Summary of Meeting #24 held at Honeywell in Phoenix as a Joint meeting of RTCA SC-186 Working Group 3 and Eurocae Working Group 51, Subgroup 1 for the Maintenance of the ADS-B 1090 MHz Extended Squitter (1090ES) MOPS Held 13 – 15 January 2009 between 9:00am and 5:00pm MST
http://adsb.tc.faa.gov/WG3.htm

The meeting was called to order by Working Group Co-Chair Thomas Pagano of the FAA Technical Center at about 9:30am, 13 January 2009 after waiting for all participants to pass through the Honeywell security process. Mr. Pagano welcomed all attendees and asked that each attendee introduce themselves and their organization. The participants during part or all of the meeting included:

Nathan Alfermann, Garmin (phone)	Dr. George Ligler, PMEI – FAA SBS P.O.	Stuart Searight, FAA Tech Center (phone)
Dr. Larry Bachman, JHU-APL	Al Marshall, Sensis Corp.	Charles Sloane, FAA AIR-130 (phone)
Gary Furr, Engility Corp, FAA TC	Christophe Maily, Airbus (WG-51, SG-1)	Joe Smith, SAIC – FAA SBS P.O.
Dr. William Harman, MIT LL (phone)	Dean Miller, Boeing ATM	Greg Stayton, L-3/ACSS
Richard Jennings, FAA AIR-130	Tom Pagano, FAA Tech Center	Rocky Stone, United Airlines
Ed Johnson, FAA ATO	Eric Potier, Eurocontrol (WG-51, SG-1)	Jessie Turner, Boeing ATM
Steven Lang, FAA ATO	Robert "Bob" Saffell, Rockwell Collins	Nolan Van Foeken, Garmin (phone)
Dr. Ian Levitt, FAA Tech Center (phone)	Kurt Schueler, Garmin (phone)	Don Walker, Honeywell International

1. Tom Pagano began the meeting with **Agenda Item #1** by welcoming all participants to the Honeywell Aerospace facility in Phoenix Arizona. Don Walker of Honeywell, who was acting as the host for this meeting, welcomed participants and discussed the facilities and the arrangements for lunch and breaks. Tom continued by discussing the reasons for the initiation of a draft of "Change 3 to DO-260A." Tom proceeded by presenting Working Paper 1090-WP24-12.

   George Ligler raised a question concerning the Rule Making process in Europe. The draft of the European proposed Rule indicates that there is a date of 1 January 2012 for a forward fit implementation. Eric Potier of Eurocontrol indicated that he could not comment on the specific comments that have been returned as a result of the European Rule making process, but that the final date of implementation of forward fit would be the result of the discussions regarding the European comments. Eric further commented that it was the European intention to set their baseline as the result of the change to the 1090ES MOPS that would be the result of this WG-3/SG-1 activity, whether it turns out to be a version 1 or perhaps a version 2, if it is deemed that the ADS-B version number must be changed as a result of these negotiations.

2. After Tom Pagano concluded his presentation, he indicated that the next order of business would be **Agenda Item #2** to have Stuart Searight present Working Paper 1090-WP24-15 regarding the cooperation between RTCA SC-186 WG-3 and WG-6 for the purpose of identifying and retaining the proposed changes to the ADS-B MASPS. Stuart introduced the fact that Dean Miller of Boeing has agreed to be the co-chair of WG-6. As part of a process of discussion among the SC-186 Leadership, it has been proposed that WG-6 members be an integral part of the process of all WG-3/SG-1 meetings so that a set of Issue Papers could be maintained that would represent a list of proposed changes to the ADS-B MASPS which could be implemented at a point in time when it is agreed by RTCA SC-186 Plenary that an

update to the MASPS is appropriate. Stuart also pointed out that WG-6 will be supplying the same kind of support for RTCA SC-186 WG-5 during any proposed changes to the UAT MOPS as a result of changes deemed to be MASPS changes affecting all ADS-B data links.

3. Next, under **Agenda Item #3**, the Meeting turned to Working Paper 1090-WP24-14 as presented by Richard Jennings and Don Walker which summarizes the activities of the RTCA SC-186 STP Ad Hoc Subgroup. Don and Rich indicated that the STP Ad Hoc Subgroup was tasked by the SC-186 Plenary for a review of the STP MOPS for the purpose of identifying all of the requirements that should be called out in either the (a) ADS-B OUT Advisory Circular (AC), (b) the Navigation AC, or (c) in the ADS-B Link MOPS. Discussions of the Ad Hoc Subgroup also considered the issue of Total and Uncompensated Latency. It was pointed out that there would be a later presentation by Ian Levitt of Working Paper 1090-WP24-09 on Total and Uncompensated Latency and that some of those items will also be drawn back into the ADS-B MASPS via the Issue Paper process discussed earlier by Stuart Searight. As part of discussion items related to issues uncovered by the Ad Hoc Subgroup and reported in 1090-WP24-14, Richard Jennings took ***Action Item #24-1*** to address with his AIR-130 colleagues what can be done with the vertical accuracy and integrity metrics issue akin to what Barbara Clark did with the GNSS Velocity Accuracy.

   As a part of the summary of the STP MOPS Ad Hoc Subgroup, a matrix was produced that shows the proposed dispensation of each paragraph in the STP MOPS, which was produced as a result of the several meetings and teleconferences of the Ad Hoc Subgroup. Gary Furr presented Working Paper 1090-WP24-08 as the result of that effort summarizing the dispensation of each STP MOPS paragraph. There was Meeting discussion regarding what to do with the information presented in this Working Paper. It was agreed by the Meeting that the information should be presented to the RTCA SC-186 Plenary as the work product of the STP MOPS Ad Hoc Subgroup. Bob Saffell brought up the question of whether or not it was appropriate to not indicate further 1090ES MOPS work on STP MOPS §2.2.5.2.10 for "Selected Data Source Annunciation." Discussion on this issue led to further discussion on whether it was proper to have not included STP MOPS sections in §2.2.4.7 into the Link MOPS. It was agreed by the Meeting that those STP MOPS sections should be brought into the Link MOPS and thus the matrix presented in Working Paper 1090-WP24-08 was revised to produce 1090-WP24-08R1. These revisions will be carried back to the STP MOPS Ad Hoc Subgroup for their presentation back to the RTCA SC-186 Plenary.

4. Under **Agenda Item #4a**, the Meeting then began a review of Working Paper 1090-WP24-07R1 as Gary Furr reviewed of all of the currently proposed changes that could be included in what was originally referenced as "Change 3 to DO-260A." It was agreed by the Meeting that the review of this Working Paper would be at a high level and that deeper discussion on each potential change item would occur as further Working Papers were reviewed and discussed. George Ligler took ***Action Item #24-2*** to research Change Item #12 as to whether or not the FAA SBS Program Office cancelled the business case and if so, then what that means. The Meeting also agreed that a "Note" added into DO-260A could be the solution for Change Item #22. Further actions were taken and discussed under Agenda Item #9.

Next under **Agenda Item #4b**, the Working Group then began a review of Working Paper 1090-WP24-17 as Eric Potier of Eurocontrol reviewed the response of Eurocae WG-51, Subgroup 1 to the items that have just been presented in Working Paper 1090-WP24-07R1. Again, the Meeting agreed that this would be a high level review and that further discussion would be held on each potential change topic as other Working Papers were discussed in detail.

Under **Agenda Item #4c**, the Meeting then began a review of Working Paper 1090-WP24-02 as Bill Harman suggested that an error had been made in DO-260A when a single sentence was allowed to remain in Appendix A, §A.1.4.2.2 implying that the case where the time synchronization bit (T) is equal to ONE (1) under a non-precision mode is not allowed. The suggestion of the Working Paper is to remove the restriction in Appendix A, which also appears for the Surface Position Message case in §A.1.4.3.4. The Meeting agreed that the change should be made and that it was classified as a Class 2 change based on the Change Classes as proposed in 1090-WP24-21.

Under **Agenda Item #4d**, the Meeting began a review of Working Paper 1090-WP24-03 as Dean Miller from Boeing discussed the need to remove the dependency on the vertical accuracy and integrity from the NIC, SIL and NAC parameters. This proposal for change is captured in Working Paper 1090-WP24-07R1 as Change Item #10. It was agreed by the meeting that the proposals in this Working Paper would be split into two separate Change Items. First, in Change Item #10a, we would specify a Class 1 set of changes as the splitting of the vertical components. Then, in Change Item #10b, we would specify a Class 2 change as a set of changes related to finding bits for broadcasting the required information, including the rate component.

Under **Agenda Item #4e**, the Meeting began a review of Working Paper 1090-WP24-04 as Dean Miller from Boeing presented an Issue Paper that has originally been produced by Tony Warren, also of Boeing, as a work product presented to the RTCA/Eurocae RFG for their consideration in completing the ADS-B RAD document. This Working Paper deals with the restructuring of the SIL parameter. This proposal for change is captured in Working Paper 1090-WP24-07R1 as Change Item #11. The Meeting agreed with the recommendation in the Working Paper that the SIL parameter should only refer to the containment radius, and it appears to be satisfied by removing the Note #5 currently below Table 2-72 in DO-260A Change 2. Rich Jennings took ***Action Item #24-3*** to report on the further views of the FAA AIR-130 regarding this change. It was agreed to also look at Note #6 under Table 2-72 as part of this change. It was also pointed out that a comment would have to be made against the FRAC copy of the ADS-B RAD document to qualify the requirement of SIL in that document.

Under **Agenda Item #4f**, the Meeting began a review of Working Paper 1090-WP24-05 as presented by Bob Saffell of Rockwell Collins as a proposed change because of changes needed to the 1090 MHz Extended Squitter Monitor requirements and test procedures. This proposal for change is captured in Working Paper 1090-WP24-07R1 as Change Item #14. The Meeting agreed that the proposed changes should be classified as a Class 1 change and that the proposed Table in the Working Paper would be placed in the front of the test procedure section instead of in the section §2.2 requirements. Gary Furr will implement the

proposed changes that were identified in the Working Paper into the draft of DO-260B that will be presented to the Working Group during the Brussels Meeting #25.

Under **Agenda Item #4g**, the Meeting began a review of Working Paper 1090-WP24-06R1 as Don Walker from Honeywell presented a summary of several parameters which were identified originally in DO-242A that may or may not still be required ADS-B parameters. This proposal for change is captured in Working Paper 1090-WP24-07R1 as Change Item #13. The first parameter discussed in the Working Paper was the "Receiving ATC Services" flag. After discussion, ***Action Item #24-4*** was accepted by Rich Jennings to get back to the Working Group on the FAA's response as to why the "Receiving ATC Services" flag is still required. The second parameter discussed in this Working Paper was the "IFR Capability Flag." The third parameter discussed was the "CDTI Installed and Operational." This was agreed by the Meeting to be a Class 2 change.

Under **Agenda Item #4h**, the Meeting began a review of Working Paper 1090-WP24-16 as Don Walker from Honeywell presented a summary of his proposal of how to handle 1090ES Messages with a TYPE Code of ZERO (0). This proposal for change is captured in Working Paper 1090-WP24-07R1 as Change Item #21. It was agreed by the Meeting that this issue would be a Class 2 change and Don Walker accepted ***Action Item #24-5*** to additionally propose the changes to DO-260A test procedures.

Under **Agenda Item #4i**, the Meeting began a review of Working Paper 1090-WP24-13 as input from Kojo Owusu of Air Services Australia. The Working Paper proposes the addition of an Event-Driven Message that would duplicate the Selected Altitude data contained in transponder Register 40_{16} and broadcast that data in a newly defined Subtype of the ADS-B Emergency/Priority Message. This proposal for change is captured in Working Paper 1090-WP24-07R1 as Change Item #17. It was agreed by the Meeting that this proposed change would be classified as a Class 2 change. During the presentation of this Working Paper to the ICAO Aeronautical Surveillance Panel (ASP) Working Group of the Whole Meeting in Montreal in December 2008, the members from Air Services Australia agreed to review the data currently being broadcast in the ADS-B Target State and Status Message and report back to the ICAO ASP Technical Subgroup (TSG) on whether or not that data could be used in their application. Bob Saffell of Rockwell Collins agreed to accept ***Action Item #24-6*** to further write up the issues related to this issue and present it to the Working Group during the March Meeting #26 at RTCA.

Under **Agenda Item #4j**, the Meeting began a review of Working Paper 1090-WP24-11 as input from Tom Pagano on a proposed change that would be related to a requirement change that is currently being implemented by ITT for the FAA SBS Ground Stations in the area of a transition of the CPR Decode reasonableness test by a participant that is transitioning from the ground to airborne. This proposal for change is captured in Working Paper 1090-WP24-07R1 as Change Item #15. It was agreed by the Meeting that this proposed change would be classified as a Class 2 change.

Under **Agenda Item #4k**, the Meeting began a review of Working Paper 1090-WP24-10 as input to the issue of how to decouple the relationship of setting the NAC_V parameter using HFOM as described in the 1090ES MOPS. This proposal for change is captured in Working Paper 1090-WP24-07R1 as Change Item #9. It was agreed by the Meeting that this proposed

change would be classified as a Class 1 change. George Ligler and Rich Jennings agreed to accept ***Action Item #24-7*** to review DO-260A and make decisions on what specific changes are to be made in the body of the document as well as a total review of Appendix J. Proposed changes would include changes to requirements and test procedures.

5. Next, under **Agenda Item #5**, Captain Rocky Stone of United Airlines, Steven Lang and Ed Johnson of the FAA ATO organization presented Working Papers 1090-WP24-19 and 1090-WP24-20 on their proposals to WG-3/SG-1 for the broadcast of Wake Vortex Avoidance information in 1090ES Messages. This effort is currently represented in Action Plan 14, but it has not had a Business Case run for it. Rocky makes the case for assigning this as a Class 2 change, but the Working Group continued to believe that it should be put into the Class 3 category of change. It was agreed by the Meeting that it would be assigned as a Class 3 change, with the potential for bumping it up to a Class 2 change if by the February Brussels Meeting #25 it would receive an endorsement from the FAA SBS Program Office with a Business Case, and with the application being determined to be a "Fast Track" application under the RTCA SC-186 ground rules for moving the application into SC-186 WG-1.

6. Under **Agenda Item #6**, Tom Pagano and Ian Levitt presented Working Paper 1090-WP24-09 as a proposal to resolve the issue of Total and Uncompensated Latency in the ADS-B system. This proposal for change is captured in Working Paper 1090-WP24-07R1 as Change Item #3. The Meeting agreed that this Latency issue would be a Class 2 change, because it is not specifically required by the ADS-B Rule making activity. It was also requested that the manufacturers review the potential changes that are discussed in the Working Paper and come back to the Working Group during the Brussels meeting and report on how they would agree or disagree with any proposed changes. It was pointed out that the discussion in Working Paper 1090-WP24-09 focused on the T=0 case, so Tom Pagano accepted ***Action Item #24-8*** to try to further explain the T=1 case.

7. Under **Agenda Item #7**, George Ligler presented Working Paper 1090-WP24-21 related to the importance of the work related to this 1090ES MOPS update and how that importance relates to a schedule of meetings to accomplish this task for the benefit of the Rule Making activities in both the USA and Europe. As part of the presentation, George suggested that there should be four (4) classes of changes and the Meeting agreed to accept the proposal. Gary Furr then presented a list of proposed meeting dates to accomplish the proposed schedule. This list of proposed meeting dates will be posted as Working Paper 1090-WP24-22. It was agreed by the meeting that we will set the next meeting after the Joint Brussels meeting as 31 March through noon on 3 April at RTCA in Washington DC. Further confirmed meetings will be discussed and agreed upon during the Brussels meeting in February.

8. Under **Agenda Item #8**, the Meeting began a review of Working Paper 1090-WP24-18 as presented by Bob Saffell of Rockwell Collins as a discussion of the proposed ability to turn ON/OFF the broadcast of ADS-B Messages by the flight crew. During the discussion, the Meeting concluded that the FAA will not have any requirement stated in the final US Rule, nor in the ADS-B OUT Advisory Circular to be published which will require ADS-B to be turned OFF by the flight crew. Eurocontrol representatives also stated that it is also not the desire of Eurocontrol to have any statement to that effect in any requirements document, although it is currently stated as an option in EASA AMC 20-24, §8.9.4.2. Eric Potier was asked by the Meeting to take ***Action Item #24-9*** to go back to EASA and ask that paragraph §8.9.4.2 in AMC 20-24 be revised.

   During this discussion, Dean Miller and Jessie Turner of Boeing indicated that Boeing was considering making a requirement for their aircraft to provide an additional item to provide an independent Fail/Warn declaration for ADS-B. A new potential change item (#31) was added to the "change matrix," which then became 1090-WP24-07R2 for discussion by the Working Group. Jessie Turner of Boeing accepted ***Action Item #24-10*** and Christophe Maily of Airbus accepted ***Action Item #24-11*** to go back to their respective customers and discuss this item for reporting back to the February Brussels Meeting #25.

   Bob Saffell points out that the ON/OFF and Fail/Warn issue go hand-in-hand. Ideally, if you want an ON/OFF capability, then you need an indicator to the Flight Crew that it is actually ON. Then comes the issue of what if you lose a bus. That is not a transponder failure, but rather, an installation failure. So, in this case the transponder may turn OFF the ADS-B and therefore would need to turn OFF the indicator light. Next, an independent Fail/Warn presents another issue in legacy installs which only have one Fail/Warn on the panel for the transponder. In short, ON/OFF and independent Fail/Warn are tied together as they would present severe impact to current installations. As a minimum, control heads would have to be updated and that may not go over very well since the operators just had to update control heads for Flight Identification. Bob Saffell agreed to accept ***Action Item #24-12*** to write up a technical evaluation of the aspects of requiring an independent ADS-B Fail/Warn indication as it may or may not be associated with any attempt to provide an ADS-B ON/OFF, switch for presentation to the Working Group in the February Brussels Meeting #25.

9. After all of the Working Papers available to the Meeting were reviewed and discussed, the Meeting turned back to Working Paper 1090-WP24-07R2 to discuss each of the proposed Change Items and to review any specific proposed changes that were not covered by Working Papers during the meeting. Each of the proposed Change Items were reviewed with the objective of assigning a Change Class for the proposed modification of the 1090ES MOPS.

   For Change Item #1, "Duplicate Addresses," ***Action Item #24-13*** was accepted by Stuart Searight and Dean Miller to review the issue and report back to the Working Group during the February Brussels Meeting #25.

   For Change Item #12, "Addition of Transmission Class for medium power, non-diversity," Kurt Schueler of Garmin accepted ***Action Item#24-14*** for the February meeting to go

through the 1090ES MOPS and produce a Working Paper that indicates what changes would be required. Rich and George will provide a copy of a working paper from the ARC as help to Kurt for his action.

For Change Item #22, "Impact of GPS Alarm on NIC Determination," ***Action Item #24-15*** was accepted by Tom Pagano to review the topic and it was decided that at most a note will be written for the 1090ES MOPS.

For Change Item #25, "Swapping Single Antenna Flag and NIC Supplement," ***Action Item #24-16*** was accepted by Christophe Maily for the February meeting to go through the 1090ES MOPS and review all changes that might need to be made in order to implement this change.

For Change Item #26, "NIC value timeout," ***Action Item #24-17*** was accepted by Gary Furr for the February meeting to review DO-260A and recommend changes that would be required to clarify the use of NIC and indicate that it is not a parameter, but is inferred from the HPL. Also propose changing the timeout form 5 seconds to 2 seconds to conform with Doc 9871 register timeouts.

For Change Item #27, "Clarify ADS-B Position Reference Point," ***Action Item #24-18*** was accepted by Chip Bulger to check with SC-186 WG-1 as they work on Surface Alerting and report to the Working Group during the February meeting concerning their proposed usage of the Position Reference Point. The Meeting agreed to separate this into two separate proposed Change Items. The actual clarification of the use of this parameter will be treated as a Class 2 change. Whereas the actual implementation of any specific changes related to the Position Reference Point will be a Class 3 change.

For Change Item #28, "Validation ground/switch," ***Action Item #24-19*** was accepted by Eric Potier to go through the 1090ES MOPS and produce a Working Paper for the February meeting indicating whether or not there are any changes required.

For Change Item #29, "Clarify start/end of squittering," ***Action Item #24-20*** was accepted by Eric Potier to go through the 1090ES MOPS and produce a Working Paper for the February meeting indicating whether or not there are any changes required.

10. The following is a summary of all of the Action Items accepted during Meeting #24.

Action Number	Action Description	Assigned to	Status
24-01	Address with his AIR-130 colleagues what can be done with the vertical accuracy and integrity metrics issue akin to what Barbara Clark did with the GNSS Velocity Accuracy.	Rich Jennings	Due Meeting #25
24-02	Change Item #12 in 1090-WP24-07R2 deals with potentially adding an equipment class A0* and/or A1* with "medium" power and non-diversity. George Ligler will check with the FAA SBS Program Office to see if the Business Case was cancelled.	George Ligler	Due Meeting #25

Action Number	Action Description	Assigned to	Status
24-03	Address with his AIR-130 colleagues the proposed revision of the SIL parameter.	Rich Jennings	Due Meeting #25
24-04	Review the "Receiving ATC Services" Flag that was originally specified in DO-242A and report back as to why the FAA believes that this flag is still required.	Rich Jennings	Due Meeting #25
24-05	With respect to the proposed changes to the Zero TYPE Code Message identified in Working Paper 1090-WP24-16, Don will additionally identify any proposed changes to the Test Procedures in §2.4 as required.	Don Walker	Due Meeting #25
24-06	Review the issues related to the need for Selected Altitude data by Air Services Australia and UK NATS and review the response of Australia to their action from the ICAO ASP December meeting and propose any further changes to the Target State and Status Message.	Bob Saffell	Due Meeting #26
24-07	Review the body of DO-260A and Appendix J for any proposed changes that would relate to the decoupling of setting the NAC_V parameter using HFOM and propose changes to requirements and test procedures.	George Ligler Rich Jennings	Due Meeting #26
24-08	Working Paper 1090-WP24-09 focused on the case of T=0 in the description of the Total and Uncompensated Latency. Tom and Ian need to add statements dealing with the T=1 case for the final version of this white paper	Tom Pagano Ian Levitt	Due Meeting #25
24-09	Contact EASA and review AMC 20-24, §8.9.4.2 and see if this paragraph could be removed or revised to indicate that a switch for the flight crew to turn ADS-B ON/OFF is not required.	Eric Potier	Due Meeting #25
24-10	During the discussion of 1090-WP24-18 regarding the possibility of the ADS-B ON/OFF switch, there was also discussed the possibility of a new Fail/Warn declaration for ADS-B. Jessie accepted the action to discuss these proposed changes with Boeing customers and report to the Working Group in Brussels.	Jessie Turner	Due Meeting #25
24-11	During the discussion of 1090-WP24-18 regarding the possibility of the ADS-B ON/OFF switch, there was also discussed the possibility of a new Fail/Warn declaration for ADS-B. Christophe accepted the action to discuss these proposed changes with Airbus customers and report to the Working Group in Brussels.	Christophe Maily	Due Meeting #25
24-12	Write up a technical evaluation of the aspects of requiring an ADS-B Fail/Warn indication as it may or may not be associated with any attempt to provide an ADS-B ON/OFF switch, for presentation to the Working Group in Brussels.	Bob Saffell	Due Meeting #25
24-13	Review the issues related to 1090-WP24-07R2, Change Item #1 for "Duplicate Addresses" for presentation to the Working Group in Brussels	Stuart Searight Dean Miller	Due Meeting #25
24-14	Review the issues related to 1090-WP24-07R2, Change Item #12, "Addition of Transmission Class for medium power, non-diversity," and go through the 1090ES MOPS and produce a Working Paper that indicates what changes would be required. Rich Jennings and George Ligler will provide a working paper that was produced by the ARC for assistance.	Kurt Schueler	Due Meeting #25

Action Number	Action Description	Assigned to	Status
24-15	Review the issues related to 1090-WP24-07R2, Change Item #22, "Impact of GPS Alarm on NIC Determination," and propose a note for the 1090ES MOPS.	Tom Pagano	Due Meeting #25
24-16	Review the issues related to 1090-WP24-07R2, Change Item #25, "Swapping Single Antenna Flag and NIC Supplement," and go through the 1090ES MOPS and produce a Working Paper that indicates what changes would be required.	Christophe Maily	Due Meeting #25
24-17	Review the issues related to 1090-WP24-07R2, Change Item #26, "NIC value timeout," and go through the 1090ES MOPS and produce a Working Paper that recommends changes that would be required to clarify the use of NIC and indicate that it is not a parameter, but is inferred from the HPL.	Gary Furr	Due Meeting #25
24-18	Review the issues related to 1090-WP24-07R2, Change Item #27, "Clarify ADS-B Position Reference Point," and check with SC-186 WG-1 as they work on Surface Alerting, and report to the Working Group during the February meeting concerning their proposed usage of the Position Reference Point.	Chip Bulger	Due Meeting #25
24-19	Review the issues related to 1090-WP24-07R2, Change Item #28, "Validation ground/switch," and go through the 1090ES MOPS and produce a Working Paper that evaluates whether there are any differences in the requirements of DO-181D, Doc 9871 and the 1090ES MOPS.	Eric Potier	Due Meeting #25
24-20	Review the issues related to 1090-WP24-07R2, Change Item #29, "Clarify start/end of squittering," and go through the 1090ES MOPS and produce a Working Paper that evaluates whether there are any changes required for the 1090ES MOPS.	Eric Potier	Due Meeting #25

11. The **Working Papers** for all WG-3 Meetings, as well as the Meeting Agendas, Meeting Minutes, and Meeting Schedules are 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**