Welcome to RTCA Program Management Committee Meeting

Chairman
Dr. Chris Hegarty, MITRE
June 23, 2022
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  - 2) Evidence that private pecuniary interests have not driven any decision to either include or exclude a system from the market
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RTCA Committee Participation Membership Policy

• To participate on RTCA Committees, an individual’s organization is required to be a member of RTCA. Individuals from non-member organizations may apply for membership on a committee, and if accepted, will be required to become an RTCA member.

• Individuals from Non-RTCA member organizations may attend Committee Plenary meetings that are announced on the web. Non-member attendees have the option of requesting permission to be recognized to speak during the plenary meeting. Meeting summaries and related information from previous plenary meetings will be available to the public via RTCA’s website. Documents undergoing final review can be obtained by contacting RTCA. Members of the public may also submit comments on documents undergoing final review.
Introductions

Chairman Hegarty
Welcome new PMC Members

Bruce DeCleene, FAA (GAR)
James Baird, FAA
Michael McDowell, Collins
Thank you!

Di Reimold
Agenda Item 2A:
Review/Approval Meeting
Summary
March 17, 2022

RTCA Paper No. 045/PMC-2241
Agenda Item 3A:
DO-282C Universal Access Transceiver (UAT) MOPS
From
RTCA SC-186 – ADS-B
Jessie Turner, SC-186 Co-Chair
Proxy for Rob Strain
SC-186 Working Group 5 Chair
June 23, 2022
RTCA Paper No. 158-22/PMC-2288
RTCA SC-186 WG-5
Leadership & Key Contributors

• RTCA SC-186 WG-5 Chair – Rob Strain (MITRE)

• Key Contributors
  • Industry
    • Martin Gray, Trig
    • Ryan Braun, uAvionix
    • Tom Mosher, Garmin
  • FAA
    • Matt Haskin, AIR
    • Tim Steiner, ANG
    • Eltzafan Mark, AJM
    • Alex Rodriguez, AJM
  • Engineering Services
    • Steve Darr, Dynamic Aerospace
    • Stan Jones, MITRE
    • Tom Pagano, Regulus
    • John Paranzino, Regulus
SC-186 Automatic Dependent Surveillance – Broadcast (ADS-B)

• Seeking approval for DO-282C, “Minimum Operational Performance Standards (MOPS) for Universal Access Transceiver (UAT) Automatic Dependent Surveillance - Broadcast (ADS-B)”
• Harmonize UAT MOPS with 1090ES ADS-B Standards [DO-260C including Change 1]
• Address errors, omissions, clarifications, and changes
• Consider new capabilities
New Capabilities

• AIREPS

• Episodic Payload
  • PIREPS
  • UAS/RPAS Lost C2 Link

• Support for High-velocity and/or high-altitude craft
  • 15,690 kts
  • 3,237,500 ft (532 nmi)
  • 1, 4 or 8 Hz ADS-B transmission rate

• Updated UAT performance model & results
FRAC opened January 14, 2022 (Plenary 84)
FRAC comment period January 18 – February 18, 2022
FRAC closed March 25, 2022 (Plenary 85)
Total Comments: 484
No Non-Concurs
• SC-186 Requests PMC approval of DO-282C, Minimum Operational Performance Standards (MOPS) for Universal Access Transceiver (UAT) Automatic Dependent Surveillance - Broadcast (ADS-B)
Agenda Items 3B, 3C, and 6C
SC-216
Aeronautical Systems Security

David Pierce – Chair

Program Management Committee
June 23, 2022

RTCA Paper Nos. 146-22/PMC-2284, 147-22/PMC-2285, and 162-22/PMC-2291
Committee Make-up

• Leadership
  • Co-Chair – David Pierce, GE Aviation US
  • Co-Chair – Patrick Morrissey, Collins Aerospace
  • Secretary – Sam Masri, Honeywell
  • GAR – Varun Khanna, FAA

• Work Group Leads
  • Siobvan Nyikos, Boeing

• Document Editor
  • DO-392, Sam Masri, Honeywell
  • DO-392, Ted Patmore, Delta
  • DO-392, David Pierce, GE Aviation US
  • DO-393, Siobvan Nyikos, Boeing

• Participants
  • 192 Members, typical attendance ~42
  • EUROCAE WG-72
Committee Key Standards

• DO-326A – Airworthiness Security Process Specification
• DO-355A – Information Security Guidance for Continuing Airworthiness
• DO-356A – Airworthiness Security Methods and Considerations
• DO-391 – Aeronautical Information System Security (AISS) Framework Guidance
• DO-392 – Guidance for Security Event Management
• DO-393 - Process Standard for Security Certification and Declaration of ATM ANS Ground Systems
October 29, 2021: Commenced FRAC Process
  • 45-day comment period (later extended by an additional 10 days)
  • Followed by 16 weeks for committee to review, organize, and resolve comments

April 8, 2022: Committee Plenary to approve the close of FRAC (per all agreements reached in principle from FRAC)
  • One NC remained but committee decided that current state of art did not provide enough maturity to include event reporting requirements in document, general agreement that >= 2 years needed to mature this data. Will add ToR revision to update this document in the future when sufficient data available to include in the document.

April 8, 2022: Committee Plenary to Approve Document Submission
  • Committee reached consensus to recommend for publication
FRAC Comments Summary – DO-392

Comment period: October 29, 2021 – December 13, 2021

- Large number of comments
  - Initial document on a difficult topic which raised many comments
  - Multiple Editors made work easier but still quite a task
  - Large number of NC but some of them, that if unresolved, may not have been submitted as NC

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Conclusion

• SC-216 recommends PMC to approve DO-392, Information Security Event Management for publication
FRAC Process and Schedule – DO-393

- **November 29, 2021: Commenced FRAC Process**
  - 45-day comment period
  - Followed by 12 weeks for committee to review, organize, and resolve comments

- **April 7, 2022: Committee Plenary to approve the close of FRAC (per all agreements reached in principle from FRAC)**
  - Revision was intended to handle a limited scope which was obeyed, and resolution went smoothly.

- **April 7, 2022: Committee Plenary to Approve Document Submission**
  - Committee reached consensus to recommend for publication
FRAC Comments Summary – DO-393

Comment period: November 29, 2021 – January 13, 2022

- Reasonable number of comments
  - Resolution went smoothly

### Summary of Comments

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Conclusion

- SC-216 recommends PMC to approve DO-393, Process Standard for Security Certification and Declaration of ATM ANS Ground Systems for publication
Committee Upcoming Work

• Current ToR complete upon PMC approval to publish DO-392 and DO-393

• Committee has reached consensus and proposes a revised ToR with new tasking recommended by multiple members and regulatory authorities

• Proposed next plenary October 17-21, 2022 at EUROCAE in Paris, France
Committee Upcoming Work

- **Proposed ToR revisions:**
    - Revise to include Change Impact Analysis concerns specific to IS
    - Develop an analog to current SMS to address IS concerns
    - Revise with additional data concerning specific reporting timelines
  - DO-YYY, Data Security Minimum Operational Performance Standards – December 2024
    - Develop specific standards for data security including data loads and other related issues
Additional Committee Concern

• SC-228 and SC-236 have contacted SC-216 about possible need to address Information Security issues in their deliverables

• SC-216, SC-228 and SC-236 are discussing the needs of these groups to determine a way forward, expectation is that this is not the last time this will be needed

• Possible solutions include:
  • Additional SC-216 deliverables such as directed guidance/MOPS for different specific equipment (similar to DO-178 companion documents)
  • Revision to SC-216 documents already published (can make a very large document)
  • Contributing to other groups deliverables with specific technical controls and/or specific guidance on application of airworthiness security process
Agenda Item 3D: Aeronautical Databases
SC-217
PMC Meeting – June 23, 2022

Brian Gilbert, Boeing
SC-217 Co-chair

RTCA Paper No. 132-22/PMC-2277
Committee Membership

• SC-217 Leadership
  • Co-chairs
    • Stephane Dubet, France SIA (AIS)
    • Brian Gilbert, Boeing
  • Government Authorized Representative
    • Brad Miller, FAA/AIR-6B1
  • RTCA Program Director
    • Rebecca Morrison
  • Secretary
    • Sasho Neshevski, EUROCONTROL
• SC-217 Participants

  • Avionics manufacturers: Collins, Garmin, GE Aviation, Honeywell, Universal Avionics, Thales
  
  • Aircraft Manufacturers: Airbus, Boeing
  
  • Data Providers: Jeppesen, Lufthansa Systems, Navblue, AeroNavData
  
  
  • International organizations: EASA, EUROCONTROL, EUROCAE
  
  • Other: Jacobs, MITRE
  
  • Airlines: N/A
DO-394, Considerations for Aeronautical Data Alteration

245 comments received

Comment Type
- Editorial, 117
- Medium, 55
- Low, 53
- Non-Concur, 0
- High, 20

Disposition
- Accepted 44%
- Modified 41%
- Rejected 15%

Acceptance rates:
- Accepted: 44%
- Modified: 41%
- Rejected: 15%
• Operates jointly with EUROCAE WG-44
• Working under current ToR (rev 11) since September 2020
• Monthly group web meetings, ad-hoc sub-team web meetings
• In-person plenary held March 21-25 at RTCA in Washington, DC
• Next plenary meeting scheduled for June 27-July 1 at EUROCONTROL in Brussels, Belgium

• DO-394: Considerations for Aeronautical Data Alteration
  • New document to clarify and provide guidance on alteration of source data (address DO-200B gaps)
  • Completion date: March 2022

Requesting PMC approval to publish DO-394
• **DO-200C: Standards for Processing Aeronautical Data**
  - Estimated completion date: March 2024
  - Statement of work:
    - Data Process Assurance Level (DPAL) granularity and validation/verification guidance
    - Quality Management
    - Change Management
    - Tool qualification
    - Data processing
    - Error reporting
    - Data quality requirements guidance
    - Authorized deviations
    - Alteration/origination (alignment with DO-394)
    - Document mechanics and organization
    - Terminology and consistency
    - WG-114 (AI in Aviation) needs

• **DO-201C: User Requirements for Navigation Data**
  - Estimated completion date: June 2024
  - Statement of work:
    - Align with ARINC 424 updates
    - Data Driven Charting (DDC)
    - European Commission (EC) Performance Based Navigation (PBN) rule
    - DPAL granularity
    - Align with PANS-AIM updates
    - Other minor updates as needed
Conclusions

- DO-394 development took longer than expected
  - ToR completion date was September 2021
  - Covid impacts on meetings
  - Evolving complexity of topic

- ToR completion dates for DO-200C is September 2023
  - Expected to take until at least March 2024 now
  - Late start due to longer DO-394 development time

- ToR completion dates for DO-201C is December 2023
  - Expected to take until at least June 2024 now
  - Late start due to longer DO-394 development time, focus on DO-200C highest priorities
  - Dependencies/coordination with other RTCA and EUROCAE committees

- Planning 3 plenary meetings per year in 2022 and 2023 to meet adjusted plans
SAFER SKIES THROUGH COLLABORATION
Agenda Item 3E:
Special Committee SC- 223
Internet Protocol Suite (IPS) &
Aeronautical Mobile Airport
Communication System (AeroMACS)

PMC Meeting – June 23, 2022
RTCA Paper No. 136-22/PMC-2278

Aloke Roy, SC-223 Chairman
## Current Committee Leadership

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<tr>
<td>Chair</td>
<td>Aroke Roy</td>
<td>Honeywell International</td>
<td>410-964-7336</td>
<td><a href="mailto:Aroke.Roy@Honeywell.com">Aroke.Roy@Honeywell.com</a></td>
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<td>Government Authorized</td>
<td>Brent Phillips</td>
<td>FAA/ANG-B2</td>
<td>202-267-2745</td>
<td><a href="mailto:Brent.phillips@faa.gov">Brent.phillips@faa.gov</a></td>
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<tr>
<td>Authorized Representative</td>
<td>Dongsong Zeng</td>
<td>MITRE</td>
<td>703-983-1367</td>
<td><a href="mailto:dzeng@mitre.org">dzeng@mitre.org</a></td>
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Program Director: Rebecca Morrison
Current Committee Participation

• SC-223 activities are jointly held with EUROCAE:
  • The AeroMACS portion of the Plenaries are held in collaboration with WG-82
  • The IPS plenaries and working sessions are held with WG-108

• The SC-223 activities are well attended by FAA, industry members and related SDOs. Some of the participants include:
  • DSNA
  • EUROCONTROL
  • FAA
  • Airbus
  • Boeing
  • Collins
  • Honeywell
  • Thales
  • INMARSAT
  • IRIDIUM
  • Collins IMS
  • AEEC
  • ICAO
  • EUROCAE
• In 2020, SC-228 Working Group 2, asked for DO-346, AeroMACS MOPS, to address a few defects identified by industry during system implementation

• In order to make these updates, it was required to work with EUROCAE WG-82 as DO-346 is a joint document with ED-223

• The SC-223 Committee reviewed the defect reports identified by the industry members and SC-228 WG-2, and successfully coordinated MOPS changes with the members and industry to mitigate the defects.
  • These actions resulted in minor modifications to AeroMACS MOPS, which has been also harmonized with the latest versions of the ICAO standards.

• The proposed revision DO-346A has undergone RTCA FRAC process which resulted in only one comment that has been fully resolved.

• The SC-223 Committee is pleased to submit the AeroMACS MOPS DO-346 Revision A to the PMC for publication approval.
1 Editorial comment received
Conclusions

• SC-223 requests the approval to publish DO-346A
Agenda Item 3F: DO-236D
from
Standards of Navigation Performance
SC-227

Mike Cramer
Chair SC-227

PMC Meeting – June 23, 2022
RTCA Paper No. 159-22/PMC-2289
Committee Membership

• RTCA SC-227 / EUROCAE WG-85 Leadership
  • Co-chairs
    • Mike Cramer - MITRE
    • Ellen McGaughy – Collins
    • Okuary Osechas - DLR
  • Government Authorized Representative
    • Barry Miller - AIR
  • Secretary
    • Dave Nakamura - MITRE
  • RTCA Program Director
    • Rebecca Morrison
  • EUROCAE Technical Programme Manager
    • Alexander Engel
Committee Membership

• SC-227 Participants
  • Avionics manufacturers: Collins, CETC Avionics, Esterline CMC, Foreflight, Freeflight, Garmin, GE Aviation, General Atomics, Honeywell, Jeppesen, NavBlue, Thales. Universal
  • Aircraft Manufacturers: Airbus, ATR-Aircraft, Boeing, Bombardier, Dassault, Embraer, Gulfstream, Vertical Aerospace, Volocopter
  • Airlines: Alaska, ALPA, APA, American, Delta, Helios, Lufthansa, Southwest, United
• DO-236D completed early, for approval this meeting, non-concur resolutions are contained in backup slides for discussion if needed
  • This was joint with EUROCAE WG-85
  • All six non-concurs were resolved satisfactorily to all
• DO-283C working group development kicked off in May plenary with considerations of MASPS driven changes
  • This will be joint with EUROCAE WG-85
• DO-257C for data-driven charts continues in working group
• Integrate Change 1 material into the MASPS (completed)
• Include new minimum standards for DME navigation in support of RNP operations (completed)
• Include additional guidance on multi-sensor and inertial navigation (completed)
• Consider updates to TOAC requirements in coordination with SC-186 to ensure compatibility with interval management operations
  • No changes made to TOAC requirements to resolve non-concurs – see next slide
Non-Concur Resolutions Summary

• Comments 54615, 54616, and 54610 were jointly resolved by updating the minimum bank angle requirements at high altitude to both reduce airspace necessary for turns and still allow “comfort” levels for turn forces

• Comment 54592 regarding VOR performance assumptions was resolved by removal of VOR performance from the MASPS due to States disallowing use of VOR for RNP operations

• Comments 54618 & 54624 were resolved in favor of not including TOAC minimum requirements changes that were the basis of the non-concur at this time because
  • The US has no unified concept for TBO utilizing TOAC and IM
  • Newly started work for the NAC which will try to define one by end of 2022 is in progress, changes to MASPS would be more appropriate following that concept publication
Agenda Item 3G and 3H:
SC-234
Portable Electronic Devices (PEDs)

Jamie Lutkus – Chair
Brian Verna – GAR
June 23, 2022
RTCA Paper Nos. 145-22/PMC-2283
and 144-22/PMC-2282
Committee Make-up

• Leadership
  • Chair – Jamie Lutkus (Astronics)
  • Secretary - Sal Navidi (Wisk)
  • GAR – Brian Verna (FAA)

• Work Group Leads
  • Wifi 6e – Jamie Lutkus (Astronics)
  • 5G – Robert Kebel (Airbus)

• Document Editor
  • Mike Airey (LSA Electromagnetics)

• Participants
  • 36 members
  • 2 working groups (5G and Wifi 6e)
• DO-363A / ED-130B - Guidance for the Development of Portable Electronic Devices (PED) Tolerance for Civil Aircraft

• DO-307B / ED-239A - Aircraft Design and Certification for Portable Electronic Device (PED) Tolerance
FRAC Process and Schedule

• **February 24, 2022: Commenced FRAC/OC Process**
  - 45-day comment period
  - Followed by 3 weeks for committee to review, organize, begin to resolve comments

• **May 4, 2022: Committee Plenary to resolve FRAC/OC comments**
  - All comments closed by the plenary by consensus
  - SC recommend approval of forwarding document to PMC for publication
• All FRAC comments dispositioned and agreed upon by the working group
• Most comments where editorial or clarifying in nature
  • DO-307B / ED-239A
    • Received Total of 21 Comments
      • High: 5
      • Medium: 5
      • Editorial: 11
  • DO-363A / ED-130B
    • Received Total of 44 Comments
      • High: 5
      • Medium: 1
      • Low: 4
      • Editorial: 34
Conclusion

• SC-234 recommends PMC to approve DO-307B and DO-363C for publication
• Recommend Sunset Action for SC-234
Agenda Item 3I: Wireless Avionics (WAIC) SC-236

PMC Meeting – June 23, 2022
RTCA Paper No. 160-22/PMC-2290

Steven Rines
Co-Chair SC-236
Committee Membership

• SC-236 Leadership
  • Co-chairs
    • Steve Rines (Safran Aerospace)
    • Thomas Meyerhoff (Airbus) temporarily replacing Uwe Schwark (on Sabbatical)

• Government Authorized Representative
  • Richard Adler (FAA)

• RTCA Program Director
  • Rebecca Morrison

• Secretary
  • David Redman (AVSI)
Committee Membership

• SC-236 Participants
  • Avionics manufacturers: Safran Aerospace, Collins Aerospace, Crane Aerospace
  • Aircraft Manufacturers: Airbus Industrie, Fokker
  • Government: FAA, EASA
  • Airlines:
Comments Received & Dispositioned

60 total comments received

- Editorial, 18
- Non-Concur, 17
- High, 12
- Medium, 6
- Low, 7

All comments were addressed and completed within 60 days of FRAC closure with the exception of 12 non-concurs.
• The availability of SARPs is a prerequisite for the development and deployment of WAIC systems, according to Resolution 424 of World Radiocommunication Conference 2015.

• The WAIC MASPS and SARPs were jointly developed by SC-236/WG96 and the FSMP Correspondence Group.

• Pre-FRAC, DO-378A specified an equivalent isotropic radiated power spectral density of 4mW/MHz.

• Rationale for non-interference at this power level included studies of minimum distances between worst-case aircraft positions at airports and previous ITU-R studies (ITU-R M.2319).
• Regulatory participants in FSMP questioned the legitimacy of WAIC power limits from WAIC studies based on the use of I/S versus I/N.

• Concerns were also raised regarding traceability of the SARPs limits to ITU-R M.2319 and the aggregate power of all WAIC systems on aircraft.

• Some administrations in the FSMP requested a drastic reduction of the permissible total radiated power of a WAIC system to a permissible total e.i.r.p. level of -20dBm in the worst-case radiation direction.
• Feasibility studies and practical testing of WAIC prototypes were conducted to evaluate the impacts of such a drastic reduction in WAIC power.

• Participants concluded that reliable wireless communication over reasonable distances remains possible using a modulation and coding scheme optimized for operation at the consequentially low Signal-to-Noise power ratio.

• Thereafter, the SARPs draft was modified to reflect the reduced total radiated power.

• The WAIC SARPs was approved by the FSMP in April 2022 based on a maximum WAIC transmit power of -20dB per transmitter.
• Following approval of the SARPs, the DO-378A draft was revised to reflect that same power limit.

• This modification had the side benefit of significantly reducing the need for inter-aircraft interference testing in the MASPS.

• The revised DO-378A draft was reviewed directly with participants from the French DGAC and UK CAA (the requestors of the SARPs modification and the originators of a majority of the FRAC non-concurs).

• Those regulators concurred that, with the reduced power limit, the issues associated with their non-concurs had been resolved and could be completed.
Conclusions

• SC-236/WG96 considers DO-378A ready for publication.
• A copy of the bulk comments from the DO-378A FRAC with their individual resolutions has been provided to RTCA and EUROCAE.
• Since the MASPS references the SARPs, RTCA will have to delay publishing the MASPS until after ICAO has published the SARPs.
Agenda Item 4: Integration and Coordination Committee
Agenda Item 5A:
Add ICAO Representative to PMC Invite

Terry McVenes
RTCA President
Agenda Item 5B: Reach out to AAAC for their actions on Spectrum and Surveillance Activities – Follow Up

Terry McVenes
RTCA President
Agenda Item 5C:
Presentation to ICAO FSMP on RTCA Spectrum Activity

Terry McVenes
RTCA President
Agenda 5D: Forum on Aeronautical Software Terms of Reference
PMC Meeting – June 23, 2022
Rebecca Morrison
SC-239 RTCA Senior Program Director
Agenda Item 5E:
SC-159 TOR Review for Tasks/References

• Action Closed

Chris Hegarty
SC-159 Co-Chair
Agenda Item 5F:
SC-228 TOR Rev 14 Further Refinement

• Action Closed

Karan Hofmann
RTCA PMC Secretary
Agenda Item 5G:
Means for DESIRE Review by PMC Members

Karan Hofmann
RTCA PMC Secretary
Securboration Status Update

• Configuring a standalone server with RTCA DESIRE
• Loaded about 25 RTCA documents
• Individual User Accounts are being setup
• Target: Up and running by 1 July
• Offering to Setup Training Session for interested participants
Agenda Item 5H:
Investigate Potential RTCA Way Forward for DESIRE

Karan Hofmann
RTCA PMC Secretary
Agenda Item 5I: Conduct Electronic OOC Ballot on SC-228 Rev 14 TOR

• Action Closed

Karan Hofmann
RTCA PMC Secretary
Agenda 5J:
Path forward on SC-239
Terms of Reference
PMC Meeting – June 23, 2022

Rebecca Morrison
SC-239 RTCA Senior Program Director
RTCA Paper No. 181-22/PMC-2300
• SC-239 met in Joint Plenary with WG-119 April 5-7, 2022, and agreed on a change to the TOR to include an initial deliverable

• The proposed TOR was presented to the PMC as an out of cycle ballot

• One PMC Member, the FAA, provided comments to clarify the requested additional deliverable
For PMC Consideration today:

- The TOR approved by SC-239 redlined with FAA suggestions for improvements (V1)
- The TOR from the FAA redlined with further SC-239 leadership comments for improvements (V2)

SC-239 Leadership has worked to answer the comments provided by the FAA

SC-239 was given a ballot to give input to the PMC on the committee opinion of V2 and the results are provided
Request of the PMC

- Discuss the scope of the initial deliverable and approve the general idea of a guidance document as presented in the latest TOR redlines
- Request the ICC be asked to consider both TOR versions with stakeholders to consensus on a TOR update for SC-239
Agenda Item 6A: Out of Cycle Actions since last PMC Meeting

- SC-228 – Revised TOR – Approved April 7, 2022
- SC-239 – Revised TOR – Ballot Closed April 11, 2022 – Not Approved
- SC-242 - Initial TOR – Approved with comments May 6, 2022
- DO-376 Change 1 – Approved May 20, 2022
- SC-222 - Revised TOR – Approved May 17, 2022
- SC-240 - Approved May 5, 2022

Karan Hofmann
RTCA PMC Secretary
Agenda Item 6B:
SC-159 Revised TOR

Chris Hegarty
SC-159 Co-Chair
Agenda Item 6D:
SC-FAS – Forum for Aeronautical Software Update

Rebecca Morrison
RTCA Senior Program Director

June 23, 2022
Agenda Item 6E:
• FAA Actions Taken on Previously Published Documents

FAA to Present
RTCA Paper No. 165-22/PMC-2294
Agenda Item 6F:
Chair Reports

Rebeca Morrison
RTCA Senior Program Director

June 23, 2022

RTCA Paper Number: 166-22/PMC-2295
Agenda 6G:  
International Coordination  
Terms of Reference  
PMC Meeting – June 23, 2022  
Rebecca Morrison  
SC-239 RTCA Senior Program Director  
RTCA Paper No. 167-22/PMC-2296
• TAC Meeting Dates and Publications since the last PMC have been uploaded to AerOpus

• RTCA and EUROCAE Participated together at the FAA/EASA Safety Conference last week

• Currently, RTCA and EUROCAE are working to plan a fully virtual event, Global Summit on Spectrum, for November 15th and 16th
Agenda Item 7A: How to view Shared Documents

Al Secen
RTCA VP
June 23, 2022
Why PMC Receives Documents

• PMC members receive a notice when documents are sent for FRAC
• Provide an early look into the document
• Save time in the PMC review cycle
Invitation to view Document

FULL FRAC CYCLE

Dear SC-147 Members,

Action Requested by COB – Thursday, April 14, 2022 5:00pm ET ... early replies encouraged.

SC-147 Traffic Alert & Collision Avoidance System has completed the updates to ACAS X+U MOPS & ADD and is making it available for Final Review and Comment (FRAC). All interested parties are requested to review the proposed draft and provide comments.

Please provide your comments by Thursday, April 14, 2022 5:00pm ET. The comments will be addressed at the next in-person committee meeting. Note that editorial, reference numbers, and format/style issues will be resolved as part of the FRAC process.

A folder called "Document Review/FRAC ACAS X+U March 2022" on AerOpus is now available for SC-147 using the following link:

[Link to AerOpus Folder]

This folder contains:

1. A PDF (with line numbers) of the document proposed for Final Comment and Resolution (you must use Adobe Acrobat, Adobe Pro, Adobe DC, or Adobe Reader to use the PDF)

   Link to Browser Enabled Version: https://standards.rtca.org/f803XUA

2. A copy of the Excel Spreadsheet that must be used for uploading bulk comments against the document. Instructions for uploading are on the 2nd tab of the spreadsheet.

3. Instructions for accessing the protected documents

Program Management Committee members can find the document on the Shared Documents Tab on AerOpus.

If you have any problems uploading your comments, please contact Al Secken (ascken@rtca.org).

This document is also posted for public review at the RTCA Document Review website.

PMC Members receive FRAC Announcements

The invitation invites PMC members to view the documents
AerOpus Link to Document

Documents shared with PMC are listed in the **Shared Documents** Tab.
Provides an opportunity to find all documents open for FRAC

Get an early look at the content – reducing PMC review time
Agenda Item 7B: MOPS for UAS
SC-228 Revised TOR

James H. (Jim) Williams
Brandon Suarez
Co-chairs
June 23, 2022
RTCA Paper No. 176-22/PMC-2299
SC-228 Status

• SC-228
  • Chair(s):
    • James H. (Jim) Williams
    • Brandon Suarez
  • GAR: Stephen VanTrees
  • Secretary: Katie Edwards

• Committee Purpose is to Develop Standards for:
  • UAS Detect and Avoid
  • UAS Command and Control Communications
  • Lost C2 Link Procedures
  • UAS Navigation
  • Recommend solution for vehicle-to-vehicle link for UAS
• Summary of changes in revision 15
  • GBSS MOPS (DO-381A)
    • Revision to include a class of equipment with reduced performance consistent with en route separation requirements
    • Simulation and modeling required for validation delayed, requiring a 6-month slip
  • Guidance Material for Lost C2 Link UAS Behavior
    • Guidance material that will regularize the lost link behavior of UAS operating in controlled airspace
    • Working Group start up delayed due to scoping issues, requires a 6-month slip
  • Guidance Material for UAS Navigation Systems
    • Document that identifies gaps and recommended actions to address equivalent level of safety guidance material for Part 91 operations under IFR for UAS navigation systems
    • Working Group start up delayed due to scoping issues, requires a 3-month slip
<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>FRAC Completion Date</th>
<th>Change Requested</th>
</tr>
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<tbody>
<tr>
<td>GBSS MOPS (DO-381A)</td>
<td>Revision to include a class of reduced performance consistent with en route DWC requirements.</td>
<td>April 2022</td>
<td>October 2022</td>
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<tr>
<td>GM for Lost C2 Link UAS Behavior</td>
<td>Guidance material that will regularize the lost link behavior of UAS operating in controlled airspace.</td>
<td>April 2022</td>
<td>October 2022</td>
</tr>
<tr>
<td>GM for UAS Navigation Systems</td>
<td>Create standard equivalent level of safety guidance material for Part 91 operations under IFR.</td>
<td>April 2022</td>
<td>July 2022</td>
</tr>
</tbody>
</table>
• Ad-Hoc working group established to address plans for use of a new vehicle-to-vehicle frequency dedicated for use by UAS/AAM aircraft

• Discussions continue with EUROCAE WG-105 to resolve incompatibility issue between RTCA DO-362A MOPS for C-Band Terrestrial C2 Links and EUROCAE draft MOPS for C-Band SATCOM C2 Links
  • Compromise Proposal to modify both documents to enable compatibility under assessment
  • Working toward a proposed resolution of the incompatibility at July SC-228 Plenary
Agenda Item 7C: Counter UAS
SC-238 Revised TOR

Adam Robertson
Chairman
June 23, 2022
RTCA Paper No. 175-22/PMC-2298
Agenda Item 8:
• Next Meeting Documents

Karan Hofmann
RTCA PMC Secretary
• SC-147, Traffic Alert & Collision Avoidance System (TCAS)
  • DO-385 Change 2 – *Minimum Operational Performance Standards for Airborne Collision Avoidance System X (ACAS X) (ACAS Xa and ACAS Xo)*
  • DO-396 – *MOPS for ACAS sXU Functionality*

• SC-222, Aeronautic Mobile Satellite (Route) Services (AMS(R)S)
  • DO-262F Change 1– *Minimum Operational Performance Standards for Avionics Supporting Net Generation Satellite System*
• SC-228, Minimum Performance Standards for Unmanned Aircraft Systems
  • DO-387 Change 1 – **Minimum Operational Performance Standards (MOPS) for Electro-Optical/Infrared (EO/IR) Sensor Systems for Traffic Surveillance**
• September 15, 2022
• December 15, 2022
• March 16, 2023
• June 15, 2023???
June Action Item Review
ADJOURN