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**Minimum Operation Performance Standards
(MOPS) for Automatic Flight Guidance
and Control Systems and Equipment**

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Prepared by: SC-220
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FOREWORD

This document was prepared by Special Committee 220 (SC-220) and approved by RTCA Program Management Committee (PMC) on December 8, 2010.

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- analyzing and recommending solutions to the system technical issues that aviation faces as it continues to pursue increased safety, system capacity and efficiency;
- 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 Automatic Flight Guidance and Control Systems (AFGCS) and applicable interfaces. These standards specify system characteristics that should be useful to designers, manufacturers, installers and users of the system and equipment.

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

Section 1.0 Purpose and Scope. This section provides information needed to understand the rationale for system/equipment characteristics and requirements stated in the remaining sections. It describes typical system/equipment applications and operation goals, as envisioned by the members of Special Committee 220, and establishes the basis for the standards stated in Sections 2.0 through 3.0. Definitions and assumptions essential to proper understanding of this document are also provided in this section.

Section 2.0 System/Equipment Performance Requirements and Test Procedures. This section contains the MOPS for the AFGCS equipment and recommended test procedures to demonstrate system/equipment MOPS compliance.

Section 3.0 Installation Instructions. This section contains criteria for the installation of the AFGCS. Installation criteria are included as guidance for equipment installers and for performance which may not be adequately demonstrated during equipment MOPS testing.

Title 14 Codes of Federal Regulations (CFR) or European Aviation Safety Agency (EASA) function hazard categorizations contained in 14 CFR Sections or Certification Specification (CS) 23, 25, 27, and 29.1309 for compliance, the Advisory Circulars (AC) 23.1309-1D (or current revision) and 25.1309-1A (or current revision) provide a basis for the evaluation to be performed for the effects of the loss or malfunction of these functions. An equipment manufacturer may define limits on intended installation and document hazard category limitations accordingly.

This document provides minimum operational performance standards (MOPS) for the automatic flight guidance and control functions consisting of four equipment classes:

- Class A, autopilot.
- Class B, yaw damper.
- Class C, flight director.
- Class D, autothrust/autothrottle.

Performance standards for functions or components that describe capabilities that exceed the MOPS are identified as optional features.