

**RTCA SC-209 ATCRBS/Mode S
Transponder MOPS
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**MOPS for ATCRBS/Mode S Airborne
Equipment Background**

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Mode S Transponder Standards

- Minimum Operational Performance Standards for ATCRBS/Mode S Airborne Equipment, DO-181, originally published by RTCA in March 1983 by SC-142 to replace DO-150, Minimum Performance Standards – Airborne ATC Transponder Equipment for Mode S Transponder Standards
 - Introduced Standard for Mode S avionics to support SSR Mode S and TCAS
 - Change 1 published in November 1984 followed by Change 2 in January 1986
- TSO C112 released by FAA for Mode S Transponders in February 1986 which required adherence to DO-181 Change 1 and 2

Mode S Standards - Continued

- DO-181A published in January 1992
 - Change 1 published in January 1993,
 - Change 2 published in August 1996
- DO-181B published in July 1999 by SC-187
- DO-181C published in June 2001 by SC-187

ATCRBS Transponder Standards

- Minimum Operational Standards for Airborne ATC Transponder Systems, DO-144, published by SC-116B in March 1970
- TSO-C74C Airborne ATC Transponder Equipment released by FAA in February 1973

Transponder Related Standards

- Airborne Data Link Processor MOPS
 - SC-187 published DO-218B in June 2001
- Extended Squitter MOPS
 - SC-186 published DO-260 in September 2000
 - SC-186 published DO-260A in April 2003
 - TSO-C166 released in September 2004
 - Draft TSO-C166A to be released (DO-260A)
- TCAS Standards
 - DO-185A, TCAS II, published by SC-147 in December 1997
 - TSO-119B released in December 1998

International Standards

- Surveillance and Collision Resolution Systems Panel (SCRSP) of ICAO is responsible for International Standards for SSR, TCAS and Mode S/Extended Squitter
 - Standards and Recommended Practices (SARPs) have been developed, and are maintained by SCRSP
 - Requirements for Mode S Transponder are primarily contained in Annex 10, Volume IV

International Standards - Continued

- Transponder MOPS have been changed/updated over the years to be consistent with ICAO SARPs
- SCRSP has submitted to the Air Navigation Committee an update to the SARPs that will be contained in a future Amendment. Amendment 77 contains the existing material