



WORKING PAPER

THIRTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 9 to 19 October 2018

COMMITTEE A

Agenda Item 2: Enabling the global air navigation system

2.3: Future provision of aeronautical meteorological service

**FURTHER DEVELOPMENT OF IWXXM FOR THE EXCHANGE OF AERONAUTICAL
METEOROLOGICAL INFORMATION**

(Presented by the United States)

EXECUTIVE SUMMARY

This paper presents a proposal to address the transition from the exchange of aeronautical meteorological information in traditional alpha-numeric code format to the weather information exchange model format consistent with the future Standard in Annex 3 — *Meteorological Service for International Air Navigation* (Amendment 78 to Annex 3 refers).

Action: The Conference is invited to:

- a) note the information in this paper; and
- b) agree to Recommendation 2.3/x — Further Development of IWXXM for the Exchange of Aeronautical Meteorological Information in paragraph 3.2.

1. INTRODUCTION

1.1 The provision of aeronautical meteorological services is critical to the safety and efficiency of international air navigation. In addition, meteorological information is identified as an enabling capability necessary to implement multiple Aviation System Block Upgrades (ASBUs) modules described in the ICAO *Global Air Navigation Plan* (Doc 9750, GANP).

1.2 The exchange of aeronautical information, including meteorological information, in the system wide information management (SWIM) environment is critical to achieving the operational improvements associated with the ASBU modules described in the GANP. The provision of information in SWIM-compliant format underpins much of the anticipated benefit associated with implementation of the ASBU modules.

2. DISCUSSION

2.1 For many years, national meteorological services have provided most domestic weather information in traditional alpha-numeric code (TAC). While many ICAO States have begun to transition to disseminating weather information in the SWIM-compliant ICAO Meteorological Information Exchange Model (IWXXM) format, a large number of States have not yet started to transition to IWXXM and may never be able to do so.

2.2 To ensure that aeronautical meteorological service is globally-harmonized and aviation users are able to receive weather information via SWIM-enabled systems, more ICAO Contracting States should be encouraged to transition to exchanging aeronautical meteorological information in IWXXM consistent with the Recommended Practice in Annex 3 — *Meteorological Service for International Air Navigation*.

2.3 ICAO recognized that many States might experience difficulty in transitioning from exchanging aeronautical meteorological information in TAC format to IWXXM format. Thus, ICAO took the unusual step of introducing IWXXM first as a Recommended Practice in Annex 3 with an eventual transition to a Standard. However, the applicability date for IWXXM to become a Standard is now 2020, having already been delayed once due to many States being unable to implement IWXXM. Many ICAO Contracting States simply do not have the capability to transition existing domestic weather observation and forecast systems from TAC format to IWXXM format.

2.4 It should be noted that unlike the Aeronautical Information Exchange Model (AIXM) and the Flight Information Exchange Model (FIXM), which are both unique to the aviation industry, IWXXM is being jointly developed by ICAO and the World Meteorological Organization (WMO), which governs national meteorological services. The implementation of IWXXM can have significant implications for those service providers.

2.5 The WMO utilizes a complex change management process for reviewing and approving changes to IWXXM and incorporating those changes into WMO Technical Regulations. The WMO change management process is in addition to the ICAO processes for amending Annex 3 — *Meteorological Service for International Air Navigation*. Thus, changes to IWXXM require a significant lead-time to accommodate the processes to change or update standards in both organizations. This situation can cause delays to changes or updates if either organization experiences a disruption in its standards development process.

2.6 While it is crucial that aeronautical meteorological information be exchangeable between SWIM-enabled systems, it may not be necessary for all individual States to provide domestic weather information in IWXXM format. If ICAO, in close coordination with the WMO, develops the requisite policies and procedures to allow designated entities, such as an Operational Meteorological (OPMET) databank, to convert information in TAC format to IWXXM format, then individual States that are unable to transition to IWXXM could arrange for data to be translated from TAC to IWXXM for the purpose of data exchange.

2.7 It needs to be understood that, for a variety of reasons, not all national meteorological services will have the capability to transition from TAC formatted information to IWXXM formatted information. This situation is entirely acceptable provided that ICAO and the WMO develop the appropriate policies and procedures to ensure that the aeronautical meteorological information from all States required by aviation users can be translated and made available in IWXXM format. The translation from TAC to IWXXM does not necessarily have to occur at the local or State level. It could be successfully accomplished at the regional level.

3. CONCLUSION

3.1 To ensure that aeronautical meteorological service is globally harmonized and aviation users are able to access weather information via SWIM-enabled systems, ICAO needs to encourage States to transition to exchanging aeronautical meteorological information in IWXXM format. A means to encourage more States to transition to disseminating information in IWXXM is to cease support for information in TAC format in Annex 3 and provide appropriate options for States unable to transition to IWXXM at the local level to translate TAC-formatted information into IWXXM format for the purpose of data exchange.

3.2 In light of the above, the Conference is invited to agree to the following recommendation:

Recommendation 2.3/x — Further Development of IWXXM for the Exchange of Aeronautical Meteorological Information

That the Conference:

- a) endorse the exchange of meteorological information for aeronautical purposes only in the ICAO Meteorological Information Exchange Model (IWXXM) format;
- b) request ICAO, in close coordination with the WMO, to cease the exchange of aeronautical meteorological information in TAC format, as soon as practicable; and,
- c) request ICAO, in close coordination with the WMO, to expeditiously develop the policies and procedures necessary to convert meteorological information from TAC format to IWXXM format for the purpose of data exchange to support international air navigation, where necessary.

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