

**59<sup>th</sup> CONFERENCE OF  
DIRECTORS GENERAL OF CIVIL AVIATION  
ASIA AND PACIFIC REGIONS**

*Cebu, Philippines  
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**AGENDA ITEM 4: AIR NAVIGATION**

**AERONAUTICAL COMMUNICATION SERVICES  
ADVANCEMENTS**

(PRESENTED BY ISLAMIC REPUBLIC OF PAKISTAN)

**INFORMATION PAPER**

**SUMMARY**

This paper presented by Pakistan Civil Aviation Authority regarding the latest developments made for the advancement of communication systems. This paper summarizes the progress made in Aeronautical Mobile Service, Aeronautical Fixed Services (AFS), Aeronautical Broadcasting Service (ABS), Common aeronautical Virtual Private Network (CRV), System Wide Information Management (SWIM) and Flight and Flow of Information in Collaborative Environment (FF-ICE).

## AERONAUTICAL COMMUNICATION SERVICES

### 1. INTRODUCTION

- 1.1 Pakistan Civil Aviation Authority (PCAA) first installed AMHS (ATS Messages Handling System) during the year 2009 and upgraded AMHS in 2021 which is capable of providing extended AMHS services. Pakistan being member state is providing AMHS services and responsible for worldwide distribution / routing of AMHS/AFTN traffic through 06 international circuits as per ICAO APAC Routing Directory. AMHS is also configured to route AIDC messages to the ATM system of adjacent ACC's. Currently PCAA use Euro control AMC (AMHS Messaging Centre) data on behalf of ICAO for uploading of AMC files in AMHS. PCAA is working with OEM (Original Equipment Manufacturer) of the AMHS to upgrade the software to enhance the capabilities of AMHS to support SWIM data exchange models. Furthermore the procurement of High Frequency Radio Telephony (HF R/T) system is in hand to replace the obsolete HF R/T system. The objective is to cover the grey areas currently not covered through EVHF and to use as a backup in case of failure of EVHF.

### 2. DISCUSSION

#### 2.1 Aeronautical Fixed Service:

##### a) **AMHS Implementation Status:**

The first AMHS installed by PCAA during the year 2009 completed its useful life and its servers were malfunctioning frequently. The old AMHS was also not capable of performing operations as per new SARP'S introduced by ICAO. Therefore PCAA procured a new upgraded AMHS during the year 2021. The new AMHS has extended functionalities to meet the future requirements.

##### b) **ATS Inter-facility Data Communication (AIDC) Implementation Status:**

PCAA is in the process of implementing the AIDC with adjacent ACC's. The objectives of AIDC implementation are to reduce manual intervention and to reduce human error in ground to ground coordination. However due to ATM interoperability issue AIDC facility is not fully operational.

##### c) **AIDC over AMHS:**

All AIDC messages are routed through the AMHS servers installed at JIAP Karachi. Necessary configurations and parameterization in AMHS and testing of AIDC message completed. There is no AFTN latency issue as Karachi-Mumbai AFTN data link successfully replaced with AMHS. Steps are initiated to replace the existing Karachi-Beijing AFTN data link with new MPLS link for exchange of messages in AMHS format and coup with the AFTN latency issues. Furthermore PCAA has coordinated with Muscat for conversion of existing AFTN over TCP / IP link to AMHS link.

##### d) **PCAA COORDINATION WITH EUROCONTROL AMC:**

Euro control ATS Messaging Management Centre (AMC) providing services on behalf of ICAO AMC data files for uploading in AMHS. In January, 2023 Euro control intimated that a new AMC version 5.1 is live on its portal and requested to nominate experts for registration on its portal. Euro Control registered three PCAA officers on its portal for getting AMC data. PCAA regularly uploading AMC data on AMHS as per AIRAC cycle and is not facing any issues for worldwide routing of AMHS / AFTN traffic.

##### e) **AMHS Transition to SWIM;**

PCAA has initiated the implementation of exchange of data in XML format. The objective is the implementation of SWIM enable data sharing (IWXXM, AIXM and FIXM). PCAA is closely working with the OEM of the AMHS. This will be a step towards AMHS transition to SWIM as per ICAO roadmap for SWIM implementation. Agreement reached with OEM of AMHS for exchange of meteorological data in IWXXM. OEM has assured the existing software will be replaced with new software to enable translation of TAC (Traditional Alphanumeric Code) data into IWXXM (ICAO Meteorological Information Exchange Model) data for delivery to the intended addressees and RODB (Regional OPMET Data Bank) Bangkok.

## **2.2 Aeronautical Mobile Service:**

PCAA has taken initiative for the procurement of new HF R/T system at JIAP Karachi and AIIAP Lahore (with remote operations at IAP Islamabad through VOIP connectivity with AIIAP Lahore) hence increasing the number of Aeronautical Stations from previous two to three. The objectives of the new HF R/T system are as under:

- a) To provide coverage in Pakistan Northern International Air Routes from PURPA to GILGIT, crossing Pakistan-China border. Pakistan Western Air Routes crossing Pakistan-Afghan Border in Lahore FIR also have grey areas for EVHF/VHF Communication. It is expected that all the grey areas will be covered due to wide coverage of HF RT System as well as coverage in hilly areas / oceanic regions where RADAR / VHF coverage is not available. Installation of New HF High power RT System will serve as a contingency / backup system for EVHF/VHF communication.
- b) The new HF R/T System will also comply with the provisions of ICAO Amendment 91 to Annex 10 Vol-III regarding provision of SELCAL32 (expansion of SELCAL codes). The new HF R/T system will be capable for the provision of HF data Link (HFDL) in accordance with the ICAO Doc 9741 Manual on HF data link

## **2.3 Aeronautical Broadcasting Service (ABS).**

During the year 2023 PCAA has replaced the obsolete VOLMET Broadcast equipment with new system at JIAP Karachi to provide meteorological information for en route flights in the designated area assigned by ICAO.

## **3. ACTION BY THE CONFERENCE**

- 3.1 The Conference is invited to note the information contained in this Paper.

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