

**RTCA PROGRAM MANAGEMENT COMMITTEE
MEETING SUMMARY
June 27, 2019**

The RTCA Program Management Committee (PMC) convened at 8:30 a.m. on June 27, 2019 at RTCA. The attendance list and action items are attached.

AGENDA ITEM 1

Welcome and Introductions

- A. PMC Chairman Dr. Chris Hegarty welcomed the group, asked attendees to introduce themselves and to note their organization of affiliation. PMC Secretary Karan Hofmann reviewed the anti-trust statement, proprietary policy, and membership policy.
- B. PMC Chairman announced a new PMC member, Jeffrey Hausmann from Gulfstream Aerospace Corporation, who unfortunately couldn't be with us today.
- C. PMC Chairman recognized that this will be Dr. George Ligler's last PMC meeting as he is stepping down as a member. He presented a gift on behalf of the PMC as a humble gesture of thanks for the support Dr. Ligler has provided to RTCA and, in particular, the PMC over the years. All members extended a special thank you to Dr. Ligler. Dr. Ligler will stay on as Co-Chair of SC-159.

AGENDA ITEM 2

Review / Approve

- A. The summary of the March 21, 2019 meeting was approved with one administrative change (RTCA Paper No. 088-19/PMC-1883).
- B. The following administrative Special Committee Terms of Reference (TOR) Revisions were presented and approved:
 - SC-217 – Joint Aeronautical Databases – Formally changing committee to “Active Monitor Status” – Approved (RTCA Paper No. 159-19/PMC-1917)
 - SC-227 – Standards of Navigation Performance – Formally changing committee to “Active Monitor Status” – Approved (RTCA Paper No. 152-19/PMC-1919)
 - SC-229 – 406 MHz Emergency Locator Transmitters (ELTs) – Formally changing committee to “Active Monitor Status” – Approved (RTCA Paper No. 153-19/PMC-1920)

- SC-236 – Standards for Wireless Avionics Intra-Communication System (WAIC) within 4200-4400 MHz – New Secretary Radek Zakrzewski (Collins Aerospace) – Approved (RTCA Paper No. 155-19/PMC-1922)
- SC-230 – Airborne Weather Detection Systems – New Secretary Yukun (Kenny) Ren (Boeing Corporation) – Approved (RTCA Paper No. 154-49/PMC-1921)

AGENDA ITEM 3

Publication Consideration/Approval

A. New Document – *MASPS for Collision Avoidance System Interoperability* prepared by SC-147 (Aircraft Collision Avoidance Systems)

The work on this document is not complete and its presentation is scheduled for a later PMC meeting. See agenda item 8D for TOR revision.

B. DO-246E Change 1 – *GNSS-Based Precision Approach Local Area Augmentation (LAAS) Signal-in-Space Interface Control Document (ICD)* prepared by SC-159 (Navigation Equipment Using the Global Navigation Satellite System (GNSS))

- Joel Wichgers, SC-159 WG-4 Co-Group Lead, presented.

This document includes a few corrections to RTCA DO-246E. The content of the Interface Control Document (ICD) was maintained to be backward compatible with all LAAS MOPS compliant equipment specified in DO-253 as amended by applicable FAA TSOs.

This ICD defines the Signal-in-Space for the Global Navigation Satellite System (GNSS) based Local Area Augmentation System (LAAS). The LAAS has global application as a Ground-Based Augmentation System (GBAS) to GNSS. The GNSS/GBAS Signal-in-Space is composed of three signals:

1. the navigation signal transmitted from the GNSS satellites to the ground subsystem,
2. the navigation signal transmitted from the GNSS satellites to the airborne subsystem, and
3. the VHF Data Broadcast (VDB) transmitted from the GBAS ground subsystem to the airborne subsystem.

The PMC approved the document. It will be published as DO-246E Change 1.

C. DO-253D Change 1 – *Minimum Operational Performance Standards for GPS Local Area Augmentation System Airborne Equipment* prepared by SC-159 (Navigation Equipment Using the Global Navigation Satellite System (GNSS))

- Joel Wichgers, SC-159 WG-4 Co-Group Lead, presented.

This document is the complementary avionics standard to the International Civil Aviation Organization Annex 10 Volume I GBAS standards and recommended practices (SARPs) for

GBAS Approach Service Types C (GAST C) and D (GAST D) as well as the differentially corrected positioning service (DCPS). Together, GAST C and GAST D support all categories of approach and landing operations with vertical and lateral guidance, as well as guided takeoff. DCPS supports horizontal positioning in local airport and terminal area environments. This change 1 of RTCA DO-253D primarily includes changes to the GBAS VHF Data Broadcast (VDB) receiver adjacent channel rejection requirements (Section 2.2.8) and the associated test procedures (Section 2.5), as well as the rationale for the VDB requirements (Appendix K) resulting from coordination of the frequency compatibility with the ICAO Navigation Systems Panel. This change 1 also includes a correction to the embedded synchronization and ambiguity resolution sequence test message (Table 2-26) contained in the VDB Training Sequence and Message Failure Rate Test (Section 2.5.2.2.5.4). RTCA DO-253D Change 1 supersedes RTCA DO-253D.

The PMC approved the document. It will be published as DO-253D Change 1.

D. DO-358A – *Minimum Operational Performance Standards (MOPS) for Flight Information Services – Broadcast (FIS-B) with Universal Access Transceiver (UAT) prepared by SC-206 (Aeronautical Information and Meteorological Data Link)*

- Mr. Paul Freeman and Mr. John Ferrara, SC-206 SG-5 Co-Group Leads, presented.

This document contains Minimum Operational Performance Standards for Flight Information Services Broadcast-System (FIS-B) with Universal Access Transceiver (UAT). These standards specify system characteristics that should be useful to designers, manufacturers, installers and users of the equipment. This document considers an equipment configuration consisting of the airborne processing and cockpit display of aeronautical and meteorological data known as FIS-B provided by the Federal Aviation Administration (FAA). Functions or components that refer to equipment capabilities that exceed the stated minimum requirements are identified as optional features. This document supersedes DO-358.

There is a data "Supplement to DO-358A" that is a zip file archive that contains test group files described in Section 2.4. The archive includes 24 sets of test group zip files. Each test group zip file includes a test procedures document, test stimulus timing information, and binary data input files for conducting the tests.

The PMC approved the document. It will be published as DO-358A.

E. New Document – *Aviation Profiles for Internet Protocol Suite prepared by SC-223 (Internet Protocol Suite (IPS) and Aeronautical Mobile Airport Communication System (AeroMACS))*

The work on this joint document is not complete and is expected to be presented at next PMC meeting.

F. New Document – MASPS for Coexistence of Wireless Avionics Intra-Communication within 4200-4400 MHz prepared by SC-236 (Standards for Wireless Avionics Intra-Communication System (WAIC) within 4200-4400 MHz)

- Steve Rines (SC-236 Chairman) and Sanjay Bajekal (SC-236 SWG-1 Group Lead) presented.

EUROCAE and RTCA have defined this Minimum Aviation System Performance Standard (MASPS) that applies to Wireless Avionics Intra-Communications (WAIC) systems utilizing the frequency band 4 200 - 4 400 MHz as allocated by the World Radiocommunication Conference (WRC) in 2015. Key criteria for allocation of the band by the WRC were (i) coexistence between WAIC systems and (ii) coexistence between WAIC systems and Radio Altimeters (RA), both on board neighboring aircraft.

This MASPS defines two Performance Requirements (PR) that ensure WAIC systems meet the above coexistence criteria. The first PR specifies the aggregate power spectral flux density allowed to be emitted by WAIC systems on board an aircraft. The second PR specifies tolerance of WAIC systems to Radio Frequency (RF) emissions from RA and WAIC systems from neighboring aircraft. Both PRs were derived after significant work by the Aerospace Vehicle Systems Institute (AVSI), EUROCAE and RTCA organizations to understand and characterize the worst-case conditions that may be experienced during the normal course of operation of the worldwide aircraft fleet.

This MASPS then specifies metrics to verify the aggregate power spectral flux density and interference susceptibility of WAIC systems.

Finally, this MASPS provides an acceptable means to demonstrate compliance along with corresponding pass/fail criteria.

The PMC approved the document. It will be published as DO-378.

AGENDA ITEM 4

Integration and Coordination Committee (ICC)

With Dr. Ligler's PMC departure, it was agreed that the ICC Lead position would pass to Mr. Clay Barber. This will assist with further validation for need of ICC and CCC.

AGENDA ITEM 5

Cross Cutting Committee (CCC)

No CCC updates reported.

AGENDA ITEM 6

Action Item Review.

A. Include PMC recommendations in Active Monitor Status Process – Status

- Karan Hofmann, RTCA Program Director, presented.

The revised Active Monitor Status Process was presented (highlighted areas are PMC recommended changes):

- When a committee has completed their TOR but still believes there is value in having the committee remain intact, the chairs may request to be placed on “Active Monitoring” Status
- A committee in Active Monitor Status will update their TOR to show:
 - On the first page of the TOR it will say, “Committee Status: Active Monitoring”
 - Deliverables will be removed from the TOR and indicate “None”
 - A paragraph under the empty deliverables table will indicate that the committee is on Active Monitoring Status
 - Scope, Envisioned Use of Deliverable(s), and Specific Guidance sections will be revised to not include anything referencing or referring to past deliverables
 - Paragraph to describe what is expected of the committee while in this status
 - The condition for sunset for the committee will change to indicate the committee will request to be sunset with the need for active monitoring has been addressed
- It is expected a committee on Active Monitor Status will submit a chair report after each meeting
- If the committee does not meet at least once in a year, it is expected the committee will submit a chair report to support remaining in Active Monitor Status
- RTCA staff will monitor the individual committees and contact leadership periodically as part of process and evaluation of expertise and membership to committee

PMC members approved the revised process for implementation. Action closed.

B. Provide Wording reference DO-377 for PMC Summary – Status

- Karan Hofmann, PMC Secretary, presented.

The recommended wording was provided and included in the March 21, 2019 Summary (agenda item 2A). Action closed.

C. Complete administrative cleanup to Appendix C Table for DO-377 – Status

- Al Secen, RTCA Vice President, Aviation Technology and Standards, presented.

The document was administratively corrected prior to publication. Action closed.

D. Adjust proposed TORs for SC-217, SC-227, and SC-229 for Active Monitor Status – Status

- Rebecca Morrison, RTCA Program Director, presented.

The three TORs were adjusted and approved under agenda item 2B. Action closed.

E. Share RTCA-ICAO Document Reference Spreadsheet with PMC Members – Discussion

- Al Secen, RTCA Vice President, Aviation Technology and Standards, presented.

Progress is being made with completion dependent on EUROCAE coordination. ICAO is asking panels to meet only once a year and the Standards Panel has not yet met (and very likely will not). Action still open.

F. Review and Revise TAWS SC TOR by Ad Hoc.

- Rebecca Morrison, RTCA Program Director, presented.

The TAWS SC TOR Ad Hoc provided a revised draft SC-231 TOR on April 11, 2019. It was forwarded to the PMC Secretary for follow on action. Action closed.

G. Conduct electronic approve for TAWS SC TOR - Status

- Rebecca Morrison, RTCA Program Director, presented.

The TAWS SC TOR Ad Hoc delivered a revised draft SC-231 TOR. It was provided to PMC members for their review and comment. Consensus was reached, and revised SC-231 TOR was approved on April 29, 2019. Noted that Mr. Jessie Turner had a few administrative corrections that he would forward for inclusion (action). Primary action closed.

- The approved TOR is posted in Workspace (RTCA Paper No. 104-19/PMC-1888).

H. Review and Revise HTAWS SC TOR - Status

- Rebecca Morrison, RTCA Program Director, presented.

SC-237 HTAWS delivered a revised draft TOR on April 30, 2019. It was forwarded to PMC Secretary for follow on action. Action closed.

I. Conduct electronic approval for HTAWS SC TOR - Status

- Rebecca Morrison, RTCA Program Director, presented.

The SC-237 HTAWS provided draft TOR was provided to PMC members for their review and comment. Consensus was reached, and TOR was approved on May 15, 2019. It was noted the group is holding its first meeting this week. Action closed.

- The approved TOR is posted on Workspace (RTCA Paper No. 116-19/PMC-1891).

J. Review IP Policy by Ad Hoc and recommend action for SC-159 - Status

- Terry McVenes, RTCA President and CEO, presented.

The Ad Hoc (including Terry McVenes, Dr. George Ligler, Al Secen, Mats Brenner, Karan Hofmann, and Anna von Groote) met June 3rd. There was much discussion on the exact wording in the RTCA Proprietary Reference Policy. Members agreed some fine tuning to specifically say the inclusion of any proprietary information anywhere in an RTCA document (main section or appendix) – whether informative or prescriptive – would require a Commitment to License from the owner of the information. This will be coordinated with EUROCAE to align our policies and will be presented to the RTCA Advisory Board for final approval.

To answer the original request, PMC members recommended SC-159 not include examples with potential proprietary/patented information in an appendix of their new MOPS without working through the process to obtain a Commitment to License from the owner of the information. This portion of action is closed.

K. Discuss UAS FAS briefing with TAC Chair - Status

- Dr. Chris Hegarty, PMC Chairman, presented.

Discussion between Dr. Hegarty and EUROCAE leadership has occurred. He suggested a path forward very much in alignment with the PMC recommendations from March 2019 meeting. Action closed.

Members requested a copy of the notes of this meeting (action).

L. FAA capture use/need for output of a DO-178C supplement - Status

- Charles “Chip” Bulger (FAA) presented.

Mr. Bulger reported the FAA is discussing but no final decision has been made. Right now, they are leaning toward recommendation that a DO-178C supplement might not be the right path but don't have the solution yet. Action still open.

M. Provide schedule for UAS FAS Ad Hoc activity - Status

- Rebecca Morrison, RTCA Program Director, presented.

The UAS FAS Ad Hoc presented the same presentation from the March PMC meeting to the TAC in April. EASA proposed some Lessons Learned and further lessons were captured by FAS Executive Committee on June 18th.

After consideration of all information, the Ad Hoc agreed all topic papers will be written by FAS members with a perspective that is independent of UAS SW Development

- Issues were identified by UAS Ad Hoc but are not only relevant to UAS SW Development

FAS UAS Ad Hoc Members from the UAS community who have requested Observer Status in the FAS will be able to participate in the FAS process prior to final balloting of the FAS Topic Papers.

Schedule for Topic Papers:

- FTP 1049 – Memory Management Software Levels – December 2019
- FTP 1050 – Agile Methodology – January 2020
- FTP 1051 – Alternate Development Methodologies – January 2020
- FTP 1052 – Compiler Clarifications - December 2019
- FTP 1053 – Constraints for Supplements – February 2020
- FTP 1054 – Operating Systems Clarifications – November 2019
- FTP 1055 – Tool Qualification Clarifications – February 2020

Action closed.

N. Provide outline for envisioned UAS FAS supplement - Status

- Rebecca Morrison, RTCA Program Director, presented.

The FAS is still considering what should be included in possible UAS supplement. There is a FAS face to face scheduled for November, so the next update will be at the December PMC meeting.

O. SC-213 present MASPS Deviation Request - Presentation

- Rebecca Morrison, RTCA Program Director, presented.

The group is still working on their inputs on MASPS Drafting Guide format. Presentation is expected at December PMC meeting after their next Plenary in October. Action still open.

P. Investigate pulling Requirements from documents and making available in separate format

- Al Secen, RTCA Vice President, Aviation Technology and Standards, presented.

Mr. Secen reported RTCA is engaged with an engineering company to investigate making the documents available in a more useable format. Will see if some type of demonstration would be possible at the next PMC meeting. Action still open.

Q. Conduct Internal (FAA) 4D TBO Coordination

- Karan Hofmann, PMC Secretary, presented on behalf of Doug Arbuckle, PMC Member.

This action it still being worked within the FAA. Action still open.

R. After FAA Coordination, Ad Hoc 4D TBO with SC-227 and SC-186 (w/WG-51) Leadership

Awaiting closure of item 6Q. This action still open.

AGENDA ITEM 7

Discussion.

A. Possible Special Committee Work - Counter UAS, Hybrid Electronic Engines, and Artificial Intelligence.

- Terry McVenes, RTCA President and CEO, presented.

RTCA Staff presented three possible special committee proposals:

- Counter UAS – based on feedback from Thought Leadership Series Session
- Hybrid Electronic Engines – Possible Joint Effort
- Artificial Intelligence – Possible Joint Effort

Calls for interest were sent out on two (HEE and AI) and the results were presented (posted in Workspace, RTCA Paper No. 143-19/PMC-1910).

There was much discussion on the complication of the counter UAS topic and the number of organizations getting involved (including the DAC forming a subcommittee at their most recent meeting). Possibly RTCA could reach out to support this effort. And although growing in effort, there is a lot of duplication. PMC members also expressed concern for depleted resources to support all these efforts. The HEE and AI support is being worked by some RTCA members through other organizations. Possible room for historic opportunity for RTCA to work with other organizations, such as SAE.

Members agreed to form an Ad Hoc to determine follow up course of action in general, but specifically on these three topics. Ad Hoc will include Terry McVenes, Jens Hennig, Jessie Turner, Bob Lee, and Randy Robertson. (Action)

B. SC-186 – Automatic Dependent Surveillance Broadcast (ADS-B) – Discussion – Revised TOR

- Jessie Turner, SC-186 Co-Chairman, presented.

The group requested several changes to delivery dates as presented in discussion at the March 2019 PMC meeting (RTCA Paper No. 074-19/PMC-1877). There are four documents that have document inter-dependencies, so delay of one affects them all. Additionally, Mr. Matt Haskin (FAA) is taking over the GAR position.

The revised TOR was approved with comment on these inter-dependencies (RTCA Paper No. 146-19/PMC-1913).

C. SC-209 – Minimum Operational Performance Standards for ATCRBS/Mode S Transponder – Discussion – Revised TOR

- Al Secen, SC-209 RTCA Program Director, presented.

The group requested a delay to the ATCRBS/Transponder MOPS as presented in the discussion at the March 2019 PMC meeting (RTCA Paper No. 074-19/PMC-1877). Additionally, Mr. Matt Haskin (FAA) is moving into the GAR position.

The revised TOR was approved (RTCA Paper No. 147-19/PMC-1914).

D. SC-216 – Aeronautical Information Systems Security – Discussion – Revised TOR

- Karan Hofmann, SC-216 RTCA Program Director, presented.

The group requested the addition of two deliverable items to further align joint work with EUROCAE WG-72's taskings. Additionally, Mr. Sam Masri (Honeywell Aerospace) is taking over the Secretary role from Ms. Siobvan Nikos (The Boeing Company) who is moving on to other responsibilities.

The revised TOR was approved with an administrative change to delete ASISP ARAC delivery (RTCA Paper No. 149-19/PMC-1916).

E. SC-222 – Aeronautical Mobile Satellite (Route) Services AMS(R)S – Discussion – Revised TOR

- Dr. Charles LaBerge, SC-222 Chairman, presented.

The group requested realignment of the projected document revisions to appropriate designation and to align with joint work with EUROCAE WG-82 TOR. Some clarification questions had been received from PMC members from pre-meeting review. These items were addressed and included in the final version presented today.

The revised TOR was approved (RTCA Paper No. 151-19/PMC-1918).

F. Actions Taken on Previously Published Documents – Report and Government Authorized Representative (GAR) List –Update.

- Charles “Chip” Bulger, FAA, presented

FAA Published Documents that reference published RTCA Documents, FAA Pending Documents for RTCA Documents Published, and FAA plans for RTCA Documents pending PMC approval were reviewed. Original document is posted in Workspace (RTCA Paper No. 125-19/PMC-1897).

FAA Published Guidance (Since Previous PMC)

RTCA Document	Developed By	FAA Guidance	Approval Date	Comment
DO-372, Addressing Human Factors/Pilot Interface Issues for Avionics	SC-233	AC 00-74	May 2019	Best practices, informational AC (00-HF)
DO-363 Change 1	SC-234	AC 91.21-1D	April 2019	Updated AC to incorporate DO-363 Change 1

RTCA Published Documents - FAA Pending Guidance

RTCA Document	Developed By	FAA Guidance	Planned Release Date	Comment
DO-311A, MOPS for Rechargeable Lithium Batteries and Battery Systems	SC-225	AC 20-184A	December 2019	Installation standard for rechargeable lithium batteries
DO-227A, MOPS for Non-Rechargeable Lithium Batteries	SC-235	AC 20-192	December 2019	Airworthiness installation criteria for non-rechargeable lithium batteries
DO-315A, DO-359, MASPS for SVGS, MASPS for ASA-SVS	SC-213	AC 20-185A	September 2019	Consolidates synthetic vision (SVS), synthetic vision guidance system (SVGS), and airplane state awareness guidance

DO-315A, MASPS for EVS, SVS, CVS, EFVS	SC-213	AC 20-167B	November 2019	Consolidates enhanced and combined vision system airworthiness criteria. No new criteria.
DO-220A, Change 1, MOPS for Airborne Weather Radar Systems	SC-230	AC 20-182B	December 2019	Aircraft weather radar installation guidance
Multiple RTCA data comm references from AC 20-140C	SC-214	AC 20-140D	October 2019	Incorporates clarification memo from Dec 2017 and policy for partial FANS-1/A installations
DO-362, Command and Control Data Link MOPS	SC-228	AC 20-187	December 2019	Airworthiness C2 installation guidance.
DO-365, Detect and Avoid MOPS Phase I. DO-366, MOPS for Air-to-Air Radar for Traffic Surveillance	SC-228	AC 20-DAA	February 2020	Airworthiness installation of a UAS DAA system
DO-253D, MOPS for GPS Local Area Augmentation System Airborne Equipment	SC-159	TSO-C161b and TSO-C162b	September 2019	Awaiting Change 1 to publish TSO. (Change 1 up for PMC approval June 2019)
DO-356A, Airworthiness Security Methods and Considerations	SC-216	AC	November 2019	Supports Special Conditions
DO-370, Guidelines for the In Situ Eddy Dissipation Rate (EDR) Algorithm Performance	SC-206	TBD	N/A	FAA solicits industry feedback on need for FAA guidance on use of this document
DO-373, MOPS for GNSS Active Antenna in the L1/E1 and L5/E5A Bands	SC-159	TSO-C215	TBD	New TSO. (Need DO-292A (2020) for interference environment)

DO-385 MOPS for ACAS X _a System and ACAS X _{a/o} Functionality (Class 1 ACAS X & Class 2 ACAS X)	SC-147	TSO	November 2019	Performance standard and installation guidance for Class 1 ACAS X (basic collision avoidance functionality) and Class 2 ACAS X (closely spaced runway operations and do not alert)
		AC	May 2020	
SPR for Vision Systems for Takeoff	SC-213	None	N/A	Establish safety case for the takeoff operation.
DO-281C, MOPS for aircraft VDL Mode 2 Physical Link and Network Layer	SC-214	TSO	2021	SC-214/WG-92/AEEC DLK recommends TSO/ETSO-C160a not be revised until publication of DO-281D/ED-92D planned in late 2020
DO-201B – User Requirements for Navigation Data	SC-217	AC 20-153B Change 1	July 2020	Updates navigation data quality requirements (DQRs).
DO-317B Change 1	SC-186	Note to Manufacturers for TSO-C195b	July 2019	Note to Manufacturers will post on FAA RGL with TSO-C195b, announcing availability of MOPS change.
DO-262D MOPS for Next Gen Satellite Systems	SC-222	None	N/A	TSO revision will synch with subsequent MOPS update
New C2 Link MASPS	SC-228	AC 20-187A	2020	

RTCA Documents Pending PMC Approval

RTCA Document	Developed By	Planned FAA Guidance	Planned Release Date	Comment
DO-246E Change 1 – LAAS Signal-in-Space ICD	SC-159	None	N/A	This document is a reference for DO-253D. RTCA publishes for the convenience of avionics OEMs

DO-253D Change 1 – <i>MOPS GNSS LAAS</i>	SC-159	TSO-C161b and TSO-C162b	September 2019	Addresses VDB changes associated with ICAO VHF compatibility criteria development
DO-358A – <i>MOPS FIS-B</i>	SC-206	TSO-C157c	April 2020	
New Document MASPS- Coexistence of Wireless Avionics 4200-4400 MHz	SC-236	TBD	TBD	

Mr. Bulger commented things are moving, just a little slow. The 6-7 month for legal review was not part of the anticipated timeline. This is not the norm, but legal has been taking on more activity, so taking longer. No impact on TSO side, more on the AC side. Legal is working under DOT guidance. If a particular document is needed, let Mr. Bulger know. Goal is to have regulations published so certifications submitted do not need issue papers.

G. Special Committees - Chairmen’s Reports, Active Inter-Special Committee Requirements Agreements (ISRA) – Review.

- Rebecca Morrison, RTCA Program Director, presented.

Reports were received from SC-135, SC-206, SC-209, SC-213, SC-214, SC-216, SC-223, SC-224, SC-228, SC-229, SC-231, and SC-236.

SC-236 – Presented today. Progressing on schedule with MOPS. Members of SC-236 are also working with the AEEC APIM on secure messaging characteristics (presentation from previous PMC by Steve Rines). Working as Ad Hoc until final approval.

SC-231 – First Plenary with new scope in TOR was May 14-15, 2019 at RTCA. Reviewed the PMC approved TOR to set the boundaries for the current work. Went over the recommendations NTSB and GAJSC in detail. Agreed on a white paper template for presenting information to the PMC. Plan is to meet at RTCA in September.

SC-229 – Held Virtual Plenary on May 13th with WG-98 SG-1 and scheduled full WG-98 in December 2019. Comments have been raised against the publication of DO-204B. The committee is considering if they should be addressed as errata or as a Change 1 to the document. Will come to the PMC with the results of their determinations with the hope to publish an update in early 2020.

SC-228 – At Plenary, decided to publish a white paper on decision for submission to FAA with comments on plan to re-allocate DME spectrum and the concurrent availability of band spectrum. TOR change is coming because of schedule delay and potential scope change to consolidate SATCOM into single MASPS document.

SC-224 – Met in Plenary in May and June - on schedule for DO-302J

SC-223 – Met in June at Collins Aerospace in Toulouse and continued work on the MASPS for IPS. A TOR update is expected at the PMC in September 2019 to extend the delivery date of the MASPS from December 2019 to December 2020. Their document IPS Profiles, should be presented at the September 2019 PMC. Currently waiting for approval from IETF Trust to included detailed RFC information. Next plenary starts Sept 30 hosted by Boeing in Seattle.

SC-216 – Presented today on their TOR update.

SC-214 – Presented today on their TOR update.

SC-213 – Had presentations by both EASA and the FAA on their use of the SC-213/WG-79 documents. Made progress on the SCS/SVGS/CVS new MASPS during plenary and working group.

SC-209 – Presented TOR change today.

SC-135 – Met in April considering change proposals against DO-160G and DO-357 (User's guide). Continues work on the Environmental Test Procedures for Ground Station. Will meet in October at Garmin in Salem, Oregon. Will initiate FRAC for the initial publication of the document. Aligned to present to PMC in June 2020 per TOR. Note: Continues alignment with EUROCAE WG-14. WG-14 is not publishing the Ground Station document at this time.

The complete matrix and individual committee reports are posted on Workspace (RTCA Paper No. 126-19/PMC-1898).

H. European/EUROCAE Coordination – Status Update.

- Rebecca Morrison, RTCA Program Director, presented.

Topics of Note:

- New Documents Released by EUROCAE since last PMC
 - o ED-253 – *Operational Services and Environment Definition (OSED) for RPAS Automation & Emergency Recovery functions* – WG-105, March 2019
 - o ED-205 - *Process Standard for Security Certification and Declaration of ATM ANS Ground Systems* – WG-72, April 2019
 - o ED-130A Change 1/DO-363 Change 1 - *Guidance for the Development of Portable Electronic Devices (PED) on Board Aircraft* – WG-99/SC-234, April 2019

- ED-243A/DO-262D – *Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems* – WG-82/SC-222, April 2019
- ED-242A/ DO-343B – *AMS(R)S Data and Voice Communications Supporting Required Communications Performance (RCP) and Required Surveillance Performance (RSP)* – WG-82/SC-222, April 2019
- EC-194A Change 1/DO-317B Change 1 - *MOPS for Aircraft Surveillance Applications (ASA) System* – WG-51/SC-186, April 2019
- ED-137C – *Interoperability Standard for VOIP ATM Components”, Volume 5 “Supervision”, Volume 4 “Recording” and Volume 2 “Telephone, including 8 Addenda* – WG-67, April 2019
- New EUROCAE WG-112 – VTOL
 - Planned Scope Includes:
 - Electrical
 - Thrust/lift
 - Safety
 - Flight
 - Ground
 - Details of the TOR will be completed at the kickoff meeting 6/28/19
 - This effort is not currently planned to be joint with RTCA, but EUROCAE is not currently working with another SDO on this effort
- New EUROCAE WG-113 – Hybrid Electric Propulsion
 - Initial effort will be to create Report on the list of standardization needs for Hybrid Electric Propulsion
 - This document is not currently planned to be joint with RTCA
- New EUROCAE WG-114 – Artificial Intelligence
 - Initial Efforts:
 - Report on Qualification process of aeronautical systems implementing AI: Statement of concerns
 - Process standard for Qualification of aeronautical systems implementing AI: Development standard
 - This effort is not planned to be joint with RTCA at this time
- EUROCAE Upcoming Meetings:
 - TAC #78 – July 2-3, 2019, St Denis, EUROCAE
 - TAC #79 – September 19-20, 2019, Brussels, EASA

I. RTCA Drafting Guides – Status Update.

- Karan Hofmann, RTCA Program Director, presented.

The RTCA staff continues working on updates to the drafting guides in coordination with EUROCAE to align the guides as much as possible.

AGENDA ITEM 8

Other Business.

A. SC-214 – Standards for Air Traffic Data Communication Services – Discussion – Revised TOR.

- Thomas Mustach, SC-214 Government Authorized Representative, presented.

The group requested a delay in delivery date for the companion document for ground equipment due to delays in overall document development. Additionally, DO-290 Change 3 was requested as a quick joint change with WG-78 to eliminate problems to demonstrate compliance with EUR Datalink Services Implementing Rule.

The revised TOR was approved (RTCA Paper No. 148-19/PMC-1915).

B. Spectrum Considerations Update - Presentation.

- Andrew Roy, Director, Engineering Services, Aviation Spectrum Resources, Inc., presented.

Mr. Roy provided an update on the developing ICAO spectrum guidance for aviation standards as previously briefed to the PMC. He also summarized recent activity at the Federal Communications Commission (FCC) that directly involves multiple aviation systems, including potential implications for radio altimeters that may require RTCA action in the mid-term.

- The presentation is posted on Workspace (RTCA Paper No. 139-19/PMC-1906). Additionally, an ICAO working paper is provided for reference.

C. FAA Complex Electronic Hardware Standards – Possible DO-254 Gap Discussion - Presentation.

- Calvin Chu, Chief Operating Officer, CHIP SCAN, presented.

Mr. Chu presented some thoughts on a lack of security in validations/verification process. He indicated the FAA does not include cybersecurity in their process. He thought changes to DO-254 should be considered to include such processes. PMC members recommended he present ideas to SC-216 (action).

D. SC-147 – Aircraft Collision Avoidance Systems – Discussion – Revised TOR.

- Stuart Searight, SC-147 Co-Chairman, presented.

The group requested the following items for their TOR:

- Removal of ACAS X_A/X_O MOPS as deliverable, as it was approved by PMC and published September 2018
- Adding New Deliverable: DO-386/ED-256 Change 1 MOPS for ACAS X_A/X_O
- Changed PMC Delivery Date for Interoperability MASPS to December 2019
- Inclusion of language regarding ACAS sX_U and ACAS X_R operational concepts and work currently being done outside of SC-147
- Other Minor Editorial Clean-ups

During discussion, Terry McVenes pointed out for RTCA to remain viable we have to adapt. We need to be able to support the new entrants (like UAS). Along with the FAA, we agree it can't take 3-5 years to create a document. But we still need enough content to make it useful. He recommended an ad hoc to investigate possibility of a MOPS "Lite". Further discussion brought about the term Scaleable MOPS (SMOPS). PMC members agreed on action to follow up on this concept. Ad Hoc members will include Terry, Al Secen, Jens Hennig, Bob Lee, and Dan Elgas (Action).

The revised TOR was approved (RTCA Paper No. 145-19/PMC-1912).

AGENDA ITEM 9

Schedule for Committee Deliverables and Next Meeting Date

Documents expected for the September 12, 2019 meeting:

- SC-214, Standards for Air Traffic Data Communications Services
 - DO-290 Change 3 – *Safety and Performance Requirements Standard for Air Traffic Data Link Services in Continental Airspace (Continental SPR Standard)*
- SC-223, Internet Protocol Suite (IPS) and Aeronautical Mobile Airport Communication System (AeroMACS) – at risk for March
 - New Document – *Aviation Profiles for Internet Protocol Suite*

The dates for the next four PMC meetings were confirmed: Thursday, September 12, 2019; Thursday, December 19, 2019; Thursday, March 26, 2020, and Thursday, June 25, 2020.

AGENDA ITEM 10

New Action Item Summary

See PMC Action Item Table.

/Signed/

Karan Hofmann, Secretary
RTCA Program Management Committee

CERTIFIED to be a true and accurate report of the meeting.

/Signed/

Christopher Hegarty, Chairman
RTCA Program Management Committee

**Program Management Committee – June 27, 2019
ATTENDANCE LIST**

PMC MEMBERS:

Christopher	Hegarty	The MITRE Corporation Chairman
Doug	Arbuckle	Federal Aviation Administration
John	Craig	Aviation Information Sharing and Analysis Center
Rune	Duke	Aircraft Owners and Pilots Association
Dan	Elgas	Federal Aviation Administration Government Authorized Representative (Proxy for Michael Romanowski)
Jens	Hennig	General Aviation Manufacturers Association
Steve	Horvath	Garmin, Ltd (Proxy for Clay Barber)
Robert	Ireland	Airlines for America
Richard	Kahne	U.S. Air Force
Randy	Kenagy	Air Lines Pilot Association
Robert	Lee	Collins Aerospace
George	Ligler	Project Management Enterprises Inc.
Terry	McVenes	RTCA, Inc.
Al	Secen	RTCA, Inc.
Ron	Stroup	Federal Aviation Administration (Proxy for Joseph Post)
Jessie	Turner	The Boeing Company
Heidi	Williams	National Business Aviation Association

OTHER ATTENDEES:

Sanjay	Bajekal	United Technologies Corporation
Chip	Bulger	Federal Aviation Administration
Ruy	Brandao	Honeywell
Calvin	Chu	Chip Scan
John	Farrara	Farrara Consulting
Eldridge	Frazier	Federal Aviation Administration
Paul	Freeman	Harris Corporation
Anna	Guegan	EUROCAE
Ed	Hahn	Air Line Pilots Association
Karan	Hofmann	RTCA, Inc.
Chuck	LaBerge	EPL LaBerge Engineering
Gionluca	Nigro	Aircraft Owners and Pilots Association
John	Moore	Collins Aerospace

Rebecca	Morrison	RTCA, Inc.
Hal	Moses	Citizen
Thomas	Mustach	Federal Aviation Administration
Steve	Rines	Zodiac Inflight Innovations
Andrew	Roy	ASRI
Stuart	Searight	Federal Aviation Administration
Brian	Verna	Federal Aviation Administration
Joel	Wichgers	Collins Aerospace
Dongsong	Zeng	The MITRE Corporation

PMC ACTION ITEM TABLE

TRACKING NUMBER (Meeting Date and agenda item from which original action resulted)	ACTION	ACTION ASSIGNED TO	DUE DATE	STATUS
06/21/2018 Agenda Item 8C	06/21/2018 – Investigate feasibility of providing redlined versions of completed documents 09/20/2018 – Update provided, but further questions 12/13/2018 – Redirect to pulling reqs from documents and making available separate format 03/21/2019 – More structure format needed for requirements in MOPS and MASPS – prototype forthcoming	Al Secen	Sep 2019	Open
12/13/2018 Agenda Item 3B	12/13/2018 – Setup procedure for annual review of committees in “active monitor” status 03/21/2019 – Include PMC recommendations in Active Monitor Status Process 06/27/2019 – Revised process presented and approved	RTCA Staff	Jun 2019	Closed
12/13/2018 Agenda Item 6D	12/13/2018 – Once complete, share RTCA-ICAO document referenced spreadsheet with PMC	Al Secen	Sep 2019	Open
12/13/2018 Agenda Item 7G	12/13/2018 – Conduct electronic approval for TAWS SC creation (with TOR) 03/21/2019 – Once revised draft TOR complete, conduct electronic TOR approval 06/27/2019 – TOR approved electronically	Karan Hofmann	Apr 2019	Closed
03/21/2019 Agenda Item 3E	03/21/2019 – Clay Barber provide wording for PMC summary about DO-377 06/27/2019 – Comments received and included in March 2019 summary	Clay Barber	Apr 2019	Closed
03/21/2019 Agenda Item 3E	03/21/2019 – Administrative Appendix C table cleanup for DO-377 06/27/2019 – Clean up completed prior to document publication	RTCA Staff	Apr 2019	Closed
03/21/2019 Agenda Items 6A & 7C	03/21/2019 – Adjust proposed TORs for SC-217, SC-227, and SC-229 for Active Monitor Status 06/27/2019 – All TORs revised and approved	Rebecca Morrison	Jun 2019	Closed

03/21/2019 Agenda Item 6H	03/21/2019 – Ad Hoc review and revise new draft SC-213 (TAWS) TOR 06/27/2019 – TOR draft Revised	Dr. Romanowski, Doug Arbuckle, Rebecca Morrison	Apr 2019	Closed
03/21/2019 Agenda Item 6J	03/21/2019 – Review and Revise draft SC-237 (HTAWS) TOR 06/27/2019 – TOR draft Revised	SC-237	Apr 2019	Closed
03/21/2019 Agenda Item 6J	03/21/2019 - Once revised draft SC-237 (HTAWS) TOR complete, conduct electronic TOR approval 06/27/2019 –TOR approved electronically	Karan Hofmann	Apr 2019	Closed
03/21/2019 Agenda Item 6N	03/21/2019 – Ad Hoc review IP Policy (coordinate with EUROCAE) and recommend action for SC-159 GNSS-aided inertial navigation systems MOPS 06/27/2019 – Ad Hoc recommendations reviewed; being coordinated with EUROCAE and then to RTCA Advisory Board for approval; recommend SC-159 not include info without CtL	Terry McVenes, Al Secen, George Ligler, Mats Brenner, EUORCAE Rep	Sep 2019	Open
03/21/2019 Agenda Item 7A	03/21/2019 - PMC Chair have discussion with TAC Chair after the TAC receives UAS FAS Ad Hoc briefing 06/27/2019 – Discussion occurred	Chris Hegarty	Jun 2019	Closed
03/21/2019 Agenda Item 7A	03/21/2019 - FAA capture their use/need for output of a DO-178C supplement	FAA Dr. Romanowski, Doug Arbuckle	Sep 2019	Open
03/21/2019 Agenda Item 7A	03/21/2019 - UAS FAS Ad Hoc provide a schedule for when they could deliver IPs as listed. 06/27/2019 – List of suggested topics and schedule presented.	UAS FAS Ad Hoc	Jun 2019	Closed
03/21/2019 Agenda Item 7A	03/21/2019 - UAS FAS Ad Hoc provide an outline for the envisioned supplement	UAS FAS Ad Hoc	Dec 2019	Open
03/21/2019 Agenda Item 7C	03/21/2019 – SC-213 present to June PMC mtg on MASPS deviation request	SC-213	Sep 2019	Open
03/21/2019 Agenda Item 8F	03/21/2019 – internal FAA 4D TBO coordination	Doug Arbuckle	Sep 2019	Open
03/21/2019 Agenda Item 8F	03/21/2019 – After FAA coordination, Ad Hoc with SC-227 and SC-186 (w/WG-51) leadership on 4D TBO	Doug Arbuckle	Sep 2019	Open
06/27/2019 Agenda Item 6G	06/27/2019 – Jessie Turner provide administrative corrections to SC-231 TOR	Jessie Turner	Jun 2019	Open

06/27/2019 Agenda Item 6K	06/27/2019 – Provide copy of meeting summary w/ Chris Hegarty and EUROCAE leadership on UAS FAS Ad Hoc recommendations	Chris Hegarty / Karan Hofmann	Jul 2019	Open
06/27/2019 Agenda Item 7A	06/27/2019 – Ad Hoc to determine follow on COA for possible new SC's (Counter UAS, HEE, & AI)	Terry McVenes, Jens Hennig, Jessie Turner, Bob Lee, and Randy Robertson	Sep 2019	Open
06/27/2019 Agenda Item 8C	06/27/2019 – Present ideas to SC-216 for consideration	Calvin Chu	Sep 2019	Open
06/27/2019 Agenda Item 8D	06/27/2019 – Ad Hoc to investigate possible SMOPS concept	Terry McVenes, Al Secen, Jens Hennig, Bob Lee, and Dan Elgas	Sep 2019	Open