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Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems (NGSS)

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FOREWORD

This document was prepared by Special Committee 222 (SC-222) jointly with EUROCAE Working Group 82 (WG-82) and approved by the RTCA Program Management Committee (PMC) on September 25, 2025, and the EUROCAE Council on September 26, 2025.

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- developing consensus on the application of pertinent technology to fulfill user and provider requirements, including development of minimum operational performance standards for electronic systems and equipment that support aviation; and

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1 PURPOSE AND SCOPE

1.1 Introduction

This document contains minimum operational performance standards (MOPS) for avionics that provide Aeronautical Mobile Satellite (R) Services (AMS(R)S) by means of satellite communications technologies scheduled to become operational in context of the global and regional ATM and CNS modernization (e.g. ICAO/Global Air Navigation Plan, Europe/SESAR, US/NextGen). Each of these technologies is individually and collectively referred to as a "Next Generation Satellite System" (NGSS), and the NGSS nomenclature will be used throughout this document. This document does not apply to avionics that provide AMS(R)S in accordance with the Standards and Recommended Practices defined in ICAO Annex 10, Part I, Volume III, Chapter 4 (Chapter 4 SARPS). Such equipment is specified in the current version of RTCA DO-210D.

Note: The ICAO SARPS chapter 4 as well as the ICAO AMS(R)S manual (document number 9925) are planned to be updated to include NGSS. However these updates are not yet available.

Compliance with these standards is recommended as one means of assuring that NGSS avionics will perform its intended function(s) satisfactorily under all conditions normally encountered in routine aeronautical operations. Any regulatory application of this document is the sole responsibility of appropriate governmental agencies.

This document contains a generic description of a satellite communication system configuration including Ground Subnetworks; NGSS Satellite Subnetworks, of which the Aircraft Earth Station (AES) is one part; and Aircraft Subnetworks. However, the specified Minimum Operational Performance Standards in this document address only the AES portion of the Satellite Subnetwork.

To comply with the minimum requirements of an application for certification or other approval, an NGSS applicant is required to submit information regarding the technical characteristics of the NGSS. These technology-specific technical requirements for each such system will become normative appendices to this document. It is anticipated that such technology-specific appendices will be created as the particular NGSS becomes operational for AMS(R)S.

This document covers typical NGSS avionics requirements and tests for the aircraft avionics. It includes the purpose, scope and equipment performance requirements, recommended bench tests and other performance verification procedures, and installed-equipment tests and operational performance characteristics. Detailed requirements and test procedures are based on the technical characteristics documented in the normative appendices, as discussed in the previous paragraph.

A companion document DO-343() / ED-242(), *Minimum Aviation System Performance Standards (MASPS) for the Aeronautical Mobile-Satellite (R) Service (AMS(R)S) as Used in Aeronautical Data Links*, should be consulted for operational requirements at the air/ground system level, and for details of specific systems providing AMS(R)S.

1.2 Document Overview

This document consists of the main body (sections 1 to 5) and the set of appendices. The main body of the document and the appendices A and C are informative. Only the technology specific appendices (D, E) are normative for the airborne equipment.

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