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| WORLD METEOROLOGICAL ORGANIZATIONCOMMISSION FOR BASIC SYSTEMS-----------------------------THIRD MEETING OFINTER-PROGRAMME EXPERT TEAM ONCODES MAINTENANCEMARRAKECH, MOROCCO, 15 - 19 APRIL 2019 |  | IPET-CM-III / Doc. x.x (x)(xx. x. 2019)-------------------------ITEM x.xENGLISH ONLY |

(Category)

(Sub-category, otherwise omitted)

Alignment of the WMO Manual on Codes regarding the representation of midnight in OPMET information, including TAF, plus other relevant considerations

*Submitted by Raul Romero on behalf of ICAO*

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**Summary and Purpose of Document**

This paper presents a proposal to amend WMO-No. 306, *Manual on Codes* to ensure that midnight is exclusively represented by “00” not “24” notation within OPMET information, including in the TAF code form, to ensure alignment with ICAO Annex 5 – *Units of Measurement to be used in Air and Ground Operations* and the International Organization for Standardization (ISO) 8601 standard*.*

This paper also informs the meeting with regard to the issuance, on 30 November 2018, of Corrigendum No. 1 to Annex 3, Twentieth Edition, addressing, inter alia, the coding in METAR and SPECI of missing information in the cloud layers associated to CB or TCU in Annex 3, Table A3-2 - *Template for METAR and SPECI*.

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**ACTION PROPOSED**

That the Manual on Codes be aligned with ICAO Annex 5 – *Units of Measurement to be used in Air and Ground Operations* and the International Organization for Standardization (ISO) standards to ensure consistent time depiction of midnight is exclusively represented by “00”.

To note Corrigendum No. 1 to Annex 3-*Meteorological Service for International Air Navigation*, Twentieth Edition.

**ANNEXES:**

 1. Corrigendum No. 1 to Annex 3-*Meteorological Service for International Air Navigation*, Twentieth Edition issued on 30 November 2018.

**DISCUSSIONS**

**Alignment of the Manual on Codes and Annex 3- *Meteorological Service for International*** ***Air Navigation* to ensure that midnight is exclusively represented by “00”**

The meeting is invited to note that ICAO Annex 3 – *Meteorological Service for International Air Navigation* (reproduced as WMO Technical Regulations (WMO-No. 49), Volume II) contains Standards and Recommended Practices (SARPs) for aeronautical meteorological services, including the supply of OPMET information such as METAR/SPECI and TAF in WMO code forms prescribed in the WMO Manual on Codes (WMO-No. 306). In respect of METAR/SPECI, midnight is always represented by 0000Z, whereas in TAF midnight could be represented either by 0000Z or 2400Z depending on whether midnight denotes the start or the end of the TAF validity period (or intervening TAF validity periods). This representation also presently depends, to a great extent, on national practices of Members/States – for example, some prefer to use 312400Z whereas others prefer to use 010000Z.

According to ICAO Annex 5 – *Units of Measurement to be used in Air and Ground Operations*, Attachment E, paragraph 3 (Presentation of time), hours should be represented by two digits from 00 to 23 in the 24-hour timekeeping system and may be followed either by decimal fractions of an hour or by minutes and seconds. In addition, minutes should likewise be represented by two digits from 00 to 59 followed by either decimal fractions of a minute or by seconds.

It should be noted that even though Annex 5, Attachment E comprises material *supplementary to* the SARPs, included to *guide* their application, there is known non-adherence by some aeronautical meteorological providers of OPMET information, including TAF, to the Annex 5 guidelines. And, sometimes, there is a need for downstream (end-user) systems rectification of messages containing the “24” notation since this is not acceptable in some database or processing systems due to the fact that the use of “24” goes against the Annex 3 guidelines.

Moreover, it is important to note that the International Organization for Standardization (ISO) 8601 *does not* permit the use of “24” to represent midnight.

Noting that databases often reject OPMET information where time is incorrectly depicted, this situation could be a safety concern for international air navigation. Moreover, there are many aviation systems that *critically depend* on consistent time depiction, with OPMET information interacting in a high proportion of these systems. In this regard, the feedback from airline users is that the use of “24” instead of the “00” notation is unnecessarily confusing, impacting especially in the flight planning area and en-route MET information update processes.

Finally, and also importantly, the successful implementation of ICAO meteorological information exchange model (IWXXM) and system-wide information management (SWIM) depends on the correct use of standards, including those of ISO, and the manner in which time is depicted is considered of critical importance.

In view of the above the meeting is invited to agree that there is a need to explicitly state this consistent time depiction of midnight using the “00” notation in WMO-No. 306, *Manual on Codes*.

**Coding of missing information in automated METAR and SPECI in the cloud layers associated to CB or TCU in Annex 3, Table A3-2. Template for METAR and SPECI**

The meeting is invited to note that as part of Amendment 76 to Annex 3/WMO-No 49, Volume II, applicable in November 2013, in automated METAR and SPECI, the coding of missing information in the cloud layers associated to cumulonimbus (CB) or towering cumulus (TCU) was simplified with, inter alia, the transition from the use of six (6) solidi to three (3) solidi.

However, this simplification was not carried over to Amendment 77 (applicable in November 2016), which was an oversight.

In this regard, following the consultation process of Amendment 78 to Annex 3 (applicable in November 2018) and during the final review, it was suggested to replace, in Table A3-2 of ICAO Annex 3, the example “//////CB” by “///CB’ which was supported by the Secretariat and therefore endorsed by the Air Navigation Commission (ANC) of ICAO. For some reason, it was again inadvertently omitted in Amendment 78.

In view of the urgent need to correct the referred omission, a corrected example was included in Corrigendum No. 1 to Annex 3, Twentieth Edition, issued on 30 November 2018.

**PROPOSAL**

In view of the critical need that time be represented consistently correctly the ICAO position

of use of consistent time depiction of midnight by the exclusive use of “00” be endorsed by the IPET-CM in order to align the WMO Manual on Codes.