

International Civil Aviation Organization

ICAO

INFORMATION PAPER (IP/05)**ICAO Asia and Pacific (APAC)****Twenty-third Meeting of the Meteorological Information Exchange Working Group (MET/IE WG/23)**

Bangkok, Thailand, 25 to 28 March 2025

Agenda Item 6: Meteorological information exchange in IWXXM form**IWXXM OPMET DATA EXCHANGE TEST OVER AMHS
BETWEEN HONG KONG ROC AND MACAO AMO**

(Presented by Hong Kong China and Macao China)

SUMMARY

To facilitate Macao China's transition to direct generation, dissemination, and reception of METAR/SPECI and TAF messages in IWXXM format via AMHS, interoperability tests were successfully conducted between Macao China and Hong Kong China in early 2025.

1. INTRODUCTION

1.1 Currently, Macao AMO (VMMC) disseminates METAR/SPECI and TAF messages in TAC format through Hong Kong ROC (VHHH) according to the ROBEX scheme¹ (Appendix A). As an interim arrangement, Hong Kong ROC assists in translating the TAC messages from Macao AMO into IWXXM format for inclusion in aggregated bulletins disseminated over AMHS. With the enhanced operational capabilities, Macao AMO is planning to transition to generating METAR/SPECI and TAF messages directly in IWXXM and disseminating them to Hong Kong ROC via AMHS for onward distribution in the near future.

1.2 To identify and resolve potential issues before transitioning to the new operational arrangement, IWXXM OPMET data exchange tests over AMHS were conducted between Hong Kong ROC and Macao AMO, adhering to ICAO standards and guidelines.

1.3 Both communication service providers and meteorological service providers from Hong Kong China and Macao China participated in these tests, including the Hong Kong Civil Aviation Department, the Hong Kong Observatory (HKO), the Macau International Airport Co. Ltd. and the Macao Meteorological and Geophysical Bureau (DSMG).

¹ AMO: Aerodrome Meteorological Office
ROC: Regional OPMET Centre

2. DISCUSSION

Test Setup

2.1 The IWXXM exchange test involving the four stakeholders was conducted on 10 January 2025 and 28 February 2025.

2.2 The test setup, including AMHS and User Agent connections among the four stakeholders, is shown in Appendix B. Both Hong Kong and Macao AMHS systems can handle messages up to 4 Mbytes and support IPM heading extensions and single File Transfer Body Part.

2.3 During the test, all IWXXM attachment data were designated as non-operational messages, as illustrated in the following example:

```
<IWXXM:CLASSNAME ... permissibleUsage ="NON-OPERATIONAL" permissibleUsageReason  
="TEST" permissibleUsageSupplementary ="IWXXM EXCHANGE  
TEST">...</IWXXM:CLASSNAME>
```

2.4 IWXXM-formatted data METAR, SPECI, and TAF reports in version 2023-1 were generated by both originators in Hong Kong and Macao and exchanged during the test.

AMHS Configuration

2.5 Correct AMHS configuration was critical for ensuring error-free IWXXM data exchange. Specific attention was paid to the User Profile on AMHS and the addressing schema.

2.6 Detailed configurations, including message length limitations, IPM heading extensions, and file-transfer support, were reviewed and confirmed to comply with IWXXM data exchange requirements.

Test Cases

2.7 The tests focused on the technical trials to validate the IWXXM data exchange capabilities in operational scenarios. Test scenarios were developed to validate the submission of IPMs containing METAR, SPECI or TAF reports, with specific attention given to the correct application of gzip compression for the single File Transfer Body Part.

2.8 The submission and delivery of meteorological messages, including METAR/SPECI and TAF, between AMHS at VMMC and AMHS at VHHH were monitored. The exchanged and received IWXXM-formatted METAR/SPECI and TAF messages were then examined by both sides.

Initial Test Results and Next Steps

2.9 VMMC resolved some IWXXM schema-related issues identified on the first test day before the subsequent test on 28 February 2025.

2.10 IWXXM reports were successfully exchanged over AMHS between Hong Kong and Macao through the set up detailed in Appendix B. The meteorological agencies, namely HKO and DSMG, successfully received the IWXXM reports disseminated by their counterparts via AMHS User Agent during the tests.

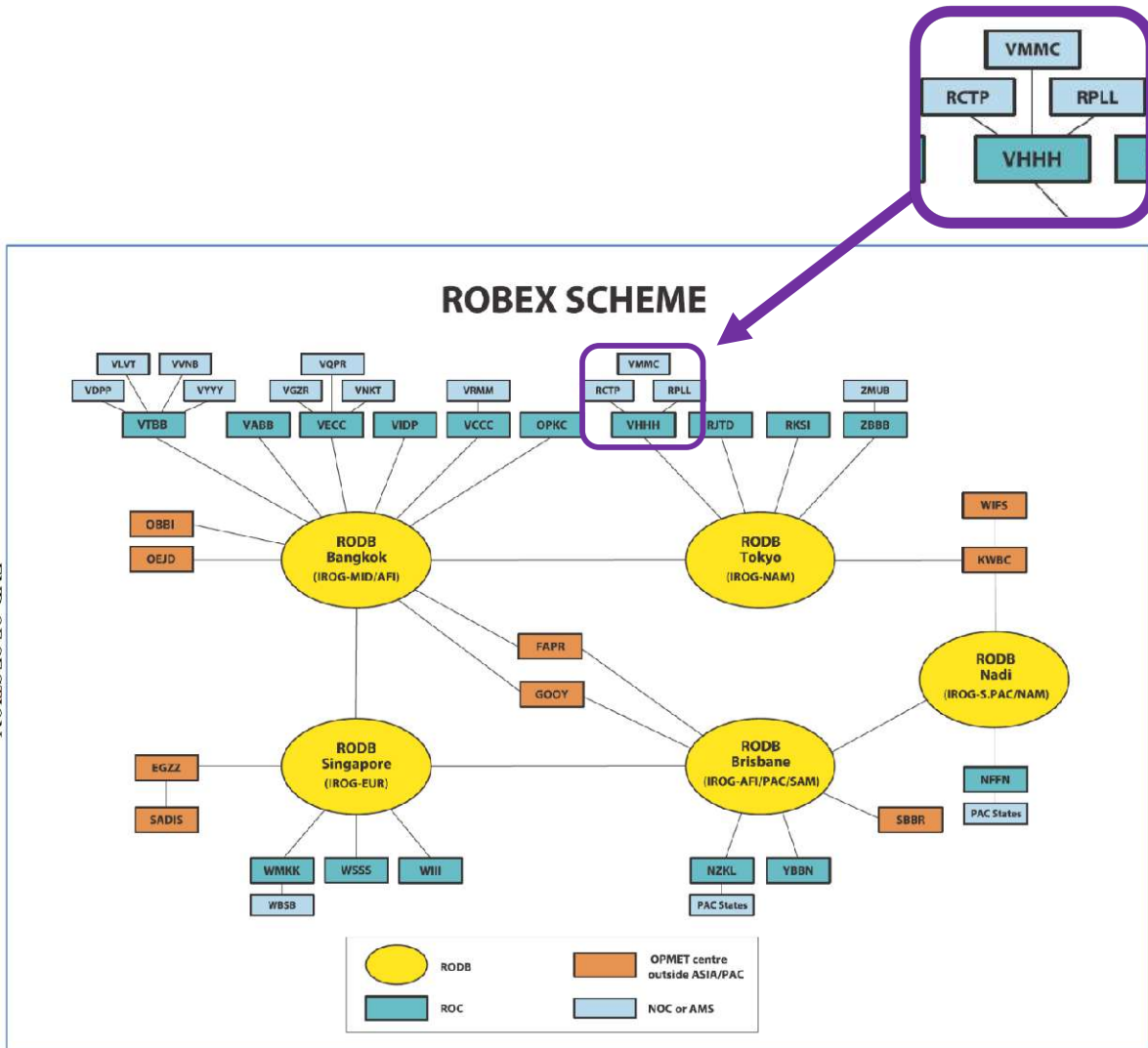
2.11 It was planned to conduct further routine trial on IWXXM exchange between Hong Kong ROC and Macao AMO for a certain period to ensure the reliability before operational implementation.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

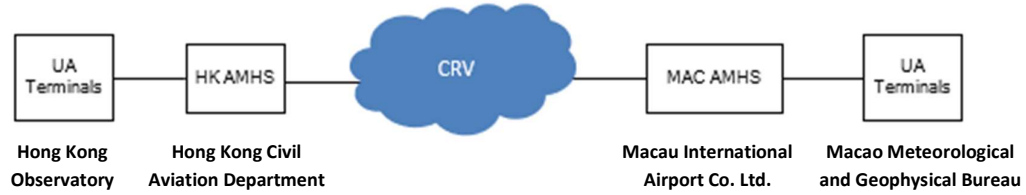
- a) note the information contained in this paper.

APPENDIX A



APPENDIX B

Test Setup for IWXXM OPMET Data Exchange Test over AMHS between Hong Kong China and Macao China



AMHS: ATS Message Handling System
CRV: Common Aeronautical Virtual Private Network
HK: Hong Kong, China
MAC: Macao, China
UA: User Agent