GREPECAS/20 — IP/18
27/10/22

Twentieth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/20)
Salvador, Brazil, 16 – 18 November 2022

Agenda Item 2:   **Global and Regional Developments**
                 2.3   Programmes and Projects Progress Report

**ICAO METEOROLOGICAL INFORMATION EXCHANGE MODEL (IWXXM)
STATUS FOR THE UNITED STATES**

(Presented by the United States)

<table>
<tr><td colspan="2" align="center">EXECUTIVE SUMMARY</td></tr>
<tr><td colspan="2">The United States is developing an AMHS System-Wide Information Management (SWIM) Gateway to enable international exchange of the ICAO Meteorological Information Exchange Model (IWXXM) data. This information paper describes that effort and status.</td></tr>
<tr><td>Strategic Objectives:</td><td>•   Air Navigation Capacity and Efficiency</td></tr>
<tr><td>References:</td><td>•   ICAO Annex 3</td></tr>
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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 be implemented as an enhancement to the FAA's operational AMHS. This AMHS SWIM Gateway (ASG) will support international exchange of Extensible Markup Language (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 will connect to the FAA SWIM in a bi-directional manner.

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, 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 incoming data from the AMHS Message Transfer Agent (MTA), extract the IWXXM portion from the FTBP, and publish the data to SWIM. There the data becomes available to SWIM consumers, including the NWS.
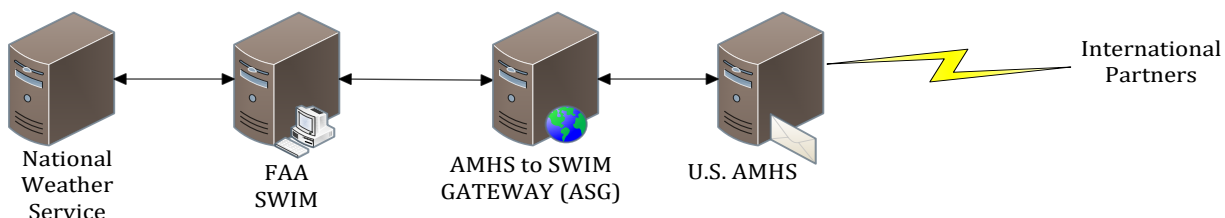
2.6   The FAA has conducted/is conducting several phases of testing of the ASG, as follows:

➢ Internal test: test of the ASG and integration with FAA AMHS and FAA SWIM – completed

➢ International test with Cuba: exchange of OPMET data between the ANSP's respective test systems over a test connection – scheduled for completion Oct/Nov 2022

➢ Test NCP (NAS Change Proposal): deployment of prototype to FAA operational environment – described further in the next paragraph

2.7   As additional test connections are not generally available between the FAA and other ANSPs, the ASG is being deployed as a prototype into the FAA's operational network. This will allow for the exchange of some IWXXM data with other ANSPs in a controlled manner.

2.8   All operational data will still be exchanged via Traditional Alphanumeric Code (TAC) data so the IWXXM data exchange can be continued or terminated at any time. The transmittal and reception of data can be arranged with partner ANSPs and can be activated and deactivated as needed. It should be noted that while the ASG can send and receive data at the current time, the NWS can currently only transmit IWXXM data via the ASG; the ability to receive IWXXM data will be implemented by the NWS in 2023. Until then, any IWXXM data received by the FAA ASG from international partners will be passed to FAA SWIM and no further.

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