



RTCA Paper No. 179-22/SC222-106
EUROCAE EUR 247-22 / WG82-112

Washington, 13 June 2022
St Denis, 13 June 2022

**Minutes of
EUROCAE WORKING GROUP 82 (WG-82) (Meeting #58)
“New Air-Ground Data Link Technologies”
related to SATCOM
and
RTCA SPECIAL COMMITTEE 222 (SC-222) (Meeting #48)
“Aeronautic Mobile Satellite (Route) Services (AMS(R)S)
Plenary Meeting**

Date	18 May 2022
Place	Virtual Meeting
Venue	RTCA – Webex
Hosted by	RTCA

Participants:

Name	Company
Adam Sarhage	Garmin
Ajay Parikh	Ligado
Al Malaga	ACES
Anna Guégan (WG-82 TPM)	EUROCAE
Armin Schlereth (WG-82 Chair)	DFS
Ben Huang	Iridium
Darrell Andregg	Collins Aerospace
Gonzalo Prieto	ESSP
Hiroshi Okochi	JRANSA
Johan Gericke	Cobham
Karan Hofmann (SC-222 PD)	RTCA
Markus Lautenbacher	Rohde & Schwarz
Matt Clifford	Thales Group
Michael Hooper (SC-222 Co-Chair)	Iridium
Nigel Silverthorn	Thales Group
Nkululeko Ntombela	ATNS
Radek Zaruba	Honeywell
Rainer Koll	Stellar Aerospace
Ravi Jain	FAA
Richard Tapp	Honeywell

DOCUMENTS

Agenda Item	Title	File name
1	Calling Notice and Agenda	SC-222 (48) and WG-82 (58) Calling Notice Meeting-Final.pdf
3	Meeting Minutes of last Meeting	SC-222_WG-82 Meeting 2022-05-03_Draft Minutes_v1_mk_kh.docx
4	Draft MOPS Change 1	Before the meeting: WP051122 Appendix F DO262 ED243 Change 1 Working Paper v13051122.doc After the meeting: WP051822 Appendix F DO262 ED243 Change 1 Working Paper – FRAC and OC Entry.doc

PRESENTATIONS

Agenda Item	Title	File name
6	Radek's paper on RSP160 latency measurement item	

All documents and presentations will be uploaded on the according RTCA and EUROCAE repository.

1) Welcome, Introductions, Administrative Remarks by Special Committee Leadership

Armin Schlereth (chair WG-82) welcomed the group and the co-chair of the SC-222, Michael Hooper. Intention of this meeting to be a Plenary meeting is to conclude on the discussion of the Change 1 material for the SATCOM MOPS covering IRIDIUM Certus material planned to be completed 2022 as an urgent activity and release it for FRAC/OC.

Karan Hofmann and Anna Guégan informed about the anti-trust policy, IPR policy, and call and participation membership policies for RTCA Special Committees (SC) and EUROCAE Working Groups.

2) APPROVAL OF THE AGENDA

After a round table, Armin Schlereth introduced the proposed agenda of the RTCA SC-222/ EUROCAE WG-82 Plenary meeting. The final agreed agenda looks as follows:

3 May 2022 (9:00 am – 12:00 pm EDT) – (15:00 – 18:00 CET)

Welcome, Introductions, Administrative Remarks by Special Committee Leadership

- Government Authorized Representative (GAR): Ravi Jain
- Co-Chair RTCA SC-222: Michael Hooper, Iridium
- Chair EUROCAE WG-82: Dr. Armin Schlereth, DFS

1. RTCA/EUROCAE Opening Material
2. Review Agenda
3. Review Minutes from previous meeting and Actions
4. Review of DO-262F/ED-243C Change 1 for possible release for Final Review and Comment / Open Consultation (FRAC / OC)
5. Approve release of DO-262F Change 1/ED-243C Change 1 for FRAC / OC
6. Any Other Business
 - 6.1 RSP160 latency measurement discussion (Radek)

7. Review Action
8. Set Future Meetings
9. Adjourn

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) Discussion on MOPS – Change 1

Mike Hooper from IRIDUM presented the Change 1 material updated from the Working Paper WP051122.

Main updates completed in Plenary discussion are:

- Clarify sub-harmonic interferer testing requirement in F.2.2.3.1.3.2.3 Rejection of Signals Outside the NGSS Receive Band
- Update units of measure on Table F-28: Receiver Power Level at A' to be dBW/m² vs dBW
- Update Adjacent Channel interference testing as part of F.2.4.3.1.2.2.6 Receiver Susceptibility

5) Approval to release DO-262F Change 1/ED-243C Change one for FRAC/OC

The Committee approved the updated draft Change 1 of DO-262FD/ED-243C Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems (NGSS) for FRAC/OC. The Committee asked Iridium to make the final edits and coordinate with Karan to review those final edits before sending the document(s) to RTCA. RTCA will forward final version to EUROCAE.

6) AOB

Radek Zaruba from Honeywell gave a presentation on the subject of measurement points for ADS-C latency evaluation. This is currently discussed at the RTCA SC-214/EUROCAE WG-78.

Different options are available, but none of them allow for really to measure the expected end-to-end latency. The main issue here is that most of the latency end-to-end budget is consumed for the data calculation in the avionics. The group therefore agreed on a proposal to change the term from RSP160 to RSP160/25 indicating that the 25 seconds latency value dedicated to CSP and ATSU is the technical relevant value to be measured. 160 in the term should be kept in order to keep the correlation to the end-to-end performance expected and to avoid any panic by the user by such a significant change in the performance definition. Finally, Radek explained that he will make a mathematical check on the correctness of the 25 seconds part for the CSP+ATSU part before presenting it as a proposal to SC-214/WG-82.

7) Review actions

An action items list related to the meeting are enclosed with status after the meeting.

8) Set Future Meetings

RTCA SC-222 and EUROCAE WG-82 have agreed on the following next meetings:

WEBEX's:

- **13.07.2022 WG-82/RTCA SC-222: Plenary Meeting from 3pm to 6pm CET** (WEBEX will be organized by RTCA)
 - Comment by Radek Zaruba: He will be not available at that meeting!
- **14.09.2022 and 15.09.2022 WG-82/RTCA SC-222: Plenary Meeting from 3pm to 6pm CET** (WEBEX will be organized by RTCA)

Physical Meetings:

- **No physical meeting(s) are planned.**

6) Adjourn – Plenary meeting

Armin thanked the group for the efficient discussion.

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 WG 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 Plan). Discussion at Plenary February 2022: AIRBUS will inform about internal discussion on strategy results when available. April Meeting: Unchanged May Meetings: Unchanged	Guillaume De Bony De Lavergne	Next WG 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 July 2022	Open
A55-03	To identify which new material could be relevant for MASPS related to L-band Satcom C2 link.	Alan Schuster Bruce	At July Meeting 2022	Open
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	Alan Schuster- Bruce/Mike Hooper	June 2022 Meeting	Open

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 meetings: Unchanged	Armin S.	asap	Open
A56-03	Check whether AMS(R)-S band can be used for C2-link	Alan Schuster-Bruce	For next meeting in June	Open
A56-04	Check whether AMS(R)-S band can be used for C2-link	Mike Hooper	For next meeting in June	Open
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 13 th 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.	Alan Schuster-Bruce/Mike Hooper	September Plenary 2022	Open
A56-08	Prepare presentation on end-to-end architectures for SATCOM (IP, ATN/IPS etc.)	Radek	Meeting 13 th April	Closed
A56-09	Send presentations provided to Armin for the minutes	Alan/Mike	18 th 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.	Al Malaga	June 2022 meeting	Open
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 18 th meeting: New folder on EUROCAE side will be created and material being uploaded.	Alan Schuster-Bruce/Armin Schlereth	21.04.2022	Open

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	Open
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?	Alan/Mike	At July Meeting	Open

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	Open
A58-02	Radek to make a check on the mathematical correctness of the 25 seconds value as part of the proposed RSP160/20 term.	Radek Zaruba	Before June Meeting of SC-214/WG-82	Open