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September 2, 2021

Minutes of Meeting
EUROCAE WG-96 Meeting 35, then
EUROCAE WG-96 RTCA SC-236 22nd Joint Meeting
Standards for Wireless Avionics Intra-Communication System (WAIC)
within 4200-4400 MHz

Date	Thursday September 2, 2021 WG-96 – SC-236 Meeting: 15 - 18pm CET (9am – 12pm EDT)
Hosted by	RTCA and EUROCAE
Place	Virtual Meeting
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

1. Welcome/Administrative Duties/EUROCAE and RTCA Policy Statements
2. IPR/Membership Call-Out and Introductions including a demonstration of the new RTCA AerOpus website
3. Review and Approval of the Minutes from the 21st Joint Meeting
4. Review of current status Secure Communications for Wireless On-Board Avionics Networks (WOBAN) MOPS. Agree on plan to restart committee activities.
5. Review of current status of WAIC MASPS in ICAO FSMP and decision on plan to restart committee activities.
6. Review ToRs content to be presented for approval
7. New Business
8. Review Plan for Next Meeting
9. Review Action Items

EUROCAE WG-96 RTCA SC-236 22nd Joint Meeting
Minutes of Meeting

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

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

Steve welcomed the committee members noting that there had been a protracted hiatus.

Rebecca Morrison read the relevant RTCA anti-trust policy and proprietary information and membership policy statements and Anna Guégan read the relevant EUROCAE policy statements from slides shared with the group. EUROCAE and RTCA will take action to ensure that committees stay compliant with these policies. 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.

Agenda Item 2: IPR/Membership Call-Out and Introductions including a demonstration of the new RTCA AerOpus website

The group went through introductions, noting several new members joining the committee. Attendance is captured in Attachment A.

Agenda Item 3: Review and Approval of the Minutes from the 21st Joint Meeting

The minutes from the 21st Joint Meeting were reviewed and approved with minor updates.

Agenda Item 4: Review of current status Secure Communications for Wireless On-Board Avionics Networks (WOBAN) MOPS. Agree on plan to restart committee activities.

Steve provided an update on the activity of the ARINC activity to develop secure communications for WOBAN. He shared the security model on which they are developing the standard based. The primary difference with WAIC networks is that there is no central network services controller. The model is to have gateways between specific subnets and the aircraft shared network that facilitate exchange of CSMIM standardized messages at the application layer. This keeps messaging secure as defined by the CSMIM requirements for data exchanged over the shared aircraft network.

There was a question if this was similar to messaging in ARINC 653 systems and if there was any overlap in the standards. These communications are at a different level, but might be implemented in 653 architecture.

Another question was raised about whether CSMIM covers secure data load. Steve acknowledged that still needs to be figured out yet.

[At this point we backtracked to revisit Agenda Item 2 and Rebecca gave an overview of AerOpus. This is the new RTCA share space solution that replaced the Kavi Workspace. Additionally, Steve asked if a WG-96 co-chair had been identified. Anna indicated that it had not yet been filled, but someone had expressed interest and it would likely be filled soon.]

Agenda Item 5: Review of current status of WAIC MASPS in ICAO FSMP and decision on plan to restart committee activities

Uwe Schwark provided an overview of the status of the approval of the updated MASPS document. MASPS were intended to be a deliverable from this committee that reflect the requirements imposed on WAIC system by ICAO SARPs. These are focused on WAIC RF levels emitted from an aircraft to ensure that different aircraft do not mutually interfere. The permissible emission levels have not reached consensus within the ICAO FSMP.

The committee made assumptions concerning WAIC RF emission levels allowed under the WRC2015 allocation resolution that turned out to be unacceptable within ICAO. A consensus ICAO SARPs is thus at an impasse, though the document is largely written.

Industry was concerned about the reduction in allowable WAIC emission limits since the requested reduction amounted to drop in power by about 50 dB. This puts significant constraints on the usable WAIC solution space. The suggested limit is currently at -20 dBm total emissions from an aircraft. Airbus has done some work to demonstrate that even though this drops WAIC power limits to a level on par with those used in UWB communications, there is still room for a viable WAIC solution.

The current effort is to review the proof of concept solution to demonstrate WAIC viability with select members of the ICAO FSMP to ensure that there is a path to consensus. The next FSMP meeting is in October and the intent is to try to move the SARPs forward.

Steve asked if what needs to be done to get this done. The ICAO FSMP WAIC Correspondence Group will develop the updated draft SARPs. **DR took an action to call the CG and move SARPs draft forward.** SARPs need to be completed before we can close out OC/FAC 236/96 of DO -378A.

Rebecca made the following points concerning progress on the MASPs:

- The MASPs are RTCA/EUROCAE information.
- DO-378 is published. It cannot be reproduced without permission.
- The information in Rev A is currently in FAC/OC, and thus the exact content cannot be guaranteed until FAC/OC closes.
- SARPs can reference RTCA documents. However, SARPs cannot push requirements into an RTCA/EUROCAE document outside of OC/FAC or 236/96 participation.
- Concerning other Committee information: permission is needed before incorporating in other documents if that information is published. Can use the same procedure as for using information from published standards.

Uwe asked if any of the new committee members have a view on the -20 dBm power limit.

- Sanjay Bajkal asked if ICAO FSMP would accept this change and we can be moved forward – that would be a good thing, but will this end the discussion? He observed that it looks like we addressed the issues and can actually now get to closure, so recommended moving forward.
- Jaco Verpoorte said the ADENEAS effort is examining feasibility to see if this will work. For safety, the system will need sufficient margin, so this will require further consideration.
- Kees Nuyten said he is currently looking at some of the detailed transmission characteristics and considering how ADENEAS could contribute.
 - Uwe suggested that would be good to get other experts to look at system feasibility/requirements. He pointed out that the -20 dBm emission limit is at the aircraft level – not the individual WAIC transmitter level. He pointed out that the primary concern at ICAO is interference to radar altimeters.
- Uwe noted that the next FSMP meeting was scheduled for October 4, 2021.

- DR suggested that Kees read the RTCA MSG Report: https://www.rtca.org/wp-content/uploads/2020/10/SC-239-5G-Interference-Assessment-Report_274-20-PMC-2073_accepted_changes.pdf

Steve commented that it sounds like we have a way forward on the RF – which is exciting.

The group took a 10 minute break at this point.

Agenda Item 6: Review ToRs content to be presented for approval

Rebecca reviewed the Rev 7 draft of the ToR (which has not been presented to the PMC yet):

- Need to change the FRAC completion due date from August to an acceptable date.
- Assuming FSMP SARPs goes well, we would still need 2-4 weeks to review/update the MASPS Rev A.
- November 2021 date in the ToR supports the following possible timeline for MASPS:
 - Backing up from the December PMC meeting date:
 - Draft needs to go to PMC by November 10,
 - Draft needs to be released by the committee to RTCA/EUROCAE by November 1,
 - Give to full committee to review by October 15 (redlined and with comments resolved in comments spreadsheet.)
 - OR Backing up from the March PMC meeting date:
 - Give to PMC by Feb, 2022
 - Give to RTCA / EUROCAE by Feb 5, 2022
 - Give to committee to review by Jan 15, 2022 (redline)

Rebecca noted that the EUROCAE ToR is way out of date.

Steve asked if there were any objections to January 22 due date for MASPS 378A FRAC resolution. NO OBJECTIONS were registered by the Committee.

There was a question whether the statement about unknown RF limits should be kept in the ToR. Do we want to move forward with 2 MOPS as was proposed to separate the systems and RF issues, or do we keep them in one document since we have a way forward for the RF issue?

- When we started discussing this, a resolution was still unknown and needed to have this in the ToR to explain the “softness” of the schedule.
- Steve indicated that he was OK with removing that paragraph.
- The Committee agreed on removing additional references to schedule issues due to SARPs impasse.

Steve asked if people would support continuing with 2 MOPS. The stand alone security/messaging MOPS would ensure that it is portable outside applications in the 4.2-4.4 GHz band.

Rebecca asked if two MOPS could/would force 2 TSO's. Technically, a TSO can reference 2 MOPS.

Rich Adler said that there's not a problem with 2 MOPS referenced in a given TSO, but not sure the individual stand-alone MOPS are sufficient to be incorporated in their own TSO.

Steve pointed out that secure messaging and RF performance are not necessarily related. Secure messaging will continue to evolve. Want to be able to allow WAIC designers to use the latest and greatest.

Rebecca opened a poll "Do you prefer one MOPS or two MOPS in the ToR given that there is only one TSO/ETSO currently planned?"

Those who prefer one: 1/16

Those who prefer two: 4/16

No answer: 11/16

This was not resolved. Resolution was tabled to the next plenary AFTER the FSMP meeting, assuming there would be a firmer indication of the allowed emission limits.

It was noted that the Committee can resume work on the MOPS within the boundaries of the existing ToR.

Anna moved to close the discussion as we were over time and suggested the discussion could continue by email.

ACTION: Anna will send out a Doodle to schedule some follow-on focused telecons to resolve this issue prior to the next Plenary.

ACTION: Rebecca will write up a summary about why we weren't have meetings

ACTION: Anna will send out second Doodle to schedule the follow-on plenary

Agenda Item 7: New Business

No new business was raised by the committee members.

Agenda Item 8: Review Plan for Next Meeting

Planning for the next meeting will occur by email.

Agenda Item 9: Review Action Items

- Update and send out minutes from Nov 2020 – Redman
- Send out a Doodle to schedule some follow-on focused telecons to resolve ToR(s) before the next Plenary. - Guégan
- Write up a summary about why we weren't have meetings - Morrison
- Send out second Doodle to schedule the follow-on plenary - Guégan

The meeting adjourned at 12:23 PM EDT.

Respectfully submitted by David Redman, Secretary SC-236.

Attachment A: Attendance List

	Name	Org
X	Uwe Schwark	Airbus
X	David Redman	AVSI
	Marshall Gladding	Boeing
X	Sanjay Bajekal	Collins
X	Jeffery Cyr	Former Collins now lorge citizen
X	Gregory Cederlind	Crane
	Christian FLEURY	DGAC
	Alexander Guignot	DGAC
	Moisés Bismarck Medina de León	EASA
X	Sonia Heemstra de Groot	Eindhoven University of Technology
X	Ingas Niemegeers	Eindhoven University of Technology
X	Shunichi Futatsumori	ENRI
X	Anna Guegan	EUROCAE
X	Rich Adler	FAA
X	Shohreh Safarian	FAA
X	John Flores	FAA SEA-AED
X	Kees Nuyten	Fokker Elmo
X	Massimiliano D'Aurelio Podrini	Leonardo
	Steffen Mersch	Lufthansa Technik
X	Jaco Verpoorte	NLR
	Kelly Peters	Piper Aircraft
X	Rebecca Morrison	RTCA
X	Steve Rines	Safran
X	John Walker	Thales
	Illia Kachan	Volocopter
X	Jon Fifield	Astronics AES
X	Leonardo Crespim	Volocopter
X	Martin Richter	Diehl Aerospace
X	Mauro Pagliarini	EASA
X	Peter Walther	Airbus
X	Samh Menshawy	Thales
X	Thomas Meyerhoff	Airbus
X	Vidyut Patel	FAA