

International Civil Aviation Organization

ICAO

WORKING PAPER (WP/26)**ICAO ASIA AND PACIFIC (APAC)
THIRTIETH MEETING OF THE METEOROLOGY
SUB-GROUP (MET SG/30)**

Bangkok, Thailand, 20 - 24 July 2026

Agenda Item 4: Regional Guidance Material**UPDATES TO THE ROBEX HANDBOOK**

(Presented by Chair/s of MET/IE WG)

SUMMARY

This paper requests updates to the APAC ROBEX Handbook to improve the METAR performance indices and to support more resilient OPMET exchange.

1. INTRODUCTION

1.1 The ICAO Asia and Pacific (APAC) Regional Operational Meteorological Bulletin Exchange (ROBEX) scheme provides a systematic framework for APAC States to exchange meteorological information, in the form of operational meteorological (OPMET) bulletins, within the APAC region and inter-regionally with other ICAO regions.

1.2 The Regional OPMET Bulletin Exchange (ROBEX) Handbook defines the responsibilities and procedures for the ROBEX centres and the content and format of the ROBEX bulletins.

1.3 At the 14th Meeting of the ICAO APAC Meteorological Information Exchange Working Group (MET/IE WG/14), several discussions identified improvements to the ROBEX Handbook. These including improvements to OPMET performance indices (PIs) and support for alternate communication paths when contingencies are enacted.

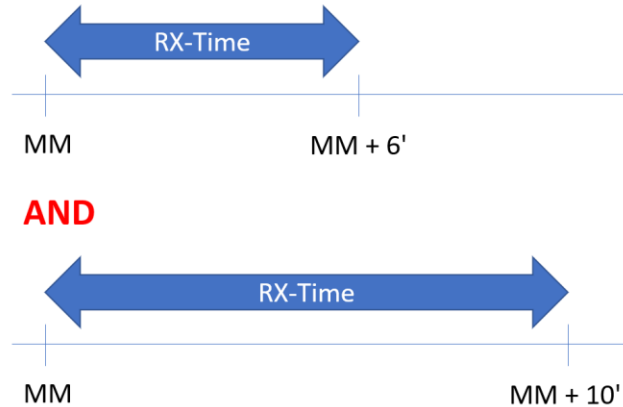
2. DISCUSSIONImprovements to METAR Performance Indices – Timeliness

2.1 MET/IE WG/14 discussed the ROBEX Handbook Performance Indices for METARs and minor inconsistency between APAC and European (EUR) thresholds. A graphical representation of our understanding is shown below.

APAC use: $HH:(MM - 5') \leq RX\text{-Time} \leq HH:(MM + 10')$



EUR use: $RX\text{-Time} \leq HH:(MM + 6')$ and $RX\text{-Time} \leq HH:(MM + 10')$



2.2 This resulted in an action (MET/IE WG/24-13) to seek clarification on the reason for the difference between the six-minute and five-minute criteria used in OPMET monitoring procedures for METARs.

MET/IE WG/24- 13	Submission of ROBEX Handbook PI amendments to MET SG Submit the proposed amendments to the ROBEX Handbook related to OPMET performance indices to the MET SG for review and possible endorsement, subject to satisfactory clarification of the OPMET monitoring time discrepancy between the APAC and EUR Regions. [Ref: MET/IE WG/24 Report, para. 4.13. to 4.16.]	For consideration at MET SG/30	ICAO Secretariat, MET/IE WG Chair
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2.3 Subsequently, Tim Hailes (Chair of MET/IE WG) contacted the European performance indices experts to seek clarification.

2.4 The European experts advised that initially they tried to use “Obs time + 5 mins” for timeliness. This resulted in a lot of messages being received too late. Then they decided to try “Obs + 6 mins”. But for the “official” PIs and publication in eANP, they decided to use the ICAO Annex 3 thresholds of “5 mins filing time + 5 mins transfer time” = “Obs + 10 mins”. They also decided to stop looking at the “Obs + 6 mins” for their statistics, but their analysis continued producing these. Now they only use 10 minutes and will arrange the update to the Appendix F of ICAO EUR Doc 018 (equivalent to the APAC ROBEX Handbook).

2.5 We now understand that when analysing METARs, EUR allow METARs to be received between 0 and 10 minutes after the observation time. They no longer use the 6-minute value defined in their procedures. Conversely, in APAC we allow METARs to arrive up to 5 minutes early, through to 10 minutes late, as illustrated below:

APAC use: $HH:(MM - 5') \leq RX\text{-Time} \leq HH:(MM + 10')$



EUR use: $RX\text{-Time} \leq HH:(MM + 10')$



2.6 This therefore raises the question: why do we allow METAR to arrive early? Given the filing time is typically 5 minutes after the hour, or the half hour, we can't see why we would allow observations to arrive early.

2.7 The Chair of MET/IE WG has consulted Thailand, who calculates the APAC performance indices. Thailand advised that they support the EUR approach of not allowing the early arrival of data.

Improvements to METAR Performance Indices – Corrections

2.8 The ROBEX Handbook (page 60) defines the rules for calculating METAR performances indices. It states that corrected (COR) messages are ignored/excluded:

NIL METARs and METAR bulletins where in the Abbreviated Header (TTAAii CCCC YYGGgg BBB) BBB = CC@ (COR) are ignored, thus excluded.

METAR Timeliness = on average 95% ANP required and available METAR observation reports (not including SPECI; no NIL, no AMD observations; including COR observations) is received maximum 6 minutes / 10 minutes after the observation time (MM observation time(s) from the YYGGgg-Group in the bulletin Abbreviated Header = DDHHMM based on monitoring): $RX\text{-Time} \leq HH:(MM + 6')$ and $RX\text{-Time} \leq HH:(MM + 10')$.

2.9 The aforementioned text with “including COR observations” is ambiguous and contradicts the preceding sentence. Further ICAO does not support amended observations, so it is recommended this text be changed to the following to clarify that corrected bulletins are not referenced in the timeliness calculation.

METAR Timeliness = on average 95% ANP required and available METAR observation reports (not including SPECI; no NIL, no AMD observations; including or COR observations bulletins) is received maximum 6 minutes / 10 minutes after the observation time (MM observation time(s) from the YYGGgg-Group in the bulletin Abbreviated Header = DDHHMM based on monitoring): $RX\text{-Time} \leq HH:(MM + 6')$ and $RX\text{-Time} \leq HH:(MM + 10')$.

2.10 Here is a clean version of the updated text:

METAR Timeliness = on average 95% ANP required and available METAR observation reports (not including SPECI, NIL, or COR bulletins) is received maximum 10 minutes after the observation time (MM observation time(s) from the YYGGgg-Group in the bulletin Abbreviated Header = DDHHMM based on monitoring): $RX-Time \leq HH:(MM + 10')$.

Alternate communication paths

2.11 It has been identified that the ROBEX Handbook does not include a procedure in case a National OPMET Centre (NOC) needs to directly transfer from one Regional OPMET Centre (ROC) (i.e. ROC1) to another ROC (i.e. ROC2).

2.12 To provide guidance, it is proposed that the following text be added after paragraph 4.2 of the ROBEX Handbook:

4.2 The overall structure of the ROBEX scheme is presented in Appendix G.

4.3 NOC–ROC assignments are defined in the ROBEX scheme and reflected in Appendix G. Changes to these assignments constitute structural scheme changes and are normally proposed to the ICAO APAC Office for consideration through APANPIRG processes (e.g. MET SG / MET/IE WG) before incorporation into the ROBEX Handbook.

4.4 ROCs may coordinate and implement operational changes to OPMET bulletins. NOCs should submit proposed changes to their ROC(s). Where changes affect the ROBEX scheme, proposals should be forwarded to the ICAO APAC Office. Changes are regionally coordinated and notified to all centres via METNO, and may later be included in the Handbook. The ROBEX Handbook defines the agreed regional framework for routine OPMET exchange and is updated periodically. Operational bulletin changes are managed through the METNO procedure until incorporated into a subsequent edition.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) endorse the proposed changes to the ROBEX Handbook; and
- c) request ICAO Secretariat to make the required changes to the ROBEX Handbook.
