



ASSEMBLY — 40TH SESSION

TECHNICAL COMMISSION

Agenda Item 30: Other issues to be considered by the Technical Commission

**DEVELOPMENT AND IMPLEMENTATION OF THE ICAO METEOROLOGICAL  
INFORMATION EXCHANGE MODEL FOR OPMET MESSAGE EXCHANGE BY THE  
BOLIVARIAN REPUBLIC OF VENEZUELA**

(Presented by the Bolivarian Republic of Venezuela)

**EXECUTIVE SUMMARY**

The purpose of this working paper is to present to Assembly participants the action taken by Venezuela to implement the ICAO Meteorological Information Exchange Model (IWXXM), by specifically developing and implementing encoding software for converting meteorological aerodrome report (METAR) and aerodrome forecast (TAF) messages from traditional alphanumeric code (TAC) format to extensible markup language (XML) format.

**Action:** The Assembly is invited to:

- a) take note of the information presented in this working paper; and
- b) take these considerations into account in IWXXM development and implementation, and assess at the global level the implementation of mechanisms that provide support tools for States that require them.

<i>Strategic Objectives:</i>	This working paper relates to the Safety and Air Navigation Capacity and Efficiency Strategic Objectives.
<i>Financial implications:</i>	It is proposed that the activities mentioned in this working paper be carried out with the resources available under the regular budget of the current triennium and/or extra budgetary contributions.
<i>References:</i>	<i>Global Air Navigation Plan (GANP) (Doc 9750)</i> <i>Aviation System Block Upgrade (ASBU)</i> <i>Manual on the System-Wide Information Management (SWIM) Concept (Doc 10039)</i> <i>Manual on the Digital Exchange of Aeronautical Meteorological Information (Doc 10003-AN/503)</i>

<sup>1</sup> Spanish version provided by Venezuela (Bolivarian Republic of).

## 1. INTRODUCTION

1.1 It is recommended in Appendices 3 and 4 to Amendment 76 to ICAO Annex 3 - *Meteorological Service for International Air Navigation* that METAR, special meteorological report (SPECI) and TAF be disseminated digitally, under bilateral agreements between States with that capability, by means of extensible markup language (XML) and geography markup language (GML).

1.2 Moreover, in Amendment 77 to Annex 3, it is recommended that States transmit meteorological reports and data in XML/GML format, applicable in November 2016.

1.3 Accordingly, in 2015 Venezuela began to develop METAX, an encoding application for converting OPMET METAR and TAF messages from a traditional format (TAC) to a digital format (XML). The METAX encoder has now been integrated into the Integrated Meteorological Transmission System (SITMET) of the Venezuelan Aviation Meteorology Service (SERMETAVIA).

1.4 On 7 March 2018, the International Civil Aviation Organization (ICAO) Council approved Amendment 78 to Annex 3, which became effective on 16 July 2018 and applicable on 8 November 2018, except for the provisions containing a different applicability date and for the implementation of the IWXXM as a standard for OPMET information exchange on 5 November 2020.

1.5 Drawing on an assessment of the early date of IWXXM implementation as a standard, an automatic weather information system (AWIS) has been developed for the National Institute of Meteorology and Hydrology (INAMEH), which stores data recorded by aeronautical meteorological stations at various Venezuelan airports, and generates automatic METAR bulletins in TAC and XML formats that comply with the IWXXM schemas.

## 2. ANALYSIS

2.1 Drawing on SERMETAVIA's SITMET and INAMEH's AWIS, Venezuela now automatically generates bulletins of **METAR (both systems) and TAF (SITMET)** aeronautical weather messages, in **TAC and XML** formats, which were developed by using IWXXM Version 2.1.1 and therefore meet ICAO requirements for encoding METAR and TAF messages in XML format for OPMET exchange.

2.2 Owing to the development of these two systems, Venezuela can participate in OPMET information exchange in XML/GML format, in accordance with ICAO Annex 3, and can collaborate with requesting States on METAX development and implementation.

2.3 Venezuela has been one of the pioneers of the development of an OPMET message encoder in accordance with IWXXM formats and schemas, and can advise and assist requesting States in implementing METAX as the software for encoding METAR and TAF messages and bulletins.

## 3. CONCLUSION

3.1 The ICAO Assembly is invited to:

- a) assess States' current IWXXM implementation status and draw up an implementation work plan;

- b) bear in mind that Venezuela stands ready to give advice and support on the basis of the experience gained from developing the METAX encoder for the IWXXM, while stressing that OPMET exchange in XML will be a standard as from 5 November 2020;
- c) take into account the considerations outlined in this working paper for IWXXM development and application by States that have not made significant progress in IWXXM implementation;
- d) promote staff training activities for IWXXM implementation, with the support of Venezuela; and
- e) evaluate the establishment of an IWXXM development working group and designate focal points for States, on the basis of Member States' experience of IWXXM implementation.

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