

TERMS OF REFERENCE
Special Committee (SC) 209
Minimum Operational Performance Standards for
ATCRBS/Mode S Transponder
(Rev 9)

ORIGINAL REQUESTOR(S):

Organization	Person
Federal Aviation Administration	David Hempe

A letter of request that addresses the elements listed below will be maintained “on file” at RTCA. The requester (point of contact) may be any senior level individual from government or industry whose authority and functional responsibilities are related to the SC activity requested.

SC LEADERSHIP:

Position	Name	Affiliation	Telephone	email	Change
Chairman	Thomas Pagano	Regulus Group	(609) 485-5387	thomas.ctr.pagano@faa.gov	
Chairman	Matt Erickson	Collins Aerospace	(407) 421-4966	matt.erickson@collins.com	
Secretary	Tim Steiner	FAA, ANG-C33	(609) 485-4239	tim.steiner@faa.gov	
Government Authorized Representative	Matt Haskin	FAA, AIR-622	(202)267-2964	matthew.d.haskin@faa.gov	

BACKGROUND: Original: Mode Select, (Mode S), and the associated technologies that support it provide the basis for aircraft surveillance within the National Airspace System (NAS), in the US and around the world. Mode S is also the basis for ADS-B, the next generational step in aircraft surveillance technology. There are a number of tangible benefits that FAA customers (e.g., airlines and the flying public) and service providers (e.g., air traffic controllers) realize using Mode S and its associated applications. The benefits of Mode S are enhanced safety, increased aviation efficiency and an increase in the capacity of all air and ground space used by the aviation industry. As the demands and requirements of the NAS change over time, Mode S standards must also be periodically updated to keep up with the dynamic aviation environment. To satisfy the need for providing an industry baseline for Mode S capabilities, SC-209 has been established to recommend industry standards for Mode S that can be made available to governments, industry and other organizations. Version update releases are planned to support the dynamic nature of the aviation and surveillance industry. The activities of Special Committee 209 support the FAA NextGen Operational Concept

DELIVERABLES:

Product	Description	FRAC Completion Due Date*	Change
<p>Change 1 to Transponder MOPS, DO-181F</p>	<p>Review/correction based on issues that have been identified since the publishing of DO-181F and ADS-B MOPS (DO-260C). Develop revisions to maintain consistency with requirements developed for DO-260C Change 1.</p>	<p>Dec 2021**</p>	

**Note: Final Review and Comment (FRAC) Completion Due Date refers to the date that the committee plenary approves the document after completing the FRAC Process. SCs should submit the final document at least 45 days before the PMC meeting where it will be considered for approval.*

***SC-209 is requesting an out-of-cycle PMC review and approval of DO-181F Change 1 (prior to the March 2022 PMC) to support FAA TSO-C112f.*

SCOPE and COORDINATION:

Special Committee 209 (SC-209) shall codify operational requirements based upon the airborne and ground user needs for a Mode S system. The development activities of SC-209 shall consider the relevant work of other bodies, including ICAO Panels, FAA/CAAs, EUROCAE, AEEC, SAE, and other RTCA Special Committees. SC-209 should work closely with SC-186, and in particular SC-186 Working Group 3. The Special Committee will also coordinate with EUROCAE and ICAO representatives.

ENVISIONED USE OF DELIVERABLE(S)

Expected deliverable for this work is RTCA/DO-181F Change 1 to the current Minimum Operational Performance Standards (MOPS) published by SC-209. This standard is intended to be used by the FAA and other Civil Aviation Authorities (CAAs) as an acceptable means of certifying Mode S equipment that use this link, such as civil aircraft and ground vehicles on an airport surface.

SPECIFIC GUIDANCE:

The committee should work jointly with the following groups to harmonize operational concepts and perform high-level safety, performance and interoperability performance analysis for well-defined Aircraft Surveillance (AS) and Ground Surveillance (GS) applications:

- RTCA SC-186, ADS-B, (in particular, Working Group 3 1090 MHz ADS-B MOPS)

- EUROCAE Working Group 49 (WG-49), Mode S
- EUROCAE Working Group 51, (WG-51), ADS-B
- Other user groups, and sponsor programs, such as FAA/SBS and Eurocontrol/Surveillance Unit

Work as a joint RTCA/EUROCAE activity, based both on previous work done within RTCA and EUROCAE WG-49 and WG-51, to produce a revision to DO-181 that has been harmonized with EUROCAE document ED-73, (Mode S), and ED-102, (ADS B), to address recommended changes noted the Deliverables section above.

Update and maintain DO-181 and verify consistency with ICAO standards. For changes that require updates to ICAO standards, coordinate as required with ICAO Surveillance Panel to maintain consistency and achieve ICAO standards harmonization for all recommended changes.

Update and maintain DO-181 in a manner that is compatible with US 14 CFR 91.215, the Mode S rule, as well as 14 CFR 91.225, the ADS-B rule. DO-181 is a basis for the U.S. ADS-B Out rule 14 CFR 91.215, so any subsequent versions of DO-181 must be compatible with current DO-181 MOPS.

Update and maintain DO-181 in a manner that is compatible with the MOPS related to ADS-B OUT, such as DO-260() MOPS for 1090 MHz Extended Squitter ADS-B and Traffic Information Services – Broadcast (TIS-B).

Update and maintain DO-181 in a manner that is compatible with the MOPS related to ADS-B IN, such as RTCA/DO-317, MOPS for Aircraft Surveillance Applications (ASA) System and DO-361, MOPS for Flight-deck Interval Management.

- *Initial Documentation* - if applicable, list any input documents that will be made available to this committee to include the source of documents and purpose.

Documents	Intended Use
N/A	

TERMINATION: Special Committee SC-209 will return to Active Monitor Status with approval by the PMC of the committee’s final document.