INTERNATIONAL CIVIL AVIATION ORGANISATION

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG)
AFI OPMET MANAGEMENT TASK FORCE (AFI OPMET MTF)
THIRD MEETING (AFI OPMET MTF/3)
(Dakar, Senegal, 27 – 28 June 2011)

Agenda Item 4:   Future Developments with regards to OPMET information

REGIONAL PLAN FOR TRANSITION TO XML CODED OPMET INFORMATION

(Presented by the Secretariat)

SUMMARY

This paper updates the MTF on the global migration of operational meteorological (OPMET) data towards table-driven data representation in the extensible mark-up language (XML).

1.   Introduction

1.1   The meeting will recall that in Task 6 (*Prepare regional plan for the transition to XML coded OPMET information in coordination with the relevant APRIG contributing bodies*) of the MTF work programme, the MTF/3 Meeting has been urged to draft the AFI regional plan for the transition to XML coded OPMET information.

1.2   This paper presents the progress made so far in the developments of table-driven data representation (i.e. table-driven code-form) in the extensible mark-up language (XML). The meeting will then decide on the way forward to Prepare regional plan for the transition to XML coded OPMET information in the AFI region.

2.   Discussion

2.1   The MTF/3 Meeting is informed by the Meteorology Group (METG) of the EANPG on the following developments for the implementation of the XML:

Pilot project for the presentation of OPMET data in XML

2.2   **In July 2009**, a pilot project ('proof of concept') was undertaken by Belgocontrol in close coordination with WMO, to demonstrate the feasibility of sending OPMET (specifically METAR) coded in XML on the AFTN and for the receiver to visualize the message in the form prescribed in Annex 3 – *Meteorological Service for International Air Navigation* – i.e. as if it were an alphanumeric message.

2.3   In coordination with receivers at LIDO (Lufthansa) and Hong Kong Observatory (Hong Kong, China), XML-coded METAR were dispatched through the NATS (United Kingdom), Singapore COM Centre (Singapore) and Bangkok AFTN Centre (Thailand). The 1800 characters limit imposed by the AFTN was not exceeded.

2.4   The results of the trial were considered successful, with messages displayed by the receiver identical to the ones sent by the originator. The pilot project demonstrated that the AFTN can be used for the dissemination of XML-coded messages provided that:

   a) The full IA-5 (International Alphabet No. 5) character set be supported by the AFS equipment; and

   b) The message be kept small (less than 1800 characters).

2.5   The group realized that the model used for creating the XML-coded METAR messages exchanged during the pilot project had been based on BUFR templates developed earlier by WMO. In the future however, the operational OPMET data exchanges would be based on the NEXTGEN/SESAR WXXM.

Models for the representation of OPMET data

2.6   In view of the expected future use of the WXXM, it was considered that there was no need to pursue developing models based on BUFR code tables for the representation of OPMET data in the XML within the WMO Expert Team (ET-ODR).

Schedule for the implementation of the XML

2.7   In this regard, the following milestones has been envisaged by ICAO:

   a) **In 2013**: replacement of the BUFR code form by XML as far as the bilateral use of table-driven codes for METAR/SPECI and TAF are concerned;

   b) **In 2014:** endorsement of the future use of WXXM by the planned conjoint ICAO/WMO MET/AIM Divisional Meeting;

   c) **In 2016:** start of implementation of WXXM; and

   d) **In 2019/2022:** completion of implementation.

2.8   The METG was informed that a number of steps would be required to enable the above transition. In particular, the following intermediate milestones (completion dates and the responsible organization in brackets) were considered necessary for:

   a) Air Navigation Commission to consider the results of the pilot project and to agree that the BUFR code form, used on a bilateral basis for METAR/SPECI and TAF, be replaced by XML as of Amendment 76 to Annex 3 (completed by ICAO);

   b) CBS IPET-MDI (Inter-Programme Expert Team on Metadata and Data Interoperability) to undertake further tests using various models, including the WXXM, and to prepare documentation for the CBS-Ext. (2010) (completed by WMO);

   c) CBS-Ext.(2010) to endorse the XML model(s) for MET data in general, including OPMET, and to agree that WMO be responsible for the future governance and maintenance of these data models (completed by WMO);

   d) WMO Executive Committee to approve the use of the XML model(s) (completed by WMO); and

e) CBS IPET-DRC (Inter-Programme Expert Team on Data Representation on Codes) to begin the maintenance of the data models, ensuring that an appropriate provisions and/or references be included in the *Manual on Codes* (WMO – No. 306) **by the second half of 2011** (WMO).

3.   Conclusion

3.1   In view of the above, in the short term, (**2010-2013**), ICAO is planning for the introduction of *enabling clauses* in Annex 3 to use XML for OPMET (METAR/SPECI and TAF), and also for tropical cyclone and volcanic ash advisories and SIGMET in graphical format. This will have little impact on telecommunications facilities since the XML-code form will be used on a bilateral basis only (most likely exchanged over the internet). Consequently, planning for the implementation of the use of XML for OPMET at this stage **is considered to be too premature**, and should not be initiated before the planned MET/AIM Divisional Meeting in 2014 – which is expected to endorse **the transition plan which would have its first milestone in 2016 (Amendment 77 to Annex 3**). There will be ample time after the Divisional Meeting to undertake the necessary regional planning.

3.2   With regard to the information provided above, the meeting considers that planning for the implementation of the use of XML for OPMET at this stage is too premature. The Task Force may wish to formulate the following decision:

> **Draft Decision 3/xx: Preparation of AFI XML Transition Plan**
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> **That, the preparation of the AFI XML Transition Plan be postponed until the decision on the implementation of the use of XML for OPMET and the necessary XML code tables has been completed by the MET/AIM Divisional Meeting planned for 2014.**

3.1   The meeting is invited to:

a) Note the information in this paper and,

b) decide on the above decision proposed for the Task Force's consideration.