



ICAO

*International Civil Aviation Organization***WORKING PAPER****Twenty-fourth Meeting of the Meteorology Sub-group (MET SG/24) of the Asia and Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG)**

Web-conference, 17 – 20 June 2019

Agenda Item 4: Air navigation deficiencies**AIR NAVIGATION DEFICIENCIES - METEOROLOGY**

(Presented by Australia)

SUMMARY

The APANPIRG MET SG, through its contributory bodies, conducts testing of operational meteorological information as part of its work plan. The outcomes of these tests are reported to MET SG on an annual basis and may be used as evidence to remove APANPIRG Deficiencies in the field of meteorology. However, there is also scope to identify new Deficiencies for any long-standing issues that may have a negative impact on the safety, regularity and/or efficiency. This paper proposes guidance that could be used for identifying, and subsequently registering, a new MET deficiency based on OPMET monitoring and SIGMET testing. It also proposes the establishment of a small ad hoc group to assist States with Corrective Action Plans, testing and reporting.

1. INTRODUCTION

1.1 There are currently 14 deficiencies on the Open List relating to the field of Meteorology (MET) in the Asia and Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) List of Deficiencies online database. The reporting dates for these range from 1995-2011. With reports primarily made by airlines and following specific ICAO missions. The types of deficiencies include: no SIGMET, MET Reports or volcanic activity provided; non-supply of WAFS to users; and no established Meteorological Watch Office.

1.2 The following definition of an Air Navigation Deficiency¹ was adopted by ICAO Council on 30 November 2001:

***Definition of Deficiency :** A situation where a facility, service or procedure does not comply with a regional air navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices (SARPs), and which situation has a negative impact on the safety,*

¹ APANPIRG Procedural Handbook:

https://www.icao.int/APAC/Documents/edocs/apanpirg/procedural_handbook.pdf

Agenda Item 4

16-20/11/20

regularity and/or efficiency of international civil aviation.

1.3 As outlined in the APANPIRG Procedural Handbook:

- With regard to global plans, APANPIRG shall: *"in line with the GANP² and regional priorities, identify specific deficiencies in the air navigation field, and propose mitigating actions and timelines to resolve deficiencies"*.
- With regard to regional activities, APANPIRG shall: *"monitor and report on the status of implementation by States of the required air navigation facilities, services and procedures in the region, and identify the associated difficulties and deficiencies to be brought to the attention of the Council"*.

1.4 Part V of the APANPIRG Procedural Handbook outlines a *"uniform methodology for the identification, assessment and reporting of air navigation shortcomings and deficiencies"*, along with an APAC supplement. Section 2 of Part V states:

2.1 *As a routine function, the Regional Offices are expected to maintain a list of specific deficiencies, if any, in their regions. To ensure that this list is as clear and as complete as possible, it is understood that the Regional Offices take the following steps:*

- a) compare the status of implementation of the air navigation facilities and services with the regional air navigation plan documents and identify facilities, services and procedures not implemented;*
- b) review mission reports with a view to detecting deficiencies that affect safety, regularity and efficiency of international civil aviation;*
- c) make a systematic analysis of the differences with ICAO Standards and Recommended Practices filed by States to determine the reason for their existence and their impact, if any, on safety;*
- d) review aircraft accident and incident reports with a view to detect possible systems or procedures deficiencies;*
- e) review inputs, provided to the Regional Office by the users of air navigation services on the basis of Assembly Resolution A33-14, Appendix M;*
- f) assess and prioritize the result of a) to e) according to paragraph 4;*
- g) report the outcome to the State(s) concerned for resolution; and*
- h) report the result of g) above to the related PIRG for further examination, advice and report to the ICAO Council, as appropriate through PIRG reports.*

2. DISCUSSION

OPMET Monitoring

2.1 As part of the MET SG Meteorological Information Exchange Working Group (MET/IE WG) work plan, the Regional Operational Meteorological (OPMET) Data Banks (RODBs) monitor³ OPMET data and report to the MET SG on the following Performance Indicators (PIs):

² Global Air Navigation Plan (GANP): <https://www.icao.int/airnavigation/pages/ganp-resources.aspx>

³ Asia Pacific Region ROBEX Handbook:

https://www.icao.int/APAC/Documents/edocs/ROBEX-HB_13th-Ed_2019-03.pdf

- Compliance: Assess the level of compliance to the ROBEX scheme.

$$V_{bul\ compliance} = \frac{\text{No of reports received for a bulletin}}{\text{No of reports required for the bulletin}}$$

- Availability: Measures the current coverage of the OPMET distribution against the ROBEX exchange requirements.

$$V_{bul\ availability} = \frac{\text{No of aerodromes for which one or more non-NIL data type are received}}{\text{No of aerodromes required in the bulletins}}$$

- Regularity: Measures the consistency in the number of reports provided by an aerodrome.

$$V_{bul\ regularity} = \frac{\text{No of aerodromes for which the number of reports equals or exceeds the threshold}}{\text{No of aerodromes required in the bulletin}}$$

2.2 The aim is for the PIs for METAR and TAF (at all RODBs) to be:
 > 0.95 for AOP aerodromes
 > 0.90 for non-AOP aerodromes

2.3 It is proposed that if the PIs are ≤ 0.5 (at all RODBs) then the following process be followed:

- ICAO to notify the relevant States of the specific product (either a TAF (FT) or a METAR (SA)), the aerodrome and associated PIs.
- The State to provide ICAO with an explanation as to the reason behind the low PIs.
- If the problem can't be rectified within an agreed timeframe, then ICAO shall submit a Deficiency in the MET field.

SIGMET Testing

2.4 As part of the MET SG Meteorological Services Working Group (MET/S WG) work plan (in conjunction with MET/IE), SIGMET and Advisory testing is held in the APAC Regional at least annually, as given in the Asia/Pacific Regional SIGMET Guide⁴. The results of the SIGMET Tests are reported to the MET SG annually.

2.5 It is proposed that if either SIGMETs or Advisories are not received by at least at one RODBs then the following process be followed:

- ICAO to notify the relevant States of the specific SIGMET or Advisory (WS, WV, WC, FV or, FK) and the area of responsibility (flight information region (FIR) or VAAC/TCAC/SWXC area of responsibility).
- The State to provide ICAO with an explanation as to the reason behind the non-receipt of the SIGMET or Advisory.

⁴ Asia/Pacific Regional SIGMET Guide:
https://www.icao.int/APAC/Documents/edocs/APAC%20Regional%20SIGMET%20Guide%207th%20edition%20OCT%202019_final.pdf

Agenda Item 4

16-20/11/20

- If the problem can't be rectified within an agreed timeframe, then ICAO shall submit a Deficiency in the MET field.

2.6 It would be envisaged that this would eventually extend to the ICAO Meteorological Information Exchange Model (IWXXM) form of each of the above-mentioned MET services and to both the text and IWXXM forms of the Space Weather Advisory.

Process

2.7 Other methods for identifying Deficiencies, as given in the APANPIRG Procedure Handbook, such as mission reports, analysis of differences against ICAO provisions, aircraft accident and incident reports and reports provided by users of air navigation services, would continue to be used.

2.8 Looking at the process described in paragraph 1.4 relating to the APANPIRG Procedural Handbook, the following is proposed:

- OPMET Monitoring & Analysis (MET/IE)
- SIGMET Tests & Analysis (MET/IE & MET/S)
- Analysis of differences against ICAO provisions (ICAO Secretariat)
- Analysis of mission reports, aircraft accident and incident reports and reports provided by users (ICAO Secretariat)
- Notify States of any issues and request an explanation (ICAO Secretariat)
- Determine and register Deficiencies (ICAO Secretariat)
- Assist States with developing a Corrective Action Plan (MET/S)
- Monitor follow-up actions (ICAO Secretariat, MET/IE & MET/S)
- Assist States in the provision progress and final reports (MET/S)
- Removal from list of Open Deficiencies, if applicable (ICAO Secretariat)

3. RECOMMENDATION

3.1 To ensure that the uniform methodology for the identification, assessment and reporting of air navigation shortcomings and deficiencies as outlined in the APANPIRG Procedural Handbook, it is recommended that the MET SG/24 adopt the following Decision:

Decision MET SG/24-X: Registering new MET Deficiencies
What: That, ICAO use the OPMET monitoring and the SIGMET testing results to identify and register new Deficiencies in the MET field.
<i>Note: This is in addition to the other means of identifying Deficiencies such as mission reports, analysis of differences against ICAO provisions, aircraft accident and incident reports and reports provided by users of air navigation services.</i>
Why: To meet the requirements of the APANPIRG Procedural Handbook, in particular Part V: "Uniform methodology for the identification, assessment and reporting of air navigation shortcomings and deficiencies".
Expected impact: Ops/Technical
Follow-up: N/A
When: By November 2020
Status: Adopted by MET SG
Who: Sub groups (MET SG)

3.2 To ensure that States are well supported to address any Deficiencies, it is recommended that a small ad hoc group be formed under the MET SG MET/S WG to assist States required to develop a Corrective Action Plan. The group could also arrange for testing and monitoring and assist States with writing progress and closure reports related to MET Deficiencies.

Decision MET SG/24-X: MET Deficiencies Remediation
What: That a MET/S WG ad hoc group be formed to work with States to develop a Corrective Action Plan, arrange for testing and monitoring and to assist States with writing progress and closure reports.
Why: To meet the requirements of the APANPIRG Procedural Handbook, in particular Part V: "Uniform methodology for the identification, assessment and reporting of air navigation shortcomings and deficiencies".
Expected impact: Ops/Technical Follow-up: N/A When: By November 2020 Status: Adopted by MET SG Who: Sub groups (MET SG)

4. ACTION BY THE MEETING

- 4.1 The meeting is invited to:
- a) Note the information contained in this paper; and
 - b) Adopt the Decision in paragraph 3.1 and 3.2
