



ICAO

*International Civil Aviation Organization***WORKING PAPER****Asia and Pacific (APAC)****Thirteenth Meeting of the Meteorological Requirements Working Group (MET/R WG/13)**

Bangkok, Thailand, 22 to 26 April 2024

Agenda Item 3: Collaboration between MET and ATM stakeholders**DISSEMINATION OF TAF FORECASTS**

(Presented by India)

SUMMARY

This paper refers to proposals for the amendment of ICAO Annex 3, Meteorological Service for International Air Navigation, Part I — Core SARPs Part II — Appendices and Attachments Twentieth Edition, July 2018 APPENDIX 5. TECHNICAL SPECIFICATIONS RELATED TO FORECASTS, The **MET/R WG/13** Meeting is also reminded that States and appropriate international organizations should provide ICAO with any comments they wish to make on the amendment proposals.

Provisions requiring the dissemination of TAF forecasts and replacing the limitation of the Wind direction +/- 60° TEMPO and BECMG in values contained in TAF; ICAO criteria for TAF verification wind direction +/-20 with an accuracy of 80%. These criteria of Wind Direction are not met in verification accuracy in satisfactory figures, which means the verification observed quite below 80% criteria of ICAO in most of the situations.

Over the north Indian region airports observed variable winds during morning hours in Dec, Jan till mid Feb. Hence the accuracy variable forecast of wind direction does not fulfill the criteria of wind direction verification and the result goes down in verification.

1. INTRODUCTION

1.1 The first edition of Annex 3 to the Convention on International Civil Aviation (now titled Meteorological Service for International Air Navigation) was adopted by the Council of ICAO in 1948. The principal intent of Annex 3 was to define the codes that the States use to transmit meteorological (MET) information for aeronautical purposes to users.

1.2 Since this first edition, Annex 3 has undergone iterative improvement to ensure that MET services continue to fulfil the evolving operational requirements expressed by States and users, with due regard to evolving scientific capabilities and technological advances.

1.3 This paper refers to the latest proposals to amend ICAO Annex 3, i.e., APPENDIX5

1.4 The objective of meteorological service for international air navigation shall be to contribute towards the safety, regularity, and efficiency of international air navigation. Owing to the variability of meteorological elements in space and time, to limitations of forecasting techniques, and to limitations caused by the definitions of some of the elements, the specific value of any of the elements given in a forecast shall be understood by the recipient to be the most probable value which the element is likely to assume during the period of the forecast. Similarly, when the time of occurrence or change of an element is given in a forecast, this time shall be understood to be the most probable time

1.5 APPENDIX 5. TECHNICAL SPECIFICATIONS RELATED TO FORECASTS

CRITERIA RELATED TO TAF

a) ICAO Appendix 5 1.3 Use of change groups

Recommendation. — The criteria used for the inclusion of change groups in TAF or the amendment of TAF should be based on the following:

- a) when the mean surface wind direction is forecast to change by 60° or more, the mean speed before and/or after the change being 5 m/s (10 kt) or more;

ICAO Appendix 5 1.3.3 Recommendation. — When a change in any of the elements given in Chapter 6, 6.2.3 is required to be indicated in accordance with the criteria given in 1.3.2, the change indicators “BECMG” or “TEMPO” should be used followed by the time period during which the change is expected to occur. The time period should be indicated as the beginning and end of the period in whole hours UTC.

ATTACHMENT B. OPERATIONALLY DESIRABLE ACCURACY OF FORECASTS

Note 1.— The guidance contained in this table relates to Chapter 2, 2.2, in particular to 2.2.8, and Chapter 6.

Note 2.— If the accuracy of the forecasts remains within the operationally desirable range shown in the second column, for the percentage of cases indicated in the third column, the effect of forecast errors is not considered serious in comparison with the effects of navigational errors and of other operational uncertainties.

<i>Element to be forecast</i>	<i>Operationally desirable accuracy of forecasts</i>	<i>Minimum percentage of cases within range</i>
TAF		
Wind direction	± 20°	80% of cases
Wind speed	± 2.5 m/s (5 kt)	80% of cases
Visibility	± 200 m up to 800 m ± 30% between 800 m and 10 km	80% of cases
Precipitation	Occurrence or non-occurrence	80% of cases
Cloud amount	One category below 450 m (1 500 ft) Occurrence or non-occurrence of BKN or OVC between 450 m (1 500 ft) and 3 000 m (10 000 ft)	70% of cases
Cloud height	± 30 m (100 ft) up to 300 m (1 000 ft) ± 30% between 300 m (1 000 ft) and 3 000 m (10 000 ft)	70% of cases
Air temperature	± 1°C	70% of cases

2. DISCUSSION

2.1 One of the important parameters of the TAF report is wind direction the criteria to include change element when wind direction is forecast to change by 60° or more and TAF verification Attachment B: operational desirable accuracy of forecast ICAO criteria is +/- 20 degrees and maximum cases are about 80% though including both the condition it's difficult to full fill ICAO TAF verification criteria however TAF verification accuracy results is underestimated. Following is strongly recommended kindly look into this matter.

2.2 **Recommendation.** — The criteria used for the inclusion of change groups in TAF particularly in case of wind direction should be reduced from existing 60°.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

- a) Note the information contained in this paper and refer to the detailed information in the ICAO Annex 3, Meteorological Service for International Air Navigation, Part I — Core SARPs Part II — Appendices and Attachments Twentieth Edition, July 2018 APPENDIX 5. TECHNICAL SPECIFICATIONS RELATED TO FORECASTS,
- b) Discuss and consider appropriate actions to support: Provisions requiring the dissemination of TAF forecasts and replacing the limitation of the Wind direction +/- 60° to less than +/- 60° TEMPO and BECMG in values contained in TAF.
