International Civil Aviation Organization

FOURTEENTH MEETING OF THE ASIA/PACIFIC METEOROLOGICAL INFORMATION EXCHANGE WORKING GROUP (MET/IE WG/14)

Bangkok, Thailand, 7 – 9 March 2016

Agenda Item 4: Planning and implementation of digital exchange of meteorological information

A SUMMARY ON THE LATEST DEVELOPMENT OF IWXXM

(Presented by Hong Kong, China)

SUMMARY

This paper presents a summary on the development of IWXXM 2.x to be published around May 2016. In addition to bug fixes, this release of IWXXM includes improvements to the digital representation and new additions to support the proposed requirements in Amendment 77 to ICAO Annex 3. A schedule indicating individual steps involved in publication of the new schema will also be presented.

1. INTRODUCTION

1.1 The WMO Task Team on Aviation XML (TT-AvXML) was set up to develop an XML/GML representation of meteorological information for use by the international civil aviation community. In September 2013, the first version (Version 1.0) of the ICAO Meteorological Exchange Model (IWXXM) was published with representations of METAR/SPECI, TAF and SIGMET. A slightly enhanced version (Version 1.1) was approved in May 2015 by the seventeenth World Meteorological Congress to become a new part of the WMO Technical Regulations.

1.2 Since then, further enhancements were being made to IWXXM. Apart from bug fixes and improvements as suggested by the aviation community, XML/GML representations of AIRMET, Volcanic Ash and Tropical Cyclone Advisories will also be introduced in IWXXM 2.x to meet the proposed requirements in Amendment 77 to ICAO Annex 3. This paper intends to highlight changes involved in this new version of IWXXM. A schedule indicating individual steps involved in publication of the new schema will also be provided.

2. HIGHLIGHTS OF CHANGES IN IWXXM VERSION 2.x

2.1 At the fourth meeting of TT-AvXML from 22 to 24 September 2015 and the first meeting of ICAO METP Working Group on Meteorological Information Exchange (WG-MIE) from 16 to 20 November 2015, the following changes were proposed to be introduced in IWXXM 2.x:

New message type:

(i) XML/GML representations of AIRMET, Volcanic Ash and Tropical Cyclone Advisories

New metadata on every message type:

(ii) Operational status of IWXXM messages (OPERATIONAL, TEST or EXERCISE)

(iii) For those IWXXM messages being created through translation from Traditional Alphanumeric Code (TAC) messages, information of the Translation Center[Note 1] involved

New structure of a message:

(iv) Extension mechanism, in the form of extension blocks, to accommodate the current additional content in the TAC RMK section

Major bug fixes and improvements:

(v) METAR/SPECI
- Make all observed fields optional with a nilReason

(vi) TAF
- Add explicit TL/AT/FM indicator

(vii) SIGMET
- Add explicit OBS/FCST indicator
- Remove the requirement to specify FIR/UIR boundaries in messages

(viii) All message types
- Replace reference to SAF classes with those in AIXM WX profile
- Add the requirement that all gml:id created should be globally unique

3. OTHER OUTCOMES OF THE TT-AvXML and WG-MIE MEETINGS

3.1 Up to this moment, only 7 products in Annex 3 are having XML/GML representations. It was envisaged by WG-MIE that TAC of these and the remaining Annex 3 products would continue to be exchanged in parallel with the 7 IWXXM messages beyond 2018. To avoid confusion, IWXXM messages should not be translated back to TAC messages; the respective TAC messages distributed in parallel should be used.

3.2 WG-MIE also considered that further development of TAC should be frozen for all except extraordinary situations to encourage users to switch to IWXXM. New message features, like metadata for operational status and Translation Centers, and new message types, including space weather to be introduced in 2018, will only be available in IWXXM.

3.3 For missing observations (e.g. due to failure of humidity sensor), WG-MIE agreed that this should not result in the METAR/SPECI not being disseminated in IWXXM format. It was noted that the mandatory content requirements in Annex 3 are typically understood to be design criteria and meant to apply primarily to long term systemic situations. The group agreed if a mandatory field of METAR is temporarily unavailable, the associated IWXXM message should still be generated with no value and respective nilReason to indicate the cause for missing data.

[Note 1] See *Guidelines for the Implementation of OPMET Data Exchange using IWXXM* for definition, function and activities involving a Translation Center.

3.4 WG-MIE agreed to recommend to the METP recommendations by TT-AvXML that for changes requiring modification of IWXXM, the minimum time between approval of an Amendment to Annex 3 and the implementation of the XML component should be at least 18 months. It was noticed that Annex amendments were normally approved in March, became effective in July and applicable in November of an amendment year (2016 and each 2 years thereafter), leaving only 8 or 9 months for any consequential changes to IWXXM. The group discussed a number of possible solutions (deferred implementation dates within the Annex, for example) and deferred further consideration of this to be within the context of specific action items, as necessary. In any case, the publishing schedule of IWXXM 2.x for Amendment 77 to ICAO Annex 3 is as follows:

Product description	**Due Date**
Draft of version 2.0 RC1 published	31/03/2016
Comments on 2.0 received from users	30/04/2016
Final release of pre-approval version 2.0	31/05/2016
Documentation submitted to WMO CBS-16	31/05/2016
Recommendation from WMO CBS-16	30/11/2016
Approval by WMO EC-69 and final definition of version 2.x[Note 2]	30/06/2017

3. ACTION REQUIRED BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.

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[Note 2] It is anticipated that minor changes (as reflected in the minor version number) to IWXXM due to bug fixes or otherwise will be applied from first published to approval by WMO during an ICAO amendment cycle.