



**TENTH WORKING GROUP MEETING OF
AERONAUTICAL TELECOMMUNICATION NETWORK
IMPLEMENTATION CO-ORDINATION GROUP
(ATNICG WG/10)**



Jaipur, India, 26 - 29 September 2011

Agenda Item 2: Review ASIA/PAC Technical Specification of AMHS

FINAL REPORT ON TESTING OF XML-BASED OPMET OVER AMHS

(Presented by the United States, Hong Kong, and Singapore)

SUMMARY

This information paper presents the results of the second phase of testing of XML-based OPMET data over AMHS. This testing was proposed at ATNICG/5 in June 2010. The results of the first phase were presented at ATNICG WG/8 in September 2010.

This paper relates to:

Strategic Objectives:

A - Safety

C – Environmental Protection and Sustainable Development of Air Transport

Global Plan Initiatives:

GPI 22 – Communication Infrastructure

1. Introduction

1.1 This paper serves to present the results of testing of XML-based OPMET data over AMHS. This test activity was proposed during ATNICG/5 in June 2010, in order to demonstrate the feasibility of utilizing AMHS for exchange of such OPMET data. At that meeting, a request was made that the United States, Hong Kong, and Singapore plan and execute such a test activity and report results in upcoming meetings. This testing is intended to demonstrate the capability of AMHS for transmission of XML-based OPMET messages and to develop data that can be used to provide feedback to WMO/ICAO regarding this capability.

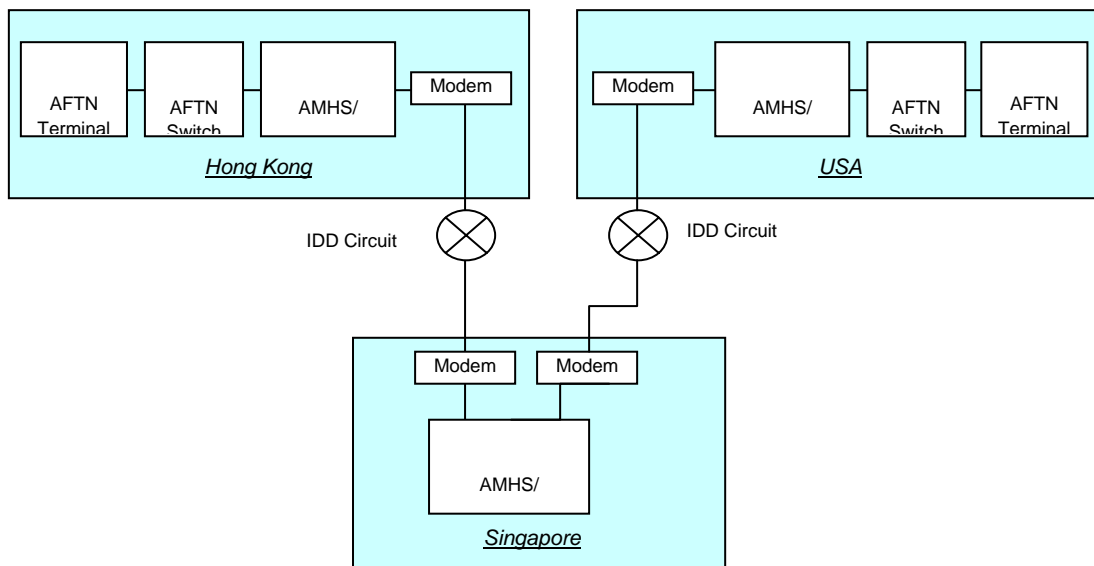
2. Test Planning

2.1 This test activity was jointly developed and planned by representatives of Hong Kong (HKG), Singapore (SIN) and the United States of America (USA). Test procedures were developed and test data messages were created manually or extracted from available documentation. Phase 1 of testing was conducted only between USA and HKG in order to provide a simple test configuration and allow for proof of concept before continuing to expanded testing. These Phase 1 test results were presented at ATNICG WG/8 in September 2010. The expanded test, including USA, HKG and SIN and referred to as Phase 2, was just completed and is the subject of this report.

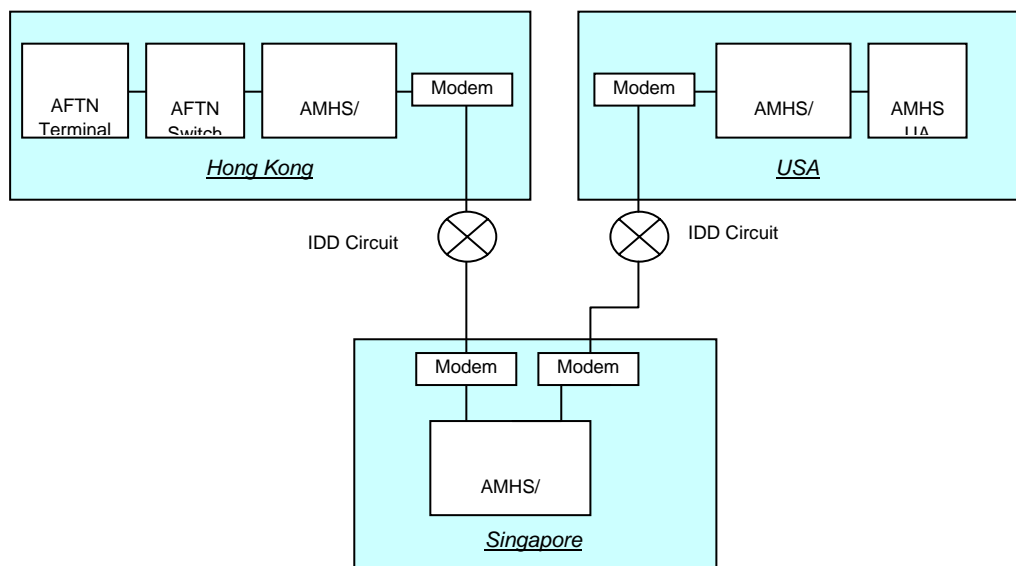
3. Test configurations

Phase 2 testing was conducted using 4 different test configurations, as detailed below:

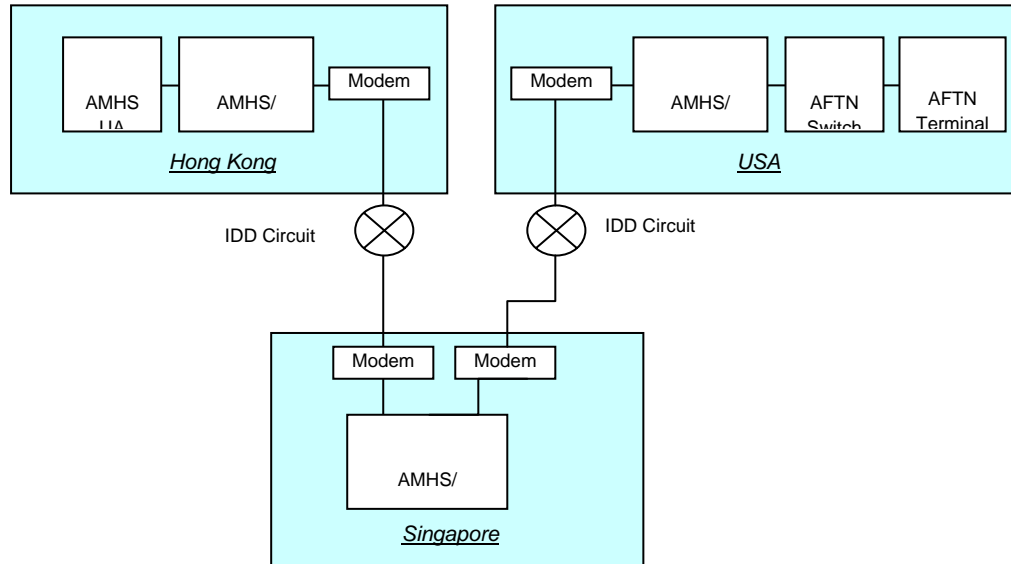
Configuration #1: Message exchange between HKG AFTN Terminal and USA AFTN Terminal



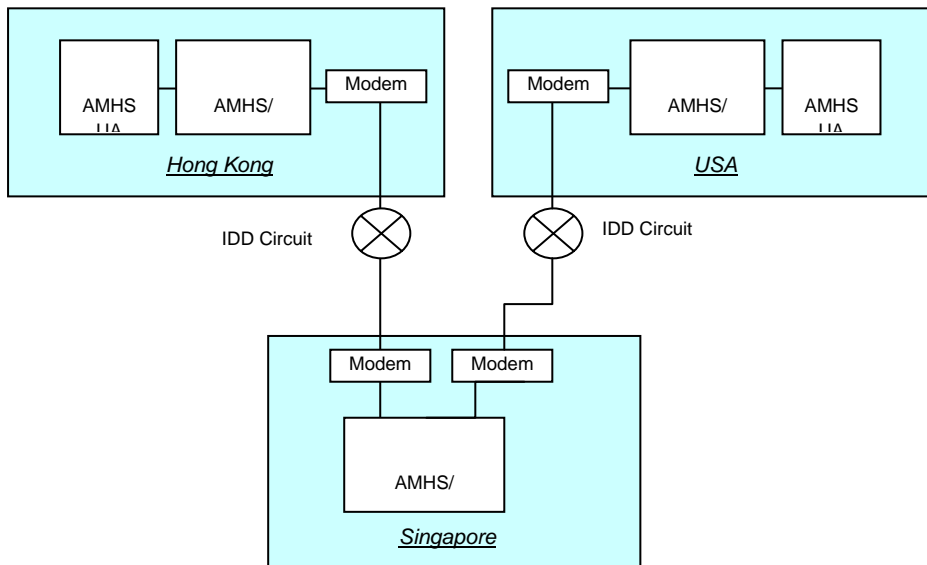
Configuration #2: Message exchange between HKG AFTN Terminal and USA AMHS UA



Configuration #3: Message exchange between HKG AMHS UA and USA AFTN Terminal



Configuration #4: Message exchange between HKG AMHS UA and USA AMHS UA



4. Test messages

4.1 Testing was conducted using 5 different test messages. Message 1 was a simple, manually created message used in the initial test cases, and contained a small subset of the ASCII character set. Messages 2-5 were extracted from the WXXM Primer (1) and contained more realistic data with expanded use of the ASCII character set. Details regarding these messages are provided below:

Test Message #1: Approximately 782 characters, containing an overlong line.

Test Message #2: Approximately 2505 characters, Point Coverage Observation, extracted from paragraph 4.2.1 of Reference (1).

Test Message #3: Approximately 1325 characters, Runway Weather Observation, extracted from paragraph 4.3.1 of Reference (1).

Test Message #4: Approximately 3214 characters, METAR, extracted from paragraph 4.3.2 of Reference (1).

Test Message #5: Approximately 2949 characters, PIREP, extracted from paragraph 4.3.3 of Reference (1).

Reference (1): FAA/EUROCONTROL WXXM 1.1 Primer, February 2010

5. Test results

5.1 The intent of this second phase was to establish end-to-end AMHS interoperability with an intermediate system providing the routing function to facilitate the exchange of XML-based OPMET messages. This phase is considered to be a success. Messages were successfully exchanged between each combination of AFTN terminal and AMHS UA as described pictorially in Section 3 above. Each party in the testing captured and logged the incoming test messages and reported the results via email to one another. Some testing was able to be conducted by each party establishing system connectivity during their daytime hours and sending test messages to the other end, who would then examine the incoming data upon beginning their own working day. (In this manner, minimal disruption to each party's regular work activity was achieved.) In addition, some testing was scheduled and conducted in simultaneous fashion, with all parties present. This was necessitated not by any difficulties with the AMHS systems, but rather was due to connectivity and stability issues with the IDD circuits involved. Aside from the inconvenience posed by these connectivity issues, no adverse issues were noted during this testing. The parties involved in this activity agree that AMHS provides a suitable platform for the exchange of XML-based OPMET data.

6. Action by the meeting

6.1 The meeting is invited to note the test configuration and successful results of this testing.
