At its recent meeting under the leadership of Chris Hegarty of The MITRE Corporation, the Program Management Committee (PMC) approved six new standards and guidance documents. The PMC also reviewed draft Minimum Operational Performance Standards (MOPS) from SC-228 for Command and Control (C2), Detect and Avoid (DAA) and Air-to-Air Radar for Detect and Avoid and revised changes to Terms of References (TORs) for several Special Committees.

New Documents:
- DO-360, Standards Development Activities for using Near Real-Time Aircraft-Derived Data in Future Applications, prepared by the Wake Vortex Tiger Team
- DO-361, Minimum Operational Performance Standards (MOPS) for Flight-deck Interval Management (FIM), prepared by SC-186

Revised Documents:
- DO-328A, Safety, Performance and Interoperability Requirements Document for Airborne Spacing – Flight-deck Interval Management (ASPA-FIM), prepared by SC-186
- DO-272D, User Requirements for Aerodrome Mapping Information
- DO-276C, User Requirements for Terrain and Obstacle Data; and DO-291C, Interchange Standards for Terrain, Obstacle and Aerodrome Mapping Data, all prepared by SC-217

Draft Documents:
- SC-228, MOPS for Unmanned Aircraft Systems, delivered draft MOPS for Verification and Validation testing: Command and Control (C2)

continued on Page 2
MOPS for Verification and Validation (Terrestrial) and Detect and Avoid (DAA) MOPS for Verification and Validation (with an initial Air-to-Air Radar MOPS for Detect and Avoid Systems).

Additionally, the PMC approved the following revised TORs:

- **SC-147, MOPS for Traffic Alert and Collision Avoidance Systems Airborne Equipment**, added Tom Troast (Regulus Group) as the Secretary, and added a new deliverable referencing a MOPS for ACAS X.
- **SC-217, Aeronautical Databases**, added a new Co-Chair, Brian Gilbert (The Boeing Company) to replace retiring John Kasten, and a new Designated Federal Official, Diana Takata. Additionally, SC-217 will update DO-201A Standards for Aeronautical Information.
- **SC-230, Airborne Weather Detection Systems**, revised their TOR to allow collaboration with WG-95 in the development of a feasibility report of weather radar detection of ice crystals and feasibility of standardization of radar ice crystal awareness function.
- **SC-235, MOPS for Non-Rechargeable Lithium Batteries**, the PMC gave approval of new chairman John Trela (The Boeing Company).

The next meeting is scheduled for December 15. For more information, visit the PMC page.

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**406 MHz Emergency Locator Transmitters (ELTs)**

SC-229 and EUROCAE WG-98, co-chaired by Thomas Pack of ACR Electronics, Inc. and Philippe Plantin De Hugues of BEA, met to provide updates to DO-204A/ED-62A and finalize the Minimum Aviation System Performance Standards (MASPS) for in-flight triggering criteria for Open Consultation (EUROCAE only). SC-229 has 5 individual working groups, verifying, discussing and updating specific parts of the specifications to provide updates and feedback for both documents.

Working Group (WG)-1, led by Philippe Plantin de Hugues of Bureau d’Enquêtes et d’Analyses and Chris Parfitt of FAA, finalized their work to provide specific input for the draft document for In-Flight Triggering criteria. The publication is expected in early 2016, enabling it to be referenced in the next issue of ICAO Annex 6 (November 2016).

WG-2, led by Chad Stimson of NASA, focused on crash survivability and reliability of ELTs in aviation accidents, to improve the performance of 2nd generation of ELT systems. The group finalized the crash safety and fire recommendations and drafted the vibration recommendations.

WG-3, led by Allan Knox of USAF and Ed Thiedeman of the US Coast Guard, provided updates on their work into second-generation beacon (SGB) homing activities and active participation in the Cospas-Sarsat Task Group. The SGB homing signal characteristics have been proposed and included in the draft Cospas-Sarsat SGB T.018 standard.

WG-4, led by Chris Hoffman of ACR Electronics, focused on Global Navigation Satellite System (GNSS) and Battery specificities and Return Link Services capabilities. It was agreed to address GNSS generically and to consider single frequency (L-1), and not Augmentation systems (e.g. SBAS, WAAS, EGNOS). This would be determined by the manufacturers.

WG-5, led by Tom Pack of ACR Electronics, is working on the harmonization of DO-204A and ED-62A with the objective to have the exact same revision published on both sides. The scope of the Minimum Operational Performance Standards (MOPS) is to cover ELTs (AF, AP, AD and S), both 1st and 2nd generation Beacons, consideration of rotorcraft requirements, incorporation of some TSO requirements and addressing FAA issuance on battery safety.

The next meeting will be December 15-17 in Paris, France, hosted by ICAO.
We Have Come a Long Way

By Edward L. Bolton Jr., FAA Assistant Administrator for NextGen

In the past two years that I have served with the FAA, we have made tremendous progress in laying the foundation for the Next Generation Air Transportation System (NextGen). We have gone from facing criticism for our lack of progress with NextGen to receiving accolades for achieving some major foundational milestones. We have come a long way and the results are significant. I am confident that the collaborative relationship we have built with our aviation partners will serve us well as we tackle obstacles and produce solutions.

We have worked closely with the RTCA NextGen Advisory Committee (NAC) to establish priorities and deliver results. Thanks to the NAC’s hard work and dedication, we have been able to focus on four focus areas that are already delivering significant benefits to our stakeholders: Data Communications (Data Comm), Performance Based Navigation (PBN), Improved Multiple Runway Operations (IMRO) and Surface Operations.

Data Comm

Data Comm gives air traffic controllers and pilots the ability to transmit flight plans and other essential information with the touch of a button instead of through multiple verbal communications. Controllers use Data Comm to send messages in a text-based format directly from the tower to an aircraft’s on-board flight computer. Data Comm instructions are clear, quick and concise, increasing safety and efficiency.

We have tested Data Comm at Newark and Memphis, and recently deployed it at Salt Lake City, Houston Hobby and Houston Intercontinental airports. In line with our commitment to meeting the NAC’s priorities, we are on track to have Data Comm in more than 50 air traffic control towers by the end of 2016 – three years ahead of schedule.

PBN

With PBN, we have established thousands of new routes and procedures based on satellite technology, which make the flow of air traffic more efficient. These new routes occur in all phases of flight and now outnumber radar-based procedures.

PBN will increase safety through continuous descent procedures and improve airport and airspace access in all weather conditions. The procedures will reduce delays at airports and in certain dense airspace through the application of new parallel routes. PBN will increase efficiency through more direct routes, especially at lower flight altitudes. We have implemented these satellite-based procedures for 463 airports, from the largest, busiest hubs to smaller general aviation airfields. We think we can do even better and have agreed to improve on these collective results, and have asked the NAC to work with us to identify ways to achieve our goals. This will take a continued concerted effort on the part of all stakeholders.

Surface Operations

Surface Operations and Data Sharing includes System Wide Information Management (SWIM), which offers access to a wide range of air traffic control and management data. Users of the National Airspace System can tap into the information they need, when they need it, through a single connection.

SWIM relies on a standard data format so information from unrelated computer systems may be shared efficiently. Airlines no longer need to look at multiple sources to access weather and surface operations information. Stakeholders can also capitalize on SWIM-distributed air traffic control data to develop new software products that serve the aviation community.

With SWIM, the FAA and airlines can collaborate more effectively on daily flow-control decisions. Several major airlines, airports and air traffic control research laboratories are already connected to SWIM and are actively using the information.

IMRO

By employing IMRO and wake recategorization, the FAA has lessened airport delays by safely reducing separation standards for dual and independent parallel runway operations. IMRO offers operators improved access to runways and increased runway capacity, which increases efficiency and reduces flight delays. Airlines have benefitted from improved schedule management. More efficient operations and fewer delays represent a benefit to passengers.

We have executed these programs because of excellent collaboration between the FAA and major stakeholders who play a part in NextGen — pilots, controllers, airports, airlines, general and business aviation, and manufacturers.

Metrics and More Collaboration

One of our primary goals in the implementation phase of NextGen is to ensure established metrics are in place to measure our progress. For example, the 2014 MITRE report on NextGen implementation showed we have made significant progress since 2008 and validated our focus on transitioning from executing programs to delivering capabilities.

We have measured $1.6 billion in benefits to airlines and the...
traveling public from NextGen capabilities already in place. Over the next 15 years, we estimate NextGen will produce an additional $11.4 billion in benefits. Once all currently planned programs are in place, we expect NextGen to deliver $134 billion in direct airline, industry and societal benefits through 2030. This includes savings in fuel, airline crew and maintenance costs, efficiencies realized through FAA programs such as SWIM, environmental savings and time savings for passengers.

Our challenge now is to keep moving quickly with implementation. This will require even greater collaboration on the part of the FAA and the aviation industry. We will continue with our stakeholders to ensure we move NextGen forward – providing benefits now and laying a foundation for expansive future NextGen capabilities. We will identify risks and acknowledge if there are areas where we are not reaching the level of benefits we initially expected, and will continue to work in constructive collaboration with industry through the NAC and other venues to close the gap and continue delivering additional NextGen capabilities.

Although much progress has been made, more work remains. Moving forward together, we will do even greater things with NextGen.

Standards for Air Traffic Data Communications Services

SC-214 and EUROCAE WG-78 recently finalized the revisions for all Baseline 2 documents: Safety and Performance Requirements (SPR), DO-350, and Interoperability Requirements (INTEROPS), DO-351, DO-352 and DO-353.

The documents are now in a Final Review And Comment (FRAC) period until October 30.

The revisions will be color-coded to highlight the amendments:

- Redlines for modifications affecting the initial release scope and Operational Safety Assessment/Operational Performance Assessment (OSA/OPA)
- Yellow, highlighting text for the addition of Interval Management – Arrival, Approach, Cruise and Departure (IM AACD) related changes
- Cyan, highlighting text for the addition of Dynamic RNP changes
- Green, highlighting text for the addition of Interval Management Pair-wise Trajectory (IM PTM) changes

If you are interested in reviewing the documents, please contact Sophie Bousquet (sbousquet@rtca.org). SC-214/WG-48 will meet in Paris at Airbus from December 7-10 to address and resolve the comments. The publication of Revision A of Baseline 2 documents is expected in March 2016.

Members reviewing documents for FRAC
Aeronautical Information and Meteorological Services Data Link

Hosted by United Airlines in Chicago, IL and led by Co-Chairs Allan Hart of Honeywell International, Inc. and Rocky Stone of United Airlines, Inc., SC-206 designated the week to Plenary meetings and Sub-Group (SG) working sessions.

SG1/6, Minimum Aviation System Performance Standards (MASPS): Under the leadership of Co-Chairs Steve Darr of Dynamic Aerospace, Inc. and Bill Carson of The MITRE Corporation, the group generated Operational Safety Assessment (OSA) results for Special Activity Airspace (Uplink) and Operational Performance Assessment (OPA) results for Weather Surveillance Downlink and Uplink. They were also able to develop a strategy for combining Service Description/OSA/OPA results in the MASPS.

SG4, Minimum Operational Performance Standard (MOPS) for Eddy Dissipation Rate (EDR): Co-Chairs Tammy Farrar of the FAA and Bill Watts of Delta Air Lines hosted a lively discussion with Airlines for America (A4A) representatives to determine the best approach to address the EDR MOPS intended use. They concluded that a table would be organized and completed by various users (aircraft operators, meteorological personnel, applications, and air traffic controllers).

SG7, Wind Information Guidance: Co-Chairs Ernie Dash of AvMet Applications, Inc. and Michael McPartland of MIT Lincoln Laboratory led discussions on Wake Operations, including Aircraft Winds (3 high-level hypotheses), RTA Operations (5 high-level hypotheses), and IM Operations (4 high-level hypotheses).

The next meeting is scheduled for December 7-11 at RTCA.

Aeronautical Mobile Satellite (R) Service

SC-222 met to prepare the final draft, Change 1 to DO-262B, Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems, Iridium Specific Appendix, for Final Review and Comment (FRAC). The proposed change contains new Receiver Sensitivity tests (Wideband and Narrowband). The draft document was released for FRAC and will last until November 6. Parties interested in commenting should contact Program Director, Jennifer Iversen.

Upon completion of this deliverable, the Committee will continue working toward a joint Terms of Reference with EUROCAE WG-82. The continued work includes next generation Iridium Minimum Aviation System Performance Standards and Minimal Operational Performance Standards and possible changes to DO-262B to accommodate results of the WG-82 collaboration.

The next meeting will be November 10 at RTCA.
Traffic Alert & Collision Avoidance System (TCAS)

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C-147 held its 82nd meeting jointly with EUROCAE WG-75 at EUROCONTROL in Brussels. Co-chaired by Stuart Searight, Dan Tillotson, and Ken Carpenter, the group continued the development of the Minimal Operational Performance Standards (MOPS) for Aircraft Collision Avoidance System Xₐ (ACAS), with the “X” denoting NextGen and the “A” denoting active surveillance, with ACAS X₀ capabilities. ACAS Xₐ will be a “drop-in” replacement for TCAS II. The due date for the ACAS Xₐ/X₀ MOPS is December 2018.

Several presentations were given during the meeting. One important topic of the meeting was the changes to the TCAS II MOPS. It was agreed to complete the FRAC process; Change 2 to DO-300 and Change 1 to DO-300A have been released and will be submitted for approval to the PMC in December.

The next meeting will be held in Melbourne, Florida, December 8-10, hosted by Rockwell Collins, Inc.

Airport Security Access Control Systems

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C-224, led by Christer Wilkinson of AECOM Technology Solutions completed work on the Credentialing Section of DO-230E, Standards for Airport Security Access Control System, for Final Review and Comment (FRAC).

The update to the Credentialing Section addresses technical criteria needed due to rapid advances in technology, trends and policy. The Committee finalized a significant number of items for this section, including airport credentialing possibly providing both identification and access to a range of privileges; airport operator responsibilities as the ultimate responsible party for issuance of credentials; the issue of potential additional measures consistent with state or local law on issuance of such credentials; credentialing process specifics; and background and security check processes.

The next meeting is set for October 29th at RTCA for FRAC resolution. The document will be presented to the Program Management Committee at its December meeting for approval and publication.
RTCA is hosting a two-day training course, tailored specifically to design/verification engineers and project/certification managers requiring DO-254 compliance.

Conducted by Randall Fulton, an experienced consultant, FAA Designated Engineering Representative (DER) and author, this two-day course will:

- Provide an overview and application of RTCA DO-254, as defined by current FAA and EASA guidance in airborne electronic systems.
- Describe how to apply the DO-254 lifecycle and supporting processes; understand system safety assessments and the design assurance level (DAL); and set up a project correctly through proper planning and standards.
- Present techniques and writing requirements for electronic hardware, and how to optimize requirements for verification processes.
- Describe how to efficiently and effectively verify requirements with simulation and hardware tests.
- Address specific considerations for programmable logic devices (PLDs) such as FPGA/ASIC versus all electronics, commercial off-the-shelf (COTS) components usage, and tool assessment and qualification.

December 7-8, 2015

The training course will take place at RTCA Headquarters, located conveniently in downtown Washington, DC. For additional information, please visit www.rtca.org or email training@rtca.org.
Spotlight on Volunteers: The Metrics of the NACSC

By design, RTCA’s NextGen Advisory Committee is organized meticulously, with carefully laid-out timelines of quarterly meetings and monthly subcommittee meetings. The NextGen Advisory Committee (NACSC) structure takes this planning a step further, ensuring the perspectives of all in the aviation industry are carefully considered together, choosing Co-Chairs to represent the spectrum of interested parties.

In terms of the NACSC, this meant choosing one co-chair from a large carrier, to address the concerns of industry leaders, and one co-chair that would represent smaller aircraft pilots, and the perspectives of those who work outside the large carriers, but who are no less affected by NextGen.

“When RTCA looked to delegate the tremendous amount of work we faced regarding NextGen, we knew we had to bring together industry leaders across the board to bring valuable recommendations to FAA and DOT,” said RTCA President Margaret Jenny. “We knew the individuals chosen for these leadership roles would represent their peers well and strong, and more comprehensive recommendations would result.”

RTCA relies on Tim Campbell, representing the large carriers, and Melissa Rudinger, representing general aviation, to lead the NACSC. Tim Campbell has been in the aviation industry for more than thirty years, beginning his career as an aerodynamics engineer at Boeing, and now works at America Airlines as Senior Vice President, Air Operations. “Tim’s a great representative for the airlines,” said Melissa. “I represent general aviation and sometimes we’re competing for resources.

We all want to use limited air space, so sometimes we have competing interests, but we don’t want to work against each other. So, Tim and I collaborate. He’s very knowledgeable and not shy about expressing his opinions. Since I’m kind of a Washington insider, it’s a good mix to weigh our perspectives and our different operational realities.”

Melissa got her first start in aviation by learning to fly hot air balloons. She ran a flight school in Pennsylvania and was co-owner of a Hot Air Balloon business. That was her gateway into aviation, and she obtained her fix wing ratings, becoming a commercial pilot and says this was her gateway into aviation. From there, Melissa earned a commercial pilot certificate. She then went to work for AOPA, where she has served its members for twenty-five years, and is currently the Vice President, Government Affairs. “Melissa’s breadth of knowledge is very helpful and we work well together,” said Tim. “It’s hard work, but Melissa is a very capable Co-Chair. With a broad range of opinions are diverse stakeholders; AOPA and business jet operators are an important constituency. We may not all use the system the same way, but we all need to have a voice and create consensus. I’m happy for the opportunity to work with Melissa.”

Tim and Melissa are united on their mission to serve the sub-committee and both express an appreciation for the role of RTCA. “There’s brilliance in how RTCA set this up,” said Tim. “NextGen has a lot of pieces. It’s a challenge. It’s an expensive and long-term project and I was pleased to see this collaboration.” Melissa says “RTCA is the backbone behind the actions of the NextGen Advisory Committee. They bring a wide range of experts together in support of the FAA’s taskings to the NAC. They provide a legitimate focal point, otherwise there would be no formal recognition by the government.”

Both agree the biggest challenge facing NextGen is the same challenge brought up at RTCA’s most recent Symposium: the instability of funding and the looming scare of sequestration with the federal budgeting process. Both say there is a dire need to prioritize adaptability without sacrificing accountability. In the near-term, we need to support the FAA’s message to not let sequestration affect core capability.

“The biggest challenge we face in implementing NextGen is the uncertainty of funding,” said Tim. “NextGen is an expensive, complicated and long-term project that faces year to year uncertainty. This is unlike what we face in the private sector, with multi-year, expansive capital projects, a stable source of funding and not year-to-year uncertainty. The current situation is mind-boggling.”

While the funding uncertainty is a challenge, and the breadth and scope of NextGen encompasses is huge, Tim believes the NAC and the NACSC have helped address previous concerns from Congress and others about the early years of NextGen. “The senior levels of the FAA have embraced the feedback from the NACSC. Without that, we couldn’t effectively address past concerns. The FAA much more collaborative. We hope to expand this model to expand beyond NextGen to include more near-term issues. We currently have a way to address today’s issues in a similar way as NextGen. The FAA would benefit from broad-based, but consolidated feedback, rather than listening to who’s squeaking the loudest.”
SC-227 met to finalize the revision to DO-283A, Minimum Operational Performance Standards for Required Navigation Performance for Area Navigation, based on the 270 comments received during the Final Review And Comment (FRAC) period. The document will be submitted at the December Program Management Committee meeting for approval and is expected to be published by the end of December.

Chaired by Dave Nakamura of Advanced PBN Solutions/SAIC, the Committee discussed a broad range of comments, changes and additions including those on vertical path construction for Vertical Navigation, associated airspace and procedure design expectations, temperature compensation for the vertical flight path, definitions of two classes of RNP equipment, equipment versus installation approvals, and clarification for implementation of Minimum Aviation Performance Standards (MASPS) relevant requirements.

The September meeting marked the completion of the DO-283A tasking. The next meeting is scheduled for December 2-4 at RTCA and will be the kick-off meeting for the new tasking to revise DO-257A, MOPS for Depiction of Navigational Information on Electronic Maps.

Tactical Operations Committee Announces New Co-Chair

RTCA welcomes Captain Bryan Quigley, Managing Director of Flight Operations from United Airlines, to serve as an industry Co-Chair for the Tactical Operations Committee (TOC) along with Dale Wright, Director of Safety and Technology from the National Air Traffic Controllers Association (NATCA). The Tactical Operations Committee, established by the FAA in January 2013, provides an open venue for the Federal Aviation Administration (FAA) and those who operate in the National Airspace System (NAS), to work in partnership to identify and resolve near-term, tactical issues impacting operations in the NAS.

At United, Captain Quigley is responsible for line and network operations, contingency and emergency operations, policy and plans, regulatory compliance and Comm/Nav/Surveillance programs. He is an Airbus 319/320 captain and has been with United Airlines since 1995. Captain Quigley is a retired military officer with more than 26 years of active and reserve service.

"With his breadth of responsibilities at United, Bryan is uniquely positioned to understand and lead discussions on the current operational issues coming before the TOC. As an active member of the RTCA NextGen Advisory Committee Subcommittee, he is also deeply informed about NextGen implementation," said RTCA President Margaret Jenny. "We are lucky to have someone of Bryan’s caliber in a leadership role on the Tactical Operations Committee."

Under the leadership of Captain Quigley and Mr. Wright, the TOC is poised to provide recommendations to the FAA this year on improvements to Notice to Airmen (NOTAMs), processes for managing airport construction, criteria for the cancellation of procedures as well as other issues impacting operations in the NAS. For more information about the upcoming TOC meeting, November 12, please visit the TOC page.
RTCA has teamed up with Wichita State University's National Institute for Aviation Research (WSU-NIAR) to offer high quality training covering RTCA's DO-160G, Environmental Conditions and Test Procedures for Airborne Equipment. The course will provide an understanding of the use of DO-160G and how it fits in with the greater picture of requirements, design, certification and TSOs.

Course participants will gain a clear and relevant understanding of the applicable FAA regulations, advisory material, certification procedures, design approaches/trade-offs, inspection and conformity requirements, as well as details of the necessary parts of a test plan, test report, compliance plan and compliance report. A strong focus is placed on the reduction of risk, cost and schedule throughout the design/certification process, by use of targeted design and increased first-pass success on design and testing.

In addition to a comprehensive course manual, each training course attendee will receive a copy of RTCA's DO-160G, supporting material and will participate in real-world exercises applying the knowledge learned from the class.

DO-160G, Environmental Conditions and Test Procedures for Airborne Equipment, Training Course

DECEMBER 14-17

*Unless otherwise noted, all training courses will take place at RTCA Headquarters, located conveniently in downtown Washington, DC. For additional information, please visit www.rtca.org or email training@rtca.org.
DO-160G, Environmental Conditions and Test Procedures for Airborne Equipment, Training Course

RTCA has teamed up with Wichita State University's National Institute for Aviation Research (WSU-NIAR) to offer high quality training covering RTCA's DO-160G, Environmental Conditions and Test Procedures for Airborne Equipment.

The course will provide an understanding of the use of DO-160G and how it fits in with the greater picture of requirements, design, certification and TSOs. Course participants will gain a clear and relevant understanding of the applicable FAA regulations, advisory material, certification procedures, design approaches/trade-offs, inspection and conformity requirements, as well as details of the necessary parts of a test plan, test report, compliance plan and compliance report. A strong focus is placed on the reduction of risk, cost and schedule throughout the design/certification process, by use of targeted design and increased first-pass success on design and testing.

In addition to a comprehensive course manual, each training course attendee will receive a copy of RTCA's DO-160G, supporting material and will participate in real-world exercises applying the knowledge learned from the class.

The course will take place from December 14-17.

DO-178C, Software Considerations in Airborne Systems and Equipment Certification, Training Course

RTCA has teamed up with The MITRE Aviation Institute to offer high quality and relevant training for the aviation industry in understanding the requirements and parameters for avionics software development necessary to obtain FAA certification.

The two world class organizations are using their collective experience and expertise to provide training on the new standards and recommended practices contained in the new DO-178C, Software Considerations in Airborne Systems and Equipment Certification.

In addition to the comprehensive course manual developed by the experts at The MITRE Aviation Institute, each training course attendee will receive the latest standards developed over a six-year period by RTCA Special Committee 205.

The course will provide a thorough understanding of the requirements and applicability of DO-178C; the fundamental techniques of software development considerations in airborne systems and equipment certification; and an introduction and overview of Software Tool Qualification Considerations, Formal Methods Supplement to DO-178C, Model-Based Development and Verification Supplement to DO-178C, and Object Oriented Technology and Related Techniques Supplement to DO-178C.

The course will take place from December 1-3.

The Supplements to DO-178C, Software Considerations in Airborne Systems and Equipment Certification, Training Course

The course will provide the background and scope on the four documents supporting DO-178C:

- DO-330, Software Tool Qualification Considerations
- DO-331, Model-Based Development and Verification Supplement to DO-178C and DO-278A
- DO-332, Object-Oriented Technology and Related Techniques Supplement to DO-178C and DO-278A
- DO-333, Formal Methods Supplement to DO-178C and DO-278A

Attendees will receive detailed instruction on DO-331 covering the objectives, activities, explanatory text and software life cycle data that should be applied when model-based development and verification are used as part of the software life cycle.

The course will take place on December 4.

LIMITED SPACE: REGISTER TODAY!

*Unless otherwise noted, all training courses will take place at RTCA Headquarters, located conveniently in downtown Washington, DC. For additional information, please visit www.rtca.org or email training@rtca.org.
RTCA New Documents

Aeronautical Data

**DO-291C, Minimum Interchange Standards for Terrain, Obstacle, and Aerodrome Mapping Data**

**ISSUED 09-22-2015 | PREPARED BY SC-217**

This 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

**Supplements to DO-291C, Minimum Interchange Standards for Terrain, Obstacle, and Aerodrome Mapping Data**

**ISSUED 09-22-15 | PREPARED BY SC-217**

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 Aerodrome Mapping Database Exchange Model (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.

*Note: Available as a zip file for electronic download only*

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

**ISSUED 09-22-15 | PREPARED BY SC-217**

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.

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

**ISSUED 09-22-15 | PREPARED BY SC-217**

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 would 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-Iceing 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.

*continued on Page 13*
The fifth meeting of SC-231 was held to continue the development of single TAWS Minimum Operation Performance Standards (MOPS). The Committee is working on a document that will cover both legacy Ground Proximity Warning Systems (GPWS) modes as well as new TAWS modes. The MOPS will also provide the foundation for revising Technical Standard Order (TSO)-C151c.

The initial draft of the Class A TAWS requirements was completed and included consensus on the Modes 1-5 alert envelopes as well as the Premature Descent Alerting (PDA) envelope, and the Forward Looking Terrain Awareness (FLTA) alert conditions.

The next meeting is scheduled for December 8-10 at RTCA.
Spotlight on RTCA Staff: Jeffery McNeil and His Unexpected Journey to RTCA

A big part of RTCA is bringing together aviation industry professionals for meetings at RTCA Headquarters. A big part of setting up these meeting rooms is RTCA staff member Jeffery McNeil. He is the one responsible for coming in after hours, before events large and small, to ready the rooms to exact specifications, ensuring a seamless meeting the next day. It’s a task Jeffery expertly and easily handles, and has for more than two years.

Seeing Jeffery as the reliable, efficient and valued member of the RTCA team that he is now, and watching Jeffery and RTCA President Margaret Jenny enjoying the great bantering relationship and friendship they have, it’s difficult to imagine Jeffery as anything other than the man he is today. But Jeffery’s path to becoming a valued member of the RTCA team is an unlikely one. Jeffery endured a difficult childhood that eventually led to homelessness. He became determined to work his way out. So Jeffery began selling Street Sense, a bi-weekly newspaper populated with articles about homelessness, written and sold by homeless individuals in DC. Soon, he began to contribute articles to Street Sense.

This is how he and RTCA President Margaret Jenny met. Margaret became a regular patron, buying his newspapers, intrigued by Jeffery’s recommendations that she read the articles he wrote. A friendship emerged and Margaret and Jeffery began regularly meeting for coffee, enjoying interesting discussions on a range of topics. Eventually, Margaret offered Jeffery a job setting up for RTCA meetings and he accepted.

Jeffery has been excelling at work, as he spends his days working at LA Fitness and nights working at RTCA, preparing for meetings. Writing has taken an increasingly larger role in his life, and, with pride, Jeffery said more people read his columns than the rest of the paper. His next goal is to write a book.

No matter where life takes him next, Jeffery McNeil will always remain grateful to Margaret. “Margaret helped me out,” said Jeffery. “She’s one of the people to help me get off the street.” Margaret expresses the same gratitude for their unlikely friendship. “For us and for him, it’s been a win-win,” says Margaret. And Jeffery and Margaret still take the time out for an occasional coffee date.

Addressing Human Factors/Pilot Interface Issues for Avionics

S-233, led by Co-Chairs Susan Taylor of Gulfstream Aerospace and Trish Ververs of Honeywell International, Inc., received briefings from the Working Groups (WG) to provide updates on discussions and get overall committee inputs.

Under the leadership of Don Stephen of Transport Canada, WG2 identified Human Factors Engineering (HFE) design issues seen during product development, encountered by regulators, and in service post-certification. There are approximately 70 existing issues and 10 potential issues from forecast technology, and the Committee worked to sort the issues into categories the HFE community could identify as common HF topics.

WG3, led by Chris Hamblin of Honeywell International, Inc., identified steps to evaluate human factors/pilot interface, including the roles and responsibilities of the applicants and regulatory authorities, expanding upon FAA Notice 8110.98. The WG is sorting through how it can be used for Technical Standard Order/Supplemental Type Certificate/Type Certificate (TSO/STC/TC), and how it can be expanded to be universally useful. The WG also identified a log of issues that have been saved for future considerations.

Under the leadership of Paul Schutte of NASA, WG4 identified methods and best practices used to address HFE issues during the design process that can be discussed with evaluators.

The next meeting is scheduled for December 8-10 in Dallas/Fort Worth, TX.
RTCA ONLINE STORE

Your one-stop resource center for

OVER 300 DOCUMENTS

Serving as the basis for FAA Regulation Compliance

JUST RELEASED

DO-360, Standards Development Activities for using Near Real-Time Aircraft-Derived Data in Future Applications

DO-272D, User Requirements for Aerodrome Mapping Information

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

DO-291C, Interchange Standards for Terrain, Obstacle and Aerodrome Mapping Data

COMING SOON!

DO-328A, Safety, Performance and Interoperability Requirements Document for Airborne Spacing – Flight-deck Interval Management (ASPA-FIM)

DO-361, Minimum Operational Performance Standards (MOPS) for Flight-deck Interval Management (FIM)

For additional information and to order documents, please visit www.rtca.org.
Aerospace Optics, Inc.
Fort Worth, Texas USA
Ruben Vasquez

Aerospace Optics, Inc. is the exclusive manufacturer of the VIVISUN brand of lighted push-button switches and programmable displays. VIVISUN combines reliability, MIL-PRF-28805 quality, and superior performance in a sunlight-readable, lighted push-button switch or indicator. VIVISUN products meet a number of military, environmental and electrical specifications.

Airline Dispatchers Federation
Washington, DC USA
Joseph Miceli

The Airline Dispatchers Federation (ADF) is the only national organization representing the professional interests of the dispatch profession. ADF’s constituency is comprised of licensed aircraft dispatchers and operational control professionals from 100 aerospace companies including every major U.S. airline. It has been estimated that approximate 92% of airline passengers traveling each day in the United States, do so under the watchful eye of ADF members.

C&D Associates, Inc.
Buchanan, Michigan USA
Bill Sandmann

Located in southwestern Michigan, C&D Associates Inc. began as a service organization, overhauling and repairing Janitrol and South Wind combustion heaters and supporting accessories. Since 1979, the company has offered alternatives to the existing sources of heaters and heating components.

However the biggest advancement came in 2004, with the development of the Dash-1 series combustion heater, C&D’s own heater product line. Born from the knowledge base compiled through the constant fixing of Janitrols and SouthWind heaters and driven by yet another Janitrol AD, in 2005 the first completely redesigned aircraft combustion heater was released in nearly 50 years. With over 18 years using the Durakoat combustion tube and nearly 10 years with the Dash-1 series, C&D’s safety and reliability record has become the industry benchmark.

CUONICS GmbH
Straubing, GERMANY
Philipp Lemberger

The CUONICS GmbH was founded in 2015 by Philipp Lemberger. Although a new company, the team has many years of experience in the field of development and production of aerospace equipment.

CUONICS GmbH provides services for major clients across Europe on customized solutions in the fields of civil and military aviation.

Dallas/Fort Worth International Airport
DFW Airport, Texas USA
Jim Crites

Dallas/Fort Worth International Airport (DFW) is the primary international airport serving the Dallas-Fort Worth metroplex in Texas. It is the largest hub for American Airlines, which is headquartered near the airport.

DFW is the third busiest airport in the world by aircraft movements and the ninth busiest airport in the world by passenger traffic. It is the busiest airport in Texas by both passenger enplanements and by aircraft movements (takeoffs and landings). It is the tenth busiest international gateway in the United States and second busiest in Texas (behind Houston Intercontinental).

As of October 2014, DFW Airport has services to 202 destinations, including 55 international and 147 domestic destinations within the U.S. In surpassing 200 total destinations, DFW joined a select group of airports worldwide with that distinction.

Echodyne Corp
Bellevue, Washington USA
Eben Frankenber

Echodyne Corp is bringing to the market next generation electronic scanning radar apertures and systems with dramatically lower Cost, Size, Weight, and Power (CSTWP) than conventional electronic scanning radars. Echodyne’s radar technology is applicable to collision avoidance, detect and avoid, sense and avoid, airborne weather, precision approach, brown-out and many other radar applications.

Their patented Metamaterial Electronically Scanning Array (MESA) stands to be disruptive across a wide range of existing radar applications and enabling for a whole new category of radars never before contemplated or thought possible. Echodyne is looking for integration partners to help bring MESA-based radar systems to market across a wide range of applications.

Electronics and Telecommunications Research Institute (ETRI)
Daejeon, Republic of Korea
Hee Wook Kim

The Electronics and Telecommunications Research Institute is a Korean government-funded research institute in Daedeok Science Town in Daejeon, Republic of Korea.

As a national Information and Communications Technology (ICT) leader, ETRI is performing communication and convergence by developing Storage Area Network (SAN) Technology (cutting-edge ICT technology converging with shipbuilding), Korean to English world-class portable automatic interpretation technology, and development of adjustable display technologies, such as transparent display.

Building on its past success, ETRI continues to dedicate research and development to maintain its place among the world’s best research institutes leading creative economy.

ELTA
Blagnac Cedex, Houte Garonne FRANCE
Claude Cresp

ELTA designs and manufactures electronics equipment. One of their main products is Emergency Locator Transmitters (ELT). ELTA has a wealth of expertise in the design, production and maintenance of cutting-edge electronic equipment for hostile environments.

EMT Ingenieurgesellschaft
Dipl.-Ing. Hartmut Euer mbH
Penzberg, Bayern GERMANY
Franziska Rumpf

EMT is a certified aviation company and supplier of aircraft and aviation equipment. For more than 30 years, innovative products for the armed forces have been developed, manufactured and supported. The growing family of EMT system includes mini- and Tactical Unmanned Aircraft Systems.

Engage Technology, Ltd.
Witley, Surrey UNITED KINGDOM
James Swift

Engage Technology, Ltd. is an industry leader working primarily in machine vision and scientific imaging. Based in the south east of England they provide a wide variety of services from project management, hardware specification and supply, to software development and commissioning.

Machine vision spans an ever increasing variety of industries and technologies some of which include packaging inspection, automotive, security, ophthalmology, food inspection and medical devices.

Working with customers they have developed considerable in-house knowledge in smart camera technology, hardware interfacing, software processing, high speed data capture, and high resolution imaging.

Ankara, TURKEY
Ergun Yasayan

ESEN System Integration has been certified as a national Information and Communications Technology (ICT) leader, ETRI is performing ‘communication and convergence’ by developing Storage Area Network (SAN) Technology (cutting-edge ICT technology converging with shipbuilding), Korean to English world-class portable automatic interpretation technology, and development of adjustable display technologies,
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**RTCA**

New Members

**Frequencia, Ltd.**
Chelmsford, Essex UNITED KINGDOM
*Matt DeChamps*

Frequencia provides impartial technical consultation in the following areas: Military and Commercial aircraft connectivity and SATCOM, including L Band services, Ku and Ka band satellites, In-Flight Entertainment and connectivity (IFE-C), GSM, GPRS, Wi-Fi, Program Management and certification support for aviation projects – both line fit and retrofit across all OEMs, RF coverage/optimization testing (GSM, LTE, Wi-Fi, etc.), RF coverage analysis and mathematical modelling, RF link margin analysis, wireless (GSM, LTE, Wi-Fi, etc.) performance testing, data link aggregation implementation/performance testing, aircraft installation support/trouble shooting, system integration lab design/build/commissioning and Bespoke hardware design/implementation.

**GEE Operations Solutions**
Marina Del Ray, California USA
*Tulinda Larsen*

Global Eagle Entertainment, Inc. (GEE) is a leading worldwide provider of media content, technology and connectivity solutions to the travel industry.

Through the industry’s most comprehensive product and services platform, GEE provides airlines with a wide range of inflight solutions. These include Wi-Fi, movies, television, music, interactive software, as well as portable in-flight entertainment (IFE) solutions, content management services, e-commerce solutions and original content development.

Serving over 150 airlines worldwide, GEE delivers exceptional quality and value to its customers to help them achieve their passenger experience objectives. The company’s headquarters is located in Los Angeles, California, with other offices and teams located throughout North America, Asia, the Middle East, Europe, Africa, Oceania and South America.

**Harris Technologies, LLC**
Powder Springs, Georgia USA
*James Harris*

Harris Technologies, LLC is a Small Disadvantage Business (SBA Certified SDB) which provides customers with the necessary knowledge, skill and experience, contacts, impartial judgment and discretion using state of the art and best industry practices to successfully meet client needs and requirements.

**iDE, Engineering Bureau Dembinski**
Weinheim, GERMANY
*Ulrich Dembinski*

iDE is an engineering bureau specialized in the application of digital computer systems in safety-critical domains such as aviation, naval, ground transportation, medical devices, chemical plants and power plants. They provide services covering the entire spectrum for the entire life cycle of such computer systems.

**IM SAR, LLC**
Springville, Utah USA
*Michael Duersch*

In 2008, IMSAR changed the industry when it demonstrated the NanoSAR A, the world’s smallest synthetic aperture radar (SAR). Since then, the company has become the leader in miniature SAR technology for manned and unmanned platforms. The company offers NanoSAR B, a Ku band sensor-base radar, Viper K and Viper LS, communications base stations and Lisa Ground Station, a SAR image generation and exploitation suite.

**Instrumart Limited**
St. John’s, Newfoundland CANADA
*Stuart Inkpen*

Instrumart Limited is a product development company based in Canada. Two of its product lines are in aerospace: emergency locator beacons and sensors for in-air ice and SLD detection.

**Martin Aircraft Company Limited**
Christchurch, NEW ZEALAND
*Martin Prystie*

Martin Aircraft Company is the maker of the innovative experimental aircraft, Martin Jetpack. Though its tradename uses the phrase “jet pack”, the craft uses ducted fans for lift. It was unveiled July 29 at the 2008 Experimental Aircraft Association’s 2008 AirVenture in Oshkosh, Wisconsin, US. The Federal Aviation Administration classifies it as an experimental ultralight airplane.

**MGA Research**
Akron, New York USA
*Micahel Greiner*

MGA New York is a division of MGA Research Corporation, which has specialized in offering testing services and products to a global market for over three decades. Their purpose is to make all MGA resources and expertise available to assist diverse customers with design qualification/verification, product development, first article, in-process, and final inspection test services across an industrial market (commercial, military, aerospace, aviation, medical, automotive, etc.). They take great pride in their ability to develop mechanical, electrical, and control components, integrating them to develop custom test equipment. Services available include but are not limited to testing, analysis, consultation, equipment/fixture design, and fabrication.

**My-konsult Teknik AB**
Sunbyberg, SWEDEN
*Mikael Norgren*

My-konsult specializes in the design, development, and manufacturing of EW Support and Training Systems. The company is focused on ECM and ESM products that includes Test and Evaluation-, Airborne-, Ground- and Naval applications.

**Novaer Craft Empreendimentos Aeronauticos S.A.**
San Jose Dos Campos, Sao Paulo BRAZIL
*Celso Cobra*

NOVAER is a Brazilian aerospace company focused on providing advanced and engineering solutions to the aviation industry. NOVAER designs and manufactures military and civilian aircraft as well as components of aircraft. As a provider of landing gear solutions, NOVAER is the prime contractor for the T-27 Tucano landing gear. NOVAER provides products and support services to customers around the world and is an important exporter of landing gear systems.

**Open Network Solutions, Inc.**
Ashburn, Virginia USA
*James Moulton*

Open Network Solutions, Inc. provides technical and management consulting in the areas of system architecture, system engineering, project management, product/OEM software design and implementation for media companies, web applications, aviation and air traffic control to both governments and industry.

**Radiant Power Corporation**
Sarasota, Florida USA
*Jeff Densmore*

Radiant Power Corporation operates as an FAA-certified repair station in Sarasota and, through its distribution partner, maintains inventory stocking locations all over the world, and provides 24/7 service and support for aerospace customers around the world. Radiant’s engineering department includes design engineers experienced in sophisticated commercial aviation, military aviation and space power delivery and control products. Radiant Power Corporation is AS9100 certified.

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New Members

RadioBro Corporation
Madison, Alabama USA
Mark Becnel
RadioBro manufactures commercial products for the nano and pico class of small spacecraft and provides a variety of world class testing and training services to developers in aerospace.

State University Parthenope
Napoli, ITALY
Filippo Tomasello
Formerly known as Naval Institute until 2001, the University of Napoli Parthenope is one of the five fully accredited Universities in Napoli. Founded in 1920, its initial purpose was to be a support institute for the promotion of studies aimed at improving maritime economy and naval technology. In the 1930s it was further enlarged and improved, and its name was changed to Istituto Universitario Navale. Also, it was at the Istituto Universitario Navale that, during the 2nd World War, a scientist developed the first Italian radar. State University Parthenope in Naples has a long tradition in radio-navigation at sea, in the air and in space. The Department of Sciences and Technologies offers degrees in aeronautical sciences, including airport services, safety regulation and Remotely Piloted Aircraft Systems (RPAS).

uAvionix
Omaha, Nebraska USA
Sean Suiter
uAvionix designs, develops, and manufactures Automatic dependent surveillance – broadcast (ADS-B) transponders for Unmanned Aircraft Systems.

Ultralife Corporation
Newark, New York USA
A global corporation headquartered in Newark, New York, Ultralife has extensive North American offices as well as international operations in Europe, China and India. Through strategic growth and acquisitions, the corporation has expanded beyond its commercial and military battery business to include custom engineering design and services, tactical communications systems and a wide range of power accessories for global government and defense markets. Ultralife is organized into two business segments: Battery and Energy Products and Communications Systems.

Underwriters Laboratories (UL)
Northbrook, Illinois USA
Judy Jeevarajan
UL is a global independent safety science company with more than a century of expertise innovating safety solutions from the public adoption of electricity to new breakthroughs in sustainability, renewable energy and nanotechnology. UL provides expertise across three strategic businesses to promote safe living and working environments around the world. These distinct UL businesses work closely with industries, authorities and customers to keep safety ahead of innovation in an evolving global landscape. In every market, every day, they are helping companies keep pace with regulatory demands while strengthening the position of their brand and business.

VadaTech, Inc.
Southampton, UNITED KINGDOM
Ian Shearer
VadaTech provides innovative embedded computing solutions that offer superior performance density for high-reliability requirements. With a unique combination of electrical, mechanical, software, and system-level expertise, VadaTech provides commercial and rugged computing solutions for a wide variety of industries. AS9100 certified, their quality system provides a consistent and reliable product from initial prototypes to volume production.

Validrone AB
Stockholm, SWEDEN
Magnus Lundmark
Validrone AB develops ADS-B IN and OUT transponders for general aviation aircraft.

Veracity Engineering
Washington, DC USA
Thomas Lamoureux
Since 2001, Veracity Engineering has been committed to supporting the Federal Aviation Administration as well as major air carriers and the aviation community nationwide, providing a broad range of technical and business support services in the furtherance of agency and industry initiatives in safety, airport operational efficiency, fiscal responsibility, enterprise engineering, and research and development. Veracity Engineering is an ISO 9001:2008 certified company.

SAVE THE DATE

RTCA 2016
Global Aviation Symposium
Soaring To New Heights

National Press Club | Washington, DC 20045 | June 1-2, 2016
RTCA Trainings: DO-160G, DO-178C, Supplements to DO-178C and DO-254

RTCA recently conducted five training courses focused on aviation certification and compliance. Participants packed the RTCA facilities and evaluated the courses high on relevance, as well as usefulness and appropriateness for course content. RTCA’s newest course, DO-254, Design Assurance Guidance for Airborne Electronic Hardware, was such a success, a second course was added for December 2015. For more information about RTCA Training Courses, visit www.rtca.org or email training@rtca.org.
RTCA Committee Participation Membership Policy

Effective January 1, 2016, organizations with a representative participating on RTCA Committees are required to be members of RTCA.

Purpose: The policy ensures that all participating organizations share in costs associated with the RTCA facilities, access to the RTCA Workspace Committee management tool, physical and virtual infrastructure, and the staff necessary for extensive collaboration among many and diverse aviation stakeholders.

Phase-in period: The policy applies for individuals seeking to join an existing committee, or a newly established committee after August 1, 2015, and applies to existing Committee Members beginning January 1, 2016.

Ensuring Access for Non-RTCA Members: The policy is in full compliance with RTCA’s role of operating Federal Advisory Committees. Representatives from Non-RTCA member organizations will continue to have the opportunity to attend Committee Plenary meetings that are announced in the Federal Register. This includes the option of requesting permission to be recognized to speak, access meeting summaries and related information from previous plenary meetings, available via RTCA’s website. Documents undergoing Final Review and Comment (FRAC) can be obtained by contacting RTCA. Members of the public may also submit comments as part of FRAC process.

Calendar of Events

OCTOBER 2015 – JANUARY 2016

Visit www.rtca.org for up-to-date information

Unless otherwise specified, all meetings are held at RTCA, 1150 18th St., NW, Suite 910, Washington, DC, 20036. The information in this calendar is deemed to be reliable as of the date of publication, but is not guaranteed and is subject to change. Please visit www.rtca.org for updates. All RTCA Federal advisory committee meetings are open to the public and are free of charge.

For additional information, email RTCA at info@rtca.org.

The RTCA Digest is published by RTCA, Inc., a not-for-profit association. RTCA is the premier Private-Public Partnership venue for developing consensus among diverse, competing interests on critical aviation modernization issues in an increasingly global enterprise.