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**Minimum Operational Performance Standards
(MOPS) for
Global Navigation Satellite System (GNSS)
Airborne Active Antenna Equipment for the L1
Frequency Band**

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FOREWORD

This report was prepared by Special Committee 159 (SC-159) and approved by the RTCA Program Management Committee (PMC) on December 13, 2006.

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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
- assisting in developing the appropriate technical material upon which positions for the International Civil Aviation Organization and the International Telecommunication Union and other appropriate international organizations can be based.

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1. PURPOSE AND SCOPE

1.1 Introduction

This document contains minimum operational performance standards (MOPS) for GNSS airborne active antenna equipment designed to use the GPS or Galileo L1 frequency augmented by other systems/equipment/techniques as appropriate to meet the performance requirements for primary means of navigation for en route, terminal, non-precision, and precision approach phases of flight. An active antenna is one integrated with a preamplifier. Minimum requirements for passive designs are specified in DO-228 and DO-228, Change 1.

Section 1.0 of this document provides information and assumptions needed to understand the rationale for equipment characteristics and requirements stated in the remaining sections. It describes typical equipment applications and operational goals, and forms the basis for the standards stated in Sections 2.0 through 4.0.

Section 2.0 contains the minimum performance standards for the equipment. These standards define required performance under standard operating conditions and stressed physical environmental conditions. It also details the recommended bench test procedures necessary to demonstrate compliance.

Section 3.0 describes the performance required of the installed equipment. Tests for the installed equipment are included when performance cannot be adequately determined through bench testing.

Section 4.0 describes the operational characteristics for equipment installations, and defines conditions that will assure the operator that operations can be conducted safely and reliably in the expected operational environment.

Compliance with these standards by manufacturers, installers, and users is recommended as one means of assuring that the equipment will satisfactorily perform its intended function(s) under conditions normally encountered in routine aeronautical operations.

The word "equipment" as used in this document includes all components or units necessary (as determined by the equipment manufacturer or installer) for the equipment to properly perform its intended function.

It is recognized that any regulatory application of these standards is the responsibility of appropriate government agencies.

Inasmuch as the measured values of equipment performance characteristics may be a function of the measurement method, standard test conditions and methods of test are recommended in this document.