure all APAC RODBs are included in all TCA dissemination lists.
TCAC Honolulu	Non-receipt of test TCA by RODBs Nadi, Brisbane, Tokyo and Bangkok.	<ul style="list-style-type: none"> Ensure all APAC RODBs are included in all TCA dissemination lists.
VAAC Toulouse	Non-receipt of test VAA by RODBs Nadi and Bangkok.	<ul style="list-style-type: none"> Ensure all APAC RODBs are included in all VAA dissemination lists.
VAAC Washington ¹	Incorrect priority indicator used for test VAA bulletin. Non-receipt of test VAA by RODBs Nadi and Bangkok.	<ul style="list-style-type: none"> Reissue test VAA to demonstrate correct priority indicator for VAA or provide evidence of operational VAA with correct priority indicator to the ad hoc group on MET deficiencies. Ensure all APAC RODBs are included in all VAA dissemination lists.

MWO Opportunities for Improvement

2.2 WP/C01 and WP/C02 outline the receipt of test SIGMETs issued for the WS and WV/WC SIGMETs respectively. Analysis of these results have highlighted the following opportunities for improvement:

State	Issue	Suggested action
Bangladesh, Cambodia, China, Malaysia, Mongolia, Nepal, New Zealand, Solomon Is, US	Non-receipt of at least one test SIGMET by at least one RODB.	<ul style="list-style-type: none"> Ensure all APAC RODBs are included in all SIGMET dissemination lists.

2.3 Further, some MWOs had a date-time group (DTG) in the SIGMET header that indicated their SIGMET was issued either very early (eg New Zealand SIGMETs) or after receipt of the SIGMET by RODBs (eg MWOs Vientiane and Guangzhou in WC test). It is believed that this is an artefact of the test process for these MWOs (eg pre-preparing SIGMETs ahead of the test), however all MWOs are reminded that the DTG in the SIGMET header is used as a de facto issue time. It may be useful to include this reminder in SIGMET test instructions.

¹ Similar issues in place for VAAC Anchorage test VAA, but the VAAC Anchorage AOR does not extend into APAC region or designated in the APAC ANP Vol I. Consideration may be necessary as to whether they should be participating in this test.

2.4 It was difficult to determine from the test results whether MWOs had issued all or only some of the test SIGMETs required for each TCAC/VAAC they are associated with. It would be useful if the SIGMET test results presented could show this level of granularity, allowing issues of non-receipt of VAA/TCA to be highlighted and steps taken to rectify, noting this was an issue highlighted in a recent “Pacific mini SIGMET test” (MET SG/25 WP/13 [Outcomes of the Mini Pacific SIGMET test](#)).

2.5 Regarding MWOs that did not issue a test SIGMET during at least one test, it is noted that some MWOs listed in the SIGMET test results service FIRs located in the MID, ESAF or NACC regions, so these have not been considered in this analysis. For the APAC MWOs, the following SIGMET test non-participation is noted, with follow up actions suggested:

State	MWO	WC	WV	WS	Suggested action
Afghanistan	Kabul	N/A	X	X	Follow up to determine reason for non-participation and potentially also if operational SIGMETs are regularly issued.
Bangladesh	Dhaka	√	X	√	Follow up on non-participation in WV test.
Maldives	Male	X	X	X	Follow up to determine reason for non-participation and potentially also if operational SIGMETs are regularly issued.
Mongolia	Ulaanbaatar	N/A	X	√	Follow up on non-participation in WV test.
Myanmar	Yangon	X	X	X	Follow up to determine reason for non-participation and potentially also if operational SIGMETs are regularly issued.
Nauru	Nauru	X	X	X	Deficiency already in place.
Papua New Guinea	Port Moresby	X	X	X	Deficiency already in place.
Philippines	Manila	X	X	X	Advice was provided by MWO Manila regarding their inability to participate due to operational issues. No action required.

SIGMET test Opportunities for Improvement

2.6 As noted in paragraphs 2.3, 2.4 and 2.5, there are opportunities to further improve the ICAO APAC SIGMET test process to:

- ensure MWOs understand the data used to measure the SIGMET timeliness;
- ensure only APAC MWOs participation is monitored; and
- provide more information on receipt of TCA/VAA by MWOs whose FIR is covered by more than one advisory centre area of responsibility.

2.7 It would be useful to also review the relevant tables in the ICAO APAC SIGMET test procedures to ensure all MWOs associated with each VAAC and TCAC are listed. For example, MWO Tahiti should be associated with VAAC Washington as well as VAAC Wellington, while MWO Port Moresby should be associated with VAAC Washington as well as VAAC Darwin.

3. ACTION BY THE MEETING

3.1 The meeting is invited to agree the following actions:

- a) Consider application of the deficiency methodology and suggest any improvements.
- b) TCAC/VAAC/MWO with opportunities for improvement are encouraged to:
 - perform the suggested action(s);
 - confirm with at least one RODB that the action was effective by issuing a test message; and
 - update the ad hoc group on MET deficiencies when improvements and follow up actions are performed.
- c) Invite the ICAO APAC SIGMET test organisers to consider the suggestions outlined in paragraph 2.6. and 2.7.
