

**Minutes of Meeting #21 of RTCA SC-186 Working Group 3
For Maintenance of the ADS-B 1090 MHz Extended Squitter MOPS**

<http://adsb.tc.faa.gov/WG3.htm>

The meeting was called to order by Co-Chair Thomas Pagano at 9:00am on 19 April 2006, at the facilities of Mitre CAASD in McLean Virginia. Mr. Pagano welcomed all attendees and asked that each attendee introduce themselves and their organization. The attendees for all or part of the meeting included:

Larry Bachman, JHU-APL	Al Marshall, Sensis Corp.	Ronald Staab, SAIC
Woody Bode, Freestate Electronics	James Maynard, Garmin AT	Tom Teetor, DCA, Inc.
Allen Branch, FAA, AIR	Vince Orlando, MIT Lincoln Lab	Dave Thomas, L-3/Titan, FAA TC
Frank Calkins, DCS Corp.	Tom Pagano, FAA TC	Edward Valovage, Sensis Corp.
Rob Duffer, FAA, AIR	Bill Petruzal, FAA AFS	Don Walker, Honeywell
Gary Furr, L-3/Titan, FAA TC	Bob Saffell, Rockwell Collins	Jeff Wheeldrier, L-3 / ACSS
Bill Harman, MIT Lincoln Lab	Stuart Searight, FAA TC	Gene Wong, SAIC, FAA Prog Office
Ron Jones, FAA, ASD	Bernald Smith, Soaring Society of America	

1. Tom Pagano briefly reviewed the Agenda and asked if there were any comments about what was required to be accomplished during this meeting.
2. With no further comments being offered regarding the proposed Agenda, Gary Furr began to discuss Working Paper WP21-02, the consolidated set of comments against the proposed Change 1 to RTCA/DO-260. There was only one (1) comment related to the proposed Change 1 to DO-260 and this comment related to the use of “**shall not**” requirements being addressed as not testable. After a brief discussion, the Working Group agreed that the scope of this comment would be limited to the actual proposed Change 1 for DO-260, as opposed to what could be considered as a larger scope for the entire MOPS document(s). However, even after limiting the scope of the affected comment, it was agreed by the Working Group that “**shall not**” requirements were in fact testable in numerous ways and that those in the Change 1 document should be retained. It was agreed that further discussion could be held on this topic during future Working Group discussions related to the production of DO-260B. RTCA Paper No. 051-06/SC186-228 (WP21-02R1) was updated by Gary to reflect the decision of the Working Group and it was stated that this updated Working Paper would be posted on the ADS-B 1090ES Technical Center web site and additionally sent back to RTCA for their records. There were no further discussions related to Change 1 for DO-260.
3. Next, Gary Furr began to discuss Working Paper WP21-03, the consolidated set of comments against the proposed Change 1 to RTCA/DO-260A. Before going into detail on each specific comment, Gary initially explained that there were several categories of comments. First, there were several “new” comments from himself and Jim Maynard that, if accepted by the Working Group, would result in additional changes to be entered into the draft of the Change document. Next, there were several comments from Jim Maynard that related to the terminology used for ADS-B Rebroadcast as a stand-alone service versus a TIS-B Service. After this, there were several comments that dealt with minor editorial and typographical errors. Finally, there were three comments, one of which was a “Non-Concur,” which deals with the reasonableness test that was crafted to guard against a CPR boundary problem which had been identified by Air Services Australia in January 2006.

With this introduction, Gary began to step through each individual comment identified in Working Paper WP21-03. As each comment was addressed and resolved by the Working Group, a resolution was entered into RTCA Paper No. 051-06/SC186-230 (WP21-03R1) by Gary to reflect the decision of the Working Group, and it was stated that this updated Working Paper would be posted on the ADS-B 1090ES Technical Center web site and additionally sent back to RTCA for their records.

During the discussion of Comment #4 in WP21-03, which was submitted by Don Walker from Honeywell against the change that increases the minimum transmit power level of an A3 transmitter to 200 watts, it was agreed that the 1090ES community believes that a minimum of 200 watts for an A3 transmitter is necessary in order to meet the requirements of the ADS-B MASPS. As a condition of agreeing not to disagree any further with the proposed change, Don requested that an analysis which was presented by Johns Hopkins Applied Physics Lab be made available as a Working Paper from this meeting and posted for reference. Gary agreed to make the Analysis document Working Paper WP21-04 and post it on the ADS-B 1090ES web site.

4. The first 25 of 28 comments were discussed and resolved prior to lunch, with the last three comments dealing with the CPR issue left for discussion in the afternoon after lunch. With the resumption of discussions after lunch, Al Marshall of Sensis began to step through a paper that he produced which was submitted by Sensis as the basis of their “Non-Concur” comment against the CPR Boundary testing issue. This Sensis paper is “Attachment 1” inside WP21-03.
5. The Working Group discussed various aspects of this issue for most of the afternoon, and finally agreed that there was, in general, a need for some kind of reasonableness test. It was further agreed that there was no need to update Table 2-130 as was suggested in the Sensis comment. As regards the specific reasonableness test that was identified as change #1.86 in the FRAC review copy of DO-260A, Change 1, the Working Group agreed that it was not appropriate. The Working Group was informed by Vince Orlando that Air Services Australia intended to present to ICAO SCRSP WG-B, a proposal for a broader reasonableness test to include other errors that could occur in the position data. An attempt was made to craft the text of a specific requirement that could be agreed to by the Working Group prior to the end of this meeting, with the agreement that a subgroup, identified as Bob Saffell, Don Walker, Al Marshall and Bill Harman would finish the specifics of the requirement and write appropriate test procedures for the Change document.
6. It was therefore agreed that the subgroup identified above would take the text of the reasonableness test that was crafted during the meeting and complete it and write a set of test procedures that all parties could agree to as being sufficient. It was agreed that the requirement would be crafted and agreed to by the subgroup not later than 3 May, in order for the language to be taken to the ICAO SCRSP WG-B meeting in Montreal for their meeting 8-12 May 2006. It was further agreed that the subgroup would craft a set of test procedures and present them back to Gary Furr for distribution to the Working Group members, not later than 11 May 2006. The Working Group agreed to hold a teleconference starting at 1:00pm EDT on Tuesday 16 May 2006 for the purpose of discussing the reasonableness test and test procedures one final time before the proposed Change document needs to be distributed to RTCA for review by the PMC on 27 June 2006.
7. Tom Pagano indicated that he and Gary would put together a presentation for the RTCA SC-186 Plenary review, and then Meeting #21 was adjourned.
8. The **Working Papers** for all WG-3 Meetings, as well as the Meeting Agendas, Meeting Minutes, Meeting Schedules and proposed modifications to both DO-260 and DO-260A will be posted on the ADS-B 1090 MHz web site maintained at the FAA William J Hughes Technical Center, located at: <http://adsb.tc.faa.gov/WG3.htm>