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Change No. 1  
-to-  
RTCA DO-270

**Minimum Aviation System Performance Standards  
for the Aeronautical Mobile-Satellite (Route) Service (AMS(R)S)  
as Used in Aeronautical Data Links**

**System Specific Attachment for Iridium Satellite**

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## GLOSSARY

|        |   |
|--------|---|
| AAC    | Aeronautical Administrative Communications                  |
| AC     | Acquisition Class   |
| ACCHL  | Associated Control Channel, L-Band                          |
| AES    | Aircraft Earth Station                                      |
| AOC    | Aircraft Operational Communication                          |
| APC    | Aeronautical Public Correspondence                          |
| ATC    | Air Traffic Communications (Command)                        |
| BPSK   | Binary Phase Shift Keying                                   |
| CC     | Call Control  |
| CMU    | Communications Management Unit                              |
| COCR   | Communications Operating Concept and Requirements           |
| CSP    | Communications Service Provider                             |
| DCE    | Data Communications Equipment                               |
| DFOA   | Differential Frequency of Arrival                           |
| DSP    | Datalink Service Provider                                   |
| DTE    | Data Terminal Equipment                                     |
| DTOA   | Differential Time of Arrival                                |
| FDMA   | Frequency Domain Multiple Access                            |
| FEC    | Forward Error Correction                                    |
| GES    | Ground-Earth Station (Gateway)                              |
| GSM    | Global System for Mobile Communications                     |
| ICAO   | International Civil Aviation Organization                   |
| ISLLC  | Iridium Satellite Limited Liability Corporation             |
| IP     | Internet Protocol   |
| LAI    | Location Area Identity                                      |
| LBP    | L-Band Physical   |
| LBT    | L-Band Transceiver  |
| LL     | L-Band Link   |
| MLPPP  | Multi-Link Point to Point Protocol                          |
| MM     | Mobility Management   |
| MO     | Mobile Originated   |
| MOPS   | Minimum Operation Performance Standards                     |
| MT     | Mobile Terminated   |
| NGSS   | Next Generation Satellite System                            |
| OSN    | Operational Support Network                                 |
| PPP    | Point to Point Protocol                                     |
| PSDN   | Public Switched Data Network                                |
| PSTN   | Public Switched Telephone Network                           |
| QPSK   | Quadrature Phase Shift Keying modulation                    |
| RUDICS | Router-Based Unrestricted Digital Interworking Connectivity |

|      |  |
|------|--|
|      | Solution                                   |
| SBD  | Short Burst Data                           |
| SDU  | Satellite Data Unit                        |
| SIM  | Subscriber Identity Module card            |
| SNOC | Satellite Network Operations Centre        |
| SV   | Space Vehicle (Satellite)                  |
| TCP  | Transport Control Protocol                 |
| TDMA | Time Domain Multiple Access                |
| TE   | Terminal Equipment                         |
| TMSI | Temporary Mobile Subscriber Identification |
| TTAC | Telemetry, Tracking, and Control facility  |
| UTC  | Universal Coordinated Time                 |

## 1 INTRODUCTION

### 1.1 Objective

This document has been prepared in accordance with *DO-270 Minimum Aviation System Performance Standards (MASPS) for the Aeronautical Mobile-Satellite (R) Service (AMS(R)S) as Used in Aeronautical Data Links* as a system specific attachment for the Iridium Satellite System. It contains minimum aviation system performance standards for communications utilizing the Iridium Satellite network for the air-ground communications subnetwork in an Aeronautical Telecommunications Network (ATN). This attachment reflects the Standards and Recommended Practices defined in ICAO Annex 10, Part I, Volume III, Chapter 4 (Chapter 4 SARPS), as revised in 2007.

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

The technical characteristics specific to the Iridium Satellite system will be prepared in accordance with this System Specific Attachment. The system specific performance declared in accordance with this attachment will provide one means of assessing whether Iridium Satellite AMS(R)S is appropriate for a specific operational environment. Iridium's system specific performance declaration will not require RTCA publication or approval.

A companion document, the *Iridium Satellite Normative Appendix to the DO-262A Minimum Operational Performance standards (MOPS) for Avionics Supporting Next Generation Satellite Systems (NGSS)*, should be consulted for operational requirements at the air/ground system level, and for details of specific systems providing Iridium AMS(R)S. RTCA documents DO-215A and DO-231 provide overall guidance on data and voice performance.

### 1.2 Scope

This system specific attachment contains a description of the Iridium Satellite communication system configuration including Ground Subnetworks; Iridium Satellite Subnetworks, of which the Aircraft Earth Station (AES) is one part; and Aircraft Subnetworks. However, the *minimum system performance standards* in this document address only the Satellite Subnetwork.

Section 1 of this attachment provides an informative description of the Iridium Satellite network, focusing on those aspects particular to AMS(R)S. Section 1 provides information needed to understand the rationale for Iridium system characteristics and requirements stated within this document. Definitions and assumptions essential to proper understanding of the Iridium System are provided in this Section, while a more extensive generic glossary can be found in Appendix A of DO-270. Section 1 is intended to be informative in nature and contains no requirements applicable to the Iridium Satellite System.

Section 2 defines the general requirements of an Iridium Satellite 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