



RTCA Paper No. 264-23/SC222-119
 EUROCAE EUR. 345-23 / WG82-123

Washington, 5th October 2023
 St Denis, 5th October 2023

**Minutes of
 EUROCAE WORKING GROUP 82 (WG-82) (Meeting #64)
 “New Air-Ground Data Link Technologies”
 and
 RTCA SPECIAL COMMITTEE 222 (SC-222) (Meeting #54)
 “Aeronautical Mobile Satellite (Route) Services (AMS(R)S)”**

Date	5th October 2023
Place	Virtual Meeting
Venue	EUROCAE – Webex
Hosted by	EUROCAE

Participants:

Name	Company
Alan Schuster-Bruce	INMARSAT
Hiroshi Okochi	Jransa
Karan Hofmann	RTCA, Inc.
Radek Zaruba	Honeywell
Ravi Jain	FAA
Shawn Solomon	Collins
Mike Hooper	Iridium
Armin Schlereth	DFS
Mark Watson	EUROCAE
Bernhard Heindl	Frequentis
Ben Zhusng	Iridium

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 Special Committee Leadership

Radek Zaruba welcomed the group.

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

2) APPROVAL OF THE AGENDA

Radek Zaruba introduced the proposed agenda of the RTCA SC-222/ EUROCAE WG-82 joint plenary meeting and the WG-82-only plenary meeting. The final agreed agenda looks as follows. (Due to time constraints, the group started with the WG-82 LDACS topics and defer or cancel some of the topics from the calling notice.):

AGENDA

Joint SC-222 / WG-82 Plenary

1. Welcome and introductions & RTCA/EUROCAE Opening Material
2. Agenda review
3. Review actions from previous meetings
4. Review of DO-262F/ED-243C Change 2 FRAC/OC resolutions for possible publication
5. Approve release of DO-262F Change 2/ED-243C Change 2 for Council / PMC approval
6. Co-Chair on the SC-222 discussion
7. Review of the DO-262 / ED-243 IPS updates – *defer to dedicated working meeting*.
8. Any other business
9. Plan next meeting
10. Review of action items

WG-82 only Plenary

11. Update on LDACS activity (Armin Schlereth (DFS), Bernhard Haindl (FREQUENTIS))
12. Potential ToR update – LDACS delivery
13. Presentation on Hyperconnected ATM (Radek) – *deferred to next meeting*

3) 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.

4) Review of DO-262F/ED-243C Change 2 FRAC/OC resolutions for possible publication

Mike Hooper presented the comments received from FRAC.

Only few editorial comments received and will be resolved by Iridium.

Mike explained that one of the changes released for FRAC/OC was wrong. The receiver susceptibility test referring table F-24 was in the FRAC/OC version revisited to refer table F-25. But the original reference to F-24 was in fact correct. This was reviewed and agreed by the group.

5) Approve release of DO-262F Change 2/ED-243C Change 2 for Council / PMC approval

The group agreed that once Iridium resolves the issues described under previous agenda item the DO-262F Change 2 / ED-243 Change 2 document can be released for approval.

6) Co-Chair on the SC-222 discussion

Nobody volunteered yet for SC-222 co-chair to replace Alan Schuster-Bruce.

Mike Hooper is willing to act as single chairman role until / unless somebody volunteers and is approved by the group.

Karan Hofmann confirmed that the co-chair is not required for the group to continue working.

7) Review of the DO-262 / ED-243 IPS updates

Agreed to postpone to dedicated working session due to lack of time and missing key stakeholders.

8) Any other business

Inmarsat IPS updates way forward:

Inmarsat is yet to identify somebody to replace Alan in the WG-82/SC-222.

Proposed way forward for MASPS: Radek will take a lead on the MASPS updates for Inmarsat part. Inmarsat still needs to stay involved in reviews and approval of the updates.

Iridium IPS updates:

There are other system-level updates for Certus (new small form-factor transceiver class) that have higher precedence for MOPS updates than IPS. But even these updates are not yet ready to be included in the current MOPS and MASPS updates. Iridium will only do IPS updates once they are closer to being ready to offer the IPS service.

Conclusion: There would not be any Iridium updates to be published with Inmarsat IPS updates.

Action [Radek]: Review 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.

9) Plan next meeting

Working session to review the MOPS IPS changes: Possibly November 9th.

Also include the ToR discussion.

Action: Radek to reach out to key participants and agree the date and time for the next working session to review IPS updates in MOPS.

10) Review of action items

Two new actions were recorded at this meeting. (See "Action Items" section at the end of the present minutes.)

11) Update on LDACS activity (Armin Schlereth (DFS), Bernhard Haindl (FREQUENTIS))

Armin presented status and progress of the WG-82 LDACS subgroup. The participation has been declining with very little progress and meetings being canceled.

Bernhard presented structure of the LDACS MOPS. Follows the structure of VDLm2, AeroMACS and SATCOM MOPS.

Armin presented structure and status of the MASPS. It follows the structure of the MASPS.

Both MOPS and MASPS have relatively mature content in some sections, but still lots of work remaining in other sections. The target dates for publication are not deemed feasible anymore.

DFS (Armin) no longer able to lead MASPS activity due to other commitments. But DFS still interested in supporting LDACS standardization as far as feasible.

12) Potential ToR update – LDACS delivery

Armin proposed to wait for results of the measurement campaign on LDACS-Surveillance interference in L-band. This should be completed in November 2023. The results should provide more insights into the remaining work and help come up with a realistic plan that could then be reflected in the ToR.

Armin also proposed to have another call for participation to strengthen the industry involvement.

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	Open

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	<p>Check whether AMS(R)-S band can be used for C2-link</p> <p>July meetings: Unchanged</p> <p>September meeting.: SARPs in final review for C2 link. It clearly defines AMRS frequencies for C2 link. Expect a ICAO paper from Mike to be distributed on this subject.</p> <p>5-Oct-2023: See A55-03.</p>	Mike Hooper	For next meeting	closed
A56-05	<p>Provide chairman report on decision about UAV C2-link issue to PMC → Update of TOR of SC-222</p>	Alan/Mike	End of April 2022	Closed
A56-06	<p>MOPS: Update Generic Section 1 about wording related to ATN</p>	Radek	Meeting 13 th April	Closed
A56-07	<p>MOPS Core Part: Identify useful material to be kept (section 2 onwards). Especially dependencies to Appendices (D; E, F) have to be identified.</p> <p>July meetings: Unchanged</p> <p>September meeting.: New material on Appendices D and F for next meeting planned to be presented (Mike).</p> <p>June 2023: Agreed to close as there is no appetite to update core part in this update cycle.</p>	Alan Schuster-Bruce/Mike Hooper	Next meeting	Closed
A56-08	<p>Prepare presentation on end-to-end architectures for SATCOM (IP, ATN/IPS etc.)</p>	Radek	Meeting 13 th April	Closed
A56-09	<p>Send presentations provided to Armin for the minutes</p>	Alan/Mike	18 th March	Closed
A56-10	<p>Clarify mix up of ATS traffic (CPDLC), payload/mission traffic and C2-link com on the same satcom equipage level.</p> <p>April Meeting: Current TSO distinguishes between APC and ATS. Further to be considered in the committee.</p> <p>July/September meeting: Unchanged until C2-link issue discussed at next meeting.</p> <p>5-Oct-2023: See A55-03.</p>	Al Malaga	Next meeting	closed
A56-11	<p>Clarify with EUROCAE procedure on Change 1 for MOPS</p> <p>April Meeting: EUROCAE Task Sheets to be updated and require TAC approval.</p>	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	<p>Alan and Armin to upload MOPS change 1 material onto RTCA/EUROCAE workspace.</p> <p>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.</p>	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	<p>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.</p> <p>Some more guidance in MASPS would be desirable. Text like "SATVOICE being available as the sole voice LRCS" required?</p> <p>August meeting: For further discussion wait until Alan is back.</p> <p>September meeting.: Part of the dual SATCOM discussion.</p> <p>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.</p>	Alan/Mike	At next Meeting	Closed
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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	<p>Radek to make a check on the mathematical correctness of the 25 seconds value as part of the proposed RSP160/20 term.</p> <p>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.</p>	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	Open
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	Open
A62-03	Review the MOPS Appendix E changes in the DO-626 working version distributed by Radek.	All	19 th 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 ToR for the MOPS and MASPS updates and propose changes to reflect: <ul style="list-style-type: none"> 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. 	Radek Zaruba	EOY 2023	Open
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 9 th -November)	Radek Zaruba	End of October 2023	Open