



Agenda Item 4: Assessment of operational requirements to determine the implementation of improvements in communication, navigation and surveillance (CNS) capabilities for operations in route and terminal area

AeroMACS

(Presented by WiMAX Forum)

SUMMARY

The purpose of this information paper is to present more details about AeroMACS, latest developments, deployments, standards, major players, and specially how to improve airports wireless communications at the airport surface.

References:

- WiMAX Forum Power-point presentation

1. Introduction

1.1 Major airports throughout the world lack the communications capacity to meet today's airport traffic demands. To this end, having gone through over a decade in the standardization process, AeroMACS has been adopted worldwide to support such emerging and evolving airport surface communications needs. AeroMACS is one of the essential enablers of the global Air Traffic Management (ATM) initiatives and one of the three required communication technologies under the ICAO Global Air Navigation Plan (GANP). ICAO has approved the AeroMACS Standards and Recommended Practices (SARPS), which will help guarantee manufacturer interoperability and global harmonization through certified equipment. AeroMACS is a key technology to the aviation industry to improve communications on the airport surface by providing increased transmission of Air Traffic Control (ATC) and Airline Operations Communications (AOC) to relieve traffic, congestions, and delays, and to support the safety and regularity of flight.

2. Discussion

2.1 AeroMACS, the Aeronautical Mobile Aircraft Communication System, is the wireless interface that provides aircraft and ground infrastructure with the broadband connectivity needed to support a new generation of aircraft and an expanding range of ATM applications. AeroMACS is based on the IEEE 802.16-2009 (WiMAX) standard applied to create a new airport (surface) data communication system that is robust, efficient, secure, safe, and flexible.

2.2 AeroMACS operates in a licensed aeronautical spectrum in the 5 GHz band. A core allocation between 5091 MHz and 5150 MHz was designated on a worldwide basis by the ITU at the WRC 2007. AeroMACS benefits are beyond ground communications. The technology has multiple advantages over currently used wireless solutions: quality of service (QoS) functionality to optimize traffic

management; security and privacy to protect passengers and the air system; standards-based solution; scalability and interoperability to support global deployments across aircraft types and airports.

2.3 AeroMACS provides the capacity and efficiency needed to sustain demand for communication between aircraft, vehicles and ground infrastructures. Its ecosystem is gaining momentum and the number of deployments is increasing. Several AeroMACS projects are being contemplated, under consideration and with installation in progress around the world. In the United States, AeroMACS has been confirmed to be widely deployed through the Federal Aviation Administration (FAA) Telecommunications Infrastructure (FTI) program. In China AeroMACS networks have been deployed in 13 airports since 2014 and formally authorized with the frequency to install AeroMACS in 110 airports. In Japan, AeroMACS performance has been demonstrated in Haneda and Sendai airports. Other sites in Europe though EUROCONTROL and SESAR JU have undergone testing, additionally an AeroMACS project expansion has started in Portugal. In Latin America, AeroMACS projects are being evaluated and installation has been approved to start in Brazil.

2.4 AeroMACS is gaining momentum with deployments in airports worldwide. The AeroMACS presentation will focus on supporting the global Aviation Community in managing profitable developments and growth, build best-in-class AeroMACS networks, and collaborate to the benefit of the industry.

3. Suggested Action

3.1 The Meeting is invited to analyze the information provided in this information paper and Power-Point presentation.
