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**Minimum Operational Performance Standards  
(MOPS) for Traffic Alert and Collision  
Avoidance System II (TCASII)  
Hybrid Surveillance**

RTCA DO-300A  
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Prepared by: SC-147  
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## FOREWORD

This report was prepared by Special Committee 147 (SC-147) and approved by the RTCA Technical Management Committee on March 20, 2013. It provides modifications to RTCA/DO-185B, *Minimum Operational Performance Standards for Traffic Alert and Collision Avoidance System II (TCAS II) Airborne Equipment* that are required to implement hybrid surveillance techniques in conjunction with the other functions of that equipment.

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# 1 PURPOSE AND SCOPE

## 1.1 Introduction

This document contains Minimum Operational Performance Standards for Traffic Alert and Collision Avoidance System II (TCAS II) equipment that uses hybrid surveillance. Hybrid surveillance includes both passive surveillance using the Mode S extended squitter as well as the active interrogations used in TCAS II systems built in compliance with RTCA/DO-185B. These standards specify system characteristics that should be useful to designers, manufacturers, installers and users of the equipment.

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

Section 1 of this document provides information needed to understand the rationale for equipment characteristics and requirements stated in the remaining sections. It describes typical equipment operations and operation goals, as envisioned by the members of RTCA Special Committee 147 (SC-147) and EUROCAE Working Group 75 and establishes the basis for the standards stated in Sections 2 and 3. Definitions and assumptions essential to proper understanding of this document are also provided in this section.

Section 2 contains the minimum operational performance standards for the equipment. These standards specify the required performance under standard environmental conditions. Also included are recommended bench tests necessary to demonstrate equipment compliance with the stated minimum requirements.

Section 3 describes the performance required of installed equipment. Tests for the installed equipment are included when performance cannot be adequately determined through bench testing.

This document considers an equipment configuration as specified in Ref. A with the following additions:

- The TCAS Processor Unit is implemented with the ability to decode the extended squitter. This was identified as an optional feature in Ref. A, §1.3.2.1. The TCAS Processor Unit must meet the additional requirements (defined in Ref. C) of a receiver that is shared between TCAS and a 1090 MHz Automatic Dependent Surveillance-Broadcast (ADS-B) receiver.
- The TCAS Processor Unit is provided own position latitude and longitude information from the aircraft and associated quality parameters.
- The TCAS Processor Unit is provided own aircraft ground speed from the aircraft.

This document considers an equipment configuration identified in the System Overview, §1.2. Operational performance standards for functions or components that refer to equipment capabilities that exceed the stated minimum requirements are identified as optional features.