STANDARDS OVERSIGHT COMMITTEE ACTS ON SAFETY AND EMERGING TECHNOLOGIES

RTCA’s Program Management Committee (PMC) held its winter meeting approving three critical guidance documents, reviewing workplans for the Special Committees (SC), and incorporating changes to the various committee Terms of References (TOR) that reflect leadership and work plan changes.

Chaired by Chris Hegarty of The MITRE Corporation, the PMC is the RTCA oversight body charged with producing timely and robust standards and guidance documents to ensure

See page 16 for details.

continued on page 2
interoperability of aviation systems and equipment. The standards encourage innovation and serve as the basis for meeting Federal Aviation Administration (FAA) regulations. An important responsibility of the PMC is ensuring the operational application of the technical standards. The Members of the PMC approved three standards covering the following areas:

- Industry requirements for navigation databases for aeronautical use. This revision to User Requirements for Navigation Data confines the scope to navigation data, provides an overview of Performance Based Navigation (PBN) and System Wide Information Management (SWIM) concepts in relation to navigation data, defines a data catalog, expands the set of data quality requirements, and provides new guidance on procedure design and coding.

- Emergency Locator Transmitters (ELTs) Minimum Operational Performance Standards (MOPS). This updated MOPS for 406 MHz ELTs includes NASA research and development considerations for ELT crashworthiness, ELT power sources (primarily lithium), second generation ELTs, and inflight triggered ELT (DT) for Global Aeronautical Distress & Safety System (GADSS).

- Combined vision systems technology for helicopters. This Minimum Aviation System Performance Standards (MASPS) for A Combined Vision Systems for Helicopter Operations does not provide “additional operational credit” and is not intended to change the helicopter’s existing operational capability or certification basis.

The Committee also approved leadership changes for two committees:

- New company for Chairman and new Secretary for SC-135, Environmental Testing
- New Co-Chair for SC-209, ATCRBS/Mode S Transponder

And changes to the work plans of seven SC’s were approved. These included:

- SC-186, Automatic Dependent Surveillance Broadcast (ADS-B)
- SC-214, Standards for Air Traffic Data Communication Services
- SC-216, Aeronautical Systems Security
- SC-228, Minimum Performance Standards (MOPS) for Unmanned Aircraft Systems
- SC-222, AMS(R)S Systems

Details from the December 13, 2018 PMC meeting are contained in a letter from Chairman Hegarty to FAA Associate Administrator for Aviation Safety, Ali Bahrami.
2019 GLOBAL AVIATION SYMPOSIUM

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- Unmanned Vehicles (surface and air)
- Cybersecurity Applications & Challenges within Aviation Standards
- Next Generation Propulsion Systems

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http://symposium.rtca.org   |   202-833-9339   |   symposium@rtca.org
EUROCAE Working Group (WG) 98’s chairman, Philippe Plantin de Hugues of BEA obsessed over Air France’s Flight 447 for the two years before it was found. The international aviation community remains haunted by the disappearance of Malaysian Airlines Flight 370 the same way.

SC-229 406 MHz Emergency Locator Transmitters was formed merely days after MH370 disappeared, in an eerie happenstance that showed how important a joint RTCA/EUROCAE project to update Emergency Locator Transmitter (ELT) 406 MHz (MOPS) Minimum Operational Performance Standards would be.

“Back in early 2013, I asked EUROCAE to create WG-98 in anticipation of ICAO standards to make sure that we will never lose an aircraft like MH370,” said Plantin de Hugues, Special Adviser on International Affairs/Senior Safety Investigator with Bureau d’Enquetes et d’Analyses. “I was glad that RTCA decided to create SC-229 and to work jointly with the EUROCAE WG-98. Even when manufacturers are competitors in the WG, everybody worked together for the improvement of the ELT and to create the most advanced, robust solution to avoid a new MH370.”

This shared determination to make it easier to find missing aircraft brought together avionics and aircraft manufacturers, along with airlines, search and rescue organizations, and governmental representatives to tackle the problem of making ELTs quicker to respond, more durable and more accurate, while meeting the requirements from ICAO. The joint group explored options to find the required performance to assure an ELT activates prior to accidents and to provide accurate accident positioning for first responders.

“We had a good cross-section of people throughout the industry working on this and it was quite rewarding, with a lot of tie-ins to other projects,” said Tom Pack, Chief Technology Officer with ACR Electronics and Chairman of SC-229. “The document we accomplished is referenced by the ICAO standards and addresses the latest design, performance, installation and operational issues for 406 MHz emergency beacons.”

Since its inception in 2013, the joint group held sixteen joint plenary sessions addressing ELT crashworthiness, global navigation satellite system specifications, power sources, second generation ELTs, in-flight trigger criteria and ELT survivability. The group’s joint MOPS was published in December 2018. Looking to the future, the committee is the first to be in a new status created by the PMC: Active Monitoring Status. As the industry continues to evolve and improve, the members of SC-229 and WG-98 want to keep meeting to discuss technical advances and make sure the RTCA and EUROCAE documents are relevant and consistent with other members of the search and rescue community.
AERONAUTICAL SYSTEMS SECURITY

SC-216 held a virtual Plenary on December 4, 2018. They approved a revised Terms of Reference (TOR) to include an update to DO-355, Information Security Guidance for Continuing Airworthiness, and a new document to address gaps in current Security Event Management processes. Publication releases are expected in late 2019 and 2020 respectively. The goal is to work jointly with EUROCAE Working Group (WG) 72 on both of these documents. The TOR was approved by the Program Management Committee (PMC) at their December meeting.

The groups recently met again on February 4-5, at RTCA to begin working on these tasks.

Members of SC-216 during their Plenary at RTCA headquarters

AERONAUTICAL MOBILE-SATELLITE (R) SERVICE

SC-222, met jointly with EUROCAE Working Group (WG) 82, chaired by Armin Schlereth, DFS GmbH, virtually in late January. The groups completed Final Review and Comment (FRAC) / Open Consultation (OC) Resolution for DO-343B Change 1/ED-242A, Minimum Aviation System Performance Standard (MASPS) for AMS(R)S Data and Voice Communications Supporting Required Communications Performance (RCP) and Required Surveillance Performance (RSP) and DO-262D Change 1/ED-243A, Minimum Operational Performance Standards (MOPS) for Avionics Supporting Next Generation Satellite Systems (NGSS). The groups are expecting to present to the Program Management Committee (PMC) and EUROCAE Council in March.

RTCA Program Director, Karan Hofmann with SC-222 Chairman, Dr. Charles LaBerge
RTCA WELCOMES NEW MEMBERS

ADAC Luftfahrt Technik GmbH
St. Augustin, GERMANY
Norbert Derichs

ADAC Luftfahrt Technik (ALT) has been specializing in the maintenance and repair of helicopters and components for 50 years. At the beginning of the eighties, the company's profile changed from the formerly dominant agricultural flight business to the partner of the ADAC Luftrettung, which first joined the company in the early nineties and then completely took over the aviation business in 1996.

High quality work on the aircraft with stable or sinking DMCs as well as ensuring a high availability of helicopters for their customers are the most important business goals of ALT.

As an approved maintenance company in accordance with EASA Part 145, aeronautical operations in accordance with LuftGerPV and development organization in accordance with EASA Part 21, ADAC Luftfahrt Technik offers services such as full paint jobs or large and small changes to the equipment of helicopters, which are also offered in the context of the sale of helicopters as a support service.

Its renowned clientele includes the ADAC Air Rescue, ANWB Medical Air Assistance (NL), the Federal Police Air Force Group, various police helicopter squadrons of the German federal states as well as other national and international airlines and private helicopter operators.

Envirotainer Engineering AB
Upplands Väsby, SWEDEN
Carolina Lundquist

Envirotainer manufactures and leases out active temperature-controlled containers for air cargo in a global network. Envirotainer Engineering AB operates as a subsidiary of ETR Group.

Green Hills Software
Santa Barbara, California USA
Patrick Huyck

Green Hills Software is the worldwide leader in embedded safety and security.

Green Hills Software’s technology and services have been chosen by prominent companies in over 50 countries to build their electronic products for everything from MP3 players to jumbo jets.

The company’s platform-independent, certified safe and secure real-time operating systems and embedded development solutions support the broadest range of hardware and software platforms.

In 2008, the Green Hills INTEGRITY-178 RTOS was the first and only operating system to be certified by the NSA to EAL 6+ High Robustness, the highest level of security ever achieved for any software product. Only an EAL 6+ High Robustness operating system is certified to protect high value resources at risk of attack from hostile and well-funded attackers.

Their INTEGRITY and µ-velOSity real-time operating systems, IPv6-ready TCP/IP networking stacks, MULTI and AdaMULTI integrated development environments, DoubleCheck integrated static analyzer and TimeMachine tool suite offer a complete development solution that addresses both deeply embedded and high-reliability applications.

Green Hills Software was founded in 1982, is privately held, has been profitable since its inception. Green Hills Software has averaged nearly 30% per year revenue growth and is now the world’s largest independent RTOS company. Green Hills Software is headquartered in Santa Barbara, CA, with European headquarters in the United Kingdom.

JET Systems LLC
Lexington Park, Maryland USA
Redmond Saul

JET Systems was founded in 2013, a Woman-Owned Small Business (WOSB) in the field of Aerospace and Robotics Systems Engineering. Their markets primarily include DoD contract support, commercial SUAVs, and mobile application development. Their focus areas are modular software/hardware engineering, OA planning and integration, field operations, and systems engineering management solutions in the aerospace, autonomy, robotics disciplines. JET Systems provides professional, developmental engineering and programmatic support related to unmanned and manned aircraft, military operations, combat system architectures, and future technical capabilities.

Karvonen Engineering Limited
Beaumont, Alberta CANADA
Garnet Karvonen

Karvonen Engineering Limited is an engineering consulting firm to multiple aircraft OEMs and Canadian DAOs to support aircraft design, integration, testing, and certification.

(continued on page 7)
New Members (continued)

Mage Control Systems Ltd
East Kilbride, UNITED KINGDOM
Matthew Love

Mage Control Systems Ltd. established as a specialist engineering consultancy in 2011, the company has grown significantly to develop a dedicated team of highly motivated engineers with 60 years of combined experience in adaptive and predictive control system design. Specialist designs and productions include: complex motion control and actuation, motor drives, power electronics, intelligent sensing and condition monitoring, electronic design for the planet’s harshest environments, inertial and electro-optical stabilization systems.

Nurol BAE Systems Air Systems, Inc.
Cyberpark, Ankara TURKEY
Gulsevil Pinar

Nurol BAE Systems Air Systems, Inc. was established in 2015 between Nurol Holding (51%) and BAE Systems (49%) to secure a position in the growing Turkish aerospace, defense and security sector. The company aims to provide Engineering Services and Systems and Support on aerospace, defense and security sector to Turkish Industry, and subsequently international customers, using a core engineering expertise developed indigenously or through transferring the capability from its shareholders.

The company targets the niche areas in aerospace and provides these products and services to domestic and international markets. Their aim is to become a Tier 1 Supplier of products and services developed in Turkey achieving this through: establishment of local R&D programs; delivering design and built work packages; and building local capabilities complementing existing industry strengths.

Private Joint-Stock Company
Kyiv, Kharkiv UKRAINE
Michael Kuraksa

PJSC «AVIACONTROL» provides full support for research and development, testing and production of special electronics intended for critical control applications in avionics such as:

- Control and monitoring systems
- Control systems of aircraft engines
- Central Air Data Computers

They have completed certification by the Ukrainian Civil Aviation Authority. Their equipment and systems are manufactured according to the Part-21, Subpart G (POA) - Production Organization Approval Certificate, the Part-21 ADOA Design Organization Approval.

Radia
Boulder, Colorado USA
Craig Zimmerman

Radia is an emerging Cargo and Aircraft Developer and Manufacturer.

SYSGO AG
Klein-Winternheim, GERMANY
Britta Ehlenberger

SYSGO has 25 years of expertise in certifiable software, agile and responsive, with long term support for their OS products, PikeOS Hypervisor and ELinOS.

SYSGO is the European Leader in Hypervisor based OS technology offering worldwide product life cycle support. SYSGO provides invaluable extensive training services with engineering service support covering on-site support engineers and full BSP development services for certifiable BSP to the highest safety levels.

SYSGO provides safety certification support for PikeOS Hypervisor, which has been certified on a variety of platforms, including multicore platforms with X86 processor architectures. PikeOS supports a wide variety of multicore processor architectures, where certification effort is ongoing.

Their customers include Airbus, Continental, Thales, Raytheon, Collins Aerospace, Rheinmetall, B. Braun, Miele Rohde & Swarz, and Selex.

Technology Exploration Group, Inc.
Mountain View, California USA
Greg Deeds

Technology Exploration Group, Inc. provides technology backbone services for industry leadership groups like the FAA Unmanned Aircraft Safety Team, ASTM specification design work, and Chair for AUVSI Silicon Valley. They build UTM integration with NASA UTM projects for clients, LAANC integrations for FAA, and communication services for many leaders in the autonomous industry.

Ziska Unmanned Machines Associates (ZUMA)
Carlsbad, California USA
Michael Gagne

Ziska Unmanned Machines Associates (ZUMA) is focused on emerging beyond line of sight (BLOS) enabling technologies for command and control and detect and avoid, and accompanying data products and actionable intelligence data products for unmanned systems in maritime, ground and airborne environments.
RTCA announces the development of an Airworthy Security Training Course available to member organizations beginning in October 2019. The new course was developed in response to industry requests for additional security-related educational opportunities, particularly in the arena of RTCA security documents and their association with FAA certification.

To present this innovative three-day course, RTCA partnered with Wichita State University’s National Institute for Aviation Research (WSU-NIAR). In particular, this Airworthiness Security Course will examine the following RTCA security documents: DO-326A, Airworthiness Security Process Specification, DO-355, Information Security Guidance for Continuing Airworthiness, and DO-356A, Airworthiness Security Methods and Considerations. It will cover the content and practical application of these three documents, as well as the relationship between the documents, their combined use and key differences between revisions of documents, in particular, updates to DO-356A.

For additional information email training@rtca.org
INTERNET PROTOCOL SUITE (IPS) AND AEROMACS

In December 2018, Frequentis hosted a joint Plenary for EUROCAE Working Group (WG) 108 and RTCA Special Committee (SC) 223. The meeting gave the committee members the opportunity to review the draft IPS Profiles Document and prepare for a Final Review and Comment/Open Consultation (FRAC/OC) to take place in January and February of 2019.

In addition to the profiles document, the group is creating a Minimum Aviation System Performance Standard (MASPS) for IPS for avionics certification. The MASPS is expected to be completed by December 2019 and will enter a public commenting period thereafter.

COMMITTEE
SC-223, Internet Protocol Suite (IPS) and AeroMACS

CHAIR
Aloke Roy, Honeywell International, Inc.

NEXT MEETING
March 25-29, 2019 at RTCA, Washington, DC

ARE YOU THINKING OF TAKING DO-254 TRAINING?

- Have you been assigned the task of preparing a PHAC without knowing what you are expected to include?
- Do you know if your project is for a simple or complex device and what it will mean to your plan for certification?
- Do you need to communicate why following DO-254 could help save your project time and money?
- Three days of instruction focused on the details of DO-254
- Registration discount for RTCA members
- Online registration on RTCA’s DO-254 Training site.

If you want to find out more about getting your electronics hardware certified for use on aircraft, then you should attend this comprehensive RTCA training course.

Next Class: April 8-10, 2019

Classes start at 8am and end at 5pm each day.
Questions? Contact training@rtca.org

RTCA | 1150 18th Street NW, Suite 410, Washington, DC 20036
NEW DOCUMENTS

Aeronautical Databases

DO-201B, User Requirements for Navigation Data Operations

Issued 12-13-2018 | Prepared by SC-217

This document provides industry requirements for navigation databases for aeronautical use by identified applications. This document attempts to state the information requirements for users. The expectation is that navigation data originators, navigation data providers, and application integrators would use this document when providing those data to system designers and/or users. This document provides an industry recommended basis for DQRs to facilitate end user development in support of an intended function.

This revision refines the scope to navigation data, provides an overview of Performance Based Navigation (PBN) and System Wide Information Management (SWIM) concepts in relation to navigation data, defines a data catalog, expands the set of data quality requirements, and provides new guidance on procedure design and coding. It addresses applications and related data needs that have emerged since the last revision. Definitions were also reviewed and updated throughout the document to maintain compatibility with other database and data processing standards.

RTCA DO-201B and EUROCAE ED-77A, User Requirements for Navigation Data are technically equivalent documents.

Emergency Locator Transmitters

DO-204B, Minimum Operational Performance Standard (MOPS) for Aircraft Emergency Locator Transmitters 406 MHz

Issued 12-13-2018 | Prepared by SC-229

This MOPS was authored to update DO-204A. This revision was developed jointly with EUROCAE Working Group (WG) 98 with the goal of making DO-204B technically equivalent to ED-62B.

The updates to DO-204A include:

- ELT Crashworthiness – NASA R&D and Installation Considerations
- GNSS – specifications and RLS
- Power Sources – Primary Lithium
- 2nd Gen ELTs (MEOSAR)
- In Flight Triggered ELT(DT) for GADSS

Note that while DO-204 and ED-62 were technically equivalent, DO-204A and ED-62A were not technically equivalent.

Enhanced Flight Vision Systems and Synthetic Vision Systems

DO-375, Minimum Aviation System Performance Standards (MASPS) for a Combined Vision Systems for Helicopter Operations

Issued 01-16-2019 | Prepared by SC-213

This document addresses Combined Vision Systems (CVS) technologies applied to helicopter operations. While RTCA DO-315x / EUROCAE ED-179x and DO-371 / EUROCAE ED-249 documents are not specialized for a particular type of platform or mission, they were mostly written with fixed-wing platforms and operations in mind. The present document is oriented specifically towards helicopter platforms and operations. It defines performance standards for CVS over head down and transparent displays, which intended function is to provide a supplemental view of the external scene and visual references to the pilot. Such a CVS does not provide “additional operational credit’ and is not intended to change the helicopter’s existing operational capability or certification basis. The pilot(s) is expected to follow the existing operational procedures and adhere to all published minimums. This document is technically equivalent to EUROCAE ED-255.

For additional information and to order documents, visit RTCA’s store at www.rtca.org/store_list.asp. RTCA Members may download electronic documents at no cost and qualify for a 60% discount on paper documents.
SC-224 met in January to continue work on DO-230J, Standards for Airport Security Access Control System. This version will primarily update the credentialing, procurement, biometrics and video sections. This document is expected to be published in the Fall of 2019.

SC-224 members were all hands on deck for their January Plenary

Are you interested in taking DO-178C training?

- Do you know how the Software Life Cycle at your organization relates to the Software Development Process that supports producing software which can approved?
- Is your System Process supporting your Software Development Cycle to ease implementation of the aspects of certification for software?
- Can you explain how what you do in your software process relates to a certification process?

If you need better answers to these and other questions, join the graduates who have benefited from our course. Register early to guarantee your seat.

- Three days of instruction focused on the details of DO-178C
- Registration discount for RTCA members
- Online registration on RTCA’s DO-178C Training site

Classes start at 8:30am and end at 5pm each day.

Next Class: April 1-3, 2019

Questions? Contact training@rtca.org

RTCA | 1150 18th Street NW, Suite 410, Washington, DC 20036
SC-236 met in joint Plenary with EUROCAE Working Group (WG) 96 in Mobile, Alabama and was hosted by Airbus America. During the meeting, the joint committee finished addressing all comments on its first document, Minimum Aviation System Performance Specification (MASPS) for Coexistence of Wireless Avionics Intra-Communication Systems (WAIC) within 4200-4400 MHz. This document will be submitted to the EUROCAE Council and the RTCA Program Management Committee (PMC) for approval in March.

In addition, the group is working to create a standard to define the Minimum Operational Performance Standard (MOPS) to use WAIC in the 4200-4400 MHz band. With the completion of the MASPS, the Committee will focus on the MOPS which is expected to be referenced by the FAA and EASA to support a WAIC TSO/ETSO.
Your one-stop resource center for documents, many of which serve as a basis for FAA Certification.

RTCA Documents:

- Establish a common understanding of performance requirements
- Ensure interoperability of equipment, systems and processes in the highly complex, safety-critical aviation enterprise
- Expedite innovations to market

For additional information and to order documents, please visit rtca.org.
RTCA, Inc. 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 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 is led by instructors who will provide a thorough understanding of the requirements and the 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.

As an adjunct to DO-178C, this 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.

In addition, the training will cover the systems requirements linkage to the DO-178C and Supplement processes through an explanation of the interface to ARP 4754A, Guidelines for Development of Civil Aircraft and Systems.
DO-254, DESIGN ASSURANCE GUIDANCE FOR AIRBORNE ELECTRONIC HARDWARE, TRAINING COURSE

April 8-10 at RTCA
September 9-11 at RTCA
December 9-11 at RTCA

RTCA is hosting a three-day training course, tailored specifically to design/verification engineers and project/certification managers requiring DO-254 compliance.

This three-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.

DO-160G, ENVIRONMENTAL CONDITIONS AND TEST PROCEDURES FOR AIRBORNE EQUIPMENT, TRAINING COURSE

April 1-4 at RTCA
October 8-11 at WSU
December 2-5 at RTCA

RTCA, in partnership with Wichita State University’s National Institute for Aviation Research (WSU-NIAR), offers 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.

*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 TWENTY YEARS AGO...

On March 18, 1999 Special Committee (SC) 159, Navigational Equipment Using Global Navigation Satellite, formally named Global Position System, held their 48th Plenary at RTCA. At this meeting the Committee announced the appointment of Dr. George Ligler, PMEI, as the Vice Chair. They also announced the publication of DO-247, Role of the GLOBAL Navigation Satellite System (GNSS) in Supporting Airport Surface Operations, put together by Working Group (WG) 4B.

RTCA CALL FOR INTEREST FOR TWO NEW SPECIAL COMMITTEES

Terrain Awareness and Warning System (TAWS), is a new committee being formed to garner industry inputs for how the FAA should address NTSB recommendations to address reducing Controlled Flight into Terrain. The Committee will review the NTSB Safety Recommendations and DO-367, Minimum Operational Performance Standards (MOPS) for Terrain Awareness and Warning Systems (TAWS) Airborne Equipment and make recommendations to the FAA how to best satisfy NTSB Safety Recommendation A-17-035 and NTSB Safety Recommendation A-18-015.

Helicopter Terrain Awareness and Warning System (HTAWS), this committee will function jointly with EUROCAE Working Group (WG) 110. WG-110 is working to develop a Minimum Operational Performance Standards before (MOPS) for Class A HTAWS analogous to fixed wing TSO-C151. The intent is not to change DO-309, MOPS for Helicopter Terrain Awareness and Warning System (HTAWS) Airborne Equipment but instead provide a MOPS that is specific to Offshore Helicopter Operations.

If you are interested in participating in either of these committees, please contact rmorrison@rtca.org.
STANDARDS FOR AIR TRAFFIC DATA COMMUNICATION SERVICES

SC-214, Sub Group (SG) 3 met in December 2018 at Honeywell, Phoenix Sky Harbor Learning Center, AZ. This was a joint collaboration with EUROCAE Working Group (WG) 92, VDL Mode 2 and ARINC Airlines Electronic Engineering Committee (AEEC) Data Link (DLK) Systems Sub Committee.


MINIMUM OPERATIONAL PERFORMANCE STANDARDS (MOPS) FOR UNMANNED AIRCRAFT SYSTEMS

Special Committee (SC) 228 met in January, at RTCA in Washington, DC. During the meeting they addressed comments from the Final Review and Comment (FRAC) cycle for the Minimum Aviation System Performance Specification (MASPS) document that is due to the Program Management Committee (PMC) this coming March.

Working Group (WG) 2 met throughout the week to discuss technical comments and resolutions and ended the week with a plenary session to approve closing FRAC for the MASPS and referring it to the PMC for publication.

They remain on schedule for producing revisions to the original DO-362, *Command and Control (C2) Data Link MOPS (Terrestrial)*, DO-365, MOPS for Detect and Avoid (DAA) Systems, DO-366, MOPS for Air-to-Air Radar for Traffic Surveillance in 2019 and 2020 as well as new documents covering MOPS for a ground-based sensor, MOPS for an airborne sensor, and extensions to point-to-point C2 architectures to address Beyond-Radio-Line-of-Sight (BRLOS) applications.
March

March 7
SC-147, Traffic Alert & Collision Avoidance System
Hosted by NASA
Mountain View, CA

March 8
Hosted by RTCA
Washington, DC

March 13-14
SC-230, Airborne Weather Detection Systems
Hosted by RTCA
Virtual

March 14
SC-224, Airport Security Access Control Systems
Hosted by RTCA
Washington, DC

March 18-22
SC-216, Aeronautical Systems Security
Hosted by EUROCAE
St. Denis, France

March 18-22
SC-206 (SG-5)
Hosted by Harris Corporation
Herndon, VA

March 18-22
SC-206 (SG-1 & SG-6)
Hosted by EUROCONTROL
Brussels, Belgium

March 21
Program Management Committee (PMC)
Hosted by RTCA
Washington, DC

March 25-29
SC-223 Internet Protocol Suite (IPS) and AeroMACS
Hosted by RTCA
Washington, DC

April

April 1-4
DO-160G Training
Hosted by RTCA
Washington, DC

April 1-3
DO-178C Training
Hosted by RTCA
Washington, DC

April 4
Supplements to DO-178C Training
Hosted by RTCA
Washington, DC

April 8-10
DO-254 Training
Hosted by RTCA
Washington, DC

April 8-12
SC-236, Standards for Wireless Avionics Intra-Communication System (WAIC) within 4200-4400 MHz
Hosted by EASA
Cologne, Germany

April 19
SC-228, Minimum Operational Performance Standards for Unmanned Aircraft Systems
Hosted by RTCA
Washington, DC

April 26
SC-135, Environmental Testing
Hosted by RTCA
Washington, DC

May

May 9
SC-224, Airport Security Access Control Systems
Hosted by RTCA
Washington, DC

May 21-23
Hosted by Airbus
Toulouse, France

June

June 5
RTCA Symposium
Hosted by RTCA
Arlington, VA

June 10-14
SC-206, Aeronautical Information and Meteorological Data Link Services
Hosted by AOPA
Frederick, MD

June 12-13
SC-222, AMS® S
Hosted by RTCA
Virtual

June 17-19
DO-178C Training
Hosted by RTCA
Washington, DC

June 17-21
SC-223, Internet Protocol Suite (IPS) and AeroMACS
Hosted by EASA
Cologne, Germany

June 20
Supplements to DO-178C Training
Hosted by RTCA
Washington, DC

June 21
Program Management Committee (PMC)
Hosted by RTCA
Washington, DC