

**TERMS OF REFERENCE**

**Special Committee 186**

**AUTOMATIC DEPENDENT SURVEILLANCE BROADCAST (ADS-B)  
(Revision 11)**

**POINTS OF CONTACT**

Rocky Stone	Co-Chair	United Airlines	303-780-3812	Rocky.stone@united.com
Vincent Capezzuto	Co-Chair	FAA	202-385-8637	Vincent.capezzuto@faa.gov
Jonathan Hammer	Secretary	MITRE/CAASD	703-983-5209	Jhammer@mitre.org

**DELIVERABLES**

Document	Revision	Date
TIS-B MASPS	B	8/07
ASAS (ASSAP/CDTI) MOPS	-	5/08
RAD OSED, SPR, Interop	-	7/08
VSA OSED, SPR, Interop	-	7/08
ITP OSED, SPR, Interop	-	4/08
Other Package 1 OSEDs, SPR, Interop	-	12/09
	-	
ASA MASPS	A	TBD
	-	

**TERMINATION OF COMMITTEE**

Activities of Special Committee 186 will terminate with approval by the PMC of the committee's final document. Any change/extension of a committee's work program requires prior PMC approval.

**NAS ARCHITECTURE LINKAGE**

The activities of Special Committee 186 are directly traceable to the Operational Concept for Free Flight and the NAS Architecture document, JPDO NextGen and FAA OEP operational concepts.

## REQUIREMENTS ASSESSMENT

There are a number of potential benefits that FAA customers (e.g., airlines and the flying public) and service providers (e.g., air traffic controllers) can realize with the use of ADS-B technology and associated applications. Over 70 ADS-B operational capabilities have been identified that could provide benefit if implemented and provided as a tool for flying public use. These benefits include enhanced safety, increased aviation efficiency and the potential to increase the capacity of all air and ground space used by the aviation industry. To satisfy the need for providing the ADS-B capabilities, SC-186 has been established to recommend industry standards for ADS-B applications that can be made available to governments, industry and other organizations. Version update releases are planned to support the phased operational evaluation of ADS-B applications.

## TERMS OF REFERENCE

Special Committee 186 (SC-186) shall codify operational requirements based upon the airborne and ground user needs for an Automatic Dependent Surveillance-Broadcast (ADS-B) system. The development activities of SC-186 shall consider the relevant work of other bodies, including the RTCA Free Flight Steering Committee, ICAO Panels, FAA/CAAs, EUROCAE, AEEC, SAE, and other RTCA Special Committees. The Special Committee should coordinate with these bodies, including the EUROCAE and ICAO representatives. SC-186 shall also consider the recommendations developed by RTCA Task Force 2, 3 and 4. The committee should:

1. Working jointly with EUROCAE WG51, harmonize operational concepts and perform high-level safety, performance and interoperability performance analysis for well-defined aircraft surveillance (AS) and ground surveillance (GS) applications including the near-term applications specified in Package 1. While the initial set of ASA applications were being refined within RTCA, other activities in Europe were developing similar operational concepts. To facilitate global interoperability, harmonization of these applications is needed.

This work will be done as a joint RTCA/EUROCAE activity. The efforts will be based both on the methodology specified in RTCA DO-264/EUROCAE ED-78A, and on previous work done within RTCA and in Europe. The work products of these efforts will be documents addressing the entire set of applications that include the following:

- Operational Services and Environment Description (OSED),
- Safety and Performance Requirements
- Interoperability assessment.

It is anticipated that this document set will be the basis for revising the ASA MASPS (RTCA/DO-289) as a joint RTCA/EUROCAE document. Other results from this work will be the harmonization of the analysis methodology most appropriate for

surveillance applications and applications definitions in a format that can be useful to stakeholders in the U.S., Europe, and elsewhere.

2. Update the December 9, 2003 MASPS for Aircraft Surveillance Applications (ASA) (RTCA/DO-289), including detailed application descriptions and end-to-end requirements analysis. This revision of the MASPS will address the initial ASA applications and some of the other AS applications defined jointly by SC186 and EUROCAE WG51 within the Requirements Focus Group (RFG). The revision of the ASA MASPS will be developed jointly with EUROCAE WG51, and will be the repository for applications descriptions and requirements for airborne surveillance applications. Beyond the specific applications addressed in the initial ASA MASPS and those defined by the RFG, future versions of the ASA MASPS should include additional applications that are of interest and benefit to the aviation community. Oceanic in-trail (or lead) climb and descent are examples of beneficial applications that are expected to be included in a future version of the ASA MASPS.

The application descriptions in the ASA MASPS should have sufficient detail to ensure a common understanding of the applications by all interested parties and should remain consistent with the definitions agreed to within the OSEDs developed through RFG activities. The MASPS should follow the process articulated in RTCA DO-264 for assessment of applications, analysis of safety, and allocation of requirements. The MASPS should allocate requirements to ASA subsystems, including ADS-B, TIS-B, surveillance processing, alert functions, supporting applications processing, and displays.

3. Update and maintain, as required, the April 10, 2003 Minimum Operational Performance Standards (MOPS) for an ADS-B system operating on 1090 MHz frequency (RTCA Document No. RTCA/DO-260A).
4. Update and maintain, as required, April 10, 2003 MASPS for Traffic Information Services Broadcast (TIS-B) (RTCA Document No. RTCA/DO-286). The TIS-B MASPS shall provide recommendations for the transmission of ground-derived surveillance information on aircraft and vehicles to suitably equipped users for display and use in airborne and surface applications. TIS-B compatibility and interoperability with ADS-B applications must be addressed.
5. Update and maintain, as required, the June 25, 2002 ADS-B MASPS (RTCA Document No. RTCA/DO-242A). Coordinate the ADS-B MASPS with EUROCAE WG-51 with a goal of any future revisions to the MASPS being a joint RTCA/EUROCAE document.
6. Develop MOPS for Airborne Separation Assistance Systems (ASAS) processing. ASAS MOPS will specify requirements for processing of surveillance information prior to transmission, airborne surveillance processing, cockpit display of traffic information (CDTI), and avionics interfaces in support of the applications specified

in the ASA MASPS. The ASAS MOPS defines how TCAS, ADS-B, and TIS-B traffic is integrated on a CDTI display. *Note that with regard to TCAS, SC186 is tasked only with developing standards related to the traffic display. SC186 is not authorized to make any changes to DO-185A. Any changes that are determined to be required to DO-185A shall be coordinated through the RTCA Program Management Committee.*

7. Update and maintain, as required, the July 29, 2004 Universal Access Transceiver (UAT) ADS-B MOPS (RTCA Document No. RTCA/DO-282A).
8. SC-186 shall serve as RTCA's forum for the consideration and initial development of new ADS-B ground and air-based surveillance applications enabled by ADS-B. SC-186 will solicit application inputs from within and outside SC-186. Upon receiving application inputs, SC-186 will review and consider the application for further development. Considerations will include maturity of concept, potential timeframe in which the application might become operational, number of stakeholders, and compatibility with ADS-B implementation planning. The committee shall develop and publish procedures for prioritizing applications.
9. Coordinate closely with other government and industry groups, as appropriate, e.g., EUROCAE, ICAO, and RTCA activities SC-147 and SC-159.