MINUTES OF JOINT RTCA SC-223 (PLENARY #37) / EUROCAE WG-108 (MEETING #14) / JOINT MEETING #8

"Internet Protocol Suite (IPS) and AeroMACS"

Date	June 25 and June 30, 2020
Time	10:00 am – 3:00 pm EDT 4:00 pm – 9:00 pm CEST 7:00 am – 12noon PDT
Venue	Virtual Meeting
Contact	**Rebecca Morrison**, Program Director, RTCA (202) 330-0654 or rmorrison@rtca.org **Adrian Cioranu**, Director, Training and Communications, Technical Program Manager, EUROCAE +33 1 49 46 19 72 or adrian.cioranu@eurocae.net
Working Session (optionally with AEEC)	**June 24, 2020** **1pm-3pm EDT** **7pm – 9pm CEST** **10am-noon PDT**

Attendees:

Name	Role	Affiliation
Cioranu, Adrian	Member	EUROCAE
Correas, Antonio	Member	SKYMANTICS
d'Humieres, Francois	Member	FREQUENTIS A.G.
Dlouhy, Ron	Member	COLLINS AEROSPACE
Drasil, Pavel	Member	HONEYWELL INTERNATIONAL, INC.
Emberger, Luc	Guest	AIRBUS

Garofalo, Giovanni	Guest	ESA
Graefe, Jonathan	Member	COLLINS AEROSPACE
Haindl, Bernhard	Member	FREQUENTIS A.G.
Henzl, Martin	Member	HONEYWELL
Hideyuki, Ishii	Member	JRANSA - JAPAN
Holtzman, Bill	Member	MOSAIC ATM
Jain, Rovi	Guest	FEDERAL AVIATION ADMINISTRATION (FAA)
Jasiukajc, Zbigniew	Guest	SITAONAIR
Kilbourne, Todd	Member	MOSAIC ATM
Leonardon, Laurent	Guest	COLLINS AEROSPACE
Maiolla, Vaughn	Member	ICAO
McParland, Tom	Guest	BASIC COMMERCE AND INDUSTRIES, INC
Morrison, Rebecca	Manager	RTCA, INC.
Niraula, Madhu	Member	COLLINS AEROSPACE
Nisbet, David	Member	THALES GROUP
Olive, Mike	Guest	HONEYWELL
Pelleschi, Stephane	Member	COLLINS AEROSPACE
Popescu, Liviu	Member	EUROCONTROL
Prisaznuk, Paul	Guest	SAE ITC, ARINC IA
Roy, Aloke	SC-223 Chair	HONEYWELL INTERNATIONAL, INC.
Saccone, Greg	Member	THE BOEING COMPANY
Skorepa, Michal	Guest	HONEYWELL
Tamalet, Stephane	Member	AIRBUS
Vanguardia, Michael	Member	THE BOEING COMPANY
Warns, Timo	Guest	AIRBUS
Weger, Roberto	Member	SITTI
Wargo, Chris	Member	MOSIAC ATM
Zeng, Dongsong	SC-223 Secretary	THE MITRE CORPORATION

AGENDA

1. Welcome and Administrative Remarks

2. Approval of the agenda

3. Administrative aspects

4. Review previous meeting notes and existing Action Items (WG-108/SC-223)

5. Continue progress on the creation of the IPS ATN MASPS

    a. QOS paper (Aloke and Madhu)

    b. Verification paper (Dongsong)

    c. IPS for C2 Link use (Dongsong)

    d. Risk assessment paper (Mike Vanguardia)

6. Profile Discussion
    a. ROHC (Pavel)
    b. Strategy for updating the profile
7. Roadmaps and schedules
8. Review of joint meeting actions
9. Any Other Business
10. Next meetings

Agenda Items 1. Welcome and Administrative Remarks

Due to the pandemic situation, the joint meeting was conducted through virtual telecons. Aloke Roy, Chair of SC-223, and Stephane Pelleschi, Chair of WG-108, welcomed the participants.

Rebecca Morrison, Program Director, RTCA, presented the RTCA/EUROCAE intellectual property and membership policy statements. All participants agreed on the statements and no issue were raised.

Agenda Item 2. Approval of the Agenda

The group reviewed and approved the meeting agenda.

Agenda Item 3. Administrative Aspects

Each day the meeting has two sections, one is from 10:00AM to 12:00PM and the other is from 1:00PM to 3:00PM. Between the two sections, there is a one-hour break. The participants are asked to be considerate to all members, mute microphones when not speaking, and avoid talking over each other. If necessary, members should raise hand (i.e., click on the "hand" button in the WebEx application) to ask questions.

Agenda Item 4. Review Previous Meeting Notes and Existing Action Items.

The group reviewed and approved the previous meeting notes. The action items were reviewed and updated in a separate group telecon before the meeting.

Agenda Item 5. Continue Progress on the Creation of the IPS ATN MASPS

Stephane Pelleschi, Collins Aerospace, led the group to go through the MASPS in the works chapter by chapter. The group reviewed and provided inputs to the MASPS draft on the fly.

Madhu Niraula, Collins Aerospace, and Aloke Roy, Honeywell, presented an information paper, titled "ATN/IPS Quality of Service Mapping," which describes a mechanism to map ATS service classes to ATN/IPS QoS classes. The paper was well received by the group.

Action 1. Madhu Niraula, Collins Aerospace, and Aloke Roy, Honeywell, to present the QoS paper at the next ICAO WG-I meeting.

Dongsong Zeng, MITRE, presented an information paper, titled "Performance Verification Methods," which describes two verification methods, one for IPS communications delay requirement verification and the other for availability requirement verification. The group discussed the paper and suggested to expand the discussion on small sample sizes especially for the pre-operation avionics tests.

Action 2. Dongsong Zeng, MITRE, to update the verification paper and send it the industry editor for inclusion to the MASPS draft.

Dongsong Zeng, MITRE, presented slides on "Thoughts on IPS Use Case for UAS C2 Link," which has the following two recommendations:

- Keep C2 Link out of the scope of current IPS design
- May include C2 Link in IPS design in the future when C2 Link requirements are mature

Decision 1. Keep C2 Link out of the current IPS MASPS and may include it in future MASPS revisions.

Action 3. Pavel Drasil, Honeywell, to estimate of line of code for ROHC.

Action 4. Pavel Drasil, Honeywell, to provide details on how the ROHC analysis was done.

Action 5. Collins Aerospace, to assess whether ROHC at DAL C is reasonably achievable.

Action 6. Collins Aerospace, to evaluate the impacts of splitting data flows among multiple links with performance-based multilink on ROHC performance.

Agenda Item 6. Profile Discussion

Pavel Drasil, Honeywell, presented a set of slides, titled "ROHC in IPS Profiles," which raise the following questions for the group to pore over before making the final decision on whether to mandate ROHC for IPS:

1. ROHC datagram can get bigger than the original uncompressed IP packet, i.e. bigger than 1,280B (exact number should be calculated)

2. ROHC mandatory or optional?

3. Do we want IPS future-proof or optimized for current traffic?

4. Do we want to do profiling for performance?

The presentation was well received, the group needs some time to investigate ROHC and will revisit this topic in future meetings.

Agenda Item 7. Roadmaps and Schedules

The group did not have enough time to discuss roadmaps and schedules during the meeting.

Agenda Item 8. Review of joint Meeting Actions

The group did not have enough time to review the outcome actions and decisions during the meeting.

Agenda Item 9. Any Other Business

No other topics were brought up during the meeting.

Agenda Item 10. Next Meetings

SC-223 P38 / WG-108, Sept 28 – 30 (Plenary meeting) and Oct 1 (focus group meeting), 2020, Virtual.

SC-223 P39 / WG-108, December 7-11, 2020, Virtual.

SC-223 P40 / WG-108, March 2021, Location TBD, Europe.

List of Action Items

Action Item #	Action Content	Responsible	Due Date	Status
P23-7	Investigate the integrity of IPS (w/ or w/o ROHC) at system level.	Aloke Roy	October 23, 2017	10/23/2017 – In progress 12/4/17 – Keep open 3/5/18 – keep open 6/4/18 – keep open 8/13/18 – keep open. 9/24/18 – keep open. 12/10/2018 – postponed to MASP discussion 3/25/2019 – keep it open 6/17/2019 – keep open 9/30/2019 – keep open 12/9/2019 – Review Pavel's paper 2/26/2020 – keep open 5/27/2020 – keep open
P29-2	Reach out to SC-228 to verify whether IPS will be used by C2 link	Aloke Roy	Dec. 3, 2018	12/10/2018 – done. The dependency is still to be defined. 3/25/2019 – keep it open. 6/17/2019 – keep open 9/30/2019 – Closed. Yes. IPS is recommended by SC-228 for C2 Link BLOS use cases. Any potential extensions by WG-105 will be on case on case basis.
P32-1	Update the Profile to include all FRAC/OC resolutions and Rebecca to distribute the file to the group	Dongsong Zeng	April 8, 2019	4/24/2019 – Done and closed
P32-2	Work out a consented resolution on row reduction in Appendix B-6 RFC 2597 detailed profile	Aloke Roy and Stephane Tamalet	April 1, 2019	4/24/2019 – Done and closed
P32-3	Review the updated Profile to make sure all FRAC/OC resolutions are correctly executed	All members	April 1, 2019	4/24/2019 – Done and closed
P32-4	Update the MASPS schedule and draft corresponding TOR revision	Stephane Pelleschi and Aloke Roy	June 17, 2019	6/17/2019 – keep open 9/30/2019 – Done. The TOR has been approved by PMC and TAC.
P32-5	Put SC-223/WG-108 TOR approval on the agenda of next meeting	Dongsong Zeng	June 17, 2019	6/17/2019 – Done and closed.
P32-6	Resolve Alistair's comment	Aloke Roy	April 1, 2019	4/24/2019 – Done and closed
P32-7	Members who were assigned to work on specific MASPS sessions will start to develop the corresponding MASPS annexes	Assigned Members	June 17, 2019	6/17/2019 – keep open 12/9/2019 – keep open 2/26/2020 – keep open 5/27/2020 – Closed
P33-1	Update IPS MASPS development schedule.	Dongsong Zeng	Sept. 30, 2019	7/17/2019 – Done.
P33-2	Schedule a telecon to advance IPS security risk assessment.	Madhu Niraula	Sept. 30, 2019	9/30/2019 – Closed. Vic Patel will lead this activity. A telecon

				with ICAO WG-I SSG is planned on Nov 8, 10AM EST.
P33-3	Coordinate with EASA for participation in SC-223/WG-108 P39 December 2020 meeting for FRAC/OC resolution.	Stephane Pelleschi and Adrian Cioranu	Sept. 30, 2019	9/30/2019 – keep open. 12/9/2019 – keep open 2/26/2020 – keep open 5/27/2020 – keep open
P33-4	Present DNS concept to ICAO WG-I.	Madhu Niraula	Sept. 30, 2019	9/30/2019 – keep open. In progress. 12/9/2019 – keep open 2/26/2020 – keep open
P33-5	Consolidate inputs to the MASPS moving work-in-progress materials into annexes	Stephane Pelleschi	Sept. 30, 2019	9/30/2019 – Done.
P33-6	Present Collins' multilink concept to the next ICAO WG-I in September 2019.	Madhu Niraula and Dongsong Zeng	Sept. 30, 2019	9/30/2019 – keep open. 12/9/2019 – keep open 2/26/2020 – Closed
P34-1	Provide an initial MASPS authors list based on SC-223 roster and the group will review and determine the final authors list at the end of the work.	Rebecca Morrison	Dec. 9, 2019	12/9/2019 – Closed and subject to review.
P34-2	Provide instructions of change proposals on the Profile standard.	Rebecca Morrison	Dec. 9, 2019	12/9/2019 – Closed and subject to review.
P34-3	Initiate ISRA between SC-222 and SC-223.	Aloke Roy and David Robinson	Dec. 9, 2019	12/9/2019 – Closed. ISRA drafted by SC-223, but rejected by SC-222. SC-222 will not be able to do anything until August.
P34-4	Coordinate with SC-214 on ISRA between SC-214 and SC-223.	Aloke Roy	Dec. 9, 2019	12/9/2019 – Closed. SC-214 is working to support IPS and no ISRA is needed right now.
P34-5	Coordinate with RTCA WAIC on aviation IPv6 address.	Rebecca Morrison and Aloke Roy	Dec. 9, 2019	12/9/2019 – keep open. 2/26/2020 – keep open 5/27/2020 – keep open
P34-6	Update IPv6 address format paper, changing platform type to type, changing type bits from 2 to 4, changing subnet ID to 10 bits.	Aloke Roy	Dec. 9, 2019	12/9/2019 – Closed and subject to review.
P34-7	Identify the process of administration and maintenance of IPv6 addresses.	Aloke Roy	Dec. 9, 2019	12/9/2019 – keep open. Also within the purview of ICAO TFSG/GRAIN. 2/26/2020 – keep open 5/27/2020 – keep open
P34-8	Work with PMC to create a special workspace for security information papers storage.	Aloke Roy	Dec. 9, 2019	12/9/2019 – Closed. Security information repository has been decided to move to ICAO.
P34-9	Complete the assigned MASPS sections by next meeting, as assigned in the MASPS progress spreadsheet.	All members	Dec. 9, 2019	12/9/2019 – keep open. 2/26/2020 – keep open 5/27/2020 – keep open
P34-10	Bring IPS transition and deployment strategy to ICAO DCIWG and request feedbacks from stakeholders of member states.	Aloke Roy and Liviu Popescu	Dec. 9, 2019	12/9/2019 – Closed. Waiting for ICAO action for feedbacks from member states.

P35-1	Talk to Isidore Venetos on IPS SRA by Q2 2020.	Mike Vanguardia	March 9, 2020	2/26/2020 – keep open. Expect an initial draft SRA from Isidore by June 2020 5/27/2020 – keep open
P35-2	Present MASPS multilink material to ICAO WG-I MSG in February 2020.	Aloke Roy	March 9, 2020	2/26/2020 – keep open 5/27/2020 – keep open
P35-3	Prepare slides for convergence of diagrams from different standards and present it to ICAO WG-I.	Stephane Pelleschi	March 9, 2020	2/26/2020 – keep open 5/27/2020 – keep open
P35-4	Prepare a one-page summary of MASPS structure.	Dongsong Zeng	March 9, 2020	2/26/2020 – Closed. Subject to review
P35-5	Present a multilink paper to ICAO WG-I MSG.	Madhu Niraula and Dongsong Zeng	March 9, 2020	2/26/2020 – keep open 5/27/2020 – Closed
P35-6	Present DSCP QoS mapping to ICAO.	Madhu Niraula and Aloke Roy	March 9, 2020	2/26/2020 – keep open 5/27/2020 – keep open
P35-7	Coordinate with Vaughn Maiolla on how ICAO standards should reference AEEC documents.	Liviu Popescu	March 9, 2020	2/26/2020 – keep open 5/27/2020 – Closed
P35-8	Present AEEC A/G management message section to ICAO.	Madhu Niraula	March 9, 2020	2/26/2020 – keep open 5/27/2020 – keep open
P35-9	Provide the group feedbacks to SESAR Wave 2 validation recommending align SESAR performance measurements to the architecture that the standard groups are developing.	Francois d'Humieres	March 9, 2020	2/26/2020 – Closed. Action completed.
P37-1	Present the QoS paper to ICAO WG-I meeting.	Madhu Niraula and Aloke Roy	Sept 28, 2020	
P37-2	Update the verification paper and send it the industry editor for inclusion to the MASPS draft.	Dongsong Zeng	Sept 28, 2020	
P37-3	Estimate of line of code for ROHC	Pavel Drasil	Sept 28, 2020	
P37-4	Provide details on how the ROHC analysis was done	Pavel Drasil	Sept 28, 2020	
P37-5	Assess whether ROHC at DAL C is reasonably achievable	Collins Aerospace	Sept 28, 2020	
P37-6	Evaluate the impacts of splitting data flows among multiple links with performance-based multilink on ROHC performance	Collins Aerospace	Sept 28, 2020	

-S-
Dongsong Zeng
Secretary

CERTIFIED as a true and accurate summary of the meeting.

- S-
Aloke Roy
SC-223 Chairman

- S-
Stephane Pelleschi
WG-108 Chairman