RTCA, Incorporated
1140 Connecticut Avenue, Northwest, Suite 1020
Washington, D. C. 20036 U.S.A.

MINIMUM OPERATIONAL PERFORMANCE STANDARDS FOR AIRBORNE AUTOMATIC DEPENDENT SURVEILLANCE (ADS) EQUIPMENT

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Prepared by:
SC-170

Copies of this document may be obtained from

RTCA, Incorporated
1140 Connecticut Avenue, N. W., Suite 1020
Washington, D. C. 20036-4001 U.S.A

Telephone: 202-833-9339
Facsimile: 202-833-9434

Please call RTCA for price and ordering information.

FOREWORD

This document was prepared by RTCA Special Committee 170 (SC-170). It was approved by RTCA on October 26, 1992.

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1.0 PURPOSE AND SCOPE

1.1 Introduction

This document contains minimum operational performance standards for airborne equipment required for the automatic dependent surveillance (ADS) function (ADSF). The supporting hardware can be a stand-alone ADS unit (ADSU) or alternatively, the ADS function may be installed within other on-board equipment.

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

Portions of the communications environment are described in RTCA/DO-205, *Design Guidelines and Recommended Standards to Support Open Systems Interconnection for Aeronautical Mobile Digital Communications. Part 1 — Internetworking*. The ADSF is considered to be an application within the context of the Open Systems Interconnection (OSI) reference model and relies on two supporting elements: the hardware and the communication system.

Since the equipment implementation includes a computer software package, RTCA/DO-178B, *Software Considerations in Airborne Systems and Equipment Certification*, is applicable.

When determining the level of software requirements, as defined in RTCA/DO-178B, the equipment manufacturer should consider the criticality appropriate for the installation certification, equipment failure analysis, and the fault monitoring being accomplished.

Since the measured values of equipment performance characteristics may be a function of the measurement method, standard test conditions and methods of test are recommended in this document.

Section 1.0 of this document provides information and assumptions needed to understand the rationale for equipment characteristics and requirements stated in the remaining sections. It describes typical equipment applications and operational goals, and forms the basis for the standards stated in Sections 2.0 and 3.0.

Section 2.0 contains the minimum operational performance standards for the equipment. These standards define required performance under standard operating conditions and stressed physical environmental conditions. Also included are recommended bench test procedures necessary to demonstrate equipment compliance with the stated minimum requirements. This includes, but is not limited to, the ADS application and OSI communication software.