Welcome to RTCA

Program Management Committee Meeting

September 20, 2018

Welcome & Introductions

Chair

Chris Hegarty, MITRE

Anti-Trust Policy

- RTCA meetings are conducted in strict compliance with US antitrust laws. Meetings shall not consider, or be used to discuss, agreements on prices, including terms of sale or credit, production plans, marketing strategies or customer potential, or any other element of competition between participants.

- RTCA staff will suspend any discussion that relates to such matters and the Meeting will proceed only after appropriate limitation of such discussions has been advised and agreed.

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- RTCA develops comprehensive, industry-vetted and endorsed recommendations for the regulatory authorities and the aviation community on issues ranging from technical performance standards to operational concepts for air transportation. Supporting this hallmark of RTCA foundational goals to procure consensus for recommended performance standards, the preferred and highly endorsed method for producing RTCA documents is to do so **without reference to proprietary information**. Although this type of reference in an RTCA document is not prohibited *per se*, it is limited to those circumstances where the objective of the document cannot reasonably be attained without the reference(s). Before incorporation into an RTCA document, three tests must be met:
  - 1) A bona fide, public interest basis for the reference and/or usage
  - 2) Evidence that private pecuniary interests have not driven any decision to either include or exclude a system from the market
  - 3) A commitment to license the relevant technology, patent, patent pending, or copyrighted material by completing a Commitment to License (CtL)
- Early in the development of an RTCA document, if proprietary information is identified as relevant, the participant or the proponent *must disclose* to the SC leadership and/or Work Group (WG) leadership that they are personally aware that proprietary information is proposed and/or required for compliance with the RTCA document being developed.
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- Participation in a meeting (including participation via conference telephone or via web cast or similar remote means) shall be deemed to authorize the meeting secretary to record that this proprietary policy has been communicated and accepted.

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.

- Sign-in sheets are located outside the door
  - Please sign in via the roster, or
  - Provide your contact details on the new member sheet
- Facility Layout
  - RTCA Receptionist (Suite 910)
    - Can help with any questions
    - Can summon IT support
- Meeting tips
  - Please remember to use your microphones
    - Press and release once to activate/deactivate.
    - Do NOT hold the button down
    - The maximum number of mics on at one time is 5 – if drops occur, check the number of active mics

PMC Reflections and Remembrance

Robert Grove
May 29, 1949 – July 12, 2018

Robert "Bob" Saffell
August 24, 1949 – September 6, 2018

Per Enge
October 29, 1953 – April 22, 2018

Happy Retirement Richard Heinrich!!

Happy Retirement
Chris Benich!!

THE GOLD STANDARD FOR AVIATION SINCE 1935

Welcome New PMC Members:

Rune Duke – AOPA

Heidi Williams – NBAA

RTCA
THE GOLD STANDARD FOR AVIATION SINCE 1935

Agenda Item 1-B:
Independent Standards Development Organization Update

Andy Cebula, RTCA Interim Executive Director

September 20, 2018 PMC

RTCA Paper No. 236-18/PMC-1805

RTCA Update

- Focus: RTCA Historical Core Capability
  - Since 1935
- New Board of Directors
  - Chair: Steve Brown, NBAA
  - Vice Chair: Steve Timm, Rockwell Collins
  - Carl Esposito, Honeywell Aerospace
  - Sharon Pinkerton, Airlines for America
  - Melissa Rudinger, AOPA
  - Todd Zarfos, The Boeing Company
- Search Committee - Subset of Board Plus…
  - Chris Hegarty, MITRE

Current Emphasis

RTCA Committee Advancing Safety and Security
August 20, 2018

Reflecting RTCA's more than 83-years' worth of experience as the premiere aviation standards organization and leading provider of standards for aircraft system security, Special Committee 216, Aeronautical Systems Security, recently issued *Airworthiness Security Methods and Considerations* (DO-356A). This document capped a two-year effort by

- Continue emphasis on reaching consensus
- Individual Committee outreach with RTCA leaders
- Communicating Committee Actions – message for broader audience
- Collaborating with Europe/Other Global Areas
- Overarching Question
  - Initiating New Work for Existing Committees
  - Launching New Committees

RTCA Update

- Challenge facing RTCA and Committees
  - Transition in Committee Leadership/Participants
  - Karan and Chris special report out

Agenda Item 2A:
Review / Approve Meeting Summary
June 21, 2018

RTCA Paper No. 209-18/PMC-1791

Agenda Item 2B:
Review / Approve Administrative SC TOR Revision

SC-236 – New Chairman

SC-222 – New GAR

Agenda Item 3A: 147 – Traffic Alert and Collision Avoidance System

Stuart Searight and Ruy Brandao
SC-147 Co-Chairmen

PMC Meeting – June 21, 2018

RTCA Paper Nos. 216-18/PMC-1797 and 217-18/PMC-1798

Committee Profile

- SC-147/WG-75 Leadership
  - J. Stuart Searight, FAA/ANG-C, SC-147 Co-Chair
  - Ruy Brandao, Honeywell International, SC-147 Co-Chair
  - Bill Booth, Eurocontrol, EURUOCAE WG-75 Chair
  - Donna Froehlich, Aurora Innovations, Secretary

- SC-147/WG-75 Membership
  - 80+ <u>Active</u> participants
  - FAA: AJM, ANG, AIR, AFS, AUS
    - MIT Lincoln Laboratory, Johns Hopkins APL, Mitre CAASD
  - EUROCONTROL, SESAR, EASA, DSNA, Egis
  - ALPA, NATCA, NATS, DFS
  - Boeing, Airbus
  - Honeywell, ACSS, Rockwell, Garmin

ACAS X_A/X_O MOPS

- ACAS X_A = "Newer, Better, Smarter" TCAS II
  - "A" denotes Active Surveillance (i.e. Mode C/S)
  - Uses same RA Alerts as TCAS II
    - No new training required
  - Surveillance uses ADS-B more directly
  - Alerting Logic reduces TA and RA rates in desired environments (e.g. IFR/VFR interactions near airports.)
  - Improved Alerting (i.e. reduce frequencies of: reversals, altitude crossings, complex RA sequences, and "pop-up" RAs)

ACAS X_A/X_O MOPS

- ACAS X_O = Operationally Specific Logic
  - Allows for tailored alerting logic and thresholds to be used for Designated Traffic
    - DO-317A (ASA System/SC-186)
  - Two Versions of XO Logic included:
  - $X_{O\,DNA}$ – "Do Not Alert"
    - RAs are "masked" from designated traffic
  - $X_{O\,CSPO-3000}$ – Closely Spaced Parallel Operations
    - Decreased Alerting Sensitivity to avoid unnecessary RAs
  - Extendable for Future ASA Application Integration
    - i.e. IM Arrivals, Crossing and Passing

MOPS Materials

- **ACAS X MOPS**
  - Volume I: Standard MOPS Format, Requirements, and Test Procedures
  - Volume II: Algorithm Design Description (ADD)
    - Analogous to TCAS II Pseudocode, but in Julia source code
- **Supporting Materials**
  - Materials that were indirectly part of FRAC/OC process & required to implement an ACAS X system
  - Cost Look-up Tables (data files that dictate system alerting)
  - Test Suite files (set of tests for path coverage V&V)
- **Supplementary Materials**
  - FAA Program Office Artifacts from ACAS X development
  - Provide justification and validation for final ACAS X system performance
  - Not part of FRAC/OC Process, but used by committees to approve final MOPS
    - Operational Metrics Matrix final report
    - Requirements Mapping and Justification Matrix and Final Report
    - ACAS X simulation executable
  - To be placed in "DO-385 Supplementary Materials" folder on SC-147 Workspace

Document Approval Process (1/2)

- Oct-Nov 2017: "Pre-FRAC" Review and Comment Process

- December 2017: Meeting dedicated to Comment Review and Adjudication
  - Joint Committee Approval to implement all agreed comment resolutions and proceed to FRAC/Open Consultation

- March 8-April 29, 2018: Final draft MOPS open for FRAC/OC Review and Comment
  - 1041 Comments received
  - 9 Non-concurs, and 151 High comments

- May 15-18, 2018: Joint SC-147/WG-75 Plenary

ACAS X MOPS Comment Statistics

Summary of Comments

	Number	Not Started	In Process	Complete
Non-Concur	8	0	0	8
High	128	0	0	127
Medium	210	0	0	209
Low	177	0	0	177
Editorial	411	0	0	411
N/A	*0*	*0*	*0*	*0*
Substantive	*0*	*0*	*0*	*0*
Total	934	0	0	932

Summary of Comments

	Number	Not Started	In Process	Complete
Non-Concur	1	0	0	1
High	24	0	0	24
Medium	36	0	0	36
Low	15	0	0	15
Editorial	33	0	0	33
N/A	*0*	*0*	*0*	*0*
Substantive	*0*	*0*	*0*	*0*
Total	109	0	0	109

Summary of Comments on Volume I MOPS Textual Requirements and Tests

Summary of Comments on Volume II Algorithm Design Description

Non-concur Topics

- "Placeholder" NC to ensure that all members felt they had sufficient chance to review material missing in March 8th distribution
  - Missing material distributed April 12
  - Specific ADD routines for Designating a Target for ACAS Xo
- ACAS Xo interface capabilities during an RA
- ACAS Xo requirement to specifically use ICAO 24 bit address to correlate between ACAS X and ASA
- Operational Coordination Message definition
- Julia Code / ADD: Coding Standards
- Linkage between Vol I and Vol II Requirements

Document Approval Process (2/2)

- May 29-July 20: Held numerous Working Group WebEx sessions to discuss/introduce changes addressing comments

- July 25, 2018: Final MOPS and Comment Matrix distributed to SC-147/WG-75 members for verification review

- August 13, 2018: Joint Plenary via WebEx to present final MOPS and Comment Resolutions
  - MOPS Received Joint SC-147/WG-75 Approval

Conclusions

- SC-147/WG-75 has reached consensus on

$$\text{ACAS } X_A/X_O \text{ MOPS}$$

- SC-147 recommends PMC to approve this new standard for release to RTCA for publication

SC-147 Upcoming Work

- MASPS for Collision Avoidance System Interoperability
  - *Based on ISRA between SC-147 and SC-228 DAA WG*
  - *Committee Approval scheduled for December, 2018*

- MOPS for Airborne Collision Avoidance System X for UAS (ACAS X_U)
  - *Committee Approval scheduled for September, 2020*

- *Potential Future Addition to TORs: ACAS X_R*
  - *ACAS X specifically designed for rotorcraft*

Agenda Item 3B: SC-213 Enhanced Flight Vision Systems/Synthetic Vision Systems

PMC Meeting – September 20, 2018

RTCA Paper No. 211-18/PMC-1792

Tim Etherington, SC-213 Co-Chairman

Committee Membership

- ### SC-213 Leadership
  - Co-chairs
    - Tim Etherington – Rockwell Collins
    - Patrick Krohn - Universal
  - Designated Federal Official
    - Trent Prange
  - RTCA Program Manager
    - Rebecca Morrison
  - Secretary
    - Thea Feyereisen - Honeywell

Committee Membership

- SC-213 Participants – Around 30 in attendance
  - Avionics manufacturers:
    - At least 5 in active participation
  - Aircraft Manufacturers:
    - 5 in active participation
    - Including Airbus and Boeing
  - Government:
    - Multiple and active participation by EASA, FAA, and NASA
  - Airlines:
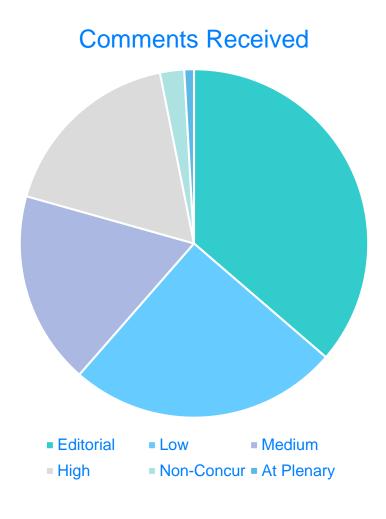   - Occasional participation from ALPA and airline representatives

Document Description

- DO-374 Safety, Performance, and Interoperability Requirements Documents defining Takeoff Minima by the use of Enhanced Flight Visibility Systems
  - Natural visibility still required
  - Defines takeoff using EFVS for 1000 feet
  - Defines takeoff using EFVS for 500 feet
  - Details additional aircraft system elements needed from a standard EFVS for landing
  - Allows for a takeoff in conditions that a landing would be allowed in 91.176

Final Review and Comment Summary

Comments Received

Legend: Editorial, Low, Medium, High, Non-Concur, At Plenary

- 81 Editorial
- 56 Low
- 40 Medium
- 39 High
- 5 Non-concur
- 2 at plenary
- All comments either resolved or withdrawn

Non-Concur DO-374 Inputs

- Five Non-Concurs – All resolved
  - Since EFVS is already defined as HUD remove direct reference to HUD
  - Added reference to both EFVS I and EFVS II
  - Clarification on expanded deviation scale as one means of compliance
  - Clarification to ground reference symbology
  - Clarification on number of additional landings required

Conclusions

- RTCA SC-213 recommends publication.

Information

- **CVS MASPS for Helicopters**
  - WG-79 working comment resolution
  - SC-213 will review at October Plenary

- **Terms of Reference**
  - A proposed TOR update will be drafted at the October Plenary
  - Re-write and cleanup of DO-315
    - Update base content
    - Fix 315 and 341 conflicts
    - Align FAA guidance material
    - Incorporate Rotorcraft or separate document

Agenda Items 3C and 3D:
RTCA PMC
September 20, 2018
SC-214
Standards for Air Traffic Data Communication Services

Chuck Stewart – SC-214 Chairman

Dongsong Zeng - SC-214 Secretary

SC-214 Terms of Reference (TOR) and Status Update

RTCA SC-214 TOR Rev 8, May 31, 2017		
Document	**Purpose**	**Completion Date**
DO-281C/ED-92C VDL2 MOPS	VDL2 avionics improvements for European Data Link Services Implementing Rule (DLS-IR) needs	June 2018
DO-224D VDL2 MASPS	VDL2 improvements including both avionics and ground systems for European DLS-IR needs	December 2018
DO-281D/ED92D VDL2 MOPS	VDL2 improvements for connectionless operations	April 2019
DO-224E VDL2 MASPS	VDL2 improvements for connectionless operations	April 2019

- SC-214 is on schedule
  - DO-281C/ED-92C and DO-224D were completed in June 2018
  - Connectionless VDL2 standardization is in progress

SC-214 Work Environment

- Cross-organization Cooperation and Harmonization

  - RTCA SC-214 (Standards for Air Traffic Data Communications Services) works jointly with EUROCAE WG-92 (VDL Mode 2) and AEEC DLK (Data Link Systems) Subcommittee

  - Revisions of VDL2 standards DO-224, DO-281, ED-92, ARINC 631 and ICAO Doc 9776 are harmonized

- Recent active members include

  - FAA, Boeing, Airbus, MITRE, Honeywell, Rockwell Collins, SITA, EUROCONTROL, Universal, United, Garmin, EASA, Thales, Spectralux, Harris, Leonardo, American Airlines, AIRTEL ATN, etc.

DO-224D VDL2 MASPS

DO-224D Revision Highlights

- Message recovery requirement clarification
  - Added a note that when a strong signal collapses with a weak signal, the strong signal should survive

- Handoff clarification
  - An aircraft transmitting or receiving a DISC frame shall initiate link establishment or handoff on one LME if no links remain.

- Maximum number of access attempts requirement clarification
  - Added a note "When the value of the counter indicates M1 limit has been reached (M1 unsuccessful access attempts have occurred without the counter being reset), authorization to transmit shall be granted as soon as the channel is idle."

DO-224D FRAC Release and Resolution

- DO-224D VDL2 MASPS was approved to release for FRAC by SC-214 at Plenary # 27 telecon meeting, April 17, 2018

- A total of 20 comments received during the FRAC period between April 19 and May 21, 2018
  - 11 editorial, 5 low, 2 medium,1 high, 0 non-concur

- All comments were resolved by SC-214 at Plenary #28 meeting, June 25-28, 2018

DO-281C VDL2 MOPS

DO-281C Revision Highlights

- Amended test case to allow avionics to handoff in response to ground station disconnection

    - Before - the avionics can only establish a new link with next ground station when receiving a ground station disconnection

    - After - the avionics can either establish a new link or handoff to the next ground station when receiving a ground station disconnection

- Added a test case to verify call-request retransmission at timer T21 expiry

- The transmission delay between Communication Management Unit (CMU) and VHF Digital Radio (VDR) has been taken into account in timer T1 calculation

DO-281C FRAC Release and Resolution

- DO-281C VDL2 MOPS and ED-92C VDL2 MOPS were approved to release for FRAC/OC by SC-214 and WG-92 at Plenary # 27 telecon meeting, April 17, 2018

- A total of 138 comments were received during the FRAC/OC period between April 24 and June 8, 2018
  - 110 editorial, 12 low, 8 medium, 8 high, 0 non-concur

- All comments were resolved at SC-214 Plenary #28 meeting, June 25-28, 2018

Conclusions

- SC-214/WG-92 have reached consensus on
  - DO-224D
  - DO-281C/ED-92C
- SC-214 recommends that PMC approve DO-224D and DO-281C for publication

Questions?

Thank you

Agenda Item 4:
ICC Report to the PMC

None for September 20, 2018

Question: Do we need to review ICC Charter for possible adjustment for RTCA SDO Status?

**Agenda Item 5:
CCC Report to the PMC**

None for September 20, 2018

Question: Do we need to review CCC Charter for possible adjustment for RTCA SDO Status?

CCC Membership:
With Rick Heinrich's retirement,
Bob Lee volunteers to support
CCC Activity

Agenda Item 6A: Work to Suggest Correct Mapping and Outline Configuration Management In Coordination with ICAO

Al Secen, RTCA Vice President,
Aviation Technology and Standards

Agenda Item 6B: FAC and GAR Changes in Approved Documents

Karan Hofmann, RTCA PMC Secretary

Agenda Item 6C:
Update Style and Drafting Guides with FAC and GAR Changes

Karan Hofmann, RTCA PMC Secretary

Agenda Item 6D: Discuss SC-216/WG-72 Activity with EASA

Lou Volchansky, PMC GAR

Agenda Item 6E: Share PMC Concern with EUROCAE on Opening ED-204 (joint DO-355)

Al Secen, RTCA Vice President,
Aviation Technology and Standards

Agenda Item 6F: Document Definitions of Errata, Change, and Revision

Al Secen, RTCA Vice President,
Aviation Technology and Standards

Document Type Definitions:

- **Errata**:
  - Corrections that would be classified as administrative or minor edits (misspellings, punctuation, alignment)
  - An error in printing or writing (found in a printed work after printing)

- **Change**:
  - Addition, modification, deletion of a limited part of the document
  - A relatively minor modification of main-body content
  - A modification of any kind to a technique – specific appendix that affects only that appendix
  - Correction of detail
  - Scope (to possibly include specific sections or appendices) included in TOR

- **Revision**:
  - A significant change to main-body content – significant technical/technological changes
  - An addition of a significant new element to the appendices
  - Fundamental change

Agenda Item 6G:

Adjust DO-220A Change 1 and send to PMC Members for Review/Approval

Karan Hofmann, RTCA PMC Secretary

Agenda Item 6H: Adjust SC-206 TOR to Clarify use of DO-364 and send to PMC for Review/Approval

Karan Hofmann, PMC Secretary

Agenda Item 6I: Discuss DO-364 and possible impact on CSC

Eldridge Frazier, SC-206 GAR

Agenda Item 6J: Adjust SC-230 TOR to Change LIDAR deliverable to Feasibility Study and send to PMC for Review/Approval

Karan Hofmann, PMC Secretary

Agenda Item 6K: Provide WG-109 and new WG-72 TORs to PMC Members

Karan Hofmann, PMC Secretary

Agenda Item 6L: Investigate feasibility of providing redlined version of completed documents

Al Secen, RTCA Vice President,
Aviation Technology and Standards

Agenda Item 6M: SC-228 (Minimum Performance Standards for Unmanned Aircraft Systems) TOR Revision Wording

RTCA Program Management Committee

20 September 2018

RTCA Paper No. 242-18/PMC-1808

Plenary Meeting Summary

- 15th Plenary Meeting, 12 July 2018, Renton, WA
  - Focus was to consider recommended changes to Terms of Reference (ToR)
    - This was at direction of PMC at March 2018 meeting to close the loop on some proposed ToR changes that had not been consensus approved by the full SC-228 in Plenary Session

  - There was a non-concur from the floor at the Plenary from a key stakeholder.
    - SC-228 leadership took the task to coordinate with the non-concurring organization to resolve the previously unknown objection
    - An additional Plenary meeting was scheduled to deal with this one topic.

- 16th Plenary Meeting 13 September 2018, RTCA HQ
  - The Plenary approved a modified ToR recommendation which will be submitted to the PMC for consideration in the December 2018 meeting.
    - Note of thanks to Andy Cebula and Al Secen for their support and active work in coordinating a successful resolution with all parties

Schedule Summary

- The Special Committee continues to enjoy strong and active support from a broad range of stakeholders supporting both working groups.

  - We routinely see >60 participants at Plenary sessions, and even broader support in the detailed working groups

  - At present we see no issues delivering any of our deliverables as scheduled.

- The next document to be delivered is the C2 Link System MASPS, scheduled for completion in December 2018 by committee and submitted to PMC for approval in the March 2019 meeting

  - Working Group 2 is currently on track to finish work and seek Plenary approval at 17th Meeting (25 October) to enter FRAC in November 2018.

  - With the holiday breaks, the 18th Plenary is scheduled in January, but in sufficient time to deliver to PMC when anticipated.

Agenda Item 7A: Discussion
FAA Actions on Previously Published Documents

RTCA Paper No. 213-18/PMC-1794

Lou Volchansky, PMC GAR

September 20, 2018

FAA Published Guidance (Since Previous PMC)

RTCA Document	Developed By	FAA Guidance	Approval Date	Comment
DO-262C, MOPS for Avionics Supporting Next Generation Satellite Systems	SC-222	TSO-C159d	31 July 2018	Includes improvements to test cases for Iridium Short Burst Data testing and Inmarsat SBB ATN/OSI functionality with improved security

RTCA Published Documents – FAA Pending Guidance

RTCA Document	Developed By	FAA Guidance	Planned Release Date	Comment
DO-362, Command and Control Data Link MOPS	SC-228	AC 20-187	**Oct** 2018 (8 months late)	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	**December** 2018 (4 month slip)	Airworthiness installation of a UAS DAA system
DO-311A, MOPS for Rechargeable Lithium Batteries and Battery Systems	SC-225	AC 20-184A	**November** 2018 (3 month slip)	Installation standard for rechargeable lithium batteries
DO-315A, MASPS for EVS, SVS, CVS, EFVS	SC-213	AC 20-167B	**October** 2018 (3 month slip)	Consolidates enhanced and combined vision system airworthiness criteria. No new criteria.
DO-315A, DO-359, MASPS for Synthetic Vision Guidance System, MASPS for Aircraft State Awareness Synthetic Vision Systems	SC-213	AC 20-185A	**October** 2018 (3 month slip)	Consolidates synthetic vision, synthetic vision guidance system, and airplane state awareness guidance
DO-227A, MOPS for Non-Rechargeable Lithium Batteries	SC-235	AC	**December** 2018 (3 month slip)	Airworthiness installation criteria for non-rechargeable lithium batteries

DO-343A MASPS for AMS(R)S Data and Voice Communications Supporting Required Communications Performance and Required Surveillance Performance	SC-222	None at this time	N/A	Update for SATCOM Performance Class B supporting RCP130 including ground gateway-to-aircraft gateway VPN capability
DO-368, MOPS for GPS/GLONASS (FDMA + Antenna) L1-only Airborne Equipment	SC-159	None at this time	—	—
DO-246E, GNSS-Based Precision Approach Local Area Augmentation System Signal-in-Space Interface Control Document	SC-159	None	—	This document is a reference for DO-253D. It is published by RTCA for the convenience of avionics OEMs.
DO-253D, MOPS for GPS Local Area Augmentation System Airborne Equipment	SC-159	TSO-C161b and TSO-C162b	~~July 2018~~ Postponed	VDB issue needs resolution. TSO delayed until MOPS corrected. Otherwise, will incorporate updated GAST-D design standard to support Category II/III operations; maintenance updates to legacy standards.
DO-372, Addressing Human Factors/Pilot Interface Issues for Avionics	SC-233	AC	**November** 2018 (2 month slip)	Best practices, informational AC (00-HF)
DO-370, Guidelines for the In Situ Eddy Dissipation Rate (EDR) Algorithm Performance	SC-206	TBD	N/A	N/A
DO-257B, MOPS for the Depiction of Navigational Information on Electronic Maps	SC-227	TSO-C165b	**November** 2018 (1 month slip)	Supports updated requirements for the electronic display of an RNP system's outputs IAW DO-236C and DO-283B. Updates embrace new display technologies and revised human factors considerations.

DO-373, MOPS for GNSS Active Antenna in the L1/E1 and L5/E5A Bands	SC-159	TSO	TBD	New TSO. (Need updated interference environment, estimated Q1CY2019)
DO-356A, Airworthiness Security Methods and Considerations	SC-216	AC	TBD	Support Special Conditions
DO-213A, Change 1, MOPS for Nose-Mounted Radomes	SC-230	(AC 20-182A)	Feb 2019	Reference in AC 20-182A revision
DO-220A, Change 1, MOPS for Airborne Weather Radar Systems	SC-230	TSO-C63e revision; AC 20-182A revision	Feb 2019	Aircraft weather radar design approval and installation guidance
DO-230I, Standards for Airport Security Access Control Systems	SC-224	N/A	N/A	Provides guidance on acquiring and designing systems, testing and evaluating system performance, and operational requirements. Incorporates the latest technological advances. Adds a credentialing operational checklist.

RTCA Documents Pending PMC Approval

RTCA Document	Developed By	Planned FAA Guidance	Planned Release Date	Comment
New MOPS to Specify the ACAS X_a System and ACAS X_O Functionality	SC-147	TSO, AC	TSO – Nov 2019; AC – Jan 2020	Performance standard and installation guidance for ACAS X_a (basic collision avoidance functionality) and ACAS X_o (closely spaced runway operations)
New SPR for Vision Systems for Takeoff	SC-213	None	N/A	Establish safety case for the takeoff operation.
Revised DO-281B, MOPS for aircraft VDL Mode 2 Physical Link and Network Layer	SC-214	TSO	2021	SC-214/WG-92/AEEC DLK recommends the MPS defined in TSO/ETSO-C160a not be revised until publication of DO-281D/ED-92D planned in late 2020.
Revised DO-224C, Signal-in-Space MASPS for Advanced VHF Digital Data Communications Including Compatibility with Digital Voice Technique	SC-214	AC	2021	SC-214/WG-92/AEEC DLK recommends the MPS defined in TSO/ETSO-C160a not be revised until publication of DO-224C planned in late 2020.

DISCUSSION

Agenda Item 7B: Discussion
Special Committee Chair Reports
RTCA Paper No. 214-18/PMC-1795

Rebecca Morrison, RTCA Program Director

September 20, 2018

Agenda Item 7C: Report on RTCA / EUROCAE Cooperation to PMC

RTCA Paper No. 215-18/PMC-1796

Rebecca Morrison, RTCA Program Director

September 20, 2018

New Documents Released by EUROCAE since Last PMC

Standard	Title	Working Group	Date of Publication
ED-203A	Airworthiness Security Methods and Considerations	WG-72/SC-216	June 2018
ER-017	International Aeronautical Information Security Mapping Summary	WG-72	June 2018
ED-254	Arrival Sequence Service Performance Standard	WG-104	July 2018
ER-018	SWIM Service Standardisation Package	WG-104	July 2018

New EUROCAE WG-110

- Approved August 29th by the TAC

- TOR will go to the Council Sept. 26-27

- Product to be: "Minimum Operating Performance Standard for Class A Helicopter Terrain Awareness and Warning Systems (HTAWS) for Offshore Helicopter Operations"

  - The MOPS are intended to normatively reference RTCA DO-309

  - Due Date T + 24 Months

- Is RTCA interested in standing up a joint committee?

Follow On: EUROCAE WG-109

- Approved February 26th by the EUROCAE Council

- Runway Weather Information Systems Strategy

- Producing a MASPS in May 2020

- Initial meeting took place 23-24 May 2018 in Saint-Denis, France.

- Is RTCA interested in making this joint work?

Document type	Draft title	Target date
MASPS / ED-xxx	MASPS for Runway Weather Information Systems	05/11/2020

EUROCAE/RTCA Coordination Meeting

- November 13-14, 2018 Hosted by RTCA
  - Discuss the status of the joint programs
  - Presentations on the work that is being done by EUROCAE and RTCA which is non-joint
  - Discussion of specific emerging technologies
  - Discussion on updates to drafting guides
  - Review of Memorandum of Cooperation

EUROCAE Meetings in 2018

- TAC #75: 22-23 October 2018

- TAC#76: 15-16 January 2019, St Denis EUROCAE

- TAC#77: 24 April 2019, Toulouse, Airbus

DISCUSSION

Agenda Item 7D: RTCA Drafting Guides Update

Karan Hofmann, Program Director

September 20, 2018

Agenda Item 8A: Special Presentation

Richard Heinrich, Retired PMC Member

Agenda Item 8B: ACSS CtL Update

Al Secen, RTCA Vice President, Aviation Technology and Standards

Agenda Item 8C: DO-363 Text Revision

Brian Verna, FAA/AFS-360

Agenda Item 8D: SC-186

Automatic Dependent Surveillance – Broadcast (ADS-B)

Terms of Reference

Rev. 21 Update

RTCA Paper No. 234-18/PMC-1803

Jessie Turner
The Boeing Company
SC-186 Co-chair

RTCA PMC
September 20, 2018

- **DELIVERABLES**

  The already planned update of Appendix H – "Service Status Indication for Traffic Information Services – Broadcast (TIS-B) and Automatic Dependent Surveillance – Rebroadcast (ADS-R)" is being moved from the planned DO-317B Change 1 revision (Dec. 2018) to the planned DO-317C revision (Dec. 2019).

  Appendix H is being updated to reflect the FAA's new Same-Link Rebroadcast (SLR) service. The delay in these updates (which are informational only) has no impact on implementers or user's of the DO-317() Aircraft Surveillance Applications (ASA) MOPS.

- **ENVISIONED USE OF DELIVERABLE(S)**

  The text was revised to show that Appendix H in DO-317B will be updated (as stated above) as part of the DO-317C release instead of the DO-317B Change 1 release.

  ALL PROPOSED TOR CHANGES WERE
  APPROVED TO MOVE FORWARD TO THE PMC AT
  THE 69TH SC-186 PLENARY HELD SEPT. 7, 2018

Agenda Item 8E: Safran CtL

Karan Hofmann, RTCA Program Director

Agenda Item 9: Next Meeting Documents

- ## SC-213:

  - New Document – *MASPS for A Combined Vision Systems for Rotocraft Operations*

- ## SC-217:

  - DO-201B – *User Requirements for Navigation Data*

- ## SC-229:

  - DO-204B – *MOPS for 406MHz ELTs*

Future Meetings

- PMC:
  - December 13, 2018
  - March 21, 2019
  - June 20, 2019* (Request to move to June 13, 2018)
  - September 19, 2019?

September Action Item Review

ADJOURN

BREAK TIME

Back at: 10:05

**LUNCH
RETURN AT 12:10 EDT**