

**Summary of Meeting #26 of RTCA SC-186 Working Group 5
held at RTCA in Washington DC and as a Teleconference and WebEx Session for the
Maintenance of the UAT MOPS
on 11 – 13 August 2009
<http://adsb.tc.faa.gov/WG5.htm>**

The meeting was called to order by Working Group 5 Co-Chair George Ligler at about 9:00am EDT on 11 August 2009 at the facilities of RTCA in Washington DC. George welcomed all attendees. The participants during all, or part of Meeting #26 at RTCA and the WebEx session included:

Dr. Larry Bachman, JHU-APL	Stan Jones, Mitre / CAASD	Tom Mosher, Garmin AT (phone)
Chip Bulger, FAA AIR-130 (phone)	Dr. George Ligler, PMEI – FAA SBS P.O.	Tom Pagano, FAA ATO-P
Gary Furr, Engility Corp, FAA ATO-P	Paul Lipsky, FAA AIR-130 (phone)	Bernald Smith, SSA / FAI (phone)
Michael Garcia, ITT Corp	Chris Moody, Mitre / CAASD	Warren Wilson, Mitre
Richard Jennings, FAA AIR-130		

1. George Ligler began Meeting #26 with **Agenda Item #1** by welcoming all participants to RTCA, with the Telephone bridge line provided by Mitre CAASD and the WebEx Session provided by RTCA. Rich Jennings thanked the Working Group for the hard work during the last 8 months and getting to the point where we believe that we can make the schedule that is deemed very aggressive. George briefly discussed the process of taking the changes for UAT to ICAO and updating ICAO Doc 9861 (UAT Implementation and Technical Manual). Rich pointed out that we need to make sure that the effort to update Doc ICAO 9861 is funded by the FAA SBS Program Office. The Working Group agreed that we will coordinate with Brent Phillips to attend a meeting of ICAO ACP Working Group M and obtain their approval to start the changes to ICAO Doc 9861. It was determined during the session that the next Meeting of ACP WG-M was currently set for 16 – 20 November at ICAO in Montreal. George will work to establish the attendance of several UAT people at that meeting.
2. After George concluded his remarks, the Meeting turned its attention to **Agenda Item #2** for a review of the proposed Agenda for this Meeting, which was distributed for this Meeting under Working Paper UAT-WP26-01. Gary noted that all revisions of Working Papers would be posted to the WG-5 web page as soon as possible after their revision. The Agenda was reviewed in detail because of the specific requirements related to presentation timing and the availability of certain Working Group members. Several Working Papers were scheduled to be presented at specific times. Gary concluded this Agenda Item by indicating that any revised Agenda will be posted on the web site for Meeting #26 as UAT-WP26-01R1.
3. Next, under **Agenda Item #3**, the Meeting reviewed Working Paper UAT-WP26-02 for the review and approval of the Minutes of Meeting #25, which was held on 14 – 16 July 2009 at RTCA, and as a Teleconference and WebEx session. There was no discussion regarding the

Minutes of Meeting #25 and therefore, the Minutes of Meeting #25 were approved as published in Working Paper UAT-WP26-02.

4. Under **Agenda Item #4a**, the Meeting then began a detailed review of Working Paper UAT-WP26-03 as Gary Furr began the review of all of the current status of the proposed changes that should be discussed and agreed upon for the proposed DO-282B. Gary pointed out that UAT-WP26-03 represents the latest update to the proposed set of changes that were reviewed, discussed and agreed upon by RTCA SC-186 WG-3 and EUROCAE WG-51, SG-1 during their effort to update and harmonize the 1090ES MOPS during their latest meeting in July at RTCA in Washington. The list of proposed changes that appears in UAT-WP26-03 is a subset of the original total 1090ES list and represents those proposed changes that potentially affect both the ADS-B MASPS and the UAT MOPS. This Working Paper is continuously updated during and after the WG-5 meetings to reflect the latest status of each change.
 - 4.1 For Change Matrix Item #18 related to the ADS-B Failure Annunciation, the Working Group discussed the issue and referred to the 1090ES Working Paper which addressed the issue. Upon reviewing 1090-WP28-22R1, the Working Group edited the draft of DO-282B in section 2.2.13.5.1 to accommodate the change to the requirement.
 - 4.2 For Change Matrix Item #19 related to the issue of accommodating the insertion of the 0.3 NM Radius of Containment. WG-5 had previously indicated that we would like to assign the decimal 15 encoding in the NIC table to accommodate this. The problem is that a Version 1 system reading a Version 2 message would probably interpret this encoding as NIC=0. The suggestion is to create a NIC Supplement in the UAT system. This suggestion was not agreed upon and the agreement was to continue forward with NIC=15 as $R_C=0.3$ NM.
 - 4.3 For Change Matrix Item #26 related to the vertical rate source, a note was added to the draft of DO-282B to reference future guidance.
 - 4.4 For Change Matrix Item #30, a new item was added to reflect a conversation held which initiated with Rich Jennings from FAA AIR-130 requesting a discussion with regard to the possibility of adding a new class of equipment for “Receive-Only.” After Session discussion, the Working Group agreed that a new Equipment Class “R” would be added to the MOPS. Working Paper UAT-WP26-14 was created to propose the changes, and have those changes carried forward to the WG-3 meeting 18-21 August for their consideration in inserting the new Equipment Class into DO-260B as well.
5. Next, under **Agenda Item #5**, the Meeting began the review of Working Papers that have been submitted as the result of Open Action Items, which were initially accepted during previous Meetings. Working Papers in Agenda Item #5 were taken in no particular order and were interleaved with Working Papers in Agenda Item #6. The presentation of a given Working Paper was dependent on the availability of certain Meeting Members. The summaries below simply represent the summaries at the time of presentation.

- 5.1 The first Working Paper to be reviewed was UAT-WP26-07 under Agenda Item #5b as presented by Larry Bachman in response to Action Item 25-03, regarding reorganizing the proposed changes that Larry proposed for Appendix K for performance. There were several edits performed to the working paper during the discussion to result in UAT-WP26-07R1. With the edits, the Working Group accepted the proposed changes and Gary Furr agreed to implement them into the draft of Appendix K.
- 5.2 George Ligler and Stan Jones presented Working Paper UAT-WP26-12 under Agenda Item #5f in response to Action Item 24-07 as an issue related to the updating of the new proposed Appendix Q for NACv. A new note was also proposed to be placed under Table 2-46 in the draft of DO-282B. The changes were agreed to by the Working Group and the note was edited into the draft of DO-282B during the meeting and the revision to Appendix Q was accepted.
- 5.3 Gary Furr presented Working Paper UAT-WP26-08 under Agenda Item #5c in response to Action Item 25-09, as an issue related to the replacement of section B.2 in the Appendix to itemize the compliance of the MOPS requirements to MASPS requirements. During WG-5 discussion, the basic idea of replacing the compliance matrix was accepted, but the text was edited to produce UAT-WP26-08R1, which was agreed to by the Working Group. Gary Furr agreed to edit this Working Paper into the draft of Appendix B for DO-282B.
- 5.4 Gary Furr presented Working Paper UAT-WP26-09 under Agenda Item #5d in response to Action Item 25-07 as an issue related to taking sections from the STP MOPS and inserting them into the Link MOPS. During the last meeting of WG-3, there was a discussion of the paragraphs identified by the SC-186 STP MOPS Ad Hoc Subgroup to be moved into the Link MOPS and the result of that conversation was that the only paragraphs that have not already been taken care of were those related to Source Selection. There had earlier been a suggestion in SC-186 WG-3 for a requirement to go into DO-260B for Source Selection and it was further suggested that this same text should be considered for DO-282B. Working Paper UAT-WP26-09 proposes that text. During discussion by WG-5, there were changes in the text of the requirement to produce UAT-WP26-09R1. The new text was emailed during the meeting back to WG-3 members for their consideration. The Working Group agreed to place the new text in §2.2.4.5.2 of DO-282B and Gary Furr agreed to insert the new text into the draft of DO-282B. Tom Pagano accepted Action Item 26-01 to write the test procedure for this requirement and coordinate with Gary to get the test procedure into the FRAC draft of DO-282B.
- 5.5 Tom Pagano presented Working Paper UAT-WP26-13 under Agenda Item #5g as an issue related to Change Item #22 in Working Paper UAT-WP26-03, related to the GPS fault that had originally been brought to us by Stan Jones and Chris Moody. After Working Group discussion, several minor edits were performed on the Working Paper to produce UAT-WP26-13R1, which was agreed to by the Working Group to be integrated into the draft of DO-260B. Gary integrated the changes into the draft of DO-282B during the meeting.

- 5.6 Chris Moody presented Working Paper UAT-WP26-05R1 under Agenda Item #5a in response to Action Item 25-06 as an issue related to making all of the proposed changes required to the Mode Status Element as a result of all of the previously agreed individually changes identified in UAT-WP26-03. Chris stepped through the Working Paper and there was Working Group discussion on several items. After a complete review, the Working Group agreed with the content of UAT-WP26-05R1 and Gary Furr agreed to implement those changes into the draft of DO-282B.
- 5.7 Tom Mosher presented Working Paper UAT-WP26-10 under Agenda Item #5e in response to Action Item 25-04 as an issue related to making all of the proposed changes required to the Target State Element as a result of all of the previously agreed individually changes identified in UAT-WP26-03. Tom Mosher stepped through the Working Paper and there was Working Group discussion and there were several minor edits that were made to produce UAT-WP26-10R1. After a complete review, the Working Group agreed with the content of UAT-WP26-10R1 and Gary Furr agreed to implement those changes into the draft of DO-282B.
- 6 Next, under **Agenda Item #6**, the Meeting discussed the additional Working Papers that represent additional issues related to the potential changes to DO-282A. Working Papers in Agenda Item #6 were taken in no particular order and were interleaved with Working Papers in Agenda Item #5. The summaries below simply represent the summaries at the time of presentation.
- 6.1 Warren Wilson presented Working Paper UAT-WP26-06 under Agenda Item #6a as an issue related to adding two clarifying notes to the MOPS because of comments from engineers in Mitre. After brief discussion, the proposal of the Working Paper was agreed to, and the draft of DO-282B was edited in real time during the meeting to include the proposed notes and changes.
- 6.2 Chris Moody presented Working Paper UAT-WP26-11 under Agenda Item #6b as an issue related to Total Latency. This Working Paper was originally submitted by Chris as an update to the test procedure for a section that had been added for Total Latency. However, after Tom Pagano reviewed the revised test procedure, Tom believed that the requirement needed to be revised. A new Working Paper was introduced by Tom Pagano as UAT-WP26-15 to offer a suggestion as to the modification of the actual requirement in §2.2.7.2.4. There was considerable Working Group discussion over the newly proposed requirement in UAT-WP26-15, which was agreed to, and Gary Furr agreed to implement the suggested changes into the draft of DO-282B. Chris Moody agreed to rework UAT-WP26-11 during a lunch break to conform the proposed new test procedures to the new requirement written in UAT-WP26-15. The proposed revised test procedures were captured in the revision of the Working Paper as UAT-WP26-11R1. Tom Pagano accepted Action Item 26-02 to review the test procedure in UAT-WP26-11R1 and make proposed revisions and coordinate with Gary to integrate it into the FRAC draft of DO-282B.

6.3 In order for the Working Group to address the issue of how to handle the GPS Antenna Offset requirement, which is an out-growth of the discussion of the Position Offset Applied (POA) discussion, Gary was asked to present the Working Paper that was originally prepared by Bob Saffell of Rockwell Collins as 1090-WP30-07 as the requirement for the GPS Antenna Offset parameter. There was Working Group discussion regarding several aspects of the specific 1090ES Working Paper, with regard to what WG-5 believes the actual requirement to be. The Working Group discussed the fact that in UAT, we only have six (6) bits to encode the GPS Antenna Offset, whereas in 1090ES there were eight (8). Bob Saffell dialed into the teleconference line and this was discussed and it was agreed that UAT could encode using six bits which will provide 4 meter resolution. Chris and Warren accepted Action Item 26-03 to review 1090-WP30-07 and make the proposed changes for requirements and test procedures for DO-260B.

7. Under **Agenda Item #7**, the Meeting briefly discussed the dates, times and length of the future meetings of RTCA SC-186 WG-5. The Working Group agreed that the currently planned future meetings in order to meet our schedule would remain to be the following. It was agreed that 7 October 2009 would be joint session with WG-3 and WG-5 to discuss any issues that are affecting both documents, and that 8 October would be a day to resolve specific issues and comments related to UAT. Friday, 9 October is a Joint Plenary Session of RTCA SC-186 and EUROCAE WG-51 for the review and approval of both Link MOPS, as well as considering other documents such as the SURF IA SPR.

Meeting	Dates/Time	Meeting Location
	31 August 2009	Release draft document to SC-186 for FRAC
#27	7-8 October 2009	RTCA Headquarters, Washington DC with RTCA SC-186 Plenary on 9 October 2009

8. The following is a summary of all of the Open Action Items from previous Meetings and Action Items accepted during Meeting #26.

Action Number	Open Action Item Description	Assigned to	Status
26-01	Draft a test procedure for the source selection and pass it to the working group for review before integrating it into the FRAC draft of DO-282B.	Tom Pagano	24 August
26-02	Review the Latency test procedures in UAT-WP26-11R1 and propose revised test procedures. Pass them to the working group for review before integrating it into the FRAC draft of DO-282B.	Tom Pagano	24 August
26-03	Take 1090-WP30-07R1 and create requirements and test procedures for DO-282B for the GPS Antenna Offset requirement.	Chris Moody Warren Wilson	24 August

9. The **Working Papers** for all WG-5 Meetings, as well as the Meeting Agendas, Meeting Minutes, and Meeting Schedules are posted on the ADS-B UAT MOPS web site maintained at the FAA William J Hughes Technical Center, located at:
<http://adsb.tc.faa.gov/WG5.htm>