

SURVEILLANCE AND CONFLICT RESOLUTION SYSTEMS PANEL (SCRSP)

SURVEILLANCE SYSTEMS

WORKING GROUP-B

Update of Mode S Transponder MOPS in RTCA and EUROCAE

Presented by Thomas Pagano, FAA Technical Center

SUMMARY

This paper presents an update to the TSG of efforts initiated at RTCA and EUROCAE to update Mode S Transponder MOPS and the coordination of those activities between both organizations.

1. Introduction

In the United States, Mode S transponders are certified according to TSO-C112. Currently, TSO-C112 requires adherence to RTCA DO-181, Change 1 and Change 2. FAA Certification recognizes the need to update the TSO to require adherence to the current version of the Mode S Transponder MOPS, DO-181C. Also, the need to update the Mode S Transponder MOPS to incorporate changes as a result of SCRSP 1 and other modifications, including addressing ADLP functions currently not covered by the Mode S Transponder TSO. This will require an update to the Mode S Transponder MOPS to version DO-181D. This effort along with an update to the ATCRBS Transponder MOPS, DO-144, prompted RTCA to form a new Special Committee to accomplish these updates.

EUROCAE Working Group 49, Mode S Enhanced Surveillance, is working to incorporate ELS/EHS into their MOPS, ED-73B. EUROCAE recognizes the need to standardize Mode S Transponder Registers.

It was recognized that both RTCA and EUROCAE have similar goals and coordination between the two organizations to reduce duplicate work and produce coordinated products is mutually beneficial.

This paper summarizes the planned activities of RTCA and EUROCAE.

2 RTCA Special Committee 209

In December 2005, the RTCA Program Management Committee (PMC) approved the formation of an RTCA Special Committee, SC-209, with Terms of Reference that includes updating both the current Mode S Transponder MOPS and the current ATCRBS Transponder MOPS. The first meeting of SC-209 will be at RTCA Headquarters in Washington, DC on February 16-17, 2006. RTCA SC-209 is envisioned to produce updated versions of the Transponder MOPS in approximately one year.

3 Coordination with EUROCAE WG-49

EUROCAE WG-49 held its 5th meeting in December 2005 in Cologne, Germany and agreements were reached to establish the coordination between both organizations for updating RTCA DO-181C and EUROCAE ED-73B. The major objectives of the agreement are as follows:

- 1) The groups agreed that the current intention is to coordinate the update of EUROCAE WG-49 document ED-73B and RTCA SC-209 document DO-181C. This coordinated effort will include incorporating all ICAO requirements to date, the requirements for the European Elementary (ELS) and Enhanced (EHS) Surveillance functions, and including references to the 1090 MHz ADS-B MOPS for requirements on Extended Squitter registers.

- 2) The groups agreed on the approach to extract the Mode S Specific Services Entity (SSE) material from the RTCA ADLP MOPS (DO-218B) and include it as a stand alone chapter in the updates to both ED-73 and DO-181 Transponder MOPS. Since the acceptance of ARINC characteristic 718A for civil air transport, the SSE functionality is located in the transponder and these requirements are appropriate for inclusion in these Transponder MOPS.
- 3) In so far as is possible the two documents will be harmonized with the intention of coordinating all future updates and until such time that the documents become identical, all differences will be highlighted and explained in both documents.

4 Conclusion

The update of the Mode S Transponder MOPS will be accomplished by RTCA SC-209 and EUROCAE WG-49 and the efforts will be coordinated between the two organizations. It is expected that this will allow future harmonization of FAA TSO-C112 and European TSO C122 which will be of major benefit to industry.