**Minutes of
EUROCAE WORKING GROUP 82 (WG-82) (Meeting #67)
"New Air-Ground Data Link Technologies"
and
RTCA SPECIAL COMMITTEE 222 (SC-222) (Meeting #57)
"Aeronautical Mobile Satellite (Route) Services (AMS(R)S)**

Date	*9th July 2024*
Place	*Virtual Meeting*
Venue	*RTCA – Webex*
Hosted by	RTCA

Participants:

Name	Company
Hiroshi Okochi	Jransa
Karan Hofmann	RTCA, Inc.
Radek Zaruba	Honeywell
Ravi Jain	FAA
Mike Hooper	Iridium
Adam Sarhage	Garmin
Mark Watson	EUROCAE
Marius du Plessis	Thales
Ryan Mustoe	Boeing
Darrell Andregg	Collins
Shawn Solomon	Collins
Andrew Ives	Viasat
Spencer Fry	Garmin
Shawn Mason	Collins
Seyed Rastaghi	NAV Canada
Johan Gericke	Thales

DOCUMENTS

Agenda Item	Title	File name

PRESENTATIONS

Agenda Item	Title	File name

All documents and presentations will be uploaded on the according RTCA and EUROCAE repository (in the folder of September Plenary meeting).

Minutes

1) **Welcome, Introductions, Administrative Remarks by Leadership**

   Radek Zaruba welcomed the group.

2) **RTCA/EUROCAE Opening Material**

   Karan Hoffman and Mark Watson presented the RTCA and EUROCAE opening material.

3) **APPROVAL OF THE AGENDA**

   Radek Zaruba introduced the proposed agenda of the RTCA SC-222/ EUROCAE WG-82 joint plenary meeting. The final agreed agenda looks as follows:

   AGENDA

   Joint SC-222 / WG-82 Plenary
   1. Welcome, Introductions, Administrative Remarks by Leadership
   2. RTCA/EUROCAE Opening Material
   3. Review Agenda
   4. Review Minutes from previous meeting and Actions
   5. **Present and discuss MOPS DO-262G/ED-243D and MASPS DO-343E/ED-242D status and the plan towards FRAC/OC.**
   6. **LDACS status and plans update.**
   7. **AMS(R)S TSO update discussion.**
   8. Any Other Business
   9. Review Actions from this meeting
   10. Set Future Meetings
   11. Adjourn

4) **Review Minutes and Actions**

   The minutes of the last meeting have been reviewed and the action item list has been updated accordingly. The result is summarized at the end of the present minutes.

   The minutes from the previous plenary meeting has been approved.

5) **MOPS & MASPS status**

   Inmarsat MOPS
   The group discussed the dual SATCOM switchover performance requirements.

Action: Radek to setup dedicated call to discuss the switchover performance requirements, mechanisms and operational impacts. Issue a Doodle poll to all the WG-82/SC-222 members. Invite also Kevin Kelley.

Action: Radek to send out the Switchover performance requirements and the new test procedures to the whole group for offline review. Comments may be discussed on the dedicated call above or resolved offline.

<u>Inmarsat MASPS</u>

Andrew briefly presented the changes done by Viasat.

Action: Radek & Andrew to share the redlined draft with the group for offline review (in pdf format and marked as draft).

<u>Iridium</u>

Mike briefly presented changes done on Iridium Certus appendices.

The redlined versions will be distributed and reviewed by dedicated working subgroups.

<u>Work Plan</u>

The plan agreed at the previous meeting, i.e. to aim for PMC in March probably requires launching FRAC/OC no later than **1st of November 2024**:

- FRAC/OC start: 1-Nov-2024
- FRAC/OC closed (+49 days): 20-Dec-2024
- FRAC/OC comments resolved & final edits done (+35 days / ~17 working): 24-Jan-2025
- PMC (+48 days): **13-Mar-2025**

This schedule is rather tight and particularly FRAC/OC comments resolution in 17 working days may get difficult if larger-than-expected number of comments is received. At the next plenary (early October?) we need to either confirm we're able to meet this schedule or revisit the ToR.

6) LDACS Status and Plans update (WG-82 only)

New task force being assembled to address some open issues on compatibility. The goal is to complete this work before DCIWG-8 in early 2025. The work on MOPS and MASPS will continue in parallel but probably the completion will be delayed by ~8 months.

There is still an appetite to revisit the ToR and issue new call for participation. The first step will be within LDACS subgroup during autumn 2024 and only once agreements are reached this will be brough to WG-82 plenary level for approval.

7) AMS(R)S TSO update discussion

Agreed to collect recommendations / suggestions for TSO update and provide them to Ravi, so that we can discuss them on the next call.

Action: Mike Hooper to solicit inputs from Viasat and others on the TSO updates and provide them to Ravi.

Action: Review AC 20-150B (SATVOICE) and consider AC 20-140 for datacom and consider whether any updates are needed on these.

8) Any Other Business

<u>HCATM and UAS C2 over SATCOM</u>

Discussions are ongoing, but no agreement within the industry yet on which groups should address related standardization.

Action: Add HCATM and C2 on the agenda for the next meeting where ToR updates will be discussed. We will only include these topics in ToR if there is a clear plan and "champion" for given topic.

9) **Review actions from this meeting**

The actions captured at the meeting were reviewed and agreed.

10) **Future Meetings and Next Steps**

Another plenary in September or 1st week of October to either approve documents for FRAC/OC or to change the ToR. (Because if we're not ready we'd have to aim for June 2025 PMC and that's already too big delay to not be reflected in ToR.)

Action: Radek to issue doodle poll for next meeting. Do not include 26th Sept (this is PMC meeting day).

Action items

RTCA SC-222/EUROCAE WG-82 52th meeting: 28.09.2021

Action#	Content	Responsible	Deadline	Status
A52-02	Inmarsat to provide a presentation on the possible interest in covering UAS C2-link at the next meeting.	Alan Schuster Bruce	Next meeting	Closed
A52-03	Guillaume De Bony De Lavergne (Airbus) to prepare a presentation on the possible impact on MASPS and MOPS of the automated data download for TRFD (Timely Recovery of Flight Data). **Discussion at Plenary February 2022:** AIRBUS will inform about internal discussion on strategy results when available. **April Meeting:** Unchanged **May/June/July/August/September Meetings:** Unchanged **April 2023:** Alan will check with Airbus if anybody will support RTCA / EUROCAE WG.	Alan Schuster-Bruce	Next meeting	Close

RTCA SC-222/EUROCAE WG-82 55th meeting: 8.02 -09.02.2022

Action#	Content	Responsible	Deadline	Status
A55-01	Present material on MOPS core part items to be updated	Honeywell (Radek Zaruba)	At the next meeting in March 2022	Closed
A55-02	Present details about 3 main items on Inmarsat MOPS (slide 4 on Radek's slide presentation); modifications will be captured in spread sheet for the discussion.	Honeywell (Radek Zaruba)	At next meeting in September 2022	Closed

A55-03	To identify which new material could be relevant for MASPS related to L-band Satcom C2 link. **September meeting:** Keep it open for next meeting. **June 2023:** Agreed to have a dedicated discussion on C2 strategy within WG-82/SC-222 and potential impact on MOPS, MASPS and ToR. **5-Oct-2023:** Based on the outcomes of the dedicated ad-hoc meeting held on 17-Jul-2023, the group agreed that no C2-related work is to be done by WG-82 / SC-222 at this stage.	Alan Schuster Bruce	Next meeting	Closed
A55-04	Ravi to send an invite on behalf sc-228 for having a discussion on the ISRA topic	Ravi	End of February	Closed
A55-05	To present material on CERTUS MOPS update	Michael Hooper	At the next Meeting in March 2022	Closed

RTCA SC-222/EUROCAE WG-82 56th meeting: 15.03.2022

Action#	Content	Responsible	Deadline	Status
A56-01	Define UAV service in DO-377 **September meeting.:** Unchanged. UAV service definition ongoing. Input from SATCOM experts needed. **5-Oct-2023:** See A55-03.	Alan Schuster-Bruce/Mike Hooper	Next meeting	closed
A56-02	Coordinate with WG-105 on support of work of SC-228 on UAV C2-link in L-band using SATCOM links. **April Meeting:** First coordinate between Alan, Mike and Armin about what WG-105 is covering. **May/June/July/September meetings:** Unchanged August meeting: Wait until Alan is back. **5-Oct-2023:** See A55-03.	Armin S.	asap	closed
A56-03	Check whether AMS(R)-S band can be used for C2-link **July/September meetings:** Unchanged **5-Oct-2023:** See A55-03.	Alan Schuster-Bruce	For next meeting	closed

A56-04	Check whether AMS(R)-S band can be used for C2-link **July meetings:** Unchanged **September meeting.:** SARPs in final review for C2 link. It clearly defines AMRS freqeuncies for C2 link. Expect a ICAO paper from Mike to be distributed on this subject. **5-Oct-2023:** See A55-03.	Mike Hooper	For next meeting	closed
A56-05	Provide chairman report on decision about UAV C2-link issue to PMC ➔ Update of TOR of SC-222	Alan/Mike	End of April 2022	Closed
A56-06	MOPS: Update Generic Section 1 about wording related to ATN	Radek	Meeting 13th April	Closed
A56-07	MOPS Core Part: Identify useful material to be kept (section 2 onwards). Especially dependencies to Appendices (D; E, F) have to be identified. **July meetings:** Unchanged **September meeting.:** New material on Appendices D and F for next meeting planned to be presented (Mike). **June 2023:** Agreed to close as there is no appetite to update core part in this update cycle.	Alan Schuster-Bruce/Mike Hooper	Next meeting	Closed
A56-08	Prepare presentation on end-to-end architectures for SATCOM (IP, ATN/IPS etc.)	Radek	Meeting 13th April	Closed
A56-09	Send presentations provided to Armin for the minutes	Alan/Mike	18th March	Closed
A56-10	Clarify mix up of ATS traffic (CPDLC), payload/mission traffic and C2-link com on the same satcom equipage level. **April Meeting:** Current TSO distinguishes between APC and ATS. Further to be considered in the committee. **July/September meeting:** Unchanged until C2-link issue discussed at next meeting. **5-Oct-2023:** See A55-03.	Al Malaga	Next meeting	closed
A56-11	Clarify with EUROCAE procedure on Change 1 for MOPS **April Meeting:** EUROCAE Task Sheets to be updated and require TAC approval.	Karan	asap	Closed

RTCA SC-222/EUROCAE WG-82 57th meeting: 13.04.2022

Action#	Content	Responsible	Deadline	Status
A57-01	Anna Guegan to coordinate on Task Sheet update for MOPS Change 1 to prepare for next TAC	Anna Guegan	21.04.2022	Closed
A57-02	Karan to provide updated working schedule to include MOPS change 1.	Karan Hofmann	14.04.2022	Closed
A57-03	Mike Hooper, to send updated MOPS change 1 material to Alan and Armin	Mike Hooper	14.04.2022	Closed
A57-04	Alan and Armin to upload MOPS change 1 material onto RTCA/EUROCAE workspace. May 2022 Meeting: WG-82: A new document item on change 1 can be added when TAC accepted Change 1 activity described in according Task Sheet. Same for RTCA. May 18th meeting: New folder on EUROCAE side will be created and material being uploaded.	Alan Schuster-Bruce/Armin Schlereth	21.04.2022	Closed

RTCA SC-222/EUROCAE WG-82 57th bis meeting: 03.05.2022

Action#	Content	Responsible	Deadline	Status
A57-05	Check ETSI Requirements in Table F-18 on lists of Harmonics, Spurious and Noise Reqs for Tx Power limits	Mike Hooper, Johan Gericke, Richard Tapp	Before May Meeting	Closed
A57-06	Change 1 paper Section 6.1: Check -43 dBc and -60 dBc source	Mike Hooper	Before May Meeting	Closed
A57-07	Upload Change 1 paper onto RTCA workspace. Give it a WP number	Mike Hooper	Before May Meeting	Closed

| A57-08 | **MASPS:** Annunciation to pilot for PVC voice failure within 90 seconds ➔ Is it end-to-end or only related to the SATCOM system? Some more discussion needed, whether only SSP part or whole end-to-end link. Desirable to keep it within SATCOM system boundary. Some more guidance in MASPS would be desirable. Text like "SATVOICE being available as the sole voice LRCS" required?

August meeting: For further discussion wait until Alan is back.
September meeting.: Part of the dual SATCOM discussion.
April 2023: Currently there is no requirement in ICAO AMS(R)S SARPS draft for voice availability monitoring. Action closed until / unless such requirement arises. | Alan/Mike | At next Meeting | Closed |

RTCA SC-222/EUROCAE WG-82 58th bis meeting: 18.05.2022

Action#	Content	Responsible	Deadline	Status
A58-01	Clarify with ETSI about test parameters for in-band blocking characteristics (ETSI 301 473 - Table 22)	Richard Tapp	Until July Meeting	Closed
A58-02	Radek to make a check on the mathematical correctness of the 25 seconds value as part of the proposed RSP160/20 term. **July meeting:** Proposal was RSP160/15 among several other options presented to SC-214/WG-78. No final decision at SC-214/WG-78 Plenary in June taken. Will be further discussed in SC-214/WG-78.	Radek Zaruba	Before June Meeting of SC-214/WG-82	Closed

RTCA SC-222/EUROCAE WG-82 69th bis meeting: 14and15.09.2022

Action#	Content	Responsible	Deadline	Status
A60-01	Prepare a presentation on outcome of SESAR Solutions 77/107 work	Radek Zaruba	Next meeting	Close
A60-02	Contact AIRBUS on Table E-5 on valid combinations of ACD services provided by an AES. Clarify whether triple stack will be supported by AIRBUS	Radek/Gary Colledge	OBE	Closed

A60-03	Distribute updated MOPS INMARSAT material **April 2023:** Updated versions provided in September 2022 and March 2023 through AerOpus.	Radek Zaruba	30.09.2022	Closed
A60-04	Comment on distributed updated MOPS INMARSAT material and send it to SC-222 and WG-82 chairs and secretariat.	all	18.11.2022	Closed
A60-05	Send group discussion results related to TAC DP 181 on common MOPS proposal for final review before sending it to Anna Guegan.	Armin	16.09.2022	Closed
A60-06	Review summary of WGs discussion results on TAC DP 181. (TAC proposal to develop new CMU standards.) **April 2023:** In September 2022 Armin collected feedback from the group and shared it with the TAC.	all	30.09.2022	Closed
A60-07	Invite EASA TAC member for the next meeting **April 2023:** There may be a joint meeting organized in the future organized by TAC.	Armin	30.09.2022	Closed
A60-08	Radek to prepare short presentation to explain header compression schemes **April 2023:** Radek Zaruba presented single slide explaining the different types of header compression in SB-S.	Radek	Next meeting	Closed

RTCA SC-222/EUROCAE WG-82 62nd meeting: 4-April-2023

Action#	Content	Responsible	Deadline	Status
A62-01	Assess impact of the B2 SPR RCP/RSP updates on MASPS and update accordingly.	Radek	EOY 2023	Close
A62-02	Consider removing the "Priority IP" service placeholder from figure E-2 in the MOPS. **5-Oct-2023:** Inmarsat OK to remove the service. Action taken over by Radek to assess the impact on MOPS and MASPS and propose revisions.	Radek	EOY 2023	Close
A62-03	Review the MOPS Appendix E changes in the DO-626 working version distributed by Radek.	All	19th of May 2023	Close

RTCA SC-222/EUROCAE WG-82 working session: 6-June-2023

Action#	Content	Responsible	Deadline	Status
WS-01	Organize dedicated C2 working session to discuss SC-222 / WG-82 strategy towards C2 and potential impact on MOSP, MASPS and ToR. (Propose some dates in July-September timeframe.)	R.Zaruba	End of June	Closed
WS-02	Update MOPS appendix E test procedure sections and address any other remaining "To be done" items in the review sheet. Distribute the redlined MOPS and review sheet to the group for review.	R. Zaruba	End of July	Closed
WS-03	Organize next working session (September / October timeframe) to review MOPS appendix E IPS test procedure changes. (Candidate for FRAC/OC release.) **5-Oct-2023:** Superseded by A63-02 below.	R. Zaruba	End of August	Closed

RTCA SC-222 meeting #53 / EUROCAE WG-82 meeting #63: 5-October-2023

Action#	Content	Responsible	Deadline	Status
A63-01	Review WG-82 ToR for the MOPS and MASPS updates and propose changes to reflect: 1) Possibly slight delay on Inmarsat IPS updates. (Probably not needed if we don't delay more than 6 months.) 2) No Iridium IPS updates. (Any work content change would require ToR update and approval.) 3) Remove any C2 work. **13-Dec 2023 Plenary:** EUROCAE ToR don't need to be modified.	Radek Zaruba	EOY 2023	Close
A63-02	Radek to reach out to key participants and agree the date and time for the next working session to review IPS updates in MOPS. (Possible date 9th-November) **13-Dec 2023 Plenary:** Closed – the meeting was held.	Radek Zaruba	End of October 2023	Closed

RTCA SC-222 meeting #55 / EUROCAE WG-82 meeting #65: 13-December-2023

Action#	Content	Responsible	Deadline	Status
A65-1	Add on the agenda of the future working sessions the consideration on if and how the future TSO updates could reflect the "(Enhanced) Service Sets" supported by the AES.	Radek	Jan-2024	Closed
A65-2	Propose WG-82 ToR updates to cover the DO-343F and DO-262H versions planned for March 2026 per SC-222 ToR so that the EUROAE and RTCA work stays aligned. **[17-Apr-2024 plenary]** Not to be reflected now – EUROCAE not necessarily looking so far to the future. Will be done once we go for OC with the current updates. **[9-July 2024]** Confirmed agreement that WG-82 ToR will be updated once current work will be completed. We keep this action open to remember to update the ToR when we're ready for OC with current updates.	Radek, Mark	Jan 2024	**Open**
A65-3	Issue a Doodle poll to find a slot for the review working session in the week starting 29th of January (2024). **[17-Apr-2024 plenary]** Superseded by events.	Radek	EOY 2023	Close

RTCA SC-222 meeting #56 / EUROCAE WG-82 meeting #66: 17-April-2024

Action#	Content	Responsible	Deadline	Status
A66-1	Radek to Issue a Doodle poll for the next plenary. (Candidates: Week of 17th June except for Wednesday or 1st half of July except for the week around 4th of July.)	Radek	Mid May 2024	Closed
A66-2	Mike and Radek to discuss how to combine the edits in Inmarsat and Iridium parts. **[9-July-2024]** Keep the action open. Need to agree on how to combine MASPS.	Mike, Radek	May 2024	**Open**
A66-3	Add LDACS ToR update on the agenda of a WG-82 or a plenary meeting in July-August timeframe. **[9-July-2024]** Discussed under agenda item 6.	Radek	June 2024	Closed
A66-4	Keep TSO on the agenda for the next meeting. Ravi will present examples of how the group could be involved in TSO work.	Mike, Ravi	June 2024	Closed
A66-5	Radek to provide updates from the EUROCAE symposium and other events where the HCATM gets discussed. **[9-July-2024]** No major updates.	Radek	June 2024 (next plenary)	Closed

RTCA SC-222 meeting #57 / EUROCAE WG-82 meeting #67: 9-July-2024

Action#	Content	Responsible	Deadline	Status
A67-1	Radek to setup dedicated call to discuss the switchover performance requirements, mechanisms and operational impacts. Issue a Doodle poll to all the WG-82/SC-222 members. Invite also Kevin Kelley.	R. Zaruba	30-Aug-2024	**Open**
A67-2	Radek to send out the Switchover performance requirements and the new test procedures to the whole group for offline review. Comments may be discussed on the dedicated call above or resolved offline.	R. Zaruba	31-Jul-2024	**Open**
A67-3	Radek & Andrew to share the redlined draft with the group for offline review (in pdf format and marked as draft).	R. Zaruba A. Ives	31-Jul-2024	**Open**
A67-4	Mike Hooper to solicit inputs from Viasat and others on the TSO updates and provide them to Ravi.	M. Hooper	Before next plenary	**Open**
A67-5	Review AC 20-150B (SATVOICE) and consider AC 20-140 for datacom and consider whether any updates are needed on these.	All	Before next plenary	**Open**
A67-6	Add HCATM and C2 on the agenda for the next meeting where ToR updates will be discussed. We will only include these topics in ToR if there is a clear plan and "champion" for given topic.	R. Zaruba	Calling notice for next plenary	**Open**
A67-7	Radek to issue doodle poll for next meeting. Do not include 26th Sept (this is PMC meeting day).	R. Zaruba	31-Jul-2024	**Open**