



EUR 224-18/WG96-044
RTCA Paper 225-18/SC236-019

17 September 2018

Minutes of Meeting
EUROCAE WG-96 / RTCA SC-236 Joint Meeting #09
Standards for Wireless Avionics Intra-Communication (WAIC) Systems
within 4200 - 4400 MHz

Date	Tuesday Aug 21 – Friday Aug 24, 2018
Place	RTCA, Inc 1150 18th St NW Suite 910 Washington, DC 20036
Venue	RTCA, Inc
Host	RTCA, Inc
Contact Persons EUROCAE RTCA	Anna Guégan <anna.guegan@eurocae.net > Phone: +33 1 40 92 79 31 And Rebecca Morrison rmorrison@rtca.org +1 202-330-0654

AGENDA

Plenary Session Tuesday August 21, 2018

1. Welcome/Administrative Duties/ EUROCAE and RTCA Policy Statements
2. IPR / Membership Call-Out and Introductions
3. Acceptance of Meeting Minutes for the Fourth Joint Plenary of SC-236/WG-96 held at RTCA in May 2018 (Toulouse, France)
4. Review Plenary Agenda and Sub-working Group Schedule including delivery schedule for MASPS and MOPS
5. Break into Sub-working Group meetings when plenary business complete.

Plenary Session Friday August 24, 2018

6. Reports of the Sub-Working Groups
7. Status and review of the Draft Paper MASPS (dedicated for ICAO Job Card)
8. Review of Special Committee Schedule
9. New Business Discussions
10. Review of Action Items
11. Plan for next meeting

Adjourn

Attachments (on RTCA web-folder):

- Attachment A : Attendance List (File: Attendance_August_Plenary.xlsx)
- Attachment B : Action List (SC-236, WG-96 WAIC) – status August 2018

Appendix:

- Appendix 1: Notes and Reports of SWG 2 (and 3,4) discussions.

Minutes of Meeting: August 21st (start 09:00pm local time)

Agenda Item 1 - Welcome

Rebecca Morrison (RTCA) welcomes the group to the Plenary Meeting. Welcome from EUROCAE Co-chair WG-96 Robin Davies (RD), who will run this Joint Meeting. Co-Chairmen RTCA-SC236 Michael Franceschini (MRF) and the Secretary of the Joint SC/WG Peter Anders (PA) joint the meeting via WebEx.

Rebecca Morrison, host of the meeting venue, provides information on the location, security, webex access, etc.

The list of attendees (direct and via webex) is contained in Attachment A.

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

Rebecca Morrison (RM) reads the RTCA's "Proprietary Policy" and some general information on RTCA / EUROCAE membership modalities are amended by Anna Guégan.

RM referred to the standard presentation SC236_WG96_EUROCAE_RTCA.pdf – RTCA workspace:

http://workspace.rtca.org/apps/org/workgroup/sc236_standards_for_waic/documents.php?folder_id=5608

This meeting is considered as a plenary meeting.

Brain Verna acts as the FAA representative (Government Authorized Representative), replacing Paul Siegmund as DFO. This change was approved by the PMC in June 2018.

Agenda Item 3. Acceptance of Meeting Minutes for the last Joint Plenary of SC-236/WG-96 held in May 2018 (Toulouse, France)

RD asks the Group whether there are comments on the MoM. There are no comments. The MoM has been accepted, and is deemed being approved. See link:

https://workspace.rtca.org/apps/org/workgroup/sc236_standards_for_waic/documents.php?folder_id=7740

The Plenary Action List (see Attachment B: Excel-file; Action List) has been reviewed:

#21: Closed; FCC petition text drafted; it's up to the Members to forward it to the FCC (envisaged target date End of November)

#27 and #28: Closed; MOPS layout and initial drafting have been assigned to SWG-2

#29: Closed - Answered by Brian Verna: *The answer is there is no minimum, the regulation says "do not be careless". The practical experience and feedback received was that a safe height of about 100 ft is normal considering rotorcraft operations. This of course can vary based on operational requirements.*

#30: kept open: RM will further check available sources explaining formal administrative RTCA acronyms.

Agenda Item 4. Review Plenary Agenda and Sub-working Group Schedule including delivery schedule for MASPS and MOPS

MF and RM reported about the RTCA PMC meeting on 21st June 2018. The proposed changes on the ToR for SC-236 were accepted, only the target dates for deliveries have been adjusted by the PMC. The MASPS DO-yyy is now on January 2019 (right after our Joint meeting no.11 (Melbourne/FL), and the MOPS DO-XXX has been re-scheduled to October 2021.

The TOR has been uploaded here:

https://workspace.rtca.org/apps/org/workgroup/sc236_standards_for_waic/documents.php?folder_id=7444

Before splitting into two breakout sessions, RD requests the SWG-leaders to explain the objectives for these sessions.

- SWG-1 plan for the week (Sanjay & Thomas):
 - SWG#1 will work on the document content of **DO-XXX Minimum Aviation System Performance Standard (MASPS) for Coexistence of Wireless Avionics Intra-Communication Systems within 4200-4400 MHz.**
 - Thomas opened the current draft of the MASPS, summarizing all important technical criteria for protections and its challenges for testing and verification procedures.
 - One challenge is that specification of Radio Altimeters (RAs) is not addressed completely by the TSO-87a, but it is extended usually by OEMs (Airbus, Boeing, etc) installing RAs. There are many questions to select typical power spectrum, and wave forms. The SWG-1 is in contact with experts on OEM side and on supplier side in order to determine a suitable reference for these still open parameters.
 - The objective of this week is to elaborate the draft of the MASPS to enable sending it to the ICAO/FSMP by next week. The ICAO/FSMP will meet in Mid-September. The draft of the MASPS should be made available for their review, even if many "TBDs" will remain in the document. The benefit for SC-236 will be to get an early feedback from ICAO/FSMP about their expectations and to which level the MASPS is satisfactory to close the FSMP JobCard.
 - Just as a reminder, the main purpose of the MASPS is to enable amending ICAO Annex 10 in order to include a new SARP for the usage of Wireless Avionics Intra-Communication (WAIC) as an aeronautical communication means, in the frequency range within 4200 - 4400 MHz as already permitted for Radio Altimeters (RA). The MASPS shall provide conditions to allow the coexistence between RA and WAIC on aircraft in close distances, without impacting the existing design and installation conditions of RAs.

- SWG-2, joint by members of SWG-3 & 4: Plan for the week (Steve Rines SR):
 - SR explains, the main objective is to continue collecting requirements of selected use cases for WAIC network based applications. The Requirements Traceability Management Tool "CASCADE", as presented during previous meetings, is still used for this process.
 - The collection of requirements and its traceability to general certification requirements addressing safety and cyber security will be presented during the plenary summary on the following Friday.
 - Members of SWG-3 and SWG-4 joint the SGW-2 activities, forming SGW-9 (2+3+4).

At 11:30am the first four agenda items are completed. **Then, the meeting is splitting into two separate sessions of Sub-working groups.**

On Wednesday, 22nd, at 9:00am, **Andy Cebula, Executive Director (Interim) at RTCA** introduced the new **RTCA policy** and the resulting relation with the FAA. He also mentioned that RTCA is in process to elect a new RTCA President. For that reason a new Board of Directors were elected recently, it is chaired by Steve Brown, National Business Aviation Association. Other members are from Rockwell-Collins, Honeywell, AFA, etc.

The group asked about the process of launching a new RTCA-SC based on requests from industry. Mr. Cebula answered that he sees RTCA as a moderator between FAA and the Industry, and will carry arguments of to the FAA considering the interests of the Industry.

The chairmen of SC236/WG-96 thank for this helpful information on RTCA organization.

Wednesday, at 10:00am the meeting continues into two separate sessions of Sub-working groups.

Agenda items 5. - Reports of the Sub-Working Groups (24th August 9:00am)

SWG-1 (Sanjay, Thomas):

The MASPS draft has being finalized up to the maturity level to submit it to the ICAO/FSMP. To enable the entire group to review it, Thomas opened the current document¹, and presented the parts of interest. Chapter §1 was skipped because it contains very general introductions only.

After that, following schedule is planned:

- 30. August Comments from SC-236 members.
- 31. August formal closure of the first official draft, and submitting to ICAO/FSMP (for their review)

Sanjay added that the SWG-1 will continue today (after the formal adjourn of the plenary meeting) to work on some fine-tunings. In order to progress appropriately, the SWG-1 continues having WebEx meetings until the next plenary meeting in October.

"MASPS Draft SC236 WG96_v4_for_comments.docx" is available on RTCA webspace:

https://workspace.rtca.org/apps/org/workgroup/sc236_standards_for_waic/documents.php?folder_id=w228

Note: Comments shall be sent to Sanjay & Thomas.

SWG-2, joint by members of SWG-3 & 4 (SR):

SR presents the work results of the week. **Appendix 1 of the MoM** contains the list of achievements and SWG-2 internal actions.

SWG-2 continued working on the selected six real aviation applications (use cases of avionics functions communicating via WAIC).

SWG-2 had also agreed on a timeline of the process of requirements capturing.

Agenda Item 7. Status and review of the Draft Paper MASPS (dedicated for ICAO Job Card)

This topic has been discussed already – see Agenda item 5 above.

The plan to release the document remains as decided already during the last Plenary Meeting in May 2018:

The next meeting (October/Tokio) is dedicated to review remarks/comments from ICAO/FSMP and to finalize the document enabling RTCA-FRAC.

The FRAC will be completed during late October/November/December time frame. The January meeting (Melbourne/FL) will then be dedicated for SC-236 response resolution of the FRAC. The MASPS DO-XXX² will be ready to propose publication, and will enable ICAO to amend Annex 10 based on a formal reference to MASPS DO-XXX.(see FSMP JobCard).

After that achievement, the whole SC will focus on the MOPS, based on the achievements of SWG-2 (and 3, 4) at this date.

Agenda Item 8. Review of Special Committee Schedule

Captured already by agenda items above.

Agenda Item 9 . New Business Discussions

The RTCA Policy relation to FAA has been discussed on Wednesday morning. No other points have been raised.

¹ Actually, this MASPS review was done after Steven provided the summary on SWG2 achievements.

² DO-xxx will become a real 3-digit RTCA doc-number (already during FRAC).

Agenda Item 10. Review of Action Items

See Attachment B: Action List (SC-236-WG-96 WAIC) – status August 2018 (uploaded by Secretary).

Agenda Item 11. Plan for next meeting

The next Joint meetings are planned:

- October 9th-12th – 10th joint meeting Tokyo, Japan
- January 14th-18th 2019 – 11th joint meeting - Melbourne, FL

The meeting in Tokyo should facilitate having rooms for **two break-out sessions** in similar way as during the current meeting. It is expected having ca 15 participant onsite in Tokyo.

The next meeting after Melbourne should be scheduled in April 2019 (preferred week **8th to 11th April**). Steffen (LH-T) will check, whether LH-T (Hamburg or Frankfurt) could host this meeting. Maybe, as a backup, Kevin Hallworth (EASA) could be asked being the host at EASA headquarter in Cologne.

Adjourn (Friday 12:00)

Chairman Robin Davies thanks participants for fruitful contributions and closes the Meeting.

Complied by Peter Anders

Secretary of Joint SC-236/WG-96

Approved by Robin Davies

Co-Chairmen of SC-236/WG-96 (EUROCAE)

Approved by Michael Franceschini

Co-Chairmen of SC-236/WG-96 (RTCA)

Appendix 1: Notes and Records of session SWG-2 joint by -3, and -4 ³

20-24 August 2018 / Washington DC

ACTION: Rines - Update Cascade Requirements guide to reflect that Cascade requirements management tool is now publicly accessible at www.cascaderequirements.com. DUE: 30 Aug 2018

ACTION: Rines - Update Cascade Requirements guide to specify that document templates must be saved as .dotm and documents should be saved as .docm to preserve Cascade QAT icons and functionality. DUE: 30 Aug 2018

ACTION: Rines - Revise Cascade RM document templates to add Design Assurance Holder (DAH) to the allocatedTo enumerated type. DUE: 30 Aug 2018

ACTION: Rines - Review MOPS outline against now planned SC-236 artifacts. Update Cascade requirements guidance to reflect artifacts and relationships. DUE: 10 Sep 2018

ACTION: SWG-2/3/4 - Assign VerificationMethod to all requirements defined in Use Cases, STPAs and FRDs. (Action is needed to identify required test procedures in MOPS.) DUE: ??

ACTION: Call/Nyikos - Review and expand STPAs for existing use cases. DUE: (Goal) 10 October 2018

ACTION: Rines - Create template/outline for Equipment Requirements Document (ERD) in line with MOPS. DUE: 30 Sep 2018

ACTION: SWG-2/3/4 - For each use case create an FRD that captures use case and STPA requirements. DUE: ??

ACTION: Rines - List all in process or planned WAIC use cases, STPA reports and Functional Requirement Documents (FRD). Define which documents are complete, in-process or to-do and define dependencies. (List will be used to establish task assignments in SWG-2/3/4.) DUE: 7 September 2018

REQUIREMENT: When a WAIC network is used to replace a wire in an existing system then the WAIC network shall have equivalent trust and availability to the wire it replaces.

Martin Call presented the interesting concept for resolving security issues associated with WAIC by identifying the specific security threats that result when replacing a wire with wireless. Table of security vulnerabilities was presented, augmented with specific references to requirements in DO-356A provided by Siobvan Nyikos.

ACTION: Call - Draft concept paper that associates WAIC DAL (reliability = 1/error rate and jamming WAIC generates an error). DUE: 10 Oct 2018

ACTION: Rines - Write whitepaper describing jamming as a safety issue, not a security issue. Describe jamming as a reliability issue that constrains WAIC implementations for use with non-critical applications unless additional steps are taken in design to improve reliability (reduce probability of jamming). Whitepaper is intended to start a discussion on what WAIC features would be required to enable higher integrity applications. DUE: 10 Oct 2018

ACTION: Cyr - Review MOPS outline. Expand outline as appropriate for radio characteristics and environmental based on other MOPS docs. DUE: 10 Oct 2018

Siobvan Nyikos provided a DAL/SAL overview.

We should expect an FAA AC that references DO-356 for compliance to special conditions associated with security.

ACTION: Rines - Define deliverables and timeline for SWG-2/3/4 MOPS elements. Assign tasks to working groups and get commitment on tasks and schedule. Define requirements flow-down to determine the requirements needed to perform each task in aid of scheduling. DUE: 10 Oct 2018

ACTION: Rines - Review SWG-2 running notes to integrate previously discussed requirements into current documents. DUE: 30 Sep 2018

ACTION: Call - Define why specific WAIC security features belong at specific OSI stack layers. DUE: Nov 2018

³ These following notes were compiled by Steve Rines, and have being copied in this MoM.

ACTION: Rines - Update Tire Pressure Use Case to satisfy comments embedded 180822 version.

DUE: 1 Sep 2018

--End of Notes--