

**RTCA PROGRAM MANAGEMENT COMMITTEE
MEETING SUMMARY
September 22, 2015**

The RTCA Program Management Committee (PMC) convened at 8:30 a.m. on September 22, 2015 at RTCA. The attendance list and action items are attached.

AGENDA ITEM 1

Welcome and Introductions.

PMC Chairman Chris Hegarty welcomed the group, asked attendees to introduce themselves and to note their organization of affiliation. Temporarily filling in for Rich Jennings as the Designated Federal Official (DFO), Michele Merkle read the Public Meeting Announcement that includes the date the Federal Register meeting notice was published, declares the meeting is “Open to the Public” and provides details for persons wishing to present or obtain information pertaining to the meeting.

AGENDA ITEM 2

Review / Approve.

- A. The summary of the June 18th meeting was approved (RTCA Paper No. 181-15/PMC-1362).
- B. Administrative SC TOR Revisions:
 - SC-224 Co-Chairman – Still working on name, so revised TOR not ready for review and approval.
 - SC-235 Chairman – Administrative correction to John Trela. TOR approved.

AGENDA ITEM 3

Publication Consideration/Approval.

- A. Final Draft, Revised Document, DO-328 - *Safety, Performance and Interoperability Requirements Document for Airborne Spacing – Flight-deck Interval Management (ASPA-FIM)*, prepared by SC-186.
 - Rocky Stone, SC-186 Co-Chairman, and Don Walker, SC-186 DFO, presented.

Captain Stone and Mr. Walker presented the SC-186 revised document “Safety, Performance and Interoperability Requirements Document for Airborne Spacing – Flight-deck Interval Management (ASPA-FIM).” This document provides the minimum operational, Safety and

Performance Requirements (SPR) and Interoperability Requirements (INTEROP) to implement Airborne Spacing (ASPA) - Flight Deck Interval Management (FIM) in support of and consistent with an identified set of operational scenarios in DO-XXX - *Minimum Operational Performance Standards (MOPS) for the Flight-deck Interval Management (FIM)*. ASPA-FIM is defined as the flight deck component of a larger Interval Management (IM) System. The IM System includes the ground domain's tools to plan and schedule traffic to assist the controller in determining what IM Clearances might be applicable to specific aircraft. ASPA-FIM then, based upon the IM Clearance provided by the controller and surveillance information received on the Target Aircraft, generates guidance for the flight crew to successfully and safely execute the IM Clearance. The document was prepared jointly by RTCA SC-186 and EUROCAE WG-51.

The PMC approved the document ensuring the PDF "Oddities" were corrected (action item). It is published as DO-328A.

B. Final Draft, New Document, *MOPS for Flight-deck Interval Management (FIM)*, prepared by SC-186.

- Rocky Stone, SC-186 Co-Chairman, and Don Walker, SC-186 DFO, will presented.

Captain Stone and Mr. Walker presented the SC-186 new document "MOPS for Flight-deck Interval Management (FIM)". This document contains the MOPS for the FIM application building upon the MOPS for the Aircraft Surveillance Applications (ASA) System, RTCA DO-317B/EUROCAE ED-194A. Because of the length and complexity of the additional requirements for the FIM application, they are included in this separate document. The FIM application requirements in this document are assumed to be integrated in an ASA System that is compliant with all requirements related to the Basic Airborne Situational Awareness (AIRB) application, which is defined in the ASA MOPS, DO-317B / ED-194A, unless explicitly stated otherwise. The document was prepared jointly by RTCA SC-186 & EUROCAE WG-51.

There was some discussion concerning the urgency for a green cover and the value of this first version of FIM knowing it is not final. Mr. Walker stated the FAA needed the publication to allow NASA and EASA to conduct flight tests. The goal is to take lessons learned from these tests and this first document version and include as needed in the next version.

There was further discussion about possibly changing the document title or even a different type of document. It was pointed out that the document is not regulatory and is required by SC-186's TOR. If not approved, there would need to be a change to the TOR. The FAA is not planning on publishing a TSO at this time.

The group finally agreed to include a disclaimer on the cover and as part of the store description (an action item was assigned to craft the wording of disclaimer).

The PMC approved the document with the to-be-written disclaimer. It will be published as DO-361.

C. Final Draft, Revised Document, DO-272C - *User Requirements for Aerodrome Mapping Information*, prepared by SC-217.

- John Kasten, SC-217 – Co Chairman presented.

Mr. Kasten presented the SC-217 revision to “User Requirements for Aerodrome Mapping Information.” This document provides industry requirements for aerodrome mapping databases for aeronautical use. It identifies aeronautical applications, which may use airport-mapping databases to define airport database standards. This document attempts to state the information requirements for users. The expectation is that aerodrome mapping database (AMDB) originators and integrators will use this document when providing those data to system designers and/or the end-users.

This revision expands on the Aerodrome Surface Route Network (ASRN) concept to include Aprons, Parking Stands and De-Icing Areas; adds new features and attributes to support Low Visibility Operations (LVO); reorders Section 4 for a better document flow; incorporates a new rule numbering scheme for requirements and recommendations; provides cross-referencing of Geometric Constraints; and incorporates SWIM Considerations in relation to AMDB standards. Definitions throughout the document were reviewed and updated to maintain compatibility other database and data processing standards.

The PMC approved the document. It is published as DO-272D.

D. Final Draft, Revised Document, DO-276B - *User Requirements for Terrain and Obstacle Data*, prepared by SC-217.

- John Kasten, SC-217 – Co Chairman presented.

Mr. Kasten presented the SC-217 revision to “User Requirements for Terrain and Obstacle Data.” This document defines the minimum user requirements applicable to the origination and publication of terrain and obstacle data from creation through the entire life cycle of the data. It provides guidance for data gathering by data originators, for data processing by data integrators, for implementation by system designers, and for end use by the aviation community (e.g., air carriers, air traffic services, procedure designers). It is supplemental to the data processing requirements included in RTCA DO-200B and to the exchange of data included in RTCA DO-291C.

It provides a minimum list of attributes associated with the terrain and obstacle data and a description of associated errors that may need to be addressed. Four areas of applicability are defined: Area 1 – The State; Area 2 – The Terminal Area (vicinity of aerodrome), Area 3 – Aerodrome Movement Area, and Area 4 – the CAT II or III Operation Area. The requirements for accuracy, integrity and resolution are tailored to meet these needs. This tailoring includes addressing the specific requirements of Helicopter Operations for Area 1. This update incorporates a new rule numbering scheme for requirements and recommendations. It provides obstacle segmentation guidance. A new Appendix is available on Terrain Post-Spacing and

Terrain in Polar Regions. Guidance for certification or approval of systems or procedures that use terrain and obstacle databases is also provided. The requirements stated in this document address the areas viewed by industry to be of most importance to certification.

The PMC approved the document. It is published as DO-276C.

E. Final Draft, Revised Document, DO-291B - *Interchange Standards for Terrain, Obstacle and Aerodrome Mapping Data*, prepared by SC-217. And Supplements to DO-291C, *Minimum Interchange Standards for Terrain, Obstacle, and Aerodrome Mapping Data*

- John Kasten, SC-217 – Co Chairman presented.

Mr. Kasten presented the SC-217 revision to “Interchange Standards for Terrain, Obstacle and Aerodrome Mapping Data and supplements, “Minimum Interchange Standards for Terrain, Obstacle, and Aerodrome Mapping Data,” to the newly revised document. The main document recommends guidelines and requirements for developing a data interchange format for terrain, obstacle, and aerodrome data. A common database interchange standard is a key factor in successfully implementing digital functions in the aviation domain. Use of information contained in this document will help system designers assure a common interchange between data originators and data integrators.

DO-291C reflects all of the changes generated from the DO-272D aerodrome mapping data and DO-276C obstacle data. A new section on SWIM Considerations for AMDB is added, as well as new sections on Aerodrome Mapping Exchange Standards and Data Management.

The Aerodrome Mapping Exchange Model (AMXM), comprised of the AMXM UML Model and AMXM XML Schema, is available as a companion technical artifact.

Two related documents specify requirements for database content and quality:

- DO-272D, *User Requirements for Aerodrome Mapping Information*

- DO-276C, *User Requirements for Terrain and Obstacle Data*

RTCA DO-291C/EUROCAE ED-119C uses a UML representation of the AMDB and an XML Schema representation of the AMDB. Together they form the AMXM.

The AMDB UML representation is called the AMXM UML Model. The AMXM UML Model is normative and determines the encoding of data formats for AMDB data exchanges.

The AMDB XML Schema representation is called the AMXM XML Schema. The AMXM XML Schema is derived from the AMXM UML Model and is provided on an informative basis. The AMXM XML Schema is a means of compliance.

The PMC approved the documents. They are published as DO-291C and DO-291C Supplements.

F. Final Draft, Wake Vortex Tiger Team (WVTT) White Paper –*Standards Development Activities for using Near Real-Time Aircraft Derived Data in future applications*, prepared by WVTT.

- Rocky Stone, Chairman - Wake Vortex Tiger Team presented.

Captain Stone presented the WVTT White Paper, “Standards Development Activities for using Near Real-Time Aircraft Derived Data in future applications.” He started by thanking the PMC, and specifically George Ligler, for recommending the paper go through the FACA process, which allows the document be submitted to the FAA as a “recommendation” rather than an “informational” paper.

The group conducted a formal Final Review and Comment (FRAC) at a plenary meeting announced in the Federal Register with an appointed Designated Federal Official, Wayne Gallo. This document contains recommendations for standards development activities for current and future applications that could make use of aircraft-derived data. Near real-time data from aircraft, particularly weather observations, may enable many new capabilities both in ground based automation systems and airborne systems. The document describes wake vortex, air traffic management, and weather applications, and how they could make use of near real-time data from aircraft. It recommends standards development and research activities necessary to move forward with implementing near, mid, and far-term applications using near real-time data from aircraft. The document also includes, for reference, a summary of many wake vortex research activities across the globe.

The PMC approved the document as an official “green cover” item. It is published as DO-360.

AGENDA ITEM 4

Integration and Coordination Committee (ICC).

- ICC Membership
- George Ligler, PMC Member and PMC ICC Chairman, presented.

Dr. Ligler presented the new slate of ICC members with a brief history of the ICC and reasoning for the recommended changes to ICC core members.

The PMC approved the membership listing.

AGENDA ITEM 5

Action Item Review.

A. PMC Ad Hoc – Standards Overlap and Alignment – Discussion – Workshop Status

- Sophie Bousquet, RTCA Program Director, presented.

Ms. Bousquet reported the process flow chart presented at the June PMC meeting for the Cross-Cutting Committee (CCC) was drafted and shared with Workshop participants. The flow chart was updated based on comments received from Garmin and Rockwell Collins. She reported the CCC concept is now ready to become “alive” – first revising the TOR template, and then identifying a possible candidate from the upcoming items requiring special committee creation. A CCC Leader and members need to be identified to implement and return recommendations to the PMC at the December 2015 meeting (Action Item)

- The briefing is posted on Workspace (RTCA Paper No. 227-15/PMC-1380).

B. PMC Ad-Hoc with SC-225 on DO-311 Revision

- Richard Nguyen, SC-225 – Chairman, and Stephen Diehl, SC-225 Secretary, presented.

Mr. Nguyen and Mr. Diehl reported SC-225 members had met with an Ad Hoc per direction from the June PMC meeting. The guidance for DO-311A falls into three major categories:

- Reformat based on MOPS Drafting Guide
 - o No problems anticipated with meeting MOPS Drafting Guide format
- Create battery categories for differentiation of requirements/tests
 - o Working through challenges based on wide variation of potential designs and applications
 - o Once categories are defined based on general requirements, equipment performance requirements, test procedures, or evaluation criteria, SC-225 will request concurrence from PMC Ad Hoc
- Addition of detailed design specifications
 - o Performance specifications are deemed appropriate for this MOPS document
 - o Design specifications are not deemed appropriate for this MOPS document
 - o SC-225 will continue work with PMC Ad Hoc to define appropriate requirements

A new timeline is being developed and a revised TOR is expected to be presented to the December PMC meeting. This action will remain open.

C. PMC Ad-Hoc MASPS vs. Guidance “discontinuity” between RTCA and EUROCAE documentation

- Rich Jennings and Margaret Jenny, PMC Members FAA & RTCA respectively, presented.

Ms. Jenny reported this subject will be discussed at the upcoming RTCA/EUROCAE Annual Coordination Meeting (October 26-27). Discussion covered possible need for broader document requirements and the fact that this topic has come up before (specifically in the Workshop for Integrated Cockpit). (Note: See items 6B and 6M for further discussion on types of documents.)

D. Response to Lockheed Martin’s input to speed up MOPS in SC-159 TOR

- George Ligler, PMC Member & SC-159 Co-Chairman, presented.

Dr. Ligler reported Lockheed Martin knows the result of the September PMC meeting discussion and that a formal draft letter response has been submitted to PMC Chairman to be sent to Lockheed Martin for their input on desire to see an accelerated schedule for the L1/L5 MOPS. Action is closed.

E. Follow up Discussion on FAA cybersecurity concerns to be included in SC-159 TOR

- George Ligler, PMC Member & SC-159 Co-Chairman, presented.

Dr. Ligler followed up with FAA POC (Ken Alexander) on cybersecurity concerns and they agreed he would present to SC-159 at their next Plenary for consideration of TOR revision. Action is closed.

F. Industry Interest in Runway Overrun Alerting – possible new Special Committee

- Richard Jennings, PMC DFO, presented.

Mr. Jennings reported that Jim Fee (FAA) attended the EUROCAE WG on Runway Overrun Alerting. The FAA is still investigating internally the need for such a standard and potential sponsorship for a RTCA SC. Mr. Jennings made a suggestion that if there is significant industry interest that RTCA work this matter outside of the FACA process. The point was brought up under the Info Share umbrella that this appears to be a safety enhancement. Some members agreed to work on specifying industry support (Richard Heinrich and Jens Hennig) and then follow up with FAA (Rich Jennings and Bruce DeCleene) and RTCA (Jennifer Iversen).

G. UPS GPS Issue

- Rich Jennings, PMC DFO, and George Ligler, PMC Member & SC-159 Co-Chairman, presented.

Dr. Ligler and Mr. Jennings discussed the issue brought up by Airlines for America concerning possible MOPS problem with reported issues by UPS. They indicated we don't know yet, as both MMR and transponders are being reviewed. Rockwell Collins has also done some research and suggested it might be a hardware/software issue. Action is still open and Richard Heinrich was added as a contributor to this matter.

AGENDA ITEM 6

Discussion.

A. SC-147 – MOPS for Traffic Alert and Collision Avoidance Systems Airborne Equipment – Discussion – Revised TOR.

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

Mr. Searight presented a revised Terms of Reference (TOR) that includes a Committee change in leadership and adds a deliverable for an ACAS X_U MOPS. Dan Tillotson (Rockwell Collins/ARINC) is replacing Co-Chair Bob Duley and Tom Troast (Regulus Group) will be taking over the Secretary role. The FAA funded research, testing, and preliminary development of an ACAS variant for UAS, ACAS X_U, with some activities being in collaboration with NASA and industry partners. ACAS X_U will provide collision avoidance protection for UAS that is interoperable with TCAS II and other ACAS X systems. Although SC-228 is developing Detect and Avoid systems for UAS, the expertise of collision avoidance within SC-147 makes it appropriate for this group to be responsible for the development of ACAS X_U requirements to support the safe integration of UAS into the NAS. SC-147 shall work with SC-228 to appropriately determine the operational envelopes of UAS that will be supported by ACAS X_U as well as determining any other constraints or assumptions placed on the capabilities of the ACAS X_U system, such as sensor performance, and available Size, Weight, and Power (SWAP). Mr. Searight also pointed out there are small errors in algorithms in DO-300 and DO-300A that allow for spurious RAs when tracks are transitioned from passive to active. The PMC members agreed to an electronic addition of this deliverable to be presented at the December 2015 PMC meeting. (Action Item)

The PMC approved the revised TOR (RTCA Paper No. 284-15/PMC-1404).

B. SC-217 – Aeronautical Databases – Discussion – Revised TOR

- John Kasten, SC-217 Co-Chairman, presented.

Mr. Kasten presented a revised Terms of Reference (TOR) that includes a Committee change in leadership and adding a new deliverable. Brian Gilbert (Boeing) will be taking over Co-Chair duties from retiring John Kasten and Diana Takata (FAA) is taking over DFO responsibilities. The committee asked to bring DO-201A in line with today's industry needs and regulatory requirements to ensure currency and consistency with ICAO, ARINC, and related RTCA standards. Additionally, the TOR includes a change to DO-201A's title (from *Standards for Aeronautical Information* to *User Requirements for Navigation Data*) to better reflect its content and use. There was some discussion on the name of "user requirements" and suggested possibly having the CCC review any adjustments. This was a continuing discussion from item 5C on all types of documents produced by RTCA (and possibly by EUROCAE). Richard Heinrich agreed to investigate and report back for potential ad-hoc (Action Item).

The PMC approved the revised TOR (RTCA Paper No. 251-15/PMC-1397).

C. SC-223 – Aeronautical Mobile Airport Communication System – Discussion – Revised TOR

- Hoang Tran, FAA, presented.

Mr. Tran provided background on the Internet Protocol (IP) situation. IP standards and test procedures need to be defined and validated to support the FAA programs – developed for RTCA

standards and updated for ICAO IPS. Several FAA programs have plans to deploy AeroMACS in the near future. AeroMACS defines the physical and link layers and runs under native IPs. Telco providers are planning to sunset TDS networks, so FAA ground infrastructure must migrate to IP. RTCA A/G IP standards will help with end-to-end IP procurement and migration. The FAA is requesting SC-223's TOR be revised to require Internet Protocol Suite Profiles be included in SC-223 deliverables and a MOPS for Internet Protocol Suite. PMC members discussed potential need for review across all SC's for inclusion of IP needs. The group agreed to task the ICC for such a review (Action Item).

The PMC approved the revised TOR (RTCA Paper No. 319-15/PMC-1419).

D. SC-228 – Minimum Operational Performance Standards (MOPS) for Unmanned Aircraft Systems, initial release, *MOPS for Unmanned Aircraft Systems (UAS) Command and Control (C2) – Discussion*

- George Ligler and Paul McDuffee, SC-228 Co-Chairmen presented.

Dr. Ligler and Mr. McDuffee presented this (and documents in item 6E and 6F) as tasked by the SC-228 TOR for a preliminary document (milestone, not designed to be officially published). This document contains MOPS for the UAS Control and Non-Payload Communication (CNPC) Link System. The word “Control” refers to the information exchanges needed to support the pilot safely maneuvering the unmanned aircraft (UA) on the ground and in the air. The words “Non-Payload Communications” refer to the potential for the CNPC Link System to support pilot-to-ATC voice and data communications, if required. Non-Payload Communications specifically exclude communications associated with the UA mission payloads and are out of scope for using the CNPC Link System and this MOPS.

These standards specify equipment characteristics that should be used by designers, manufacturers, installers and users of a “terrestrial” (i.e., not satellite based) CNPC Link.

Following extensive discussion, the PMC agreed to make the document available with a new RTCA paper number and appropriate administrative additions (copyright, NDA, etc.) for use by NASA and General Atomic flight tests.

E. SC-228 –MOPS for Unmanned Aircraft Systems, initial release, *MOPS for Unmanned Aircraft Systems (UAS) Detect and Avoid (DAA) Systems – Discussion*

- George Ligler and Paul McDuffee, SC-228 Co-Chairmen presented.

Dr. Ligler and Mr. McDuffee presented this (and documents in item 6D and 6F) as tasked by the SC-228 TOR for a preliminary document (milestone, not designed to be officially published). This document contains Phase I MOPS for Detect and Avoid (DAA) systems used for UAS transitioning to and from Class A or special use airspace, traversing Class D and E, and Class G airspace in the National Airspace System (NAS). It does not apply to small UAS operating in

low level (below 500') environments or other segmented areas. The DAA equipment has two distinct main domains: the UA and the Control Station (CS). The DAA equipment functions are intended for UAS that are able carry all necessary equipment onboard, including sensors, processors, and support equipment, and are able to maneuver as specified in Appendix D. The standards specify DAA system characteristics that should be useful for designers, manufacturers, installers and users of the equipment.

Following extensive discussion, the PMC agreed to make the document available with a new RTCA paper number and appropriate administrative additions (copyright, NDA, etc.) for use by NASA and General Atomic flight tests.

F. SC-228 – MOPS for Unmanned Aircraft Systems, initial release, *MOPS for Air-to-Air Radar for Detect and Avoid* – Discussion

- George Ligler and Paul McDuffee, SC-228 Co-Chairmen presented.

Dr. Ligler and Mr. McDuffee presented this (and documents in item 6D and 6E) as tasked by the SC-228 TOR for a preliminary document (milestone, not designed to be officially published). This document contains MOPS for the Air-to-Air Radar for DAA systems implemented in UAS. The Air-to-Air radar is part of the DAA system. DAA systems are designed to provide UAs the ability to remain well clear of and avoid collisions with other aircraft. The Air-to-Air Radar part of a DAA system is the main surveillance source for non-cooperative intruders in a DAA system.

The MOPS define the minimum functional and performance requirements, test procedures, limitations, and installation considerations for DAA radar equipment to be used in an operational environment where the UA is transitioning to and from Class A or Special Use Airspace (SUA), or traversing Class D, E, or G airspace. The standards specify the radar characteristics for designers, manufacturers, installers and users of the equipment.

Following extensive discussion, the PMC agreed to make the document available with a new RTCA paper number and appropriate administrative additions (copyright, NDA, etc.) for use by NASA and General Atomic flight tests.

G. SC-230 – Airborne Weather Detection Systems – Discussion – Revised TOR

- Jeff Finley and Dawn Gidner, SC-230 Co-Chairmen presented

Mr. Finley and Ms. Gidner presented a short overview of the current TOR that was modified in March 2015. However, SC-230 discussed the EUROCAE WG-95 subgroup effort to report on feasibility of weather radar detection of ice crystals and feasibility of standardization of radar ice crystal awareness function. SC-230 membership and WG-95 leadership expressed interest in collaboration in development of a feasibility report. This revision involves allowing contribution to long-range icing awareness feasibility report including collaboration on definition of intended function, operational concepts and recommendations for design and validation of the function. SC-230 will maintain schedule for DO-213 and DO-220 FRAC resolution in November 2015 but

consider opportunity for future change to these documents based on findings of feasibility report (expected delivery in September 2016).

The PMC approved the revised TOR (RTCA Paper No. 250-15/PMC-1397).

H. SC-234 – Portable Electronic Devices – Discussion – Status Update

- Brian Verna, SC-234 DFO, presented.

Mr. Verna provided an update on SC-234 progress, to include the full integration of WG-99 as a joint committee. He further introduced the prospect of including a focused revision of DO-307 to be consistent with the safety risk assessment process and existing HIRF requirements being used for current document development, and to incorporate industry lessons learned during application of the existing requirements in DO-307. The PMC can expect a TOR revision request at the December meeting.

I. Design Assurance Guidance for Airborne Electronic Hardware – Status – Possible New Special Committee to Update RTCA DO-254

- Richard Jennings, PMC DFO, presented.

Mr. Jennings reported there is a meeting scheduled with Steve Bradford (FAA Chief Scientist) on October 22nd to discuss how to proceed with this matter. He will provide an update at the December 2015 PMC meeting, but more likely a full recommended course of action will not be available until March 2016. Action still open.

J. NextGen Advisory Committee (NAC) - Status Update

- Andy Cebula, RTCA – Vice President, Strategy and Program reported.

Mr. Cebula reported the next NAC meeting will be held on October 8, 2015, hosted by FedEx in Memphis, TN.

The agenda items will include:

- FedEx briefing of implementing NextGen equipment, procedures and capabilities
- Implementation of NextGen Integration Working Group (to include Surface, PBN, Multiple Runway Operations, and DataComm)
- Metrics: Measuring the Effects of Implementation (through industry performance tracking and FAA/Industry Joint Analysis Teams)
- PBN NAS Navigation Strategy (to include FAA PARC revising 2006 PBN Roadmap, NACSC addressing policy issues, and Report to NAC)
- ADS-B (to include status of implementation and space based ADS-B deployment, oceanic surveillance, and common weather picture)
- NextGen Plan

K. Tactical Operations Committee (TOC) - Status Update

- Trin Mitra, PMC Member – RTCA Program Director, reported.

Mr. Mitra provided a short background on the purpose and approach for the TOC. He presented current membership (2 co-chairmen, DFO, Secretary, and 17 members), ongoing tasks (Airport Construction, National Procedure Assessment Initiative, and NOTAM Modernization), and completed tasks (VOR Minimum Operating Network, 20:1 Visual Surface Area, Caribbean Operations, Class B Airspace Criteria, and GPS Adjacent Band Compatibility). He also reported on feedback provided to the FAA on GPS ABC Task: Exclusion Zones questions (Impact of Exclusion Zones on Flight Safety, Operational Acceptability and Safety Implications, and Unique Considerations for Small UAV Operations).

The next TOC meeting is scheduled for November 12, 2015, at RTCA.

L. FAA Actions Taken on Previously Published Documents – Report

- Rich Jennings - PMC DFO presented. (FAA Guidance based on RTCA Documents – RTCA Paper No. 133-15/PMC-1336)

Mr. Jennings reviewed FAA Published Documents that reference published RTCA Documents:

FAA Published Guidance (Since Previous PMC)

RTCA Document	Developed By	FAA Guidance	Approval Date	Comment
				No guidance published since last PMC

Mr. Jennings reviewed FAA Pending Documents for RTCA Documents Published:

RTCA Published Documents - FAA Pending Guidance

RTCA Document	Developed By	FAA Guidance	Planned Release Date	Comment
DO-315A	SC-213	AC 20-167A	January 2016	Plan to release AC 20-167A after rule is published

DO-335	SC-220	AC 23-17C to address AFGCS	September 2015	Plan to reference document in the Part 23 Systems AC (planned release date move from 2014 as a result of Part 23 rewrite and other priorities)
DO-359	SC-213	AC 20-SVGS	October 2015	Airworthiness guidance for use of Synthetic Vision Guidance System on SA CAT I ILS.
DO-347	SC-225	AC 20-184	September 2015	Certification Test Guidance for Small and Medium Sized Rechargeable Lithium Batteries
Chg 4 to DO-210D	SC-222	TSO-C132a	December 2015	Change 4 makes adjustments to environmental test procedures.
DO-200B	SC-217	AC 20-153B Order 8110.55B	December 2015	Plan to allow Mfg to retain their current LOA under AC 20-153A guidance. However, the LOA may not be recognized by other authorities
Chg 1 to DO-280B	SC-214	AC 20-140C	July 2016	Interoperability Requirements Standard for Aeronautical Telecommunication Network Baseline 1. Plan to invoke with the B2 (final) standards in AC 20-140C

Mr. Jennings reviewed FAA plans for RTCA Documents pending PMC approval:

RTCA Documents Pending PMC Approval

RTCA Document	Developed By	Planned FAA Guidance	Planned Release Date	Comment
Final Draft, Revised Document, DO-328 - <i>Safety, Performance and Interoperability Requirements Document for Airborne Spacing – Flight-deck Interval Management (ASPA-FIM)</i>	SC-186	N/A	N/A	No plans to directly invoke at this time.
Final Draft, New Document, <i>MOPS for Flight-deck Interval Management (FIM)</i>	SC-186	TSO C-195C AC 20-172C	July 2018 October 2018	May incorporate this MOPS at a future time based on FIM flight trial results.
Final Draft, Revised Document, DO-272C - <i>User Requirements for Aerodrome Mapping Information</i>	SC-217	N/A	N/A	Already referenced in FAA TSO-C165A and TSO-C195A. Next time these TSOs are updated, will reflect DO-272C version.

Final Draft, Revised Document, DO- 276B - <i>User Requirements for Terrain and Obstacle Data</i>	SC-217	N/A	N/A	Already referenced in FAA AC 20-153, 20- 167, and future AC 20- SVSG. Next time these ACs are updated, will reflect DO-276B version.
Final Draft, Revised Document, DO- 291B - <i>Interchange Standards for Terrain, Obstacle and Aerodrome Mapping Data</i>	SC-217	N/A	N/A	Not directly referenced by FAA, but called out in other RTCA DO documents.
Final Draft, White Paper, Standards Development Activities for using Near Real-Time Aircraft-Derived Data in Future Applications	Wake Vortex Tiger Team	No at this time	N/A	For PMC discussion

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

- Jennifer Iversen, RTCA Program Director, reported.

Highlights from the Chair Reports for several selected Special Committees were reviewed. Reports were received from SCs 206, 213, 224, 227, 232 and 233. Other information was included in other presentations during this PMC. The complete matrix is posted on Workspace (RTCA Paper No. 237-15/PMC-1389).

N. European/EUROCAE Coordination – Status Update.

- Jennifer Iversen, RTCA Program Director reported.

Ms. Iversen coordinates regularly with EUROCAE and provided updates of ongoing RTCA / EUROCAE cooperation in several areas:

SC-206/WG-76 AIS/MET Datalink Applications

- Open to Coordination
- Both groups considering revising TOR to re-enforce stronger working relationship
- SC-206 TOR would come to December PMC

Other topics discussed included:

WG-92 VDL Mode 2

- Ensuring harmonized approach with SC-214

Extended Horizon AMAN Coordination Services

- Council Consideration – New Activity

Runway Overrun Alerting and Avoidance System

- EUROCAE Only Initiative
- Committee Launch, first meeting held late August in Paris
- FAA Present (Jim Fee)
- U.S. Interest and Participation
 - 1/3 of room U.S. with more U.S. participation requested
- Membership: Non-EUROCAE members will have to join (would not have to if RTCA joint committee)
- Timeline: 18 Months
- Meetings proposed in U.S. due to U.S. interest and participation

WG-95: Icing Long Range Awareness

- SC-230 Presented to have joint deliverable

DO-254/ED-80 Update

- Potential to Launch Jointly

Key dates for future coordination: EUROCAE will hold their Symposium on April 29-30, 2016 in Vienna. The Next TAC Meetings are set for 1-2 December (Toulouse, DSNA), 9-10 February 2016 (Paris, EUROCAE), and 7-8 June 2016 (TBD).

International Civil Aviation Organization (ICAO) Update:

Standards Round Table

- Working on path forward via correspondence
- 2 Hour Videocon – June 22, 2015
- Face-to-face meeting – October 23, 2015

World Aviation Forum

- November 23-25, 2015
- No Country Left Behind – Encouraging State and Industry collaboration in enhancing aviation system

BUDSS

- ~~May 2015~~ Postponed
- Will be rescheduled for Fall 2015 or Early 2016

The RTCA staff will continue to keep the PMC apprised of developments.

O. Forward Planning Discussion – Discussion.

PMC Chairman Chris Hegarty suggested the group hold on any further discussions and include an extra half day to the December PMC meeting schedule to cover this topic. The action was unanimously approved.

AGENDA ITEM 7

Other Business.

A. Wireless Avionics Intra Communication (WAIC) MOPS Proposal.

- Margaret Jenny, PMC Member RTCA, presented.

Ms. Jenny presented a proposal from Jean-Paul Platzer (Airbus Operations SAS) to launch a joint RTCA / EUROCAE activity undertaking the development of a MOPS and possibly MASPS for WAIC systems. This is on the tail of the current work of WG-96 on the development of guidance material in the form of a Process Specification for the airworthiness certification of Wireless Onboard Avionics Network (WOBAN) communication systems. Following discussion, Rich Jennings agreed to take the letter to Rob Duffer (FAA ANM-111) for possible FAA interest to support such activity. (Action Item)

B. Thank you for Support.

Upon the occasion of his retirement, the PMC members wish to acknowledge Colonel Juan Narvid (USAF) for his years of hard work and support. His dedication to RTCA and the many roles he fulfilled were very much appreciated and he will be missed. Thank you Juan for a job well done!

AGENDA ITEM 8

Schedule for Committee Deliverables and Next Meeting Date

Documents expected for the December 2015 meeting:

- SC-227 Standards of Navigation Performance
 - Revision to DO-283A - *Minimum Operational Performance Standards for Required Navigation Performance for Area Navigation*
- SC-147 Traffic Alert and Collision Avoidance System
 - Change 1 to DO-300A – *Minimum Operational Performance Standards (MOPS) for Traffic Alert and Collision Avoidance System II (TCAS II) Hybrid Surveillance*

- Change 2 to DO-300 - *Minimum Operational Performance Standards (MOPS) for Traffic Alert and Collision Avoidance System II (TCAS II) Hybrid Surveillance*

The dates for the next three PMC meetings were confirmed: Tuesday, December 15, 2015; Thursday, March 17, 2016; and Tuesday, June 21, 2016.

/Signed/

Karan Hofmann, Secretary
RTCA Program Management Committee

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

/Signed/

Christopher Hegarty, Chair
RTCA Program Management Committee

**Program Management Committee – September 22, 2015
ATTENDANCE LIST**

PMC MEMBERS:		
Christopher	Hegarty	The MITRE Corporation Chairman
Doug	Arbuckle	Federal Aviation Administration
Robert	Grove	Garmin Ltd.
Richard	Heinrich	Rockwell Collins, Inc.
Jens	Hennig	General Aviation Manufacturers Association
Richard	Jennings	Federal Aviation Administration (Designated Federal Representative)
Margaret	Jenny	RTCA, Inc.
Richard	Kahne	DoD Policy Board on Federal Aviation
George	Ligler	Project Management Enterprises Inc.
Michele	Merkle	Federal Aviation Administration
Jessie	Turner	The Boeing Company

OTHER ATTENDEES:		
Moin	Abulhoan	Federal Aviation Administration
Clay	Barber	Garmin Ltd.
Sophie	Bousquet	RTCA, Inc.
Stephen	Diehl	The Boeing Company
Jeffery	Finley	Rockwell Collins
Brian	Gilbert	The Boeing Company
Dawn	Gidner	Honeywell
Allan	Hart	Honeywell
Karan	Hofmann	RTCA, Inc.
Jennifer	Iversen	RTCA, Inc.
Edward	Jones	National Aeronautical Space Administration
Don	Jones	
Randy	Kenagy	Airline Pilots Association
Mark	Lillis	Triumph Engine Control System
Trin	Mitra	RTCA
Hal	Moses	RTCA
Lee	Nguyen	Federal Aviation Administration
Andrew	Paszter	Wall Street Journal
Stuart	Searight	Federal Aviation Administration
Rocky	Stone	United Airlines, Inc.
Ronald	Stroup	Federal Aviation Administration
Diana	Takata	Federal Aviation Administration

Hoang	Tran	Federal Aviation Administration
Brian	Verna	Federal Aviation Administration
Lou	Volchansky	Federal Aviation Administration
Don	Walker	Federal Aviation Administration

PMC ACTION ITEM TABLE – 2015

TRACKING NUMBER <small>Indicates the meeting Date and agenda item From which the action resulted.</small>	ACTION	ACTION ASSIGNED TO	DUE DATE	STATUS
03/24/2015 Agenda Item 6G 06/18/2015 Agenda Item 5B 09/22/2015 Agenda Item 5C	03/24/2015 – RTCA and FAA reach out to EUROCAE on different approach to handling MOPS for triggerable ELTs 06/18/2015 – Ad-Hoc to work discontinuity between MASPS vs. guidance between RTCA and EUROCAE documentation 09/22/2015 – Topic of discussion for upcoming RTCA/EUROCAE Coordination Meeting (10/26-27)	RTCA Margaret Jenny FAA Rich Jennings	June 2015 Sep 2015 Dec 2015	Open
06/18/2015 Agenda Item 4	06/18/2015 – Report on US and EUROCAE studies	ICC George Ligler	Dec 2015	Open
03/18/2014 Agenda Item 7B 3/24/2015 Agenda Item 6J 6/18/2015 Agenda Item 6C 09/22/2015 Agenda Item 3F	03/18/2014 – Tiger Team reports back to PMC upon completion 03/24/2015 – Tiger Team presented paper; received further guidance from PMC for submission Jun 2015 PMC 06/18/2015 – Paper to go through full FRAC process 09/22/2015 – Final paper presented and approved for release (DO-360)	Wake Tiger Team Rocky Stone RTCA Sophie Bousquet	Dec 2014 Mar 2015 Jun 2015 Sep 2015	Closed
09/23/2014 Agenda Item 6B 12/16/2014 Agenda item 6F 03/24/2015 Agenda Item 6C	09/23/2014 – Further TOR review pending new FAA security activities. 12/16/2014 – Further coordination / review necessary pending WG-72 schedule 03/24/2015 – PMC recommended TOR update to address development of joint content and additional deliverables 09/22/2015 note – Awaiting final report from ASISP ARAC (due in Aug 2016)	SC-216	Dec 2014 Mar 2015 Dec 2015 Dec 2016	Open
09/23/2014 Agenda Item 6I 12/16/2014 Agenda Item 6K 03/24/2015 Agenda Item 6K 06/18/2015 Agenda Item 6F 09/22/2015 Agenda Item 6I	09/23/2014 – Further discussion planned for Dec. meeting 12/16/2014 – Workshop planned to consolidate the desires of industry – revise DO-254 or not 3/24/2015 – Workshop update provided; recommendations being reviewed 06/18/2015 - FAA and EASA will hold a harmonization meeting; possible TOR for new joint committee 09/22/2015 – Meeting with FAA Chief Scientist scheduled for 10/22 for discussion on course of action	PMC Member Jessie Turner Rich Jennings	Dec 2014 Jun 2015 Sep 2015 Dec 2015	Open

06/18/2015 Agenda Item 7A 09/22/2015 Agenda Item 6A	06/18/2015 – Work possible inclusion of ACAS-XU into SC-147 TOR 09/22/2015 – PMC approved revised TOR	RTCA Hal Moses	Sep 2015	Closed
06/18/2015 Agenda Item 7A 09/22/2015 Agenda Item 6A	06/18/2015 – Parallel effort to above with SC-147 and SC-228 09/22/2015 – SC-147 and SC-228 leadership discussed and agreed part of SC-147 (as handled above)	RTCA Hal Moses	Sep 2015	Closed
06/18/2015 Agenda Item 3A	06/18/2015 – FAA work with EASA on security wording in AC vice inclusion in DO-200B	FAA Rich Jennings Brad Miller	Dec 2015	Open
06/18/2015 Agenda Item 3C 09/22/2015 Agenda Item 5B	06/18/2015 – Ad-Hoc to meet with SC-225 to address PMC-perceived shortfalls for new DO-311 09/22/2015 – Update provided to PMC; new timeline set; PMC requested December update with revised TOR	RTCA Jennifer Iversen	Sep 2015	Open
06/18/2015 Agenda Item 5C 09/22/2015 Agenda Item 5B	06/18/2015 – Draft response to Lockheed Martin on input for SC-159 TOR 09/22/2015 – Draft completed and forwarded to PMC Chair for completion	PMC George Ligler	Sep 2015	Closed
06/18/2015 Agenda Item 5C 09/22/2015	06/18/2015 – Discuss cybersecurity concerns with FAA for SC-159 TOR 09/22/2015 – FAA discussion occurred and considered for SC-159 action	PMC George Ligler	Sep 2015	Closed
06/18/2015 Agenda Item 7D 09/22/2015 Agenda Item 6O	06/18/2015 – Provide input for Sep Forward Planning Discussion 09/22/2015 – Input received and PMC decided to have separate half day session in conjunction with Dec PMC	PMC All	Jul 2015	Closed
06/18/2015 Agenda Item 6K 09/22/2015 Agenda Item 5F	06/18/2015 – Investigate possible new SC for runway overrun alert 09/22/2015 – Further investigation for industry support	PMC Rich Jennings Doug Arbuckle Rick Heinrich Jens Hennig	Sep 2015 Dec 2015	Open
06/18/2015 Agenda Item 7C 09/22/2015 Agenda Item 5G	06/18/2015 – Provide update on UPS GPS concern 09/22/2015 – Further investigation on potential input for MOPS	PMC George Ligler Rick Heinrich	Sep 2015 Dec 2015	Open
09/22/2015 Agenda Item 3A	09/22/2015 – Correct identified PDF “oddities” for DO-328A	RTCA Perla Domingo	Oct 2015	Open
09/22/2015 Agenda Item 3B	09/22/2015 – Agree upon disclaimer to be included with publishing of DO-361	PMC Rich Jennings Rick Heinrich	Oct 2015	Open
09/22/2015 Agenda Item 5A	09/22/2015 – Identify CCC Leader and members to implement CCC and return first recommendations for action to PMC	PMC Chris Hegarty Rich Jennings Margaret Jenny	Dec 2015	Open
09/22/2015 Agenda Item 6A	09/22/2015 – SC-147 TOR revision for additional deliverable to be electronically approved	SC-147 Stuart Searight PMC Karan Hofmann	Dec 2015	Open

09/22/2015 Agenda Item 6B and 6M	09/22/2015 – Investigate types of documents and potential need for ad hoc to review for recommended changes (this will include reviewing items in Special Committee “Tool Box”	PMC Richard Heinrich	Dec 2015	Open
09/22/2015 Agenda Item 6C	09/22/2015 – Investigate need for IP considerations to be included in all SC’s	ICC George Ligler	Mar 2016	Open
09/22/2015 Agenda Item 7A	09/22/2015 – Approach XX on potential support for joint RTCA/EUROCAE activity on WAIC	PMC Rich Jennings	Dec 2015	Open