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MINIMUM AVIATION SYSTEM PERFORMANCE STANDARD FOR AMS(R)S DATA AND VOICE COMMUNICATIONS SUPPORTING REQUIRED COMMUNICATIONS PERFORMANCE (RCP) AND REQUIRED SURVEILLANCE PERFORMANCE (RSP) IN PROCEDURAL AIRSPACE

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Foreword

This document was prepared by Special Committee 222 (SC-222) and approved by the RTCA Program Management Committee (PMC) on August 21, 2013.

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 help 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 Telecommunications Union and other appropriate international organizations can be based.

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

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1 INTRODUCTION

1.1 Objective and Scope

This document contains Minimum Aviation System Performance Standards (MASPS) for Aeronautic Mobile Satellite (Route) Services (AMS(R)S) that provide safety communications to aircraft in procedural airspace. The performance defined in this document is intended to provide (1) data communication services that comply to either the RCP240 or RCP400 standards of Required Communications Performance (RCP) for two-way, bidirectional, controller-to-pilot data communications and to the RSP180 or RSP400 standards of Required Surveillance Performance (RSP) for one-way aircraft-to-Air Traffic Service Provider surveillance-related information, and (2) voice communication services that comply with RCP400/V for two-way, bidirectional voice communications between pilots and controllers. Requirements for data communication services are referenced to and refined from the ICAO Global Operational Data Link Document (GOLD), and requirements for voice services are referenced to and refined from the ICAO Satellite Voice Guidance Material (SVGM) document. In keeping with the intent of the GOLD and the SVGM, this document provides requirements at the Communication Service Provider (CSP) level. In addition, other requirements are refined from the ICAO AMS(R)S SARPs.

Note: This document recognizes that data link communications meeting the RSP standard are traditionally associated with the surveillance community. However, at the CSP level, there is no fundamental distinction between traditional two-way communications and the one-way surveillance applications. Therefore, both RCP240 and RSP180 are treated as data communications services.

This document anticipates that more than one CSP may provide RCP-compliant services in procedural airspace, and that the same CSP may also provide a different suite of services using a different satellite subnetwork for air-ground communications. Therefore, in addition to the technical requirements at the CSP level that apply to any and all of the CSPs, regardless of subnetwork, this document also provides instructions for the preparation of system-specific material related to CSP-level requirements and performance using an individual specific satellite service provider. Such system-specific information will become part of a system-specific attachment to this document.

Compliance with the standards in the main body and the related system-specific material of this document is recommended as one means of assuring that an air-to-ground/ground-to-air communications service based on a particular satellite service will perform its intended function(s) satisfactorily under conditions normally encountered in routine aeronautical operations for the designated operational environment(s). Any regulatory application of this document is the sole responsibility of appropriate governmental agencies.

The specific requirements for the Aircraft Earth Station (AES) element that supports a particular satellite subnetwork used in such an AMS(R)S system will be found in the appropriate Normative Appendices to DO-262 *Minimum Operational Performance Standards (MOPS) for Avionics Supporting Next Generation Satellite Systems (NGSS)*. The latest revision of that document should be consulted for the technical requirements related to the design and performance of AES equipment used in the system described in this document.

1.2 Document Overview

This document is organized as follows.

The main body of the document follows the RTCA guidelines for MASPS preparation. After this initial introductory section, Section 2 contains the system requirements at the CSP level. Most of these requirements are presented in tabular form to simplify the cross-reference matrices required in the system-specific material.