

**RTCA- 228**  
**Summary of Plenary #40 RTCA Paper No. 017-24/SC228-115**  
**HYBRID MEETING**  
**9:00 AM EST, January 26, 2024**

The fortieth plenary of RTCA Special Committee 228 was called to order by SC-228 Co-Chair, Brandon Suarez at 9:03 AM EST on January 26, 2024 at RTCA headquarters in Washington, D.C. and using WebEx audio and web conferencing.

1. Agenda Item #1- Call to Order: Welcome
  - 1.1. Brandon Suarez, co-chair called the meeting to order and stated the purpose for today's plenary through a review of the published and proposed agendas.
  
2. Agenda Item #2- Review RTCA meeting guidelines
  - 2.1. Brandi Teel, RTCA Program Director, welcomed everyone.
  - 2.2. Brandi reviewed the Anti-Trust Policy, the Proprietary Policy and the RTCA Committee Participation Membership Policy.
  - 2.3. Brandi also briefed some meeting tips to ensure a successful virtual meeting.
  - 2.4. Brandi then briefed the online self-rostering feature. Thank you to all who self-roster!
  
3. Agenda Item #3- Opening Remarks / Introductions
  - 3.1. Went around the room and phone, and introduced participants and companies.
    - 3.1.1. 15 in person, ~50 online.
  - 3.2. Participants on the phone stated their names and organizations, and attendance is noted in Appendix A.
  - 3.3. Brandon S. gave an overview of the SC-228 leadership team.
  - 3.4. There is one change to the leadership structure, Katie Edwards will be stepping away from the role of Secretary after 3 years with the committee. Greg Moran from Boeing will be the new Secretary of the committee. Brandon and Jim thanked Katie for her work and welcomed Greg on board!

**NOTE:** Both WG1 and WG2 are looking for secretaries to fill open positions. Please reach out to anyone on committee leadership if you are interested in this opportunity.
  
4. Agenda Item #4- Review and Approve the agenda
  - 4.1. Agenda Item #10 (EUROCAE WG-105 Update) was removed from the plenary agenda.
  - 4.2. No walk on agenda items.
  
5. Agenda Item #5 - Approve meeting minutes from Plenary Meeting #39
  - 5.1. Katie Edwards, SC-228 secretary, stated they received no comments for update/revision.

- 5.2. Katie Edwards called for a motion to approve the minutes. Andrew Videmsek moved to approve the minutes. Steve Van Trees seconded. No objections, minutes approved.
6. Agenda Item #6 - Schedule review – high level overview of upcoming document work that remains for 2024-2025
- 6.1. Katie Edwards provided an overview of the SC-228 schedule.
- 6.2. The schedule will be updated based on the plenary presentations and uploaded to the schedule folder on AerOpus.
7. Agenda Item #7 – WG-1 Update
- 7.1. Don Walker provided the update for WG-1.
- 7.1.1. Spent the week focused on what changes are needed to DO-365 Radar MOPS incorporate ACAS-Xr class of equipment.
- 7.1.2. Don commented on multiple WG-1 documents being utilized by folks in industry, using existing standards and finding places where improvements are needed is a natural part of the process, and indicates good closure on the lifecycle of the standard.
- 7.1.3. Working on an update to the Air to Air radar MOPS DO-366. Some aforementioned usability updates are also needed to this document.
- 7.1.3.1. Zero Closing Component Validation – Current Focus: Clutter model, Test cases, Data Collection
- 7.1.3.2. May need more time for full scenario development. Moving it to align with DO-365D is reasonable from a committee perspective.
- 7.1.3.3. Brandon agreed, but stated the need to socialize the schedule with the rest of the committee, and users who need the standard to be ready.
- 7.1.3.4. Working group meeting will move to early morning for the Europeans to participate.
- 7.1.4. Received a briefing from NASA on ACAS-Xr flight test evaluation.
- 7.1.5. A RAC is planned for the M:N working paper internally, near the April meeting. This is not an artifact planned to be published as an RTCA white paper. This document was originally planned to scope and make clear the understanding for M:N within the committee. It is a vehicle to get committee consensus and determine the scope.
- 7.1.5.1. Request for leadership to decide what we want to do with this document. Don suggests if we do make this document public, we publish as a standalone document so that the committee could receive feedback without impacting other documents in progress.
- 7.1.5.2. Mark Reed requested a clarification on the slide to make it clear this is a working paper not intended to be published.
- 7.2. Don summarized the EUROCAE WG-105 EUDAAS update from the week
- 7.2.1. Agreed in principal to prepare joint Air-to-Air Radar and EO/IR MOPS

- 7.2.2. Talked through technical details and there appear to be no large differences
  - 7.2.3. Some additional modeling and simulation are required on the EU side
  - 7.2.4. US side may require some additional M&S TBD
  - 7.2.5. First joint meeting could possibly be June in Brussels, with plan to rotate locations until joint work is complete.
8. Agenda Item #8 – WG-2 Update
- 8.1. Amelia Mahan provided the briefing for WG-2.
  - 8.2. \*New \* WG-2.7 RTCA Report on Use of DO-377B as a MOC
    - 8.2.1. Scoping statement has been agreed. Section authors have been identified. Work on this to occur through end of the year, with RAC planned for October 2024. Want more people to use the document, this will add clarifications to help that.
  - 8.3. WG-2.6 C Band Update
    - 8.3.1. Resumed coordination meetings with EUROCAE. EUROCAE moving forward with low earth orbit (LEO), and preserving compatibility for geostationary (GEO). At this time, we are not awaiting any technical details from EUROCAE.
    - 8.3.2. Still on track to exit FRAC by October 2024.
  - 8.4. WG-2.4 AURA UHF Flight Test Report Out
    - 8.4.1. Shared results from validation flights over flat, rolling, and hilly terrain. Reliability was over 99%.
  - 8.5. WG-2.2 Cellular Update
    - 8.5.1. Progress continued on the MOPS documents. On track to enter FRAC at the next plenary.
  - 8.6. Special Guest Briefing on BVLOS Part 108 (GAR Report will cover) had 60+ attendees and was very well received
  - 8.7. Notice: WG-2 Secretary Position Open
  - 8.8. Next plenary will be very busy.
  - 8.9. Need to consider making the RR a guidance document, given the interest from FAA to use the document. The important thing is that we have something people can use. We would need to go back to the PMC to make them aware of the changes of document type.
9. Agenda Item #9 - WG-4 Update
- 9.1. Matt Harris presented the update for WG-4.
    - 9.1.1. Review of current TOR deliverable: Surface Operations MASPS
    - 9.1.2. Currently in OSED Review and Comment (RAC) jointly with WG-1. About to enter into safety analysis process. Will be led by Paul Stanley (Boeing).
    - 9.1.3. Still looking for a volunteer to champion the OPA.
    - 9.1.4. RAC summary from December:
      - 9.1.4.1. 223 comments in total.

- 9.1.4.2. Additional feedback is still welcome, it was an informal RAC.
- 9.1.4.3. Summary of non-concur comments presented in slides. Spent the week reviewing these comments and paths forward with the commenters.

#### 10. Agenda Item #10 – EUROCAE WG-105 Update

- 10.1. Item #10 was removed from the plenary agenda.

#### 11. Agenda Item #11 – GAR Report: FAA MASPS/MOPS Usage Update

- 11.1. Steve Van Trees presented an update.
- 11.2. AUS-400, AFS-700 and AIR-600 presented jointly this week to the committee.
- 11.3. Part 108: 1320 lbs. and below, ops under 400 ft.
- 11.4. Part 146: new delegation work. “How does the FAA qualify a CSP?”
- 11.5. Western Certification Bureau reports that GA-ASI application for TSOA on TSO-C211 and TSO-C212 is progressing. They are working to the latest version of DO-365.
- 11.6. uAvionix activity on TSO-C213a, have not made application yet but recognition from FAA that it is in work.
- 11.7. Currently FAA is not working on an advisory circular, because the RTCA documents are covering prospective topics well. A half page AC recognizing some of the RTCA materials may be possible.
- 11.8. What we need in a year is mapping safety requirements to engineering requirements, so DO-377 is repeatable. Reading the documents is in fact encouraged.
- 11.9. The Part 108 (BVLOS NPRM) and Part 146 (CSP) reached out for RTCA interest in an update on their work and the role of performance-based standards in the NPRM. Work is convening under NUBO (Normalization of UAS BVLOS Ops).
  - 11.9.1. Rick May (AUS-400) Introduction
  - 11.9.2. Chris Richards (AIR-600) Associated Elements
    - 11.9.2.1. This briefing included everything, including non-ground control station elements.
  - 11.9.3. Jarrett Larrow (AUS-400) Operations Part Framework
    - 11.9.3.1. Expressed help needed from WG-1 on characterizing the general airspace, so it is standard among applicants.
  - 11.9.4. Cyrus Roohi (AIR-600) Airworthiness Part Framework
    - 11.9.4.1. Discussed standard offerings from performance standards. DAA and C2 expressly included. There are standards needs that no one is working, and FAA is seeking assistance from RTCA on these gaps.
  - 11.9.5. Marcus Cunningham (AFS-700) Operations
    - 11.9.5.1. Listened to the ARC, and simplified a lot of process for certificate approval.
  - 11.9.6. Peter Sachs (AUS-400) Third-party services

- 11.9.6.1. Strong user and understanding of DO-377B without being involved in writing it. Expressed goal: NPRM 1 year from now. The goal is the standards body in place, and compliance possible from day 1.
  - 11.10. Ray Mei and Steve Van Trees are embedded in getting the SC-228 documents in the gap analysis.
  - 11.11. Joe Morrow's division from AUS moved to AFS for new entrants.
12. Agenda Item #12 – New Business
- 12.1. Brandon Suarez asked if there was any additional new business.
  - 12.2. Meeting look ahead.
    - 12.2.1. April 2024 F2F date has CHANGED:  
**April 30<sup>th</sup> - May 3<sup>rd</sup> 2024, Plenary #41 Friday morning May 3<sup>rd</sup>**
    - 12.2.2. July F2F is July 16-19th 2024.
    - 12.2.3. October 2024 F2F is TBD.
13. Agenda Item #14 – Adjourn
- 13.1. Jim Williams called for a motion to adjourn the meeting. Mark Reed moved to adjourn, Andrew Videmsek seconded. Jim Williams adjourned the meeting at 10:18 AM ET.

**SC-228 Leadership**

Jim Williams	SC-228 Co-Chair	Aura Network Systems
Brandon Suarez	SC 228 Co-Chair	Reliable Robotics
Katie Edwards	SC-228 Secretary	Boeing
Brandi Teel	SC-228 Program Director	RTCA
Don Walker	SC-228 WG1 for DAA, Co-Group Lead	A3 by Airbus
Fabrice Kunzi	SC-228 WG1 for DAA, Co-Group Lead	Boeing/Skygrid
	SC-228 WG1 for DAA, Secretary	
Steve Van Trees	SC-228 GAR, WG2 for C2, Co-Group Lead	FAA, AIR-130
Amelia Mahan	SC-228 WG2 for C2, Co-Group Lead	Amazon Prime Air
	SC-228 WG2 for C2, Secretary	
Joel Wichgers	SC-228 WG4 for Navigation, Co-Group Lead	Collins Aerospace
Matt Harris	SC-228 WG4 for Navigation, Co-Group Lead	Boeing
Andrew Videmsek	SC-228 WG4 for Navigation, Secretary	Reliable Robotics

**Appendix A- List of SC-228 Plenary Participants**

## ATTENDEES

<b>Company</b>	<b>Name</b>
A3 by Airbus Group	Donald Walker
	Eric Euteneuer
Adaptive Aerospace Group	Devin Jack
	Keith Hoffler
Adaptive Aerospace Group	Paul Volk
Air Line Pilots Association (ALPA)	Mark Reed
Amazon Prime Air	Amelia Mahan
ANRA Technologies	Brent Klavon
Aura Network Systems	Jim Williams
Bell Helicopter Textron, Inc	Francis Govers
Civil Aviation Authority of New Zealand	Charlie Morris
Collins Aerospace	Joel Wichgers
	Randy Jacobson
COMAC America	Mingwei Wang
Constellation Aviation Solutions, LLC	Walter Monk
CSSI, Inc.	Sam Alsalous
DND DTAES Canada	Tam Vu
Federal Aviation Administration (FAA)	Avi Acharya
	Christopher Swider
	David Chen
	Don Nellis
	Ferne Friedman-Berg
	Jose Fuentes
	Josh Eastly
	Mohammed Rahman
	Ravi Jain
	Ray Mei
	Raymond JohnsTon
	Rose Merchant-Bennett
	Ruth Hirt
	Stephen Van Trees
Stuart Searight	
Federal Communications Commission (FCC)	Kambiz Rahnvardy
	Peter Trachtenberg
Garmin Ltd.	Ben Peetz
General Atomics Aeronautical Systems, Inc.	J. J. Lu

	Joey Neptune
	Tim Bleakley
General Dynamics Mission System Canada	Jean-Pascal Joary
	Alexandre Capodicasa
Honeywell International, Inc.	Sara Bauman
INMARSAT	Kristen Mineck
Kansas State University	Tom Haritos
MIT Lincoln Laboratory	Matthew Edwards
NASA	Aaron Dutle
	Andrew Guion
	Jordan Sakakenny
	Steve Young
	William Bishop
NATCA	Jimmy Smith
National Oceanic and Atmospheric Administration (NOAA)	John Coffey
Northern Plains UAS Test Site (NPUASTS)	Danielle Miller
Northrop Grumman Corporation	Lance King
NUAIR	Lee Nguyen
RDRTec, Inc.	Sid Theis
Reliable Robotics	Andrew Videmsek
	Brandon Suarez
RTCA, Inc.	Brandi Teel
Sagetech Corporation	Rudy Johnson
	Stacey Rowlan
Skygrid	Mark Erwin
Softbank Corp	Hiroto Osanai
The Boeing Company	Fabrice Kunzi
	Greg Moran
	Katie Edwards
	Matt Harris
	Matthew Moser
	Scott Blum
Transport Canada	Earle DePass
	Fairy Pan
	Tom Hastie
uAvionix	Jim Davis
Volocopter	Guido Manfredi
Xwing, Inc.	Mike Mueller