



ICAO

International Civil Aviation Organization

**Twenty Eighth Meeting of the Communications/
Navigation and Surveillance Sub-group (CNS SG/28)
of APANPIRG**

Bangkok, Thailand, 01-05 July 2024

Agenda Item 5: Aeronautical Mobile Communications Service and Aeronautical electromagnetic spectrum utilization

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

WG-M, AeroMACS Sub-Group Work Progress Under CP-DCIWG

(Presented by China)

SUMMARY

This paper summarizes the activities of the AeroMACS Sub-Group of the CP-DCIWG-WG-M since the last report submitted to CNS SG/27.

The CNS SG members are requested to note the status of activities as reported; provide any comments; and are invited to support and

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 A new Job Card was presented in the CP-DCIWG/6 meeting for the update of the ICAO AeroMACS provisions, while maintaining technology-agnostic requirements and performance-based approach, enabling safe/secured adoption of innovations, such as “5G”, for aeronautical safety communications. The Job Card proposes to update the AeroMACS SARPs, the supporting technical manual and guidance.

2. DISCUSSION

2.1 To address the needs described above, the initial Job Card from DCIWG/6 was presented at the WG-M/2. The Group reviewed the proposed Job Card, made a few changes and formed the AeroMACS Sub-Group under WG-M to maintain and improve the respective standards.

2.2 Actions were assigned to the AeroMACS SG to further update the Job Card to fully describe the deliverables, the schedule, the benefits to be realized by the States and Industry. In addition, the SG was requested to verify and update, as necessary, the GANP & GASP Links referenced in the Job Card.

2.3 The AeroMACS SG held monthly telecon to update the Job Card to address the actions from WG-M/2. The updated Job Card was subsequently presented to WG-M/3. The Group made minor changes to the proposed Job Card and approved it for presentation at the DCIWG/7 to request approval of the Job Card following the ICAO approval process. The Job-Card was submitted to DCIWG/7 as WP-37, which got approved in the meeting.

2.4 In addition to the Job Card, the AeroMACS SG initiated activities on the AeroMACS SARPs. In order to make the SARPs technology-agnostic, performance based, AeroMACS SG identified several sections from the ANNEX 10, Part III, Chapter 7 to be moved to the AeroMACS Technical Manual, ICAO Doc. 10044. The specific sections are: the General Radio Characteristics, specific frequency bandwidth, receiver sensitivity, receiver selectivity, spectral mask, and frequency tolerance requirements tied to WiMAX technology. In addition, the SG enhanced the security requirements section to align with the ICAO Common Aeronautical Certificate Policy and the ICAO IPS security specifications. This was submitted to DCIWG/7 as WP-21.

2.5 The AeroMACS SG developed the Impact Assessment and the Implementation Plan as a supporting documentation for the SARPs amendment proposal. The SG identified the impacts to be all 'Positive', which was presented at the WG-M/3. WG-M/3 agreed with the SG assessment and requested the assessment to be also presented at DCIWG/7. This was submitted to DCIWG/7 as WP-22.

2.6 AeroMACS SG initiated the task to update the AeroMACS Technical Manual and Guidance Document, ICAO Doc. 10044. The SG agreed that the existing Doc. 10044 chapters related to the WiMAX technology will be maintained to support the currently operational systems. Separate technical and guidance chapters for the future technologies will be added to Doc. 10044. The deleted sections from ANNEX 10, Part III, Chapter 7 (reference paragraph 2.4 above) have been added to the WiMAX related chapter/s. This was submitted to DCIWG/7 as WP-33.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Review and note the status of AeroMACS SG activities under CP-DCIWG.
- b) Actively support and participate in the CP-DCIWG-WG-M AeroMACS SG to update the respective standards.
