

**RTCA Special Committee 209
ATCRBS / Mode S Transponder
Meeting #1
RTCA, Washington DC
16 – 17 February 2006**

**A Proposed Approach to the Update of the
Mode S / ATCRBS Transponder MOPS**

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SUMMARY

This Working Paper provides high-level goals related to the updating of the Mode S and ATCRBS Transponder MOPS.

Revised during the meeting to include assignments for teams to review specific sections of documents and come to the next meeting with recommendations for updating.

Mode S and ATCRBS Transponder MOPS Update Considerations/Recommendations

1. Add requirements for the functions performed by the ADLP, including the management of the following functions:
 - a. Mode S Data Link Protocols
 - i. Air-initiated Comm-B
 - ii. Comm-As – single segment or linked
 - iii. Comm-Bs – single segment or linked
 - iv. ELMs
 - b. Mode S Specific Services
 - i. Mode S Protocol Service (MSP)
 - ii. Broadcast Protocol Service
 - iii. Ground Initiated Service
 - c. Data Link Capability Reporting

Approach would be to extract from ADLP MOPS DO-218B appropriate sections and add necessary requirements to properly specify functions. All SVC Mode S subnetwork functions would not be included. [Appendix A – Group led by Peter Muraca, including: Leone, Fisher]
2. Rework DO-181C to align with the Transponder Levels as per SARPs. Clearly delineate the various optional capabilities associated with each Transponder Level. This will allow the updated TSO for certification of the Transponder with its intended capabilities. [Group including: Annee, Guetter, Bayh, Saffell (L), Garmin]
3. Refer to DO-260A for servicing transponder registers described for Extended Squitter. [Group including: Annee, Guetter, Bayh, Saffell (L), Garmin]
4. Include in an Appendix to the MOPS the requirements for the DAPS registers currently being worked by EUROCAE WG 49 update to ED-73B. [Appendix B – Saffell]
5. Correct and update Test Procedures as identified with known errors and/or problems. [Group including: Wapelhorst (L), Saffell, Guetter]
6. Update DO-181C to align with SCRSP 1 and current changes to the ICAO standards. [Group including: Annee, Guetter, Bayh, Saffell (L), Garmin]
7. Discuss changing DO-181C to make the Mutual Suppression Bus a minimum requirement. [Group including: Annee, Guetter, Bayh, Saffell (L), Garmin]
8. Update as required all TCAS related functions to align with current TCAS requirements. [Pagano, Furr to coordinate with Stuart Searight]

9. Compare DO-181C and ED-73B for any differences in requirements and coordinate with EUROCAE WG-49 to resolve. [Group including: Wapelhorst, Pagano, Saffell, Thedford & Duffer]
10. Consider recommendations for CFR input. [Duffer]
11. Harmonization of FAA TSO C112 and European Aviation Safety Agency ETSO-2C112B. [Duffer]
12. Update DO-144 to reflect current industry requirements and capture Mode S interrogation requirements.
13. Consider requirements for measuring the pulse widths of the installations. [Saffell]