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WORKING PAPER / FILMSY

**Twenty-fourth Meeting of the Meteorology Sub-group (MET SG/24) of the Asia and Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG)**

Web-conference, 16 – 20 November 2020

**Agenda Item 5:** Research, development and other initiatives**CHANGES TO OPMET EXCHANGE AND IWXXM EXCHANGE REGISTER**

(Presented by Australia and Hong Kong China)

**SUMMARY**

This paper presents a new OPMET exchange scheme for IWXXM and the development of an online register of IWXXM exchange to facilitate the implementation of IWXXM exchange in the APAC Region during the transition period.

**1. INTRODUCTION**

1.1 Digital Exchange of METAR/SPECI, TAF, SIGMET, AIRMET, Volcanic Ash Advisory, Tropical Cyclone Advisory and Space Weather Advisory, in IWXXM GML form has become an Annex 3 standard since 5 November 2020. This paper discusses a new OPMET exchange scheme for IWXXM and the development of an online register of IWXXM exchange to facilitate the implementation of IWXXM exchange in the APAC Region.

**2. DISCUSSION**Challenges of IWXXM exchange in APAC Region

2.1 According to the Section 2.6 of the [Guidelines for the Implementation of OPMET Data Exchange using IWXXM](#), (fourth edition) (IWXXM Guidelines) a Regional OPMET Centre (ROC) is responsible for collecting data from National OPMET Centres (NOCs) and validating all required data in its area of responsibility (AoR), according to the regional distribution schema. Each ROC is responsible for the collection of required OPMET data from the other ROCs in the Region, and for the dissemination to the other ROCs of the required data from its AoR.

2.2 IWXXM exchange between ROCs requires full AMHS pathways. Unless the AMHS is enhanced with “AMHS profile for OPMET IWXXM data” in order to cover exactly one body-part being a Transfer Body Part (FTBP) with Inter-personal Message Header Extension (IHE) to carry ATS priority and Filing time, the originating and the receiving centres will not be able to disseminate or

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receive IWXXM messages. However, not all Aeronautical Fixed Services (AFS) connections in the APAC Region support AMHS with FTBP and IHE features at the moment.

2.3 In the current TAC OPMET exchange scheme, dissemination arrangements for different products vary. METAR/SPECI and TAF are now distributed by ROC, while SIGMET, VAA, TCA, SWXA are distributed by originating centres directly to the destinations without any re-distribution by ROCs. It would be difficult to implement IWXXM dissemination if the existing TAC dissemination schemes in the APAC Region were followed considering the requirement of a full FTBP AMHS capable dissemination path. Furthermore, OPMET & SIGMET monitoring highlights inconsistencies in the availability of OPMET throughout the region. A more consistent and simpler responsibility for distribution is expected to improve the availability of OPMET information in IWXXM.

2.4 Full AMHS routing will only be possible if unique addresses are created for each ROC to receive IWXXM reports, which are different from the existing listed TAC AFTN addresses. Such new unique addresses will allow the configuration of new paths readily available to support AMHS with FTBP and IHE and the exchange of IWXXM reports but different from the existing standard route for exchanging TAC reports.

New OPMET exchange scheme for IWXXM in APAC Region

2.5 In view of the above considerations, while TAC and IWXXM coexist, IWXXM exchange scheme shall differ from traditional OPMET exchange scheme. In the Webinar on the Implementation of IWXXM held in October 2020, it was proposed that:

- There is no distributing responsibility for originating stations and National OPMET Centres (NOC) other than to get their products to their ROC in the APAC Region and users within their State;
- Originating ROC distributes every type of IWXXM OPMET (including SIGMET, VAA, TCA, SWXA in addition to METAR/SPECI and TAF) to all other ROCs in the APAC Region; and
- A ROC, on receiving an IWXXM report, will forward this to NOCs within their AOR for further distribution to users.

For example, an originating station only needs to send IWXXM SIGMET to their ROC and does not need to distribute SIGMET to other destinations, which is different from the existing practice for distributing TAC SIGMET to various ROCs/RODBs. Meanwhile, ROC needs to take up the role to distribute the IWXXM SIGMET to other ROCs.

2.6 The aforementioned IWXXM exchange model is based on the method described in the IWXXM Guidelines that is referenced in the ROBEX Handbook. To formalise this proposal the following decision is recommended:

**Draft Decision MET SG/24/x: IWXXM Exchange Approach**

That, the MET SG agrees IWXXM exchange shall be aligned with *Guidelines for the Implementation of OPMET Data Exchange using IWXXM* (fourth edition, November 2020), specifically that Regional OPMET Centres are responsible for the distribution of IWXXM to States within the Asia Pacific Region.

2.7 It was also proposed that all ROC to create a new unique IWXXM delivery AMHS address, to which all originating ROCs will send IWXXM products. Each ROC shall declare their readiness of reception of IWXXM to all other ROCs as soon as possible. If a ROC knows which receiving ROC is not ready for IWXXM, the ROC simply does not configure that address into their distribution list. An IWXXM-not-ready-ROC shall update to all other ROCs when they become ready for receiving

IWXXM, so that their corresponding IWXXM address could be included in distribution list of other ROCs.

Online register of IWXXM exchange in APAC Region

2.8 MET/IE WG/18 meeting considered the possibility to further update the ROBEX Handbook to facilitate the Regional exchange of OPMET in IWXXM form. The development of new IWXXM-related ROBEX information, such as the addresses for the required dissemination of IWXXM messages by States and the capabilities of the ROBEX scheme for transmitting IWXXM messages, would also need to be flexible to reflect the changing requirements of States, especially during the transition to Region-wide implementation of IWXXM exchange. The meeting also noted that the current process of MET/IE WG to update the ROBEX Handbook on an annual basis did not reflect OPMET updates made by States in a sufficiently responsive and timely manner. The meeting agreed to the following action item:

**MET/IE WG/18 Action Item 14: ROBEX Handbook updates – IWXXM-related data**

Investigate the development of an online repository for ROBEX data in which States would share and maintain up to date information on the IWXXM-capabilities of the ROBEX scheme and the AMHS addresses to support the required dissemination of IWXXM messages

2.9 Considering that many ROCs are with the Met Service Providers and may not have access to AMC files, following the above action item, an online register has been developed to allow ROCs to share timely updates of the implementation status of IWXXM exchange (Figure 1), including their AMHS addresses, readiness to receive IWXXM, supported file size, AMHS status and the status in transmitting NOC's IWXXM report.

2.10 The register was developed using Google Sheet to make the information available to the public via a view-only web link and a trial version is available at: [Link to proposed IWXXM exchange register](#). This allows the admin to edit the online register once ROCs submit updated information. The view-only web link could also be shared via APAC website so that the updated information could be made available to all the States. All ROCs could also be notified by email after each update.

2.11 It is recommended that the MET SG supports the development of an online register of IWXXM exchange to source and maintain reliable information about implementation status of AMHS and FTBP between the annual ROBEX Handbook update, and to facilitates the States to identify the possible alternate dissemination paths for IWXXM exchange so that ROCs could distribute the IWXXM to other capable ROCs in the APAC region as far as possible, and formulate the following draft decision:

**Draft Decision MET SG/24/x: Development of Online Register of IWXXM Exchange**

That, the MET SG supports the development of an online register of IWXXM exchange in the APAC Region to source and maintain reliable information about implementation status of AMHS and FTBP between the annual ROBEX Handbook update, and to facilitates the States to identify the possible alternate dissemination paths for IWXXM exchange so that ROCs could distribute the IWXXM to other capable ROCs in the APAC region as far as possible.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) discuss any relevant matter related to paragraph 2.6 and 2.8 to 2.11.

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**Attachment 1**

Implementation status of IWXXM exchange over AMHS (APAC Region) [Trial]						
Register updated: 12 November 2020						
Ready to receive IWXXM	ROC location indicator	ROC name	Address to receive IWXXM	File size limit	AMHS supporting FTBP+IHE	Transmitting NOC's IWXXM report
READY	VTBB	Bangkok	VTBBYPYL	6 KB	YES	YES
NOT READY	ZBBB	Beijing				
READY	YBBN	Brisbane	YBBYPYL	4 MB	YES	YES
NOT READY	VCCC	Colombo				
NOT READY	VIDP	Delhi				
NOT READY	VECC	Kolkata				
NOT READY	VABB	Mumbai				
READY	VHHH	Hong Kong	VHHYPYL	2 MB	YES	YES
NOT READY	RKSI	Incheon				
NOT READY	WIII	Jakarta				
NOT READY	OPKC	Karachi				
NOT READY	WMKK	Kuala Lumpur				
NOT READY	NFFF	Nadi				
READY	WSSS	Singapore	WSSYPYL	?	YES	NOT YET
TESTING	RJTD	Tokyo	RJTDZYA	2 MB	YES	NOT YET
READY	NZKL	Wellington	NZKLYMYL	?	YES	?

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Figure 1: The proposed online IWXXM register for IWXXM exchange in APAC Region