

International Civil Aviation Organization

ICAO

WORKING PAPER (WP/22)

ASIA AND PACIFIC (APAC) TWENTY-FOURTH
MEETING OF THE METEOROLOGICAL
INFORMATION EXCHANGE WORKING
GROUP (MET/IE WG/24)

Nadi, Fiji, 21 to 24 April 2026

Agenda Item 6: Meteorological Information Exchange in IWXXM Form**STATUS OF APAC IWXXM MESSAGE EXCHANGE OVER AMHS**

(Presented by Australia and Hong Kong, China)

SUMMARY

This paper reviews the latest implementation status of IWXXM-formatted MET information exchange over AMHS in the APAC Region as indicated in the *Online Register of APAC IWXXM Exchange Status*, and encourages States to provide any updates to the Online Register.

1. INTRODUCTION

1.1 The structure of Regional Operational Meteorological (OPMET) Bulletin Exchange (ROBEX) scheme in the APAC Region, applicable for both OPMET information in the Traditional Alphanumeric Code (TAC) and IWXXM format, is illustrated in the Appendix G of ICAO APAC ROBEX Handbook (available at [ICAO APAC e-doc portal](#) -> MET), and provided at Appendix A to this paper for reference. The following operational units form the ROBEX scheme:

- Originating Stations
- National OPMET Centres (NOCs)
- Regional OPMET Centres (ROC)
- Regional OPMET Data Banks (RODB)
- Inter-regional OPMET Gateways (IROG)

1.2 Based on the APAC ROBEX scheme, an *Online Register of APAC IWXXM Exchange Status*¹ (IWXXM online register) was developed to allow Regional OPMET Centres (ROCs) or National OPMET Centres (NOCs) to share timely status updates of the implementation status of IWXXM exchange, including

- readiness to receive IWXXM,
- supported AMHS capability,
- dissemination destinations (other ROCs or NOCs), and
- generation of IWXXM data.

The online register also reflects the progress of inter-regional exchange of IWXXM messages implemented by IROGs. The link to the online register has been included in Section 2.4.4 in the APAC ROBEX Handbook and [ICAO APAC e-doc portal](#) --> MET.

¹ Link: <https://docs.google.com/spreadsheets/d/1WEcGfMRZq2dgHsfdpFhiefJEcA8OeMhfbCJHTqA7NX0/edit#gid=0>

2. DISCUSSION

Review of current status

2.1 The IWXXM online register provided in Appendix B to this paper reflects the following status of operational IWXXM message exchange over AMHS in APAC as of March 2026.

- Among seventeen ROCs, only ten ROCs are routinely disseminating IWXXM messages, and only eight ROCs are capable of receiving IWXXM messages over AMHS.
- Some ROCs are not yet ready to disseminate or receive IWXXM messages over AMHS.
- Most of the NOCs are not yet capable of receiving IWXXM messages from ROCs.
- Some States/Administrations had the capability to generate IWXXM MET reports, but lack the necessary AMHS with FTBP² and IHE³ at their NOCs to disseminate them to ROCs for onward international exchange.
- Regarding inter-regional exchange involving APAC IROGs, only IROG Singapore and IROG London had implemented inter-regional exchange of IWXXM messages over AMHS between the APAC Region and the EUR Region.

2.2 While some States indicated the capability to generate meteorological information in the IWXXM form, they could not disseminate the IWXXM messages from the NOC. In some cases, there was no communication service available for distributing the IWXXM from the NOCs to ROCs, and from the ROCs to the IROGs because the necessary AMHS with FTBP and IHE was not yet implemented. Furthermore, the global exchange is also hindered by the lack of inter-regional communication between IROG pairs with AMHS FTBP/IHE capability.

2.3 The lack of suitable communication services hinders the global provision of IWXXM over AMHS. Consequently, the lack of global availability of OPMET is inhibiting system suppliers and users from transitioning to IWXXM and delaying realisation of benefits from the implementation of IWXXM.

2.4 The distribution of TAC-formatted MET information internationally is proposed to be no longer required from 2030 (refer State Letter AN 10/1-26/5). Hence, the APAC Region requires full implementation of IWXXM data exchange prior to 2030. States/Administrations are reminded to expedite the implementation of communication services necessary to enable the required global dissemination of meteorological information in the IWXXM form, both intra-regionally and inter-regionally (**Conclusion APANPIRG/34/13**, provided in Appendix C to this paper), and provide ICAO an update on the status and readiness dates for operational exchange of IWXXM messages (**Conclusion MET SG/28-03**, see Appendix C to this paper).

Further enhancing IWXXM message exchange among IWXXM-capable ROCs

2.5 Regarding States with IWXXM-capable ROCs, they are recommended to explore the following dissemination of IWXXM message via AMHS with respective ROC counterparts and try to resolve any technical issues to enhance the implementation of region-wide exchange:

Sender	Recipient
ROC Bangkok	ROC Kuala Lumpur
	ROC Wellington
ROC Beijing	ROC Kuala Lumpur

² File Transfer Body Part

³ Interpersonal Message (IPM) Heading Extensions

	ROC Wellington
ROC Kuala Lumpur	ROC Bangkok
	ROC Beijing
	ROC Brisbane
	ROC Tokyo
	ROC Wellington
ROC Nadi	ROC Beijing
ROC Tokyo	ROC Bangkok
	ROC Brisbane
	ROC Hong Kong
	ROC Kuala Lumpur
ROC Washington	ROC Bangkok
	ROC Beijing
	ROC Hong Kong
	ROC Kuala Lumpur
	ROC Singapore
	ROC Wellington
ROC Wellington	ROC Beijing
	ROC Kuala Lumpur

Online resources supporting States’ implementation of IWXXM message exchange

2.6 States whose ROCs or NOCs not yet capable of implementing IWXXM message exchange over AMHS are advised to refer to the following online resources for technical guidance, which are available on the ICAO APAC e-docs portal. Particular attention should be paid to the requirement of AMHS to support File Transfer Body Part (FTBP) feature, Interpersonal Messaging (IPM) Heading Extensions (IHE), and IPM body containing exactly one body-part (specifically an FTBP). States lacking IWXXM/AMHS capability are also encouraged to seek technical advice from, and conduct interoperability tests with, IWXXM-capable ROCs/NOCs.

- [Guidelines for the implementation of OPMET Data Exchange using IWXXM](#)
- [IWXXM IMPLEMENTATION IN APAC REGION - Frequently Asked Questions \(FAQs\)](#)
- [Checklist of steps required to operational IWXXM exchange](#)
- [Educational material to manage the distribution of IWXXM information for COMM experts in the event of primary link failure](#)

Updating mechanism of the online register

2.7 MET/IE WG/23 in 2025 noted that States updated the Online Register of APAC IWXXM Exchange Status annually during MET/IE WG meeting, which was not as frequent as needed. It was agreed that there is a need for a notification method so that when a ROC enhanced AMHS capability and can disseminate IWXXM reports to other ROCs or NOCs, relevant NOC and ROC can be notified automatically and table can be updated. It was agreed that MET experts from Australia and Hong Kong, China will work on this requirement (**Action Item MET/IE WG/23-16**).

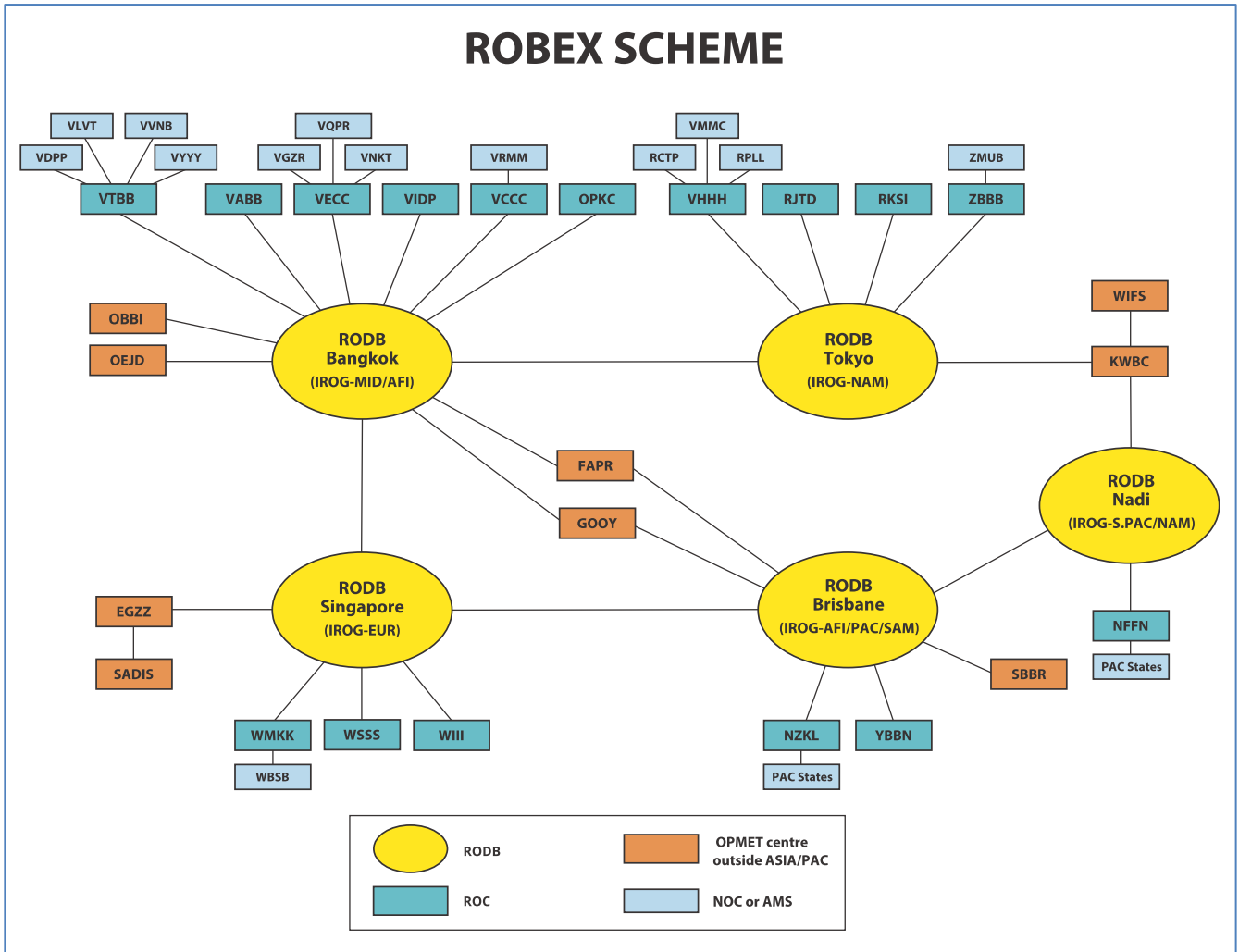
2.8 To identify new possibilities of IWXXM message exchange and promote Region-wide implementation in APAC, States/Administrations are encouraged to provide updates to the online register on their IWXXM exchange implementation status through the contact points as indicated at the footnote of the register. When the table is updated, the contact points will send an email to notify other ROCs and NOCs of updates on enhanced AMHS capability to disseminate IWXXM reports.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the progress in implementation of IWXXM message exchange via AMHS in the Region;
- b) explore ways to further assist and expedite States' implementation of regional and inter-regional exchange of IWXXM message over AMHS;
- c) request ROCs, NOCs and IROGs to provide timely updates, if any, on the IWXXM exchange implementation status in the online register; and
- d) discuss any relevant matters as appropriate.

Appendix A – APAC Regional OPMET Bulletin Exchange (ROBEX) Scheme Diagram



MET/IE WG/24
Appendix B to WP/22

Appendix B – Online Register of APAC IWXXM Exchange Status (as of 30 March 2026)

Online Register of APAC IWXXM Exchange Status  ICAO
Updated: 30 March 2026

ROC	ROC ready to receive IWXXM	ROC address to receive IWXXM	AMHS message size limit	AMHS supporting FTBP+IHE*	Disseminate IWXXM to ROCs	Disseminate IWXXM to NOCs	NOC	IWXXM generated	NOC ready to receive IWXXM	NOC address to receive IWXXM	Remarks	
Bangkok	VTBB	/C=XX/A=ICAO/ P=THAILAND/ O=VTBB/ OU1=VTBB/ CN=VTBBYPYL	4 MB	YES	RJTD, VHHH, WSSS, YBBB, ZBBB	YES	Bangkok	VTBB	YES	YES	VTBBMYX	
							Phnom Penh	VDP	YES	YES	VDPPIYX	
							Vientiane	VLT		NO		
							Ha Noi	VVNB	YES	NO		Translation service by VTBB. IWXXM exchange with ROC Bangkok scheduled for Q3 2025.
							Yangon	VYYY		NO		
Beijing	ZBBB	/C=XX/A=ICAO/ P=CHINA/ O=HJ/ OU1=ZBBB/ CN=ZBBBYPYL	4 MB	YES	RJTD, VHHH, WSSS, YBBB, VTBB		Beijing	ZBBB	YES			
							Ulaanbaatar	ZMUB	PARTIAL			
Brisbane	YBBN	/C=XX/A=ICAO/ P=AUSTRALIA/ O=YBBN/ OU1=YBBB/ CN=YBBBYPYL	4 MB	YES	NZKL, RJTD, VHHH, VTBB, WMKK, WSSS, ZBBB	No recipients ready	Brisbane	YBBN	YES			
							Port Moresby	AYPY	YES	NO		Translation service by NZKL
							Nauru	ANYN	YES	NO		Translation service by NZKL
							Honiara	AGGH	YES	NO		Translation service by NZKL
							Dili	WPDL	NO	NO		
Colombo	VCCC					Colombo	VCCC					
						Male	VRMM					
Delhi	VIDP	NO				Delhi	VIDP					
Kolkata	VECC					Kolkata	VECC					
						Dhaka	VGZR					
						Paro	VQPR					
						Kathmandu	VNKT					
Mumbai	VABB	NO				Mumbai	VABB					
Hong Kong	VHHH	/C=XX/A=ICAO/ P=HONGKONG/ O=HKCAD/ OU1=VHHH/ CN=VHHHYPYL	4 MB	YES	NZKL, RJTD, VTBB, WMKK, WSSS, YBBB, ZBBB	YES	Hong Kong	VHHH	YES			
							Taipei City	RCTP	YES	YES	RCTPIWXM	
							Manila	RPLL	YES	NO		Translation service by VHHH
							Macao	VMMC	YES	YES	VMMCIWXM	Translation service by VHHH
Incheon	RKSI	NO				Incheon	RKSI	YES			Available through Open-API. IWXXM exchange test via AMHS is planned for Q4 2025.	
Jakarta	WIII	NO				Jakarta	WIII	YES			Pending AMHS system upgrade tentatively around 2026. Temporary AMHS dissemination services by VHHH.	
Karachi	OPKC	NO				Karachi	OPKC					
Kuala Lumpur	WMKK	/C=XX/A=ICAO/ P=MALAYSIA/ O=WM/ OU1=WMKK/ CN=WMKKYMXM	4 MB	YES	VHHH, WSSS		Kuala Lumpur	WMKK	YES			
							Brunei	WBSB	NO			
Nadi	NFFN				NZKL, RJTD, VHHH, VTBB, WSSS, YBBB		Nadi	NFFN	YES	NO		Translation service by NZKL TCA in IWXXM available (TCAC Nadi)
							Cook Islands	NCRF	YES	NO		Translation service by NZKL
							Tonga	NFTF	YES	NO		Translation service by NZKL
							Tuvalu	NGFU	YES	NO		Translation service by NZKL
							Kiribati	NGTA	YES	NO		Translation service by NZKL
							Niue	NIUE	YES	NO		Translation service by NZKL
							Samoa	NSFA	YES	NO		Translation service by NZKL
							Vanuatu	NVVV	YES	NO		Translation service by NZKL
							New Caledonia	NWWW	YES	NO		Translation service by NZKL
							French Polynesia	NTAA	YES	NO		Translation service by NZKL
American Samoa	NSTU	NO	NO			IWXXM by US NWS in the FT/SA/SPUS25 KBWC bulletins						
Singapore	WSSS	YES				Singapore	WSSS	YES				
Tokyo	RJTD	YES				Tokyo	RJTD	YES			TC Advisory in IWXXM available via TCAC Tokyo website	
Washington	KWBC	NO				Washington	KWBC	YES			Washington IROG coordinates with Tokyo to test receive/transmit capabilities late 2025.	
Wellington	NZKL	YES				Wellington	NZKL	YES				

Inter-regional exchange	IROG in APAC	IROG address to receive IWXXM	IROG in another Region	IROG address to receive IWXXM	Active dissemination to another Region	Active reception from another Region	Remarks	
APAC - EUR	Singapore	WSSS	London	EGGG	/C=XX/ADM0=ICAO/ PRMD=EG/ O=AFTN/ OU1=EGZXSIN/	YES	YES	Bandwidth between the exchange services was increased to 2Mbps. Backup procedures for the alternate path EGGG – LSSS (Geneve) – LIII (Rome) – VTBB (Bangkok) – WSSS are in place. Secondary backup procedures being explored for alternate path EGGG - KATL (Atlanta) - KSLC (Salt Lake City) - YBBB (Brisbane) - WSSS
APAC - NAM	Tokyo	RJTD	Washington	KWBC	/C=XX/A=ICAO/ P=K/ O=AFTN/ OU1=KWBCYZY/	NO	NO	Test of IWXXM exchange between IROG Tokyo and IROG Washington will be conducted in the near future.
APAC - AFI	Bangkok	VTBB	Pretoria	FAPR	/C=XX/A=ICAO/ P=FA/ O=AFTN/ OU1=FAPRYMYX/	NO	NO	No POC available / known at IROG Pretoria. Extended AMHS with FTBP in place via YBBN - FAOR. FAOR to FAPR (COMC to IROG) was not AMHS capable in 2020, nothing heard since
	Brisbane	YBBB						
APAC - SAM	Brisbane	YBBB	Brasilia	SBBR		NO	NO	No POC available / known at IROG Brasilia. Extended AMHS with FTBP in place via YBBN - KSLC - KATL - SBRR. Unknown what capability from COMC SBRR to IROG SBRR is ...
APAC - MID	Bangkok	VTBB	Jeddah	OEJD	/C=XX/A=ICAO/ P=SAUDI/ O=OEJD/ OU1=OEJD/ CN=OEJDYMYX/	NO	NO	Test of IWXXM exchange conducted since May 2022 but not successful due to COMC OOMS still AFTN, so Bangkok is awaiting COMC COMS migrate to Extended AMHS with FTBP connection.

* AMHS profile for IWXXM exchange is specified in the Appendix A of "Guidelines for the Implementation of OPMET Data Exchange using IWXXM".
To update the above register, please contact: Peter Dunda (pdunda@icao.int), Marco Kok (mhkok@hko.gov.hk) or Warren Young (warren.young@airservicesaustralia.com).
When the table is updated, the above contact points will send an email to notify other ROCs and NOCs of updates on enhanced AMHS capability to disseminate IWXXM reports.

Appendix C – Recap of Conclusion APANPIRG/34/13 and Conclusion MET SG/28-03

Conclusion APANPIRG/34/13 (Draft Conclusion MET SG/27-03): GLOBAL DISSEMINATION OF IWXXM	
What: Expedite the implementation of network circuits and communication services necessary to enable the required global dissemination of meteorological information in the ICAO Meteorological Information Exchange Model (IWXXM) form, both intra-regionally and inter-regionally between APAC Inter-regional OPMET Gateways (IROGs) and IROGs in the ICAO AFI, MID, NAM and SAM Regions (through inter-regional consultation), including support for the Air Traffic Services Message Handling System (AMHS) with File Transfer Body Part (FTBP) and Interpersonal Message Heading Extension (IHE), and backup paths for redundancy purposes.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: Following the provisions of ICAO Annex 3 – Meteorological Service for International Air Navigation, States shall ensure that certain meteorological information is disseminated to users in the IWXXM form. However, without suitable communication network connections to support the necessary intra- and inter-regional exchange of IWXXM messages, global dissemination of meteorological information in IWXXM form will not be possible. Consequently, the migration of user and supplier systems from meteorological information in the traditional alphanumeric code (TAC) form to the IWXXM form, as envisaged in the Global Air Navigation Plan (GANP), will remain inhibited.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 13-Dec-23	Status: Adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: PIRGs in other ICAO Regions	

Conclusion MET SG/28-03 – Review of APAC Region IWXXM Implementation Status/ Readiness	
What: States / Administrations provide ICAO an update on the status and readiness dates for the following: (a) AMHS with FTBP/IHE and configuration for single body part; (b) AMHS connection(s) will have sufficient capacity to support IWXXM exchange; (c) when operational IWXXM information will available; and (d) commencement of operational exchange of IWXXM with their Regional OPMET Centre (ROC), and where applicable their respective Inter-regional OPMET Gateway.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: As per Amendment 79 to Annex 3 (applicable November 2020), States/ Administrations are required to exchange meteorological information in IWXXM form.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 31 December 2024	Status: adopted by Sub group.
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:	