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MINIMUM AVIATION SYSTEM PERFORMANCE STANDARDS (MASPS) FOR THE AERONAUTICAL MOBILE-SATELLITE (R) SERVICE (AMS(R)S) AS USED IN AERONAUTICAL DATA LINKS

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Prepared by SC-165

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FOREWORD

This document was prepared by RTCA Special Committee 165. It was approved by the Program Management Committee on October 12, 2001.

RTCA, Incorporated, is a not-for-profit corporation formed to advance the art and science of aviation and aviation electronic systems for the benefit of the public. The organization functions as a Federal Advisory Committee and develops consensus based recommendations on contemporary aviation issues. RTCA's objectives include but are not limited to:

- coalescing aviation system user and provider technical requirements in a manner that helps government and industry meet their mutual objectives and responsibilities;
- 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.

The organization's recommendations are often used as a basis for government and private sector decisions as well as the foundation for many Federal Aviation Administration Technical Standard Orders.

As RTCA is not an official agency of the United States Government, its recommendations may not be regarded as statements of official government policy unless so enunciated by the U. S. government organization or agency having statutory jurisdiction over any matters to which the recommendations relate.

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1 PURPOSE AND SCOPE

1.1 Introduction

This document contains minimum aviation system performance standards for communications utilizing aeronautical mobile satellite systems for the air-ground communications subnetwork in an Aeronautical Telecommunications Network (ATN) environment. The FANS 1/A data link environment is also addressed. These standards specify characteristics that should be useful to designers, installers, manufacturers, service providers and users of systems intended for operational use within the United States National Airspace System (NAS). Where systems are global in nature, the system may have international applications that are taken into consideration.

Compliance with these standards is recommended as one means of assuring that the system and each subsystem will perform its intended function(s) satisfactorily under conditions normally encountered in routine aeronautical operations for the environments intended. The MASPS may be implemented by one or more regulatory documents and/or advisory documents (e.g., certification, authorization, approval, commissioning, advisory circular, notice, etc.) and may be implemented in part or in total. Any regulatory application of this document is the sole responsibility of appropriate governmental agencies.

Communications supporting the Air Traffic Service (ATS) and Aeronautical Operational Control (AOC) may be provided by one or more satellite systems, each of which has particular operating characteristics. The technical details of each individual system will be in system-specific attachments prepared in accordance with this document. The system-specific performance will become the minimum performance requirements for that system. This document anticipates that the system-specific attachment(s) will provide one means of assessing whether a particular AMS(R)S system is appropriate for a specific operational environment. The requirements for operational environments will be developed in accordance with DO-264. A system-specific attachment will not require RTCA approval or publication.

Section 1 of this document describes a generalized Aeronautical Mobile Satellite Service (AMSS) System, the particular characteristics of its AMS(R)S component, and the data link environment in which it is used. Section 1 also provides information needed to understand the rationale for system characteristics and requirements that are stated within this document. This section contains typical applications and envisioned operational goals and assumptions necessary to establish a basis for the subsequent sections.

Section 2 defines the general requirements of an AMS(R)S subnetwork, specific requirements for its interfaces, and specific minimum Installed Communications Performance (ICP) requirements when viewed as an air/ground subnetwork of an end-to-end data network. The ICP requirements include delay, integrity, availability and continuity of service parameters.

Section 3 establishes requirements for specific information that must be provided in the system-specific attachments and establishes pro-forma tables and methodology by which that information is to be provided. The purpose of this disclosure is to provide confidence that the subnetwork design will achieve the "Point B-to-Point C" performance specified in Section 2, prior to the approval of that system for AMS(R)S. The ultimate proof of performance at the subnetwork level is the verification procedures of Section 4.

Section 4 describes procedures recommended for verifying compliance of the subnetwork with the minimum performance requirements in Section 2.

Appendices of this document are structured to contain either normative or informative material, and are so identified in each case. Normative appendices contain material, such