



ICAO

*International Civil Aviation Organization***Seventh Meeting of Aeronautical Communication Service Implementation Co-ordination Group of APANPIRG (ACSICG/7)**

Web-conference, 21 – 23 July 2020

Agenda Item 5: Report on the readiness status of AMHS to support IWXXM service by November 2020

Note: Member States are expected to provide readiness status for supporting IWXXM traffic (Annex 1).

DESCRIPTION OF FAA AMHS SWIM GATEWAY

(Presented by Federal Aviation Administration/USA)

SUMMARY

In support of MET-SWIM testing, the FAA is developing an AMHS SWIM Gateway prototype to enable international exchange of the ICAO Meteorological Information Exchange Model (IWXXM) data. This working paper describes that plan.

1. INTRODUCTION

1.1 The Federal Aviation Administration (FAA) is currently prototyping an Air Traffic Services (ATS) Message Handling System (AMHS) to System Wide Information Management (SWIM) Gateway that will potentially be implemented as an enhancement to the FAA's operational AMHS. This AMHS SWIM Gateway (ASG) will support international exchange of XML-formatted messages encoded using the Aeronautical Information Exchange Model (AIXM), Flight Information Exchange Model (FIXM), or ICAO Meteorological Information Exchange Model (IWXXM).

2. DISCUSSION

2.1 The AMHS SWIM Gateway prototype will integrate with the FAA's existing ISODE AMHS software.

2.2 The AMHS SWIM Gateway will send and receive Operational Meteorology (OPMET) data formatted using IWXXM utilizing AMHS File Transfer Body Part (FTBP) attachments. This exchange method integrates with the existing AMHS X.400 message software, whose method of sending attachments is FTBP.

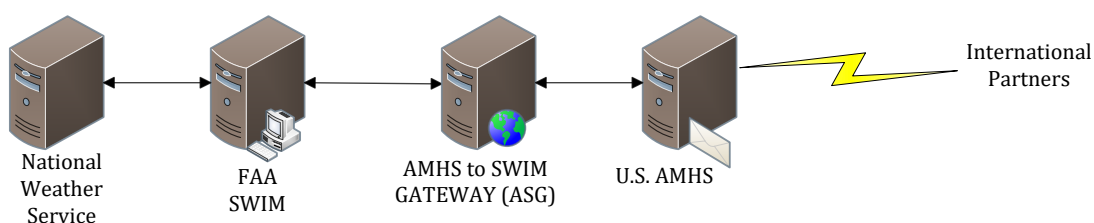
2.3 The AMHS SWIM Gateway prototype is connected to the FAA SWIM via the FAA Telecommunications Infrastructure (FTI) National Test Bed (FNTB) NAS Enterprise Messaging Service (NEMS) node located in New Jersey, USA. The interface will be bi-directional and will exchange data using a Java Messaging Service (JMS) publish/subscribe message exchange pattern.

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2.4 IWXXM data will be originated by the United States National Weather Service (NWS) and published to the FAA via SWIM. The AMHS SWIM Gateway will consume this data from a static queue, generate an AMHS-compliant message that includes the IWXXM data as an FTBP attachment, and distribute the message through AMHS to international users.

2.5 The AMHS SWIM Gateway will also receive data from the AMHS MTA, extract the IWXXM portion from the FTBP, and publish the data to SWIM. There the data becomes available to SWIM consumers.



2.6 The initial effort on the prototype has resulted in support of IWXXM 2.1 products, demonstrating the publication and consumption of IWXXM Terminal Aerodrome Forecasts (TAFs) using canned data from the National Weather Service.

2.7 Subsequent efforts will be focused on updates to support IWXXM 3.0, handle the remaining OPMET products to be disseminated in IWXXM, and establish a live connection to SWIM and receive the NWS IWXXM TAF data that is being generated by the NWS Weather Forecast Office.

2.8 Additionally, the FAA has established connectivity over the Caribbean MEVA network to conduct testing with the Cuba AMHS and their IWXXM infrastructure. Additional testing is planned with Japan and other partner ANSPs.

3. ACTION BY THE MEETING

3.1 While there are still minor technical questions to be resolved, the prototyping conducted to-date has demonstrated a feasible method of international IWXXM data exchange. Subsequent effort will focus on resolving the remaining questions and exercising the capabilities with other states. The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matter as appropriate.
