



EUR Paper No: 055-25 WG119-38
RTCA Paper No: 014-25/SC239-048

Saint Denis, 27Sep2024
Washington, 27Sep2024

**EUROCAE WG-119 Plenary Meeting #16 “Radar Altimeter” /
RTCA SC-239 Plenary Meeting #16 “Low Range Radar Altimeter”**

DATE: 27 Sep 2024

TIME: 9 – 11 AM EDT (USA)

PLACE: Hybrid (Washington DC / Online)

CONTACTS:

Jean-Luc Robin (Jean-Luc.robin@airbus.com)
Seth Frick (Seth.Frick@honeywell.com)
Sai Kalyanaraman (Sai.Kalyanaraman@collins.com)
Barbara Clark (Barbara.clark@faa.gov)
Rebecca Morrison (rmorisson@rtca.org; (202) 330-0654)
Mark Watson (Mark.Watson@eurocae.net)

AGENDA

1. Welcome and Introductions.
2. EUROCAE/RTCA presentations (Administrative Reminders – Rebecca/Mark).
3. Validation of the previous Plenary MoM (14thplenary) (Sai).
4. Working Group Reports (Timo, Dave, Eddie, Kim, Miles, Sophia).
6. Review of Schedule and Scope for MOPS development
7. Review and approve Terms of Reference Change for SC-239.
8. Discussion of Future Meetings.
5. Discussion of information received from members of the public.
9. Other Business.
10. Review of Action Items.
11. Adjourn.

PARTICIPANTS –

<u>Name</u>	<u>Organization</u>
Barbara Clark	FAA
Behlul Poonawalla	FreeFlight Systems
Clay Barber	Garmin
David Redman	AVSI
Donny Morrow	ALPA
Doug Hyslop	CTIA
Ed Hahn	ALPA
Eddie Straub	Garmin
Gary Berz	ECTL
Hang Li	FreeFlight Systems
Helmut Brutscher	AIRBUS Helicopters
Hussain Al-Sadi	Boeing
Janet Young	FCC
Jean-Luc Robin	Airbus
Jim Williams	Aura Systems
Josep Giné	ATR
Karan Hofmann	RTCA
Kim Kolb	Boeing
Luis Alves	Embraer
Marie Hogestad	FAA
Mark Watson	EUROCAE
Matt Harris	Boeing
PAGLIARINI Mauro	EASA
Rebecca Morrison	RTCA
Rebecca Swaszek	US DOT Volpe
Rob Steinle	FAA
Sai Kalyanaraman	Collins Aerospace
Seth Frick	Honeywell
Sharukh Virani	FreeFlight Systems
Shunichi Futatsumori	ENRI
Sophia THIZON	Thales SIX
Stephane TALLET	Thales
Ted Peterson	Collins
Timo Warns	Airbus
Torben	GSMA
Tuck Poon	Nokia
Wes Google AAL	American Airlines

Agenda Item 1: Welcome, Introductions and Administrative Remarks

Jean-Luc Robin and Seth Frick welcome the group and the group did a round of introductions.

Agenda Item 2. EUROCAE/RTCA presentations (Administrative Reminders)

Rebecca and Mark Watson provided the RTCA and Eurocae policies and administrative reminders.

Agenda Item 3. Validation of the previous Plenary MoMs

Sai presented minutes from the previous plenary and obtained approval from the group on the same.

Agenda item 4 : Working Group Reports

Jean Luc went through the list of SG's with updates to share at this plenary and handed it over to Kim Kolb who leads SG2.

Kim Kolb indicated that SG2 did not have regular meetings and indicated that SG2 continued to monitor 5G and other deployments in the surrounding bands globally. He also indicated that there was a slowing down of deployments as of that time and that most deployments fell in the 3.4 – 3.8 GHz band. There was no new info on power levels different from what they were in the past.

SG2 was also tracking the WRC-27 AI for IMT in the 4.4 – 4.8 GHz band (was not directly applicable to region 2) and also the WRC-31 preliminary Agenda Item (AI) to remove the aeronautical restriction in the 3.4 – 3.7 GHz band. SG2 will continue to monitor future global deployments in the bands around the radio altimeter.

Rebecca Swaszek (standing in for Miles Bellman of SG3) provided the next update. She indicated that SG3 had Half-day meetings over three days at end of August and accelerated development of relevant detailed equipment test procedures including required test conditions and required test equipment. She then indicated that requirements and test procedures were mature enough to integrate into MOPS master document. SG3 decided that test procedures would be high-level and reference ITU-R or ANSI/IEEE guidance documents that provide detail on conducting the tests for both FMCW and pulsed RA designs. At this time, Ted Peterson from Collins asked about emissions limits in areas under Japanese jurisdiction. Shunichi Futatsumori from ENRI – Japan was on the call and stated that MIC (telecom regulatory authority) in Japan will go ahead and update the Japan regs in line with what the final MOPS says once the MOPS is done. He added that MIC goes through regular updates (as applicable) based on a six month cycle.

Eddie Straub, chair of SG4 presented an update on his SG activities. SG4 continued to have regular meetings with, at least, a biweekly cadence since the last plenary. They also held two separate multi-day intensive working sessions since the previous plenary. Some of the key progress items were continuing activity towards completion of baseline full MOPS draft for SG4 scope including complex flight test scenarios. SG4 initiated activity on the Validation matrix and complex validation items were identified. It was highlighted that the larger scope of MOPS drafting work was under SG4 responsibility and a sizeable number of requirements / test procedure validation was necessary for all indicated RA classes. Next steps for SG4 included Finalization of planning and scope of validation needs for SG4 material and working towards completion of baseline full MOPS draft for SG4 scope and readiness for RAC.

Dave Redman provided the SG5 update. He indicated that requirements have achieved stasis (pending inputs from SG7) and was based on proposals from about 5 RA manufacturers. An initial draft of test procedures have been captured, validation matrix activity has been initiated and all ITM requirements were identified as complex validation items. Main SG5 activities included refinement of test procedures and harmonization of requirements with SG6, Specifying subset of tests for environmental test procedures and consolidation of ITM proposals into one single ITM. Next steps identified include obtaining SG consensus on maturity of transceiver req material for incorporation into a RAC document and estimating duration of validation effort and associated dependencies.

Timo Warns (chair of SG6) presented an SG6 overview. Regular monthly cadence has been observed by SG6. Progress was made towards alignment of requirements towards producing an integrated MOPS master document for RAC. Activity has been initiated towards revision of main test procedure for test duration optimization. Work on Validation matrix compilation had begun and complex validation items were being identified. SG6 activity during the week focused on discussing Verification procedures, approach to RFI detection indication and on whether rejection of excessive power signals was an optional requirement or if it was a baseline req. In view of getting ready for RAC, the next steps include revision of existing verification test procedures, identify and develop missing verification procedures, integrate the test procedures into the master document, iterate (as needed) and review the material to get ready for RAC,

Behlul Poonawalla and Sophia Thizon presented the SG7 updates. Regular SG7 meetings are being held and they will continue till RAC entry (at the very least). Key progress items include drafting all requirements and major test procedures (Reviews ongoing), activity initiated towards compiling the validation matrix, performed a first pass to identify complex validation items (Review Ongoing), obtained simulation results (from 4 RA Antenna Manufacturers) in view of identified "Target" antenna requirements. An early comparative analysis based on data received from antenna manufacturers has been compiled. This is intended to help ease development of the validation matrix.

Next steps include compilation of a consensus schedule with milestones, finalize Simulation Data results, Provide RAAM's consensus on the direction with prototype requirements, Continue revision of existing requirements and verification procedure for test duration optimization, Requirements Validation per SC-239 established guidelines, integration of requirements and verification procedures in master document and iterate upon the same till entry into RAC.

Agenda Item 6: Review of Schedule and scope for MOPS development

An overall view of the MOPS schedule and status was provided and the 239 leads indicated that process steps previously outlined for the MOPS development (including RAC and FRAC) will still be followed. The committee is fully engaged to Design a consensus Schedule with Milestones and with a delivery date (entering into OC/FRAC) with a range of +/- X months with impact/assumption, risks, level of confidence and open points. The committee is also fully engaged in defining the Validation of the document to reduce risks in RAC, FRAC and TSO/ETSO.

Agenda Item 7: Review and approve ToR change for SC-239

The committee is not ready to make a motion to change the ToR at this point and is continuing to work with the PMC and the TAC to come up with an update to the ToR. Torben Themsen (GSMA) had a question about the ToR update. He asked if the committee was working slightly outside the lines of current ToR. Seth Frick stated that this was not the case and indicated that we are working per the original ToR and added that the new ToR update may happen before the next plenary (and could be accomplished through a virtual plenary).

Agenda Item 8: Discussion of Future Meetings

1. Plan for an in person meeting – Week of Dec 9th , 2024 (TBC).
2. SC-239 meeting and plenary – Week of 27Jan2025 – Brussels, Europe.
3. SC-239 meeting and plenary – US - Week of Apr 28th 2025 – location (Likely Dallas).

Agenda item 5: Discussion of Information received from members of the public

No new information received.

Agenda item 9: Other Business

None

Agenda item 10: Review of Action Items:

The existing action item register was reviewed for updates and the following new actions are captured and/or tracked in the action item register:

- 1) **Action Item 13-2:** Agenda Item 4 from 13th plenary (consider motion to close DO-399 OC/FRAC) to be tabled and carried as an action that will be captured (by Sai) in Action Item register for regular updates in plenary sessions. **Action open.**
- 2) **Action Item 14-2:** Each SG lead to execute the defined RAC process according to the finalized schedule. **Action Closed** – Group agreed to Follow Standard RAC Process as Defined by Committee
- 3) **Action Item 15-1:** New Action Item: Committee chairs to coordinate receipt of committee member inputs on the ToR and define a plan to discuss and resolve all inputs received prior to the next planned plenary in September. **Action Closed** – group to follow defined process to determine validation Schedule (see new Action Item 16-1).
- 4) **Action Item 16-1:** Committee chairs to coordinate development of MOPS schedule (up to OC/FRAC entry) including validation.

Agenda item 11: Adjourn.

The meeting was adjourned (at 10:38 AM US ET).