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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