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February 11, 2021

Minutes of Meeting
EUROCAE WG-96 Meeting 34, then
EUROCAE WG-96 RTCA SC-236 21st Joint Meeting
Standards for Wireless Avionics Intra-Communication System (WAIC)
within 4200-4400 MHz

Date	<i>Thursday February 11, 2021</i> <i>WG-96-only Meeting: 15 – 16pm CET (09am – 10pm EDT)</i> <i>WG-96 – SC-236 Meeting: 16 - 18pm CET (10am – 12pm EDT)</i>
Hosted by	<i>RTCA and EUROCAE</i>
Place	<i>Virtual Meeting</i>
Contact Person	EUROCAE WG-96: Anna Guégan anna.Guégan@eurocae.net Phone: + 33 1 49 46 19 67 And RTCA SC-236: Rebecca Morrison rmorrison@rtca.org +1 202-330-0654

AGENDA

Joint Plenary Session Thursday 11 February, 10:00 – 12:00 Washington, DC /16 – 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 20th Joint Meeting
4. Review and Approve TOR changes for SC-236 and for WG-96
5. Define the path forward
6. New Business
7. Review Plan for Next Meeting
8. Review Action Items

EUROCAE WG-96 RTCA SC-236 21st Joint Meeting
Minutes of Meeting

Steve Rines (AVSI) started the meeting at 10:08 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.

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

Rebecca Morrison read the relevant RTCA anti-trust and proprietary information policy statements and Anna Guégan read the relevant EUROCAE policy statements from slides shared with the group. It was noted that RTCA and EUROCAE honor each other's policies in the work of joint committee such as this in order to produce harmonized standards.

Anna described the EUROCAE SharePoint and Rebecca demonstrated the RTCA Workspace. The group was instructed to contact them if access is needed to either site. **Anna took an action to post information about how to access the WG96 SharePoint site.**

A question was raised whether membership is by organization or by individual. Rebecca indicated that for RTCA, membership is determined by organizational affiliation. She provided a link to the [list of RTCA member organizations](#).

Agenda Item 3: Review and Approval of the Minutes from the 20th Joint Meeting

Review of the minutes from the 20th Joint Meeting was tabled and it was noted that the minutes from that meeting will be sent with minutes from this meeting.

Steve Rines, however, provided an overview of the content of the meeting. He noted that the focus was a discussion concerning revision of the committee terms of reference (ToR) to restructure the revised MOPS scope given a current impasse on some elements of the draft MOPS. In that meeting, a request for letters of support from committee members was issued. Steve indicated that he has received letters of support from a few companies and these are posted on RCTA Workspace. Additional letters would be welcomed and letters can be accepted up to 3 days before the next meeting of the RTCA PMC, at which the ToR revision will be discussed. It was noted that letters written by PMC members themselves can hold more weight (asked Marshall and Sanjay). It was also noted that Airbus provided some comments on the proposed ToR, with the comment that if the proposed changes are incorporated then Airbus might be able to send a letter.

Steve also noted that he received letter of support from SC-216/WG-72 indicating that they will coordinate with this committee on security issues.

Agenda Item 4: Review and Approve TOR changes for SC-236 and for WG-96

The group discussed potential changes to the TOR in light of lack of progress on acceptable transmission parameters to be incorporated in the MOPS and SARPs. The suggestion is to proceed with development of aviation network considerations that are not directly tied to WAIC RF transmission / coexistence parameters (e.g. security and communications protocols being developed in ARINC).

Uwe Schwark stated that Airbus security experts expressed concern that proposed MOPS consider only wireless, not aircraft data networks in general. He shared the following statement:

Airbus is of the view that the scope of the ToR of SC-236 could be widened towards other wireless technologies or frequency bands beyond WAIC (similar to the scope of WG96). However, the scope of the work should remain limited to wireless communication networks and not generally extended towards wired communication architectures. Furthermore, it is proposed to consider a two-phase approach in developing the additional deliverable (security-related MOPS). In a first phase, the work should focus on defining relevant security-related requirements by referring to existing TC/STC certification guidance material to the best possible extent. This would allow the FAA and the EASA to conclude their views on how security requirements should best be treated in the context of a TSO/ETSO. In a second step, the MOPS may be extended with specific security architecture considerations relevant for wireless communication networks.

Marshall Gladding from Boeing expressed similar concern – keep scope only to wireless, WAIC devices. Steve questioned that given that wireless is worst case, is there any reason that why this one acceptable means of compliance can't be applied to a wired solution? This led to additional questions and discussion:

- What would FAA/EASA do when such a MOPS is in place to assess airworthiness with respect to wired communications? This might have an impact on existing procedures/technologies like AFDX.
- If this MOPS is allowed to be used in a TSO, then it would require the security experts to assess wired solutions using this TSO in addition to existing means of compliance (MoC).
- Why have we introduced wired when there is already existing MoC guidance?

Steve explained that the issue is that the core communication devices need to be installed and configured. Wireless can be installed anywhere and need to be able to identify location/device parameters. This is similar to considerations in WOBAN. The hardware aspects that allow network components get installed and configured and connected to a network have been considered, but there is a need to discuss how signals and connections are secure from the start and stay secure. Up to now, this has been managed by a single design authority as a monolithic network. This prevents airlines from touching the configuration to introduce new capability, for example. This aspect of the issue has NOT been addressed elsewhere. We will need to understand how each component is built / configured / installed to allow devices to connect securely to installed networks. This is being considered in some ARINC committees that have agreed to the extensions of communications protocols to autonomous systems so that these protocols can exist with other networks side-by-side.

This led to additional questions:

- What in the existing guidance is NOT good enough? What existing guidance would be subrogated by these MOPS?
 - The intent is NOT to replace anything – come up with something new that extends capability. System designers would have the option to incorporate this new capability or not.
- When we come to physically writing the MOPS, will we need to specify the medium?
 - No, the intent would be to make the specification truly independent of medium.
- There is already wireless guidance covered by SC-216. Do we need to only cover things unique to WAIC?
 - True, but there are additional considerations that are not covered. Wireless is used in very specific applications.

- Do we expect TSOs to be applied to non-WAIC systems?

- Yes

- This would be a point of contention with SC-216 and Boeing.

Rebecca Morrison related that the RTCA PMC changed the name of the Committee in 2016 as the PMC wanted this committee to ONLY BE WIRELESS and ONLY IN 4.2-4.4 GHz. This will make it difficult to change the scope to include considerations outside these boundaries. A potential solution was offered by focusing the MOPS on wireless, but not explicitly disallowing wired. It could, for example, be put as note in the MOPS that these technologies might be useful for wired as well as wireless networks. There was some agreement that such a compromise might be acceptable provided that any we close any loopholes that would allow certification using this TSO without meeting other requirements in DO-356A.

This led to discussion of a title for the new MOPS that would better match the revised scope. There was concern that we avoid any overlap in standards that present different requirements for the same equipment security concerns. There was some agreement that the title should be consistent with the existing WG-96 WOBAN standard. It was noted that ensuring consistency with existing guidance has already been considered part of the scope, with tasks identified to map SC-216 security requirements and ED-246 (WOBAN) requirements to new the MOPS to show pedigree/compliance. This discussion led to a proposed title: "Minimum Operating Performance Specifications (MOPS) for Secure Avionics Communications Across Wireless Onboard Avionics Networks (WOBAN)."

The committee then reviewed the wording of the proposed revised ToR as any changes must be agreed by full the committee. Revisions included removing references to wired networks, and there was tentative agreement that these changes would be acceptable.

The committee then considered other necessary changes to the ToR. These included removing any "TBDs" from the Table of Deliverables. Uwe asked if it would be possible to withdraw DO-378. Rebecca indicated that it would not be possible, and further, the ballot carried out by RTCA end of 2020 ended in a unanimous vote for continuing the work. Ana indicated that was also true for EUROCAE.

At this point the Chair called for a motion to accept changes to the ToR as proposed. Gregory Cederlind so moved and Marshall Gladding seconded the motion. A voice vote was taken and no other votes against the proposal were offered. Based on the outcome of the final ballot to be run out of the RTCA workspace, the ToR text as changed during the meeting will be forwarded to the RTCA PMC and EUROCAE TAC.

Agenda Item 5: Define the path forward

The Committee discussed the next steps to move forward under the revised ToR. It was noted that the committee will need to address MOPS requirements capture, architecture/design considerations, secure wireless data loading, message structure, and additional certification guidance.

Agenda Item 6: New Business

No new business was raised by the committee members.

Agenda Item 7: Review Plan for Next Meeting

A date for the next plenary was set for 1 April 2021.

Agenda Item 8: Review Action Items

Two actions were recorded, each assigned to all committee members:

1. Check on the possibility of committee members' organizations sending a letter of support for the new ToR.
2. Answer the ballot on the new ToR proposal that will be placed on the RTCA Workspace.

The meeting adjourned at 12:06 PM EDT.

Respectfully submitted by David Redman, Secretary SC-236.

Appendix A: Attendance List

Name	Org
Uwe Schwark	Airbus
David Redman	AVSI
Marshall Gladding	Boeing
Sanjay Bajekal	Collins
Jeffery Cyr	Collins
Gregory Cederlind	Crane
Christian FLEURY	DGAC
Alexander Guignot	DGAC
Moisés Bismarck Medina de León	EASA
Kevin Hallworth	EASA
Sonia Heemstra de Groot	Eindhoven University of Technology
Ingas Niemegeers	Eindhoven University of Technology
Shunichi Futatsumori	ENRI
Anna Guegan	EUROCAE
Rich Adler	FAA
Shohreh Safarian	FAA
John Flores	FAA SEA-AED
Kees Nuyten	Fokker Elmo
Massimiliano D'Aurelio Podrini	Leonardo
Steffen Mersch	Lufthansa Technik
Jaco Verpoorte	NLR
Kelly Peters	Piper Aircraft
Rebecca Morrison	RTCA
Steve Rines	Safran
John Walker	Thales
Illia Kachan	Volocopter