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RTCA Paper No: 173-20/SC236-040

Sept 2, 2020

DRAFT Minutes of Meeting
EUROCAE WG-96 RTCA SC-236 19th Joint Meeting
Standards for Wireless Avionics Intra-Communication System (WAIC)
within 4200-4400 MHz

Date	Wednesday 2 and Thursday 3 September 2020, 9am – 12pm EDT (15 - 18pm CET)
Hosted by	RTCA and EUROCAE
Place	Virtual Meeting
Contact Person	Anna Guegan anna.guegan@eurocae.net Phone: + 33 1 49 46 19 67 and Rebecca Morrison rmorrison@rtca.org +1 202-330-0654

AGENDA

Plenary Session Wednesday 2 and Thursday 3 September,
9:00 – 12:00 Washington, DC /15 – 18:00 Paris

1. Welcome/Administrative Duties/EUROCAE and RTCA Policy Statements
2. IPR / Membership Call-Out and Introductions
3. Review and Approval of the Minutes from the 18th Joint Meeting
4. Report on the status of the ICAO FSMP meeting (17-26 August)
5. Review comments on Revision A of DO-378/ED-260 (WAIC MASPS)
6. Consider a motion to send Revision A of DO-378/ED-260 (WAIC MASPS) to the PMC and Council for Publication
7. Define the path forward
8. New Business
9. Review Plan for Next Meeting
10. Review Action Items

Minutes of Meeting

Day 1: 2 September 2020

Steve Rines (AVSI) started the meeting at 9:06 AM EDT.

Agenda Item 1: Welcome/Administrative Duties/EUROCAE and RTCA Policy Statements

Steven Rines welcomed the committee members. Rebecca Morrison presented some tips for the conduct of the virtual meeting:

- Use mute when not talking.
- Identify yourself if you are calling in by telephone.
- Raise virtual hand to be recognized.

Rebecca Morrison read the relevant RTCA policy statements and Anna Guegan read the relevant EUROCAE policy statements from slides shared with the group.

The Committee was informed of the unexpected passing of the WG-96 Chair Robin Davies over the summer. Committee members expressed their condolence and recognized Robin's invaluable contributions to the work of EUROCAE and RTCA. The Committee agreed to try to coordinate a memorial to Robin through a charity designated by the Davies family. Rebecca Morrison showed a memorial posted to Robin's field hockey club website (<http://www.holcombehc.org.uk/news/rip-robin-davies>) Rebecca Morrison, Anna Guegan, Dave Redman, and Kevin Hallworth said that they would look into options and report their findings on Day 2 of the meeting.

Agenda Item 2: IPR / Membership Call-Out and Introductions

The Committee agreed to skip over individual introductions because the members present on the call had all been previously introduced to each other.

Steve Rines reviewed the agenda. There were no suggestions for changes other than noting that the meeting will break for 30 minutes near 10:30 AM on Day 1.

Agenda Item 3: Review and Approval of the Minutes from the 18th Joint Meeting

Dave Redman reviewed the minutes from the 18th Joint Meeting held virtually on 18 June 2020. He noted that no comments or corrections had been received prior to the meeting, but that the minutes included one attendee whose affiliation was not indicated. The Committee agreed that the person is assumed to be an unaffiliated member of the public since plenary meetings are open to the public. The minutes were updated to reflect this assumption.

The updated minutes were unanimously accepted through vote by exception.

Agenda Item 4. Report on the status of the ICAO FSMP meeting (17-26 August)

Dave Redman gave an overview of the status of related activities under the International Civil Aviation Organization (ICAO). He indicated that work in the ICAO Frequency Spectrum Management Panel (FSMP) WAIC Standards and Recommended Practices (SARPs) Correspondence Group (CG) had progressed since the previous Committee meeting and the status of this work was presented to the FSMP at the August 2020 virtual meeting in Working Paper 20.¹

The work was focused on addressing 2 questions raised during a June focused meeting of FSMP representatives concerning the WAIC emitted power issue and

¹ https://www.icao.int/safety/FSMP/MeetingDocs/FSMP%20WG10/WP/FSMP-WG10-WP20_WAIC%20SARPS%20CG.doc

the frequency dependent rejection requirement issue that were preventing completion of the SARPs. Two papers were submitted to the CG studying the possibility of WAIC compliance with Rec ITU-R M.2059 (M.2059) protection criteria for an in-flight scenario in which aircraft are separated by 1000 to 2000 feet while in cruise conditions, one from the UK and one from France. Both papers indicated that additional mitigations were required to prevent an omnidirectional WAIC transmitter emitting at 6 dBm/MHz (4 mW/MHz) exceeding the M.2059 desensitization and false altitude criteria. The paper from France further provided an directional attenuation mask that would WAIC emissions to acceptable levels in the scenario studied.

The French paper also included a suggestion that additional margin may be available if the center of the 4.2 – 4.4 GHz band is excluded from use by WAIC. This might be possible because it will remove from consideration pulsed altimeters that have a higher sensitivity to desensitization. The paper provided an example that illustrated the possibility.

These results lead to the conclusion of the CG report that additional study is necessary to determine consensus language for the SARPs. This leaves the Committee in the position of not having a definitive SARPs on which to base the MASPS revision (DO-378A / ED-260A). Further progress on ED-260A / DO-378A will thus depend on progress of the work in the ICAO FSMP SARPs CG.

Uwe Schwark suggested that it is important for the committee to understand the impact of these discussions on WAIC performance requirements. Limitations on emitted power will limit the design space for implementing WAIC systems, which might have an impact on the overall viability of WAIC.

Agenda Item 5: Review comments on Revision A of DO-378/ED-260 (WAIC MASPS)

The Committee next reviewed the status of the comments to DO-378A / ED-260A that were the subject of the comment resolution meeting held in May, 2020. That meeting resulted in resolution of all but 6 comments, 5 categorized as “non-concur” and one as “high”.

Comment 45157 (High)

Rebecca Morrison provided updated information on the RTCA position concerning the incorporation of mitigations in the MASPS. Mitigation means are meant to be included when a MASPS is being developed using guidelines in DO-264 guidelines. Otherwise, the including a section on mitigation means is optional. The unresolved comment lead to the incorporation of a suggested Section 2.3.3. during the May meeting, however Rebecca pointed out that RTCA drafting guidelines dictate that no requirements are to be included in Section 2 of a MASPS.

The May meeting also lead to guidance for possible mitigations being incorporated in a note to Performance Requirement PR1b. There was some dispute over the use of “might” vs. “shall” in reference to these mitigations, but Rebecca further indicated that RTCA drafting guidelines dictate that no requirements are to be included notes.

The Committee decided that incorporation of 2.3.3 as suggested in the May meeting must thus be rejected.

If requirements for mitigations are necessary, they will need to be included in another section of the document.

Dave Redman took an action to notify the commenter about the decision of the meeting. Rebecca Morrison offered to set up meeting with the RTCA Vice President of Aviation Standards if necessary to discuss the RTCA Drafting Guide requirements if any committee members need further clarification.

Richard Adler commented that his interpretation is that mitigation means are a way to meet the MASPS requirements. Mitigation means themselves are NOT a requirement. He agreed with removing Section 2.3.3. and leaving a note to PR1b that indicates mitigations that “might” be useful. Committee members expressed agreement with this interpretation.

Kevin Hallworth provided the EASA perspective that mitigations should be included in a note as a suggestion using “might” for guidance to implementer, but mitigations should not be included as requirements themselves. This separates the “what” defined by requirements from the “how” specific implementations can meet the requirements.

Comments 45142, 45143, 45161, 45162, and 45126 (Non-concur)

It was observed that these comments are related and arise from the dispute over allowable levels WAIC emitted e.i.r.p. Steve Rines gave an overview of the history behind the unresolved non-concur items and the issues that remain to be solved. The Committee agreed that these comments depend on work in the FSMP to develop a consensus SARPs that specifies allowable levels before they can be resolved and had no further discussion.

Agenda Item 6: Consider a motion to send Revision A of DO-378/ED-260 (WAIC MASPS) to the PMC and Council for Publication

Steve Rines presented a set of options available to the Committee to satisfy the ED-260A / DO-378A deliverable requirement in the Committee Terms of Reference. These options are:

- Option 1. In line with Rev A FRAC/OC process, WG-96/SC-236 should reject the comments which are unresolved and leave the levels as stated in Rev A as presented for FRAC/OC possibly triggering a dissenting opinion process.
- Option 2. In line with Rev A FRAC/OC process, WG-96/SC-236 should accept the proposed changes in all comments as written possibly triggering a dissenting opinion process.
- Option 3. Against Rev A FRAC/OC process, engage with RTCA and EUROCAE to ask for the removal of Rev A from the TORs. (DO-378/ED-260 stand as published documents).
- Option 4. In line with Rev A FRAC/OC process, allow the resolutions to continue to be worked for another 6 months allowing more time for resolution by ICAO on the path forward. Schedule another plenary in late February/early March to revisit the question.

Rebecca Morrison described that these options will be presented in a POLL. This is different than a VOTE in that the purpose of the poll is just to illuminate how committee members are thinking, not to get a majority decision. Dave Redman asked if it would be a pick one or rank order type of poll. Sanjay Bajekal expressed a preference for a pick one option type of poll.

Jeff Cyr pointed out that the e.i.r.p. issues are not as big a concern for WAIC device manufacturers as they are for integrators, though they are linked through the need for a sustainable business case to motivate development. Rebecca Morrison pointed out that the contents of MASPS and MOPS are not dependent on business case arguments and that other committees have experienced impasses that were eventually overcome.

The Committee discussed the potential impact of each of the options.

Option 1:

The angle dependent e.i.r.p. in the current version of DO-378A / ED-260A, shown in the except below, would be retained and mitigations would not be included as requirements.

Parameter	Values											Units
Angle ϕ	>120	90	75	69	35	0	325	291	285	270	<240	degree
$P_{EIRP}(\phi)$	29	12	7	-6	-6	-6	-6	-6	7	12	29	dBm
$P_{EIRP}(\phi)$	794	158	5	0.25	0.25	0.25	0.25	0.25	5	158	794	mW

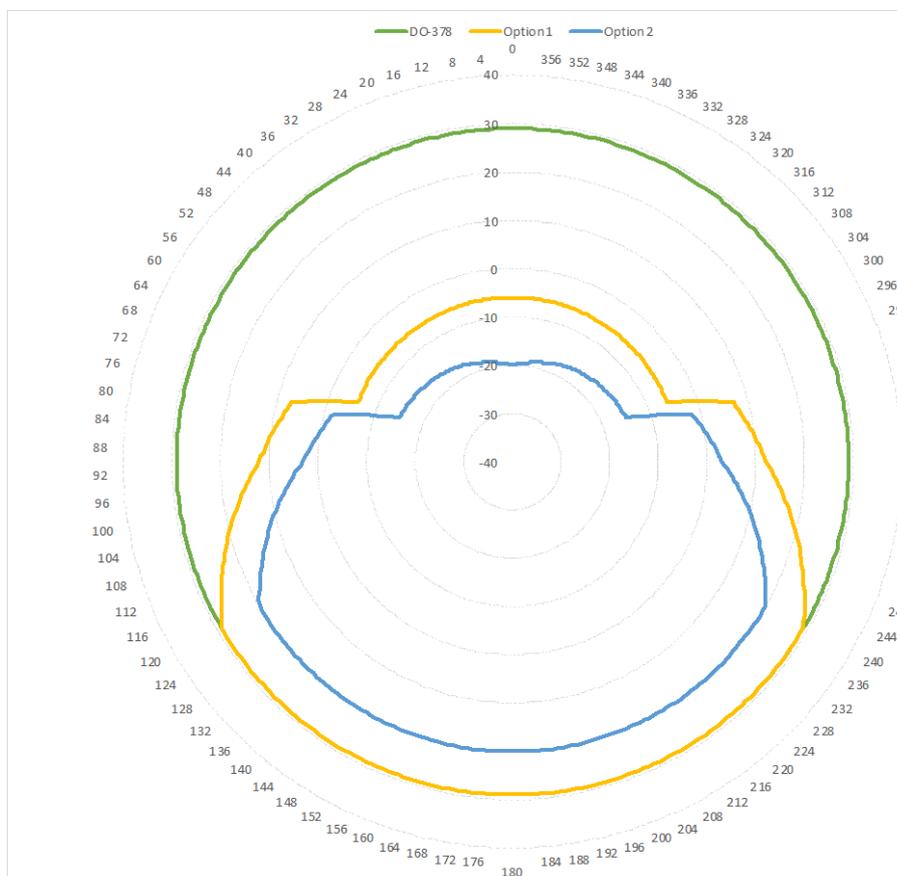
Table 3-1: Angle-Dependent Maximum Tolerable P_{EIRP} Reference Values

This would constitute a 35 dB reduction of emitted power in certain directions from the power levels specified in the current DO-378 / ED-260.

Option 2:

The angle dependent e.i.r.p. level specified in Table 3-1 of Report ITU-R M.2319 would be incorporated in ED-260A / DO-378A along with requirements for certain mitigations for all WAIC installations. The means of incorporating such requirements would still need to be made consistent with RTCA Drafting Guidelines. The difference in the e.i.r.p. between the current DO-378 / ED-260 and those recommended in Options 1 and 2 were summarized as shown below.

Parameter	Values											Units
Angle	>120	90	75	69	35	0	325	291	285	270	<240	degrees
DO-378 / ED-260	29	29	29	29	29	29	29	29	29	29	29	dBm
Option 1	29	12	7	-6	-6	-6	-6	-6	7	12	29	dBm
Option 2	20	3	-2	-15	-17	-20	-17	-15	-2	3	20	dBm



This would constitute a 49 dB reduction of emitted power in certain directions from the power levels specified in the current ED-260 / DO-378.

Steve Rines noted that this is a huge reduction in the available power and brings WAIC viability into question. Dave Redman noted that *something* could be built to these requirements, but question is whether it is useful. Committee members commented that it would be useful to have an impact on the viable link length under the power limits of the different options.

There was some concern among the committee members present that some members not present would find that none of these options would be acceptable. However, it was noted that Option 2 would resolve all comments to the draft DO-378A / ED-260A, so it would be expected that all committee members would find at least one option acceptable.

Steve Rines noted that the existing analyses have not covered all possibilities (temporal effects, exclusion of certain parts of the RA spectrum, ...). That

Option 3:

It was noted that the impact of this option was that revision ED-260A / DO-378A would not be completed and the currently published DO-378 / ED-260 would stand as written as the WAIC MASPS.

Option 4:

This option simply delays a decision. The Committee recognized that this will require action from both RTCA/EUROCAE and the ICAO FSMP to achieve resolution.

Discussion

Jeff Cyr asked if e.i.r.p. requirements would allow device manufacturers and integrators to use individual WAIC emitters with higher powers. Several committee members pointed out that that might be possible, since that would be an installation/ownership consideration and the e.i.r.p. limits are inter-aircraft issues that are addressed by the directional mask.

Rebecca Morrison questioned if the Committee could continue work on the MOPS while waiting for work to proceed in the ICAO FSMP. Uwe Schwark suggested that Option 2 could potentially eliminate use of the WAIC allocation, so proceeding with the MOPS based on partial information would be at risk.

Steve Rines asked the committee members to consider what options are available to proceed with completion of the deliverables in the ToR. Uwe Schwark asked if development of WAIC technology could proceed without SARPs through unilateral action of individual administrations. Rich Adler indicated that, while possible to get a TSO supporting certification, it would only allow WAIC equipped aircraft to operate in the US, which leads into the issue of commercial viability.

The meeting took a 30 minute recess and then reconvened. Upon resumption, the Committee observed a moment of silence for Robin Davies, who passed away in August. The committee recognized his invaluable contributions to the Committee and RTCA/EUROCAE at many levels. Rebecca Morrison indicated that there was a memorial [posted to Robin's field hockey club](#). Anna Guegan said that EUROCAE had sent out a recognition, but did not have a connection with the Davies family.

Steve Rines suggested that the Committee send a memorial recognition. Rebecca Morrison and Anna Guegan agreed to look into the possibilities and report back to the Committee on Day 2 of the meeting. Kevin Hallworth agreed to contact the hockey club to see if there is club member that could help facilitate a memorial.

Prior to breaking for the day, the Committee agreed to send out the aforementioned poll with three material inputs:

1. Select ONE of the 4 options for proceeding with the MASPS RevA,
2. Indicate ONE OR MORE of the 4 options that are **unacceptable**, and
3. A place to provide any supporting comments.

It was noted again that the poll is non-binding and that individual as well as organizational responses are encouraged, however it was stressed that any dissent process that might result must proceed through organizational members and not individuals.

Rebecca Morrison posted the poll to the following site:

https://forms.office.com/Pages/ResponsePage.aspx?id=k0_oGskkU2OMpOyU45tluLZsm-89iRDnkgAcZN13RUQTIIRkFTVjk0Qk1SR05BWDdDUUhMMUxMWS4u

which was sent to the full committee distribution along with a request that all committee members complete the poll prior to 9:00 AM EDT on 3 September 2020 so that the results can be discussed on Day 2 of the meeting.

The meeting adjourned for Day 1 at 12:06 PM EDT.

Day 2: 3 September 2020

Meeting resumed for Day 2 at 9:05 AM EDT.

Agenda Item 7: Define the path forward

Steve Rines welcomed the committee members back for Day 2 of the meeting and indicated that the remain work of the meeting was to review the results of the poll and define a path forward. He noted that the poll results were unanimous and that committee members desired to delay the decision per option 4 (see Appendix B).

Alexandre Guignot noted that he joined the meeting for Day 2 because the Committee decided at the June plenary that it had to wait for the WAIC SARPs to be completed before completing the WAIC MASPS revision, and was thus very surprised to see the poll questions. He pointed out that the ICAO FSMP will meet in March, so SC-236/WG-96 will need to wait at least until then and will thus require more than a six month delay.

Anna Guegan responded that there was an expectation at the last Plenary that the ICAO FSMP would reach a conclusion concerning e.i.r.p. levels that could be used to complete the DO-378A / ED-260A revision. Despite the fact that that did not happen, RTCA and EUROCAE must still perform to the committee's Terms of Reference/Charter and the options presented in the poll reflect the options available under the RTCA/EUROCAE procedures.

Rebecca Morrison noted that RTCA will need to change the existing ToR to reflect the either the change to the Rev A delivery date or removal of the deliverable and this will require another plenary meeting before December to agree on changes to the ToR. She took an action work with Anna Guegan to set up the next plenary.

Dave Redman suggested that the committee can't wait until March to start work. The WAIC SARPs CG will need to have an answer at least one month prior to the scheduled FSMP meeting in order to plan a full Panel meeting, so work needs to continue apace through coordination of Working Group 1 and the ICAO WAIC SARPs CG. Steve Rines agreed that we will need to continue working so that we have a high level of success at the FSMP decision point.

Steve Rines asked if the Working Groups should continue to work on the MOPs? Dave Redman said that they should since there are still some open questions for WG1. Steve Rines agreed, but questioned whether WG's 2, 3, and 4 should continue given the uncertainties. Dave Redman asked if they need to consider development of installation guidance. Steve Rines indicated that that too requires answers from WG1. He also indicated that the ARINC Cabin Systems committee was still working on CS-MIME, so related work is continuing.

Rebecca Morrison indicated that the RTCA PMC will want to know what the value of keeping the committee together if there's no end in sight? She suggested that the Committee develop some supporting materials for the next PMC meeting and that the Committee could expect some push back over any delays.

Sanjay Bajekal expressed concern over pushing the timeline out 6 months because the Committee does not have a plan to ensure that the outstanding issues can be resolved in 6 months. Steve Rines expressed similar concerns, but noted that there were some suggestions that might offer a solution and deserve a more detailed consideration, such as the suggestion to carve out some spectrum in the middle of the RA band to exclude the pulsed altimeters. Dave Redman recommended that to develop a plan, the Committee and the WAIC SARPs CG must work together to identify the questions that need to be answered and then identify the resources available to answers those questions.

Anna Guegan raised the issue that a new Chair is needed for WG-96 and that it will be difficult to justify initiating the necessary public call for interest just to wrap up the

MASPS. Thus, continuing with MOPS development is important. Additionally, the call for interest process may have the added benefit of bringing in additional interest and the accompanying resources. Steve Rines asked if WG-96 can we proceed without a chair, perhaps by naming an interim? Anna Guegan said simply naming an interim would likely not be possible and took an action to start the call for interest process. She asked Steve Rines for support in drafting the scope of activity statement that included the MOPS.

Ivan Martin suggested that a possible way forward was to merge the content of the MASPS and the MOPS. He noted that there is still a significant amount of technical work that is required to complete the MOPS and that this work should continue. However, it will be difficult to work on the MOPS until we get the answers from the FSMP. Steve Rines agree that the Committee is dependent on this information coming from the FSMP. Ivan Martin further recommended that the Committee must keep in mind the timing of the EUROCAE processes and the FSMP work schedule when planning the Committee's path forward.

Steve Rines returned discussion to the timing and agenda of the next plenary to develop input to the PMC to update the ToR. Rebecca Morrison indicated that the RTCA PMC will meet next on 17 December, so inputs need to be received no later than the week of November 16. Dave Redman suggested that the next plenary also address the need to articulate to the PMC a plan to complete the MASPS revision. Steve Rines asked if the ICAO WAIC SARPs CG could report to the Committee on progress toward a consensus SARPs. He also asked if WG1 could periodically report its progress to the full Committee by email. Sanjay Bajekal took an action to work out the details with Uwe Schwark, with a goal of biweekly reporting.

As WG1 will be the only active part of the Committee, several members asked to be added to the WG1 distribution. Rebecca Morrison suggested that the full joint committee distribution list be used for WG1 communications for the time being.

The Committee decided that it will request a change to the ToR to delay completion of the MASPS by 7 months.

Agenda Item 7: New Business

Ownship Compatibility Concerns: Dave Redman noted that concerns were raised in the ICAO FSMP meeting in August about ownship compatibility, as was discussed in the briefing provided on Day 1, and that these concerns should probably be addressed sooner rather than later. Steve Rines asked if this was a certification issue that was out of scope. Dave Redman agreed that it might be, but that it would be useful for making progress on the MASPS and SARPs if the Committee could demonstrate how a combination of SARPs, MOPS, and certification processes will ensure that there is compatibility between RAs and WAIC. Steve Rines agreed, but noted that the most the Committee can do is put guidance in the integration section of the MOPS. Rich Adler also agreed and noted that the guidance can be put in the MOPS, but not requirements. That will come in the certification process. Steve Rines suggested that the Committee could possibly develop a formal response outlining this position to have available to address questions as they may arise. Dave Redman agreed that that would be useful.

Relationship to RTCA SC-239 / EUROCAE WG-119: Rebecca Morrison noted that SC-239 was directed to work with SC-236 to ensure that the WAIC MOPS was considered in the updates to the RA MOPS. The SC-239 will start work on the RA MOPS in October and it may be useful to coordinate this working by inviting the SC-239/WG-119 Chairs to plenary meeting of SC-239/WG-96. Ivan Martin asked if SC-239 and WG-119 were planning to work jointly on the update to the RA MOPS. Rebecca pointed out that, while initial work has been within SC-239 only in order to

respond to actions of the FCC in the US, work on the MOPS will proceed as a joint committee and that Anna Guegan is the EUROCAE program manager for WG-119.

Robin Davies Memorial: Steve Rines asked what had been discovered since the Day 1 discussion concern a joint Committee recognition of Robin Davies. Dave Redman indicated that he had received information from a colleague a former colleague at BAE Systems that there was a [memorial website](#) set up and that there may be a point of contact that could help facilitate a memorial. Anna Guegan and Rebecca Morrison will coordinate the response. Kevin Hallworth had left a message with the hockey club and will inform Anna and Rebecca if there is any additional information from that source.

Agenda Item 8: Review Plan for Next Meeting

The Committee agreed to schedule the next plenary for 10:00AM – 12:00PM EST on 12 November 2020. Rebecca and Anna will make the necessary arrangements.

Anna Guegan suggested that WG-96 meet 1 hour before, from 3:00PM to 4:00PM CET, to discuss the selection of a committee chair. Anna will organize the web meeting.

Rebecca Morrison noted that the monthly touchbase on the 3rd Tuesday of each month will be cancelled.

Agenda Item 10: Review Action Items

1. David Redman will notify the commenter that provided Comment 45157 about the decision of the meeting concerning mitigations.
2. Rebecca Morrison and Anna Guegan will make arrangements for a follow-up plenary before December.
3. Anna Guegan will send out call for interest for WG-96 chair with support from Steve Rines.
4. Sanjay Bajekal and Uwe Schwark will set up WG1 meetings and provide periodic updates to the full Committee by email.
5. Anna Guegan will organize WG-96 meeting to select a chair person.
6. Rebecca Morrison and Anna Guegan will coordinate a memorial for Robin Davies.

Agenda Item 11: Adjourn

The meeting adjourned at 10:30 AM EDT.

Respectfully submitted by David Redman, Secretary SC-236.

Appendix A: Attendance List

Name	Affiliation	2 SEP 20	3 SEP 20
Uwe Schwark	Airbus	X	
David Redman	AVSI	X	X
Steven Rines	AVSI (Consulting)	X	X
Marshall Gladding	Boeing	X	X
Sanjay Bajekal	Collins Aerospace	X	X
Jeffrey Cyr	Collins Aerospace	X	X
Kanwal Reen	Collins Aerospace	X	
Mingwei Wang	COMAC America		X
Alexandre Guignot	DGAC		X
Kevin Hallworth	EASA	X	X
Aristides Cintra	Embraer	X	X
Shunichi Futatsumori	ENRI	X	X
Anna Guegan	EUROCAE	X	X
Rich Adler	FAA	X	X
John Flores	FAA	X	X
Shohreh Safarian	FAA	X	X
Rebecca Morrison	RTCA	X	X
Oliver Lücke	SPi DE	X	X
Ivan Martin	Thales		X

Appendix B: Committee Poll and Responses

Questions

Question	Options
1. What should be the response of SC-236/WG-96 to the unresolved comments against the MASPS? (select 1)	
Option 1	In line with Rev A FRAC/OC process, WG-96/SC-236 should reject the comments which are unresolved and leave the levels as stated in Rev A as presented for FRAC/OC possibly triggering a dissenting opinion process.
Option 2	In line with Rev A FRAC/OC process, WG-96/SC-236 should accept the proposed changes in the comments as written possibly triggering a dissenting opinion process.
Option 3	Against Rev A FRAC/OC process, engage with RTCA and EUROCAE to ask for the removal of Rev A from the TORs. (DO-378/ED-260 stand as published documents).
Option 4	In line with Rev A FRAC/OC process, allow the resolutions to continue to be worked for another 6 months allowing more time for resolution by ICAO on the path forward. Schedule another plenary in late February/early March to revisit the question.
2. Which options should NOT be considered as an option for SC-236/WG-96 to the unresolved comments against the MASPS?	
Option 1	In line with Rev A FRAC/OC process, WG-96/SC-236 should reject the comments which are unresolved and leave the levels as stated in Rev A as presented for FRAC/OC possibly triggering a dissenting opinion process.
Option 2	In line with Rev A FRAC/OC process, WG-96/SC-236 should accept the proposed changes in the comments as written possibly triggering a dissenting opinion process.
Option 3	Against Rev A FRAC/OC process, engage with RTCA and EUROCAE to ask for the removal of Rev A from the TORs. (DO-378/ED-260 stand as published documents).
Option 4	In line with Rev A FRAC/OC process, allow the resolutions to continue to be worked for another 6 months allowing more time for resolution by ICAO on the path forward. Schedule another plenary in late February/early March to revisit the question.
3. Any comments for the committee to consider.	

Responses

ID	Name	Organization	Question 1	Question 2	Comments
1	Anna Guegan	EUROCAE	Option 4	Option 3	
2	Shane Happs	Collins Aerospace	Option 4	Option 3	
3	Steven Rines	AVSI (consulting)	Option 4	Option 1 Option 2 Option 3	Options 1&3 will generate a politically charged negative response. Option 2 results in a standard that is not economically viable. Option 4 leaves open the possibility of an altitude-based power budget with a 30MHz cutout at 4.3GHz.
4	David Redman	AVSI	Option 4	Option 2	Delaying without trigger the dissent process will allow us to continue working without diluting resources on dissent efforts, but may not be as compelling to marshal those resources.
5	Gregory Cederlind	Crane Aerospace	Option 4	Option 1 Option 2	Although a frustratingly slow process it appears to me more time may be worthwhile
6	Mingwei Wang	COMAC America	Option 4	Option 4	
7	Kevin Hallworth	EASA	Option 4	Option 1 Option 2 Option 3	Apologies - I was not following the discussions on 'unresolved comments' but, given the current situation, I think we should continue to discuss the unresolved comments even if it takes another 6 or more months to resolve. I do not know the implications of extending by 6 months but it does appear to be the best approach (given the alternatives listed above).

8	FLEURY Christian and GUIGNOT Alexandre	DGAC	Option 4	Option 1 Option 3	<p>We are of the view that option 4 is the most suitable option because it is consistent with the last WG-96 plenary in June 2020. One can note that the meeting agreed the following (see agenda item 5 of the meeting minutes): "The meeting agreed to forward revised MASPS to PMC after resolution of the open comments once the ICAO FSMP defines final requirements in a consensus SARPS." Therefore, it cannot be proceeded until the FSMP take a decision. FSMP will meet at the beginning of March. If any decision is taken, EUROCAE WG-96 should meet afterwards (beginning of April, little bit more than 6 months). It is the decision. Regarding the option 1, it was agreed that we were waiting for the conclusions of FSMP. This option is not in line with what was discussed within this last WG-96 plenary in June 2020. Option 3-> There was a need to review the ED-260. We consider that ED-260 rev A is needed to address the potential impact of WAIC emission into Radioaltimeters. This option is also not in line with what was discussed within this last WG-96 plenary in June 2020. Also the FSMP correspondence group concluded that the PR#1A requirement only will not be sufficient and will impact the Radioaltimeter, in particular during the En-Route scenario. One can also note the conclusions of the last FSMP meeting (within the minutes): WP20 provided the status of Wireless Avionics Intra-Communication (WAIC) correspondence group activities. In particular it was noted that two actions were identified at a focused web meeting held on 3 June 2020: (1) determine if an omni directional limit of 4 mW/MHz will meet Rec. ITU-R M.2059 protection criteria for in-flight scenarios, (2) determine if WAIC adjacent band rejection better than 40 dB/decade could be supported. On question (1) the conclusion was no it would not unless other mitigations were imposed. On question (2) the preliminary conclusion was that the rejection could be improved, but final levels were not determined. It was noted that it would be helpful if target levels could be provided. The paper recommended continued effort to develop comprehensive responses to these questions, and the meeting agreed.</p>
9	Steffen Mersch	Lufthansa Technik AG		Option 2	Acceptance of proposed changes would result in WAIC requirements that are hard to implement. I am not sure which of the options A, C or D is the best way forward.
10	Shunichi Futatsumori	Electronic Navigation Research Institute	Option 4	Option 2	I agree with either option 1 or option 4 for Question 3. I disagree with option 2. Because, practical WAIC systems cannot be developed base on many restrictions such as too small radiation power.
11	Uwe Schwark	Airbus Operations GmbH	Option 4	Option 2 Option 3	"The continuation of the discussions on DO-378 Rev A and especially the radiation limit pattern, might allow to exploit one last possible technical approach. This might lead to an acceptable power limit in exchange of a portion of the band (~30MHz around the center frequency)." - rfm scribe
12	Sanjay Bajekal	Collins Aerospace	Option 1	Option 2	I could support option C - Against Rev A, removal of Rev A from the TORs
13	MARTIN Ivan	THALES SIX GTS	Option 4	Option 1 Option 2 Option 3	THALES SIX GTS is of the view that Option 4 is the option that shall be selected. The plenary WG in June stated that "The meeting agreed to forward revised MASPS to PMC after resolution of the open comments once the ICAO FSMP defines final requirements in a consensus SARPS." Option 4 is the option that will allow to be consistent with the decision that will be taken at ICAO Frequency Spectrum Management Panel (FSMP) in the coming months.