

SUMMARY: RTCA advises the public of the Eighteenth RTCA SC-228 Minimum Performance Standards (MPS) for UAS Plenary Session.

DATES: January 24, 2019 1:00 pm - 5:00 pm.

LOCATION: RTCA Headquarters, 1150 18th Street NW, Suite 910, Washington, DC 20036.

POINT OF CONTACT: Contact Al Secen by email asecen@rtca.org, telephone 202-330-0647, or mailing address RTCA, 1150 18th Street, NW, Suite 910, Washington, DC, 20036.

FOR FURTHER INFORMATION: Visit the RTCA Web site at <https://www.rtca.org/content/special-committees>

SUPPLEMENTARY INFORMATION: The agenda will include the following:

Thursday, January 24, 2019

1. Call To Order – Welcome/Introductions
2. Review RTCA Meeting Guidelines
3. Opening Remarks
4. Approve Meeting Minutes From Meeting #17
5. Approve Frac Resolutions For C2 Link MASPS
6. Wg1 Status Report
7. Wg2 Status Report
8. EUROCAE WG 105 Status
9. New Business
10. Adjourn

1 Call to order (John Moore)

2 Opening Remarks / Introductions (John Moore)

- Actually happened 2nd instead of 3rd (3rd is the usual order)
- Around the room and then around the phone
- Al Secen took attendance

3 Review RTCA Meeting Guidelines (Al Secen)

- Actually happened 3rd instead of 2nd (2nd is the usual order)
- Emergency exit and webex procedures

4 Approve Meeting Minutes from Meeting #17 (Al Secen)

- Al Secen posted to the Workspace for Meeting #17 on 24-Jan-19 – Christina submitted
- Proposal to provisionally approve them; comments need to be submitted to Al Secen by 5PM Eastern Time 30-Jan-19
- Last plenary was a proposal to accept the changes to the TOR
- **Marvin moves, Jim seconds the motion, motion approved**

5 Approve Exit of FRAC for C2 Link Minimum Aviation System Performance Standards (MASPS) Presentation for PMC Approval (Jim Williams)

- Summary of the organizations participating the WG2 (no changes from FRAC)
- Document outline (no changes from FRAC)

- Key contributors (minor change)
 - o Don Arnstein dropped off, Larry Cowles took over for Section 4
- C2 Link System MASPS Scope (no change)
- Description of Document
 - o Prepared following a *tailored* DO-264 process
 - o No interoperability specifications because a single entity has authority over *both* sides of the system
- FRAC Comment Process
 - o 531 comments, 51 *Non-Concur*, 132 *High*; All comments reviewed and solutions captions in comment matrix
 - o Some editorial comments marked as *Non-Concur* or *High* “priority inflation”
 - Review RTCA guidelines for the comment priority
 - *Non-Concur* means “your company cannot live with it, and will fundamentally affect your role” – should be used sparingly
 - o Few comments actually drove major changes to the document (even the non-concurs or highs) though many revisions increased clarity to the reader
 - o Redline version submitted to membership on 11-Jan-19
- FRAC Comment Resolutions
 - o Done via email
 - o Significant changes worked in person at F2F Meeting
- Significant Changes to the MASPS
 - o Risk Table based on Kinetic Energy was considered to be incomplete representation of process to establish design requirements
 - The issue was the table *taken out of context*
 - Original risk matrix table was simplified
 - Removed the references to kinetic energy (since this was just a starting point anyway)
 - Removed the references to anything except the Risk Class III example aircraft
 - No qualitative values were changed; no changes to the requirements in Section 3
 - References to Design Assurance Levels was removed as there is no published FAA Guidance relating Risk Classes to Design Assurance Levels; general concept of design assurance is still referenced
 - Summary of the notes in the table viewed
 - o Section 3.10 “Safety Requirements” was challenged as redundant to the performance requirements
 - Text modified to state that the objective of the MASPS is ONLY to capture safety requirements derived from the OSA (except security requirements)
 - Distinction was removed between performance requirements and safety requirements
- Approval of C2 Link Systems MASPS to Exit FRAC
 - o Requests Plenary to approve to recommend
 - o Jim made request to Chairs John M. and Paul M.
 - o Marv moves to accept the revised version, Al Malaga seconds motion
 - o No objections from the phone or the room – **uncontested consensus to move to PMC**
 - o 8th product to come out of SC 228 (all on time and on schedule – woot!)

6 Working Group 1 Status Report (Ted Lester)

- WG1 Detect and Avoid Phase 2
 - o Rev A – FRAC in Aug/Sept 2019
 - Class D-g, Transit through B-g
 - Terminal Area Operations – Straight in precision approaches / departures in Class C-g
 - Ground based surveillance
 - 3D radars
 - o Rev B – FRAC in Aug/Sept 2020
 - DO-365B MOPS
 - ACAS X (SC 147)
 - Optional automatic maneuvering
 - Low SWAP for non-Cooperative Well Clear and Alerting
 - Enable low-SWAP ATAR
 - DO-366A Air to Air Radar (ATAR)
 - New low SWAP class
 - DO-TBD Airborne EO/IR Sensor MOPS
 - o Question from Bruce – GBRS is a network of radar – where is the ground based DAA equipment?
 - ANS: Class 7 equipment is ground only (same processing on air and ground) covered in Rev A
 - o Question from Don N – is there any impact on the C2 datalink in the Rev A?
 - ANS: Current working with the uplink; the ground system prioritizes the tracks and transmits via the C2 link (few targets uplinked at 1Hz)
 - Don's request – clarify any changes if required to the C2 link
 - o Comment from Michael – need to verify that the uplink requirements as they stand today are acceptable for an uplink of DAA intruder tracks
 - o Comment from Jim – proposal to include the changes in the Rev A of DO-362 for changes required by an uplink of DAA intruder tracks
 - o Comment from John – identify the change in volume/scope impact (3% vs 20%) for the service classes of data. Concur to add in DO-362A.
 - o Question – Does the info on data need to go in Rev A of the MASPS, or in DO-362A? WG2 to decide
 - o Comment from Bruce – Unsure if the NASA work done in this area was ever wrapped into the requirements in MASPS or the Rev A of the MOPS
 - o ACTION – Discussion item in the next joint meeting (April F2F)
 - One of the conops for the Rev A MASPS will use ground based radar
 - Note- HAPS may need to include the ground based
- DAA Phase 2 Rev A
 - o GBRS MOPS – RAC complete, incorporating comments
 - o DO-365A MOPS
 - Appendix A OSED RAC
 - DO-365A RAC in progress (comments due 7-Feb)
 - o FRAC for both in August 2019
 - o All at risk due to the US government shutdown
- Upcoming Meetings

- 4-6-Mar – WG Meeting collocated with SC -147 (current location is NASA Ames – but will decide on 4-Feb if Ames is still viable)
- 11-13-June @ RTCA with SC-147
- 21-25-Oct @ RTCA with SC-228 WG2

7 Working Group 2 Status Report (Jim Williams)

- Delivery Dates for 4 more documents remaining
 - MASPS – Jan 2019
 - MASPS Rev A – Jan 2020
 - MASPS SATCOM – April 2020
 - MOPS Rev A – July 2020
- DO-362A – Tyler Barney
 - Issues with the near/far problem – limitations in proximity to the ground transmitter and range overall
 - C-band satcom coexistence analysis completed (looked at C-band satcom and C-band terrestrial in the same area using the same TDD structure)
 - Noise floor, NOT a frequency issue
 - C-band was allocated to BOTH satcom and terrestrial – need to ensure compatibility
 - Need support for HAPS – need volunteers
 - Overview of the coming months
 - Request for volunteers – contact Tyler Barney tyler.barney@collins.com
 - Meeting occurring after the Plenary session
- MASPS Satcom – Amelia Wilson
 - Provided overview of topics discussed between Sept F2F and January 2019
 - Overview of the 1st half of 2019
- Status of Revision of C2 Link Systems MASPS (Rev A)
 - Plan for FRAC in December 2019, to Plenary in January 2020
 - RAC in October to support ICAO
 - June 2019 – CONOPS 3 and 4 Complete
 - Status
 - Extended Aerial Operations CONOPS scenarios in work; initial drafts completed
 - Leaders coming up to speed on Cargo Delivery (UPS) and HAPS (Lockheed Martin)
 - Looking for additional support for OSA and OPA
 - Also need more controller input for remote and oceanic operations

8 New Business (John Moore)

- 8a – EuroCAE Working Group 105 Status Report (AI Secen); SC 228 is not a joint committee with EuroCAE (one of the few)
- This briefing was delivered to us by EUROCAE
- Plenary #5 (November 2018) – Started in 2016 – UAS Operations in EASA
 - Subgroups
 - DAA
 - (C3S) Command, Control, Communications and Security
 - UTM
 - (D&AW) Design and Airworthiness

- Enhanced RPAS Automation
 - (SORA) Specific Operations Risk Assessment
 - Plenary in Brussels in June 6th 2019
 - List of documents produced
 - Most of this information is guidance material – smaller documents
 - Action – Ask questions about LinQuest – have they looked at the C-band work for BLOS completed by WG-105?
 - Review of DAA and C3S Documents in Work
 - WG2 can review the ‘open consultation’ version of the C3S document (their version of FRAC)
 - Question from Bruce – Is there an expectation that RTCA develop comments from EUROCAE? No
 - Question from John - Why not? We could support it
 - Issue with the C-band near far – could be an issue with the TDD frames
 - Action for all who want to review and comment– need to register on EUROCAE to get the document
 - Action for SC 228 WG 2 – work to facilitate the collection of comments
 - Review of other focus team work – entire slide deck is in the presentations tab
 - Action for AI S./RTCA – will post on the workspace the dates for open consultation
 - Action for AI S./ RTCA – Will ship off the information to WG-105 at their next plenary
- 8b – Future Plenary Updates
- TOR delivery dates
 - 8 additional documents to be FRAC’d
 - Review of the schedule for 2019 and 2020
 - Final artifact in TOR shows the committee standing down in October 2020
 - 19-Apr-19
 - Working status
 - 25-Jul-19
 - DAA MOPS Rev A Enter FRAC
 - Ground Radar MOPS Enter FRAC
 - 24-25-Oct-19 (Two day plenary) – Action – Leadership meeting to verify need for 2 day meeting
 - DAA MOPS Rev A Exit FRAC
 - Ground Radar MOPS Exit FRAC
 - C2 Links MASPS Rev A Enter FRAC

9 Adjourn (John Moore)

- Motion to adjourn by Mark Reed, seconded by Jim