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# Minimum Aviation System Performance Standards for Automatic Dependent Surveillance – Broadcast (ADS-B)

# Change 1

RTCA DO-242A, Change 1
December 13, 2006
Modifies RTCA/DO-242A

Prepared by: SC-186

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## Foreword

This document was prepared by Special Committee 186 (SC-186) and approved by the RTCA Program Management Committee (PMC) on December 13, 2006.

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 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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## Executive Summary

The update to the *Minimum Aviation System Performance Standards (MASPS) for Automatic Dependent Surveillance – Broadcast (ADS-B)* systems, published by RTCA on June 25, 2002 as RTCA/DO-242A, is contained herein as **Change 1 to RTCA/DO-242A**, and has been produced to reflect changes that have resulted in requirements for ADS-B transmitting and receiving systems.

This **Change 1 to RTCA/DO-242A** mainly clarifies the definitions of several parameters transmitted by aircraft in ADS-B Messages. These parameters provide information to the recipient of the ADS-B Message about the quality of the transmitted aircraft position. This **Change 1** has been developed in a manner that reflects typically available aircraft position sources and should not impact ADS-B equipment previously certified using RTCA DO-260A for 1090 MHz Extended Squitter or RTCA DO-282A for the Universal Access Transceiver (UAT).

With the publication of this document as "**Change 1 to DO-242A**" changes that were previously identified as being necessary in RTCA/DO-260A, RTCA/DO-282A and the Appendix to TSO C166, have been used to complete this Change document. In addition, several additional changes are being made to DO-242A that were identified as necessary since the time of the publication of DO-242A. These changes include, but are not limited to:

1. Changes in the requirements sections of §2.1.2.13 and §2.1.2.15, relating to the Navigation Integrity Category (NIC) and the Surveillance Integrity Level (SIL) parameters. As the STP MOPS was developed and written, it was realized that there is a discrepancy in the meaning of the integrity values as calculated for GPS systems versus flight management systems. The purpose of these proposed changes are to make the existing definitions for NIC and SIL compatible with the new STP MOPS. The changes to the NIC table are editorial in nature. The SIL table is proposed to be changed to allow compatibility with FMS and GPS outputs, and to alter the "per flight hour or per operation" designation, which made SIL self-inconsistent;
2. The correction of errors noted in the air/ground determination section; and
3. The revision of the table defining the Aircraft/Vehicle Length and Width Codes to be more easily interpreted.