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*International Civil Aviation Organization*

**INFORMATION PAPER**

**Eleventh Meeting of the Meteorological Services  
Working Group (MET/S WG/11)**

Virtual meeting, 24 to 26 March 2021

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**Agenda Item 4: Quality management of meteorological services**

**INTRODUCTION TO TAF VERIFICATION METHOD**

(Presented by the Republic of Korea)

**SUMMARY**

This paper represents a TAF verification method being used in the Republic of Korea.

**1. INTRODUCTION**

1.1 The Aviation Meteorological Office of the Korea Meteorological Administration (KMA/AMO) regularly issues TAFs four times a day, and frequently issues AMDs depending on weather changes as specified in ICAO Annex 3.

1.2 To verify forecast accuracy, KMA/AMO evaluates only regular TAFs.

1.3 The verification method is differentiated by characteristics of aircraft operations based on desirable accuracy of forecasts as recommended in ICAO (Attachment B of ICAO Annex 3).

**2. DISCUSSION**

2.1.1 KMA/AMO has differentiated TAF verification methods on three elements: visibility, height of cloud base, and air temperature.

**Visibility**

2.2.1 ICAO recommends error range of 200 meters for visibility forecasts to be 800 meters or less, and error range of 30 percents for between 800 meters and 10 km.

2.2.2 Under the verification method of KMA/AMO, based on the VFR, when a forecasted visibility is more than 5,000 m and when the observation value is more than 5,000 m, the forecast is verified as a correct forecast. Since we have examined that more detailed forecasts are useful for users, we apply the SPECI criteria, which is 800, 1500 and 3000 m. In this case, the error range is set at 30% recommended by ICAO.

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2.2.3 For example, if a forecasted visibility exceeds 1,500m and is below 3,000m, the error range is set to 500 m, which is 30% of 1,500m.

**Height of cloud base**

2.3.1 ICAO recommends error range of 100 ft for those below 1,000 ft, and of 30% for those above 1,000 ft and below 10,000 ft.

2.3.2 Under the verification method of KMA/AMO, when a forecasted height of cloud base is above the standard height that satisfies CAVOK at airports and when the observation value is above the standard height that satisfies CAVOK, the forecast is verified as a correct forecast.

2.3.3 Since the height of cloud base below the standard height that satisfies CAVOK plays an important role in aircraft operation, the verification method complies with the desirable forecast accuracy recommended by ICAO.

**Air temperature**

2.4.1 ICAO recommends error range of 1°C.

2.4.2 Accurate forecasting of temperatures within the 1 degree range is considered to be difficult. Thus, under the verification method of KMA/AMO, when a forecast's error range is less than 1 degree, the forecast is verified as a correct forecast. And when error range is more than 1 degree and less than 2 degree, half of the score is given.

**Expected effectiveness**

2.5.1 KMA/AMO's TAF verification method encourages forecasters to provide more specified TAFs to users to support efficient and safe aircraft operations.

**Table 1. Difference between ICAO Annex3 and AMO verification method**

Element	KMA/AMO	ICAO Annex3
Visibility	(1) 0~800m: error range is ±200m (2) 800~1,500m: error range is ±300m (3) 1,500~3,000m: error range is ±500m (4) 3,000~5,000m: error range is ±1,000m (5) 5~10km - If observation value is 5~10km: full score - If observation value is not 5~10km: no score	① 0~800m: ±200m ② 800m~10km: ±30%
Height of cloud base	(1) 0~1,000ft: error range is ±100ft (2) 1,000ft ~ higher height between 5,000 ft and MSA: error range is ±30% (3) Higher height between 5,000 ft and MSA ~ 10,000 ft : verified as BKN/OVC presence or not	① 0~1,000ft: ±100ft ② 1,000~10,000ft: ±30%
Air temperature	(1) error range is 1°C: full score (2) error range is 1°C~2°C: 1/2 score (3) error range is 2°C: no score	① 1°C

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to introduce the TAF verification method in the Republic of Korea.

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