



ICAO

International Civil Aviation Organization

**Twenty Seventh Meeting of the Communications/  
Navigation and Surveillance Sub-group (CNS SG/27)  
of APANPIRG**

Bangkok, Thailand, 28 August – 01 September 2023

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**Agenda Item 3:** Aeronautical Fixed Service (AFS)

3.2. Other AFS related matters

**DISTRIBUTION OF XML BASED MESSAGES IN AMHS AND SWIM ENVIRONMENT**

Presented by USA/Federal Aviation Administration

**SUMMARY**

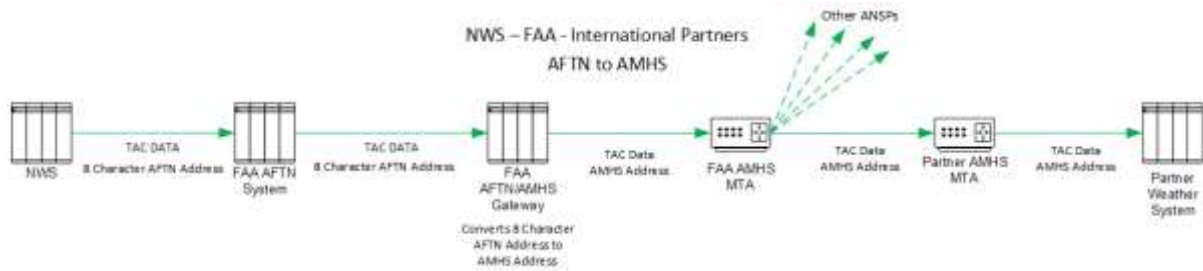
The FAA is planning to support the distribution of Extensible Markup Language (XML) based information using AMHS messaging as an interim step towards transition to a SWIM environment. This effort should support exchange of XML based messages such as FIXM and IWXXM.

**1. INTRODUCTION**

- 1.1 The FAA and many States in the region have implemented the AMHS File Transfer Body Part (FTBP) extension that allows distribution of XML-based information as an AMHS message ‘attachment’.
- 1.2 The current plan is to distribute IWXXM-formatted data in addition to legacy Traditional Alphanumeric Code (TAC) data during a transition period.

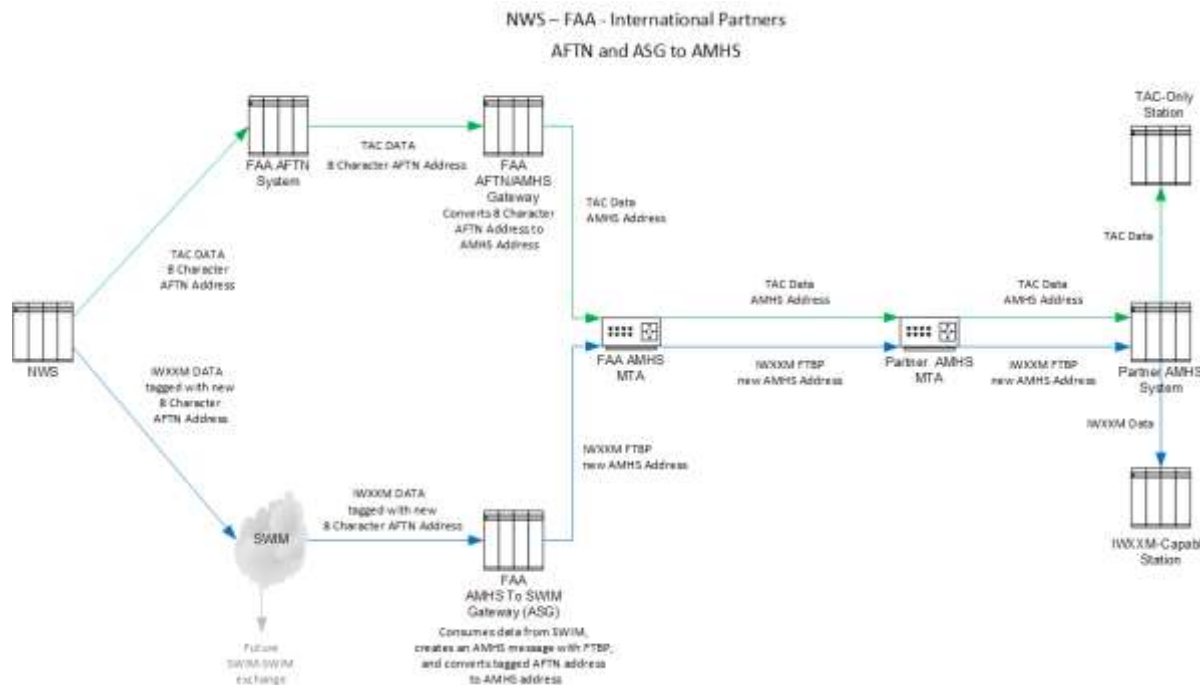
**2. DISCUSSION**

- 2.1 TAC data from the U.S. National Weather Service (NWS) is exchanged with the FAA over AFTN. The figure below depicts the current TAC distribution.



2.2 The FAA AFTN system passes messages for international distribution to an AFTN/AMHS Gateway that forms AMHS messages and translates AFTN addresses into AMHS addresses. The AMHS messages are sent to the FAA AMHS MTA that forwards messages to foreign MTA recipients, potentially over CRV.

2.2 For IWXXM-formatted data, the current plan is for the NWS to provide data to the FAA SWIM system through a ‘producer’ service. This data will be tagged with a new AFTN destination address to allow the recipient to distinguish this data from TAC messages and allow them to be routed differently. The figure below depicts the IWXXM distribution over SWIM/AMHS environment.



2.3 IWXXM data is read from SWIM with a ‘consumer’ service by the FAA AMHS to SWIM Gateway (ASG). It creates an AMHS message with the IWXXM data contained in an FTBP and translates the tagged AFTN address information into an AMHS address. The message is then forwarded to the FAA AMHS MTA for distribution.

2.4 The current TAC messages will continue to be distributed over AFTN/AMHS, for exchange with other States, over CRV. This architecture will allow a smooth transition to direct SWIM-SWIM exchanges when the FAA SWIM and NWS systems are ready to publish and consume IWXXM and FIXM directly.

- 2.5 It is recommended that close coordination is needed between SWIM and AMHS operations personnel to avoid duplication of messages.

**3. ACTION BY THE MEETING**

- 3.1 The meeting is invited to:
- a) The meeting is invited to note the information and coordinate with other States as needed.
  - b) The FAA can provide more information as required.

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