



ICAO

International Civil Aviation Organization

**Twenty Ninth Meeting of the Communications/
Navigation and Surveillance Sub-group (CNS SG/29)
of APANPIRG**

Bangkok, Thailand, 16-20 June 2025

Agenda Item 6: Aeronautical Mobile Communications Service and Aeronautical Electromagnetic Spectrum Utilization

6.4 Other issues related to aeronautical communications service and aeronautical radio spectrum management, especially on 5G implementation and potential impacts on aircraft radio altimeters

AEROMACS 2.0 PROJECT PROGRESS IN CHINA: STANDARDIZATION, APPLICATION, AND DEMONSTRATION

(Presented by China)

SUMMARY

This paper summarizes the AeroMACS 2.0 project progress in China, from the perspective of standardization, application and demonstration.

1. INTRODUCTION

1.1 Since the completion of the AeroMACS standards about a decade ago, significant technological advancements have been made in the cellular communication industry. Although some States have deployed AeroMACS systems at a few airports, the scarcity of COTS radios to support additional deployments and/or maintenance of existing systems is becoming exceedingly difficult.

1.2 The advanced cellular technologies offer significant spectrum efficiency improvements over the existing AeroMACS standards. To take advantage of these newer technologies as well as make provisions for future improvements, it is desirable to update the AeroMACS standards to be performance based, rather than coupled with a specific technology.

1.3 In October 2022, CAAC submitted a working paper to the sixth meeting of the ICAO Communication Panel/Data Communication Infrastructure working group (CP-DCIWG-6) for revising the AeroMACS profiles so as to involve the new-generation cellular technologies. CP-DCIWG-6 decided to re-activate WG-M for the AeroMACS standard revision. Until now, four WG-M meetings have been successfully held.

2 DISCUSSION

2.1 Based on the discussions under WG-M, the AeroMACS SARPs should be updated to be more performance-based and less specific to IEEE 802.16e. CAAC has submitted the SARPs amendment draft that is compatible with AeroMACS 2.0, which was preliminary approved by WG-M.

2.2 WG-M decided to add two more chapters in Doc. 10044 for involving the AeroMACS 2.0 techniques. CAAC has submitted working papers covering the parameter settings of the AeroMACS

2.0 from the perspective of Frequency Allocation & Channelization, Spectrum Mask & Emission, MIMO Configurations, and Receiver Sensitivity.

2.4 Profiting from the high spectrum efficiency, low latency, and massive connectivity of the AeroMACS 2.0, the potential application scenarios at the airport include runway incursion prevention, runway status light control, collision prevention in low-visibility conditions, Level V visual taxiing guidance, and airport surface resource management.

2.5 The demonstration of AeroMACS 2.0 has been conducted at four airports in China, including Shanghai Hongqiao Airport, Ezhou Huahu Airport, Chengdu Shuangliu Airport, and Guangzhou Baiyun Airport.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Review and note the status of AeroMACS 2.0 project progress in China.
- b) Actively support and participate in the CP-DCIWG-WG-M AeroMACS subgroup to update the respective standards.
