



*International Civil Aviation Organization*

**MID ATS MESSAGING MANAGEMENT CENTRE STEERING GROUP**

**Eighth Meeting (MIDAMC STG/8)**  
*(Amman, Jordan, 1-2 May 2023)*

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**Agenda Item 3: AMHS Planning and Implementation Matters**

**AERONAUTICAL MESSAGE HANDLING SYSTEM (AMHS) RECENT UPGRADE &  
IMPLEMENTATION STATUS BETWEEN KINGDOM OF BAHRAIN AND OTHER STATES**

*(Presented by the Kingdom of Bahrain)*

**SUMMARY**

This information paper presents the AMHS implementation status with the recent system upgrade between Bahrain and other states.

Action by the meeting is at Paragraph

**1. INTRODUCTION**

1.1 The purpose of this paper is to provide an update on the status of Bahrain's implementation of the Aeronautical Message Handling System (AMHS) in compliance with the International Civil Aviation Organization (ICAO) Standards and Recommended Practices.

1.2 In the 1970s, Bahrain became one of the first countries in the Middle East to establish the Aeronautical Fixed Telecommunications Network (AFTN), a global message handling system used by air traffic services (ATS) and aeronautical fixed service (AFS) providers to exchange messages related to flight planning, flight operations, and other aviation-related information.

1.3 In 2012 the AMHS has been installed and a test with Singapore has been successfully made. In 2015, Bahrain implemented the first AMHS with Lebanon, marking a significant milestone in the aviation industry. This system allowed for the exchange of aeronautical messages between the two countries, improving the efficiency and safety of air traffic control.

1.4 Following the successful implementation of the AMHS system with Lebanon, Bahrain expanded its reach and implemented the system with several other countries in the region. The success of the initial implementation with Lebanon paved the way for Bahrain to establish AMHS with GCC countries.

1.5 In the years that followed, Bahrain successfully implemented the AMHS system with the United Arab Emirates (UAE), Qatar, Kuwait, and the Kingdom of Saudi Arabia (KSA). These implementations further strengthened the communication and collaboration between the countries' air traffic management systems and enhanced the overall safety and efficiency of the aviation industry in the region.

1.6 Over the years, the AMHS system has continued to evolve, with new technologies and features being added to improve its functionality and reliability. In 2022, Bahrain upgraded its AMHS system to the latest version by EDISFOT-THALES, a leading provider of aviation communication solutions.

## 2. DISCUSSION

2.1 The recent upgrade of the Aeronautical Message Handling System (AMHS) with full redundancy has brought several benefits to aviation services, these include improved reliability, increased capacity, enhanced recovery capabilities, and better security features. Furthermore, the new upgrade ensures that the system can continue to operate even if one or more servers fail, minimizing the risk of disruption to critical services. The use of multiple servers distributes the workload, reducing the risk of any single server becoming overwhelmed or crashing.

2.2 The benefits of migrating to AMHS are numerous. It will improve the accuracy and timeliness of messages, reduce the risk of errors, and enhance the overall safety of aviation operations. Moreover, it will enable BAHRAIN to comply with the latest ICAO standards and regulations for aviation communication.

2.3 The recent upgrade in Bahrain also introduced the redundancy of systems in term of the operational and contingency where a contingency system has been installed in the backup FIC building in case of any emergency. This system is identical to the operational part and using it at any time will not reduce Bahrain AMSS capabilities. Also the contingency system gives Bahrain the opportunity to use it as training and testing string separately than the operational system where the local team knowledge and performance can be enhanced continuously.

2.4 Currently, the AMHS connectivity on X.400 has been established between Bahrain and GCC countries with future plans to perform AMHS test with OMAN that is currently connected to by AFTN and is functional with satisfactory performance.

2.5 Bahrain AFTN/AMHS System has connectivity with following international partners:

No.	Country	City	Connection	Protocol
<b>GCC Stations</b>				
1	UAE	Abu Dhabi	AMHS	X.400
2	QATAR	Doha	AMHS	X.400
3	KSA	Jeddah	AMHS	X.400
4	KUWAIT	Kuwait	AMHS	X.400
5	OMAN	Muscat	AFTN	TCP/IP
<b>Other Stations</b>				
1	LEBANON	Beirut	AMHS	X.400
2	IRAN	Tehran	AFTN	TCP/IP
3	SINGAPORE	Singapore	AFTN	X.25
4	TURKEY	Ankara	AFTN	X.25
5	CYPRUS	Nicosia	AFTN	CIDIN

2.6 With the cooperation of other states, Bahrain is planning to migrate all circuits to AMHS by Q4 2023.

**3. ACTION BY THE MEETING**

3.1 Bahrain has demonstrated a strong commitment to implementing the Aeronautical Message Handling System (AMHS) with all stations in the region. While it has successfully established connectivity with several countries, Bahrain remains determined to continue working towards the implementation of AMHS with all remaining stations. Bahrain will maintain to develop further in line with (ICAO) vision of achieving AMHS and further bolster the aviation industry in the region.

3.2 The meeting is respectfully invited to note the contents of this Information Paper.

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