STANDARDS OVERSIGHT COMMITTEE ACTS ON SAFETY, SECURITY AND EMERGING TECHNOLOGIES

RTCA’s Program Management Committee (PMC) held its summer meeting approving five critical guidance documents, reviewing workplans for the Special Committees (SC), and incorporating changes to the various committee Terms of Reference (TOR) that reflect RTCA as a Standards Development Organization (SDO).

Chaired by Chris Hegarty of The MITRE Corporation, this 19-member committee is the RTCA oversight body charged with producing timely and robust standards and guidance documents to ensure 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.

SC-213 meets jointly with EUROCAE WG-79. See page 14 for details and updates!

continued on page 4
CHAIRMAN’S COLUMN

The time remaining for me as the Chairman of RTCA, and a member of the board as I write this, is now numbered in days. I leave these roles knowing that I will miss most the interaction with exceptionally bright and good-natured people who have made my tenure both meaningful and enjoyable.

No chairman could ask for a better relationship with an organization’s president and CEO. Margaret Jenny ends her decade of leadership at RTCA with the same tenacity, drive and commitment to the aviation community she had when I met her almost ten years ago while I was transitioning into AOPA as its president. It has been a pleasure and privilege to work side by side over these past few years.

I have to say, it has been a pretty remarkable decade!

Any Federal advisory committee’s usefulness is determined largely by the agency seeking advice. When Randy Babbitt became the FAA Administrator, he brought a good deal of personal experience working with RTCA, and recognized the organization would play a vital role as the modernization of our nation’s air transportation system was getting underway. Then, when Michael Huerta stepped in, he embraced the collaborative approach that RTCA stood for and asked for the creation of the NextGen Advisory Committee (NAC) under the auspices of RTCA. It is difficult to imagine how there could have been a stronger bond between FAA leadership working to develop the path forward leading to air traffic modernization and the literally hundreds, maybe more, of people from all segments of the industry who came to participate in the NAC.

Through the machinations of Washington, D.C., which seemed to be the norm at times with sequestration, reauthorization extensions and government shutdowns, the steadfastness of RTCA’s leadership in the work of modernizing our air traffic transportation system never faltered.

These days, I get asked how anything gets done in Washington! My answer always starts and usually ends with a description of RTCA, where all the stakeholders have come together for decades to work through challenging issues. Perhaps my favorite message came from a participant in the Drone Advisory Committee who, after seeing how things do and can get done suggested that his new technology colleagues were discovering that they might “go faster alone, but they will go further together” by working as new members of the aviation community.

Important work remains. It remains with regard to modernization – something that never really ends – and it certainly remains with the effort to safely introduce unmanned aircraft into our airspace.

Important work also remains for RTCA where the need still exists to bring industry and operating groups together around the development of standards. Just as modernization will continue, so will the need for technologies that enhance aviation’s safety and efficiency. RTCA brings much to these tasks with up to 20 separate committees working on standards right now. Having a collaborate process available for the world’s leading manufacturers and the most sophisticated aviation operators in the world can only be beneficial. The FAA and industry have expressed vigorous support for the establishment of RTCA as an independent standards development organization (SDO),
which will enjoy the same close relationship with the FAA who will continue to seek and invoke our standards. RTCA has done a remarkable job of transitioning from a Federal advisory committee to an SDO without any gap in schedules of their special committees.

With a shift in mission and the sharp focus on standards development, I am very pleased with the new leadership being attracted to RTCA and confident that the fabric of this essential entity will remain intact.

I would be remiss as I close with not thanking Andy Cebula who has been Margaret’s right hand and the one who has lead operations at RTCA. Special thanks are also due to Leila Green, RTCA’s corporate secretary which is just one of the jobs she does so extraordinarily well. Thanks to them and all of the RTCA team for making my tenure so enjoyable.

Finally, I thank my colleagues on the RTCA Board for their candid and constructive participation in our deliberations over the past few years. Together, I do think we have positioned RTCA to play an important ongoing role for the aviation community.

When all is said and done, I hope everyone associated with the past decade at RTCA feels a measure of pride as together we have effectively driven a massive and comprehensive air transportation modernization process forward, while at the same time worked to

RTCA has done a remarkable job of transitioning from a Federal advisory committee to an SDO.

insure our system is and remains, the safest, largest, most complex and most efficient system in the world.

Sincerely,

Craig Fuller
The Members of the PMC approved five standards covering the following areas:

- Airworthiness Security Methods and Considerations – a globally harmonized set of methods and guidelines addressing safety, operational, and maintenance security aspects of aircraft systems
- Nose-Mounted Radomes - performance requirements to ensure no interference with weather radar systems
- Airport Security Access Control Systems - valuable guidelines to ensure only authorized persons have access to airport designated secured areas
- Global Navigation Satellite System (GNSS) Active Antenna in the L1/E1 and L5/ESA Bands - specifies performance requirements that support safety of life aviation applications as GPS is being modernized and constellations are being updated with new civil signals
- Airborne Weather Radar Systems - incorporates new radar technology for both air carrier and general aviation aircraft

The Committee also aligned all SC TORs with RTCA’s SDO designation by identifying the key FAA representative for each committee as the Government Authorized Representative (GAR). This ensures the continuity of the relationship between RTCA industry volunteers serving on the committees and the FAA in developing standards and guidance materials.

Various revisions were made to the work plans for:

- Traffic Alert & Collision Avoidance System (SC-147)
- Automatic Dependent Surveillance-Broadcast (ADS-B) (SC-186)
- Aeronautical Systems Security (SC-216)
- Internet Protocol Suite (IPS) and Aeronautical Mobile Airport Communication System (AeroMACS) (SC-223)
- Airport Security Access Control Systems (SC-224)
- Airborne Weather Detection Systems (SC-230)
- Standards for Wireless Avionics Intra-Communication System (WAIC) within 4200-4400 MHz (SC-236)

Details from the PMC meeting are contained in a letter from Chairman Hegarty to FAA Associate Administrator for Aviation Safety, Ali Bahrami.
Margaret Jenny’s history with RTCA goes beyond her tenure as RTCA President. Prior to working at RTCA, she had the opportunity to co-chair an RTCA working group of Task Force 3 on Free Flight, and co-chair the subsequent RTCA committee, the Free Flight Select Committee. Little did she know, that her experience on those committees, as well as her entire career path was preparing her for the role of RTCA President. But now, after a decade of leadership, Ms. Jenny is retiring and, at the same time, is looking forward to what comes next for her, as well as for RTCA.

You studied sociology in college—when and how did you first “fall in love with aviation”?

“I've always loved aviation—my dad was a GA pilot when we were growing up in St. Louis, so he used to take my brother and sisters and me flying all over St. Louis. I loved to fly with him and watch him communicate with the air traffic controllers. My dad was an aeronautical engineer for Douglas Aviation, and later for McDonnel Douglas, but I never thought I would pursue aviation as a career. I studied sociology in undergrad—I was going to pursue a career in that field. After I graduated, I was working on multiple research projects in sociology, and I really enjoyed the computer analysis aspect of the studies. So, I dropped out of the Sociology Masters/PhD program and began studying computer science.” During this time, Margaret saw how aviation could relate and decided she wanted to do something combining the two. She says she uses her sociology background these days, to help generate consensus with multiple groups. “I have applied my sociology skills many times throughout my career, probably even more than my computer science background.”

During your tenure in the aviation industry, what do you believe has changed the most in aviation?

“It used to be a mode of transportation for wealthy people, and now it is a mode for everyone, which makes the world seem that much more of a smaller place. The biggest change probably happened after 9/11. Everything is much more heightened now when it comes to flying, and there are more security measures; some precautions that have taken the joy out of flying, but obviously at the same time, has made it safer to fly. The emergence of unmanned aircraft seems to be the single biggest change since the advent of aviation. UASs will change the whole definition of aviation—and this definition is one we haven't yet figured out.”

What was the hardest thing you have had to overcome throughout your duration in aviation?

“Well, when I started my career, I started at The MITRE Corporation. I was one of few women, and one of even fewer with a Computer Science background, which was a burgeoning field during that time—most everyone else had Engineering degrees—so I had to get out of my own way, and at

continued on page 6
And at the same time, what changes have you seen in the diversity of the industry, both with respect to gender and race?

“Aviation is making strides on the gender front. There are a lot more women on all levels in the aviation industry. Credence can be given to forward-thinking men, like some of the mentors I have had. The industry is becoming more diverse, but I am dismayed to see the newer entrants who are changing the face of aviation—it’s very definition—from Silicon Valley, for example, are as male-dominated as aviation was in the 1980s. We need to work harder to capture the imaginations of young girls, to make them believe that they can do anything they want, and that there are no professions that are off limits or unwelcoming to them. Unfortunately, there is even farther to go with race.”

How did you “dare to dream” that you could be President of RTCA?

“I grew up with 2 sisters and a brother, and I never doubted that I could not do anything, if I set my mind to it and worked hard. It didn’t mean anything that I was a girl, and I owe that to my parents. My mom never finished college, but she was determined that all of us did; and my dad never treated any of us differently from one another. They both challenged and expected us to be the best that we could be. So I never once, growing up, felt that there were any paths that weren’t open to me if I worked hard and applied my talents. As I said before, I started my career at MITRE, and eventually transitioned to working with an airline.” Little did Margaret know, as she began working at different companies for different sects in the aviation industry, she was experiencing the perspectives of all in the industry, which prepared her for RTCA, the go-to place for developing consensus with diverse and competing interests. “I was very fortunate—I also had great mentors along the way.”

You took the helm of RTCA at one of the worst times in the US economy...how did that effect RTCA? Do you see a relationship between the economic strength of aviation and the commitment to consensus?

“I was very fortunate. I inherited a strong organization from the former RTCA President, Dave Watrous. During his tenure, he built up the financial endurance of the organization, so I was really lucky to not have to worry about financial issues during that 2008-2009 time period. I was then able to build on that sound footing and withstand the challenges, without affecting the output of RTCA and the staffing of RTCA. In regards to a correlation between the economic strength and a commitment to consensus, yes, I do see a relationship. From the airlines perspective, airlines spend money on things they can control, and will not devote substantial time and energy to things beyond their control. At RTCA, we educate all parties on how an improved air traffic control system can affect one’s bottom line. Once they (meaning all groups) understand that, they are willing to come together to fix the problem affecting them negatively and financially. All sides should want to make the commitment to ensure together that the FAA makes commensurate commitments to ATC infrastructure to achieve all intended benefits.”

What is one of your most cherished accomplishments at RTCA?

“Getting Task Force 5 (TF5) up and running and producing its recommendations, all in under a year. Task Force 5 refined what NextGen has become. It was against a lot of odds and competing interests. It also changed the NextGen scenario from a mainly technical challenge, to one that considered the operational, financial, cultural and political aspects of the aviation industry. Of course, credit should be given to the leaders and the more than 300 people who participated on TF5, for its accomplishments. It was a game changer for ATC modernization in a good way.” Margaret also takes pride in the staff at RTCA, and considers them another cherished accomplishment. “The staff at RTCA is amazing, and they are a highly motivated team that wants to ensure the best results and output for our members.”
What advice would you give to those interested in, just starting out in, and pursuing aviation?

“Several things:
• Don’t ever stop listening and learning. There are amazing opportunities happening right now in aviation, and these opportunities are the biggest since the beginning of aviation.
• Seek out mentors. Always have people you admire around you, and don’t be afraid to ask them for advice.
• Understand that aviation is not one-dimensional. It has technical, political, cultural and policy aspects, and you can make a difference pursuing any of these avenues.”

How has 10 years as President of RTCA changed your perspective on consensus?

“I came into this job believing it was important. I am leaving, knowing it is absolutely essential. There are numerous Special Committees, Working Groups, Task Groups and tens of thousands of people who have come to RTCA, and they get it—that it’s good for people to find common ground. That’s the whole mission of RTCA. And that’s the problem with politics today—everyone wants to voice their own opinion, and no one wants to meet in the middle. Consensus is the only way to achieve lasting results.”

What do you think about the future of RTCA?

“We are living in tough times where consensus and compromise are not valued, and where competing factions tend to look for win-lose solutions, rather than win-win. Yet historically, leaders in aviation have understood the need to collaborate on solutions that are interoperable, where we can share the airspace in a safe manner. I know RTCA has a bright future, and I know it is STILL the right venue to move things forward. Our Policy Board and many of our members believe that as well. There will need to be a renewed emphasis on the operational concepts and environmental descriptions to drive performance standards. There are so many great people on our committees, and we have a great staff. The new RTCA President will need energy and strong leadership to keep things going. RTCA will have to do more to “toot its own horn”, and let the industry know that RTCA is still valued and still the go-to place for collaboration.”

What’s next for Margaret Jenny?

“I am going to take some time, the next few months, to think and relax.” Margaret says this is the first time she’s been without a job since she was 16, and she is really okay about it. “There are some things I am passionate about, community service and homelessness, and I will get to focus more on that. “But,” she says, “I am not done working. I will continue in aviation somehow, and will find ways to use my talents and relationships to make the world a better place.”

Margaret’s work at RTCA has not only enhanced the organization’s reputation as the premier public-private partnership and venue for developing consensus, but Margaret has been a pillar in and throughout the aviation community. Margaret, we salute you, and will miss you here at RTCA, but we know we will see you again.

—RTCA Staff
Anhui Huamin Avionics System Co., Ltd.
Wuhu, Anhui CHINA
Xiaoli Liu

Anhui Huamin Avionics System Co., Ltd. is mainly engaged in research, development, integration and the manufacturing of aircraft airborne equipment, mobile and fixed terminal display equipment, electronic information, intelligent equipment, peripheral warning equipment, wireless transmission equipment, sharing devices, radar signal distributors, computer hardware and software, and related application systems.

Antonov Company
Kyiv, UKRAINE
Oleksandr Baida

Antonov Company is a Ukrainian aircraft manufacturing and services company with an expertise in the field of very large airplanes using unprepared runways. It offers transport aircraft, passenger aircraft, special purpose aircraft, and gliders and airplanes. The company also operates as an aviation carrier that provides cargo transportation services worldwide.

Antonov’s airplanes (design office prefixes An-) range from the rugged An-2 biplane (which itself is comparatively large for a biplane) through the An-28 reconnaissance aircraft to the massive An-124 Ruslan and An-225 Mriya strategic airlifters (the latter being the world’s heaviest aircraft with only one currently in service). Whilst less famous, the An-24, An-26, An-30 and An-32 family of twin turboprop, high winged, passenger/cargo/troop transport aircraft are important for domestic/short-haul air services particularly in parts of the world once led by communist governments. The An-72/An-74 series of small jetliners is slowly replacing that fleet, and a larger An-70 freighter is under certification.

Antonov (model prefix An-) has built a total of approximately 22,000 aircraft, and thousands of its planes are currently operating in the former Soviet Union and in developing countries.

Civil Aviation Safety Authority
Phillip, ACT Australian Capital Territory
AUSTRALIA
Marylou Fangilinan

Civil Aviation Safety Authority regulates Australian aviation safety and the operation of Australian aircraft overseas.

They were established in July 1995 as an independent statutory authority. They operate within a legislative framework made up of acts, regulations, associated legislative instruments and guidance material.

Their role is described in the Civil Aviation Act 1988, which also forms the basis of the Civil Aviation Safety Regulations. These regulations are broken into parts, which may have an associated Manual of Standards, as well as supporting guidance materials.

Together with the Department of Infrastructure, Regional Development and Cities, and Airservices Australia, they constitute a tripartite structure for providing safe aviation in Australia.

EaglePicher Technologies, LLC
Joplin, Missouri USA
Nate Hobbs

EaglePicher Technologies, LLC, a VECTRA company, is a leading producer of batteries and energetic devices. For more than 75 years, they have been serving the mission-critical aerospace, defense, aviation and medical battery markets. EaglePicher’s batteries are a key component of the U.S. space program; their batteries provided the emergency power that successfully brought the Apollo 13 crew home. Today, EaglePicher batteries power the International Space Station, Mars Rovers, commercial jets and helicopters, lifesaving medical implants and more than 85 percent of U.S. missile platforms.

Hensoldt is a global pioneer of technology and innovation in defense and security electronics. The company is a market leader in civilian and military sensor solutions, developing new products to counter evolving threats based on disruptive concepts in such fields as big data, robotics and cyber security.

As a technology leader, Hensoldt follows an innovative approach to cyber security. The company develops security-hardened basic IT systems for this rapidly growing area, which are impervious to hacker attacks and inherent hardware weaknesses. Hensoldt is also optimally positioned as a major player in the cyber warfare environment.

Hensoldt’s portfolio includes various sensor technologies, which, when combined, allow detection capabilities to be improved substantially. The company’s main areas of activity include the protection of borders and critical infrastructures, air defense, mission management and aircraft self-protection, vehicle protection, signal intelligence and data links, as well as night vision devices, laser rangefinders and optronic targeting equipment. In addition, Hensoldt’s portfolio also comprises mission avionics such as avionics computers, mission planning systems and autopilots. With its wide product range, Hensoldt covers all types of applications in air, sea, land and space missions and enables its customers to maintain superiority when it comes to monitoring the electromagnetic spectrum. Hensoldt solutions are deployed on various platforms, including helicopters, aircraft, (continued on page 11)
unmanned aerial vehicles, ships and submarines, armored vehicles as well as satellites.

The most prominent air and space platforms equipped with Hensoldt products include the F-16, Eurofighter, Gripen and Rafale combat aircraft, the Tandem-X and EDRS-A satellites, the A400M transport aircraft as well as helicopters of various types. Furthermore, the company provides mission-critical equipment for the Puma and Leopard armored vehicles, the class 212 and class 209 submarines, the US Navy’s littoral combat ships of the “Freedom” class, and the German Navy’s K130 corvettes.

Icelandair
Hafnarfjordur, ICELAND
Thordur Sigfusson

Icelandair is the flag carrier of Iceland, headquartered at Keflavík International Airport in Iceland. It is part of the Icelandair Group and as of April 2018, operated scheduled services to 48 cities in 16 countries on both sides of the Atlantic Ocean out of its hub at Keflavík International Airport.

With over 60 years aviation experience, Icelandair is in many ways unique among international airlines, in that apart from their role as a passenger and freight carrier, they also provide a one-stop comprehensive travel service to and from their home country, including hotel, car rental and tour facilities.

Integricom
Leiden, NETHERLANDS
P.B Ober

Integricom provides technical consultancy in the field of navigation systems. It specializes in performance-related issues and has a proven track record with Eurocontrol, national aviation authorities, industry and navigation service providers.

The company has undertaken studies in the use of navigation systems for different modes of transport, has performed performance analysis studies and has designed and developed positioning and integrity monitoring algorithms.

Integricom actively participates in the Eurocae Working Group 62 on Galileo.

Matrix Avionics
Cumming, Georgia USA
Chris Rose

Matrix Avionics is a 4-person startup of electrical and mechanical engineers working in the satellite communications industry. They are pilots with combined talents and passion to bring high-performance and affordable priced avionics to the aviation marketplace to help keep pilots flying and bring more people into the world of aviation.

Shreya Training and Consulting Services
Bangalore, Andaman and Nicobar Islands
Keshava Murthy

Shreya Training and Consulting Services (STCS) provides training and hiring solutions for embedded and avionics sectors.

Stratux Inc.
New Hudson, Michigan USA
Christopher Young

Stratux Inc. is an ADS-B receivers manufacturer for pilots. Stratux-based Automatic Dependent Surveillance-Broadcast (ADS-B) receivers are the only full-featured receivers on the market that are compatible with every major Electronic flight bag (EFB).
SC-206 met in June at Aircraft Owners and Pilots Association (AOPA), in Frederick, MD. During the meeting, Sub-Group 5 (SG-5) continued their work revising DO-358, Flight Information Services Broadcast (FIS-B) with Universal Access Minimum Operational Performance Standards (MOPS), and is expecting a delivery for publication in early 2019.

The Committee approved a Terms of Reference (TOR) revision, recommending that DO-364, Minimum Aviation System Performance Standards (MASPS) for Aeronautical Information / Meteorological Data Link Services, become a joint document with EUROCAE WG-76, and is expecting a joint publication in late 2020.
Global Positioning System

DO-373, MOPS for GNSS Airborne Active Antenna Equipment for the L1/E1 and L5/E5a Frequency Bands

Issued 06-21-2018 | Prepared by SC-159

The purpose of this Minimum Operational Performance Standard (MOPS) is to specify performance requirements for an active integrated dual frequency GNSS Aviation Antenna. This includes requirements that address reception of GNSS signals that support safety of life aviation applications in the L1/E1 (centered at 1575.42 MHz) and L5/E5a (centered at 1176.45 MHz) bands. The requirements developed in this antenna MOPS support a range of flight phases including enroute, terminal, approach, precision landing and surface operations. In comparison to RTCA DO-301, this antenna MOPS specifies better needed performance in the L1/E1 band for parameters including (but not limited to) G/T, group delay differential, axial ratio and boresight frequency response.

Security

DO-356A, Airworthiness Security Methods and Considerations

Issued 06-21-2018 | Prepared by SC-216

This document is the joint product of two industry committees: EUROCAE Working Group 72, Aeronautical Systems Security, and RTCA Special Committee 216, also titled Aeronautical Systems Security.

This document provides a set of methods and guidelines that may be used within the airworthiness security process defined in RTCA DO-326A / EUROCAE ED-202A, Airworthiness Security Process Specification. It is recognized that alternative methods to the processes described or referenced in this document may be available to an organization desiring to obtain certification.

This document does not provide guidelines concerning the structure of an individual organization or how the responsibilities for certification activities are divided. No such guidance should be inferred from the descriptions provided.

Weather Detection

DO-213A Change 1, Minimum Operational Performance Standards for Nose-Mounted Radomes

Issued 06-21-2018 | Prepared by SC-230

This document contains Minimum Operational Performance Standards (MOPS) for radomes for use with airborne weather radars with or without forward-looking windshear detection capability. These standards specify radome characteristics for designers, manufacturers, installers, and users of the equipment.

It establishes radome performance requirements to ensure that the radome characteristics do not adversely interfere with the performance of weather radar systems, including those with predictive windshear functions. It also includes testing requirements to ensure that the radome continues to perform correctly after repair.
ENHANCED FLIGHT VISION SYSTEMS AND SYNTHETIC VISION SYSTEMS (EFVS/SVS)

SC-213 met jointly with EUROCAE WG-92 to discuss potential Terms of Reference (TOR) updates to define future work for the Committee.

For the new scope, the group proposed a 24-month schedule that would include revisions to three documents. DO-315B, Minimum Aviation System Performance Standards (MASPS) for Enhanced Vision Systems, Synthetic Vision Systems, Combined Vision Systems and Enhanced Flight Vision Systems, and DO-341A, Minimum Aviation System Performance Standards (MASPS) for an Enhanced Flight Vision System to Enable All-Weather Approach, Landing and Roll-Out to a Safe Taxi Speed, would be updated to align with existing Air Circulars currently defining the FAA expectations for vision systems. DO-359, Minimum Aviation System Performance Standard (MASPS) for Synthetic Vision Guidance Systems, would be updated to include Synthetic Vision Guidance Systems to 100 feet and add an enhanced LPV description. All TOR updates will be reviewed at the next Plenary and submitted to the Program Management Committee (PMC) for approval.

The Committee also resolved the comments received during their Open Consultation/Final Review and Comment (OC/FRAC) period on a new document, Safety and Performance Requirements (SPR) for Vision Systems for Takeoff. This document will also be submitted to the PMC for approval at its September meeting.

STANDARDS FOR AIR TRAFFIC DATA COMMUNICATION SERVICES

SC-214 met in late June at EUROCAE in Saint-Denis, France. The Committee met jointly with EUROCAE WG-92 and ARINC Airlines Electronic Engineering Committee (AEEC) Data Link (DLK) Systems Sub Committee.

The group completed their Final Review and Comment (FRAC) resolution of DO-224D, Signal-In-Space MASPS For Advanced VHF Digital Data Communications Including Compatibility with Digital Voice Techniques. This document will be presented for approval at the Program Management Committee (PMC) meeting in September.

They also concluded FRAC/Open Consultation resolution for DO-281C/ED-92C, MOPS for Aircraft VDL Mode 2 Physical Link and Network Layer. SC-214/WG-92 is expected to present their document to the RTCA PMC and EUROCAE Council in September as well for approval.
SC-217 met jointly with EUROCAE WG-44 in June, at RTCA Headquarters. The Committee completed its work, updating the joint document DO-201A/ED-77, *User Requirements for Navigation Data*, and is now in the process of making editorial updates. The Open Consultation (OC)/Final Review and Comment (FRAC) period will initiate on August 1, and end September 17.

All comments received from the OC/FRAC period will be addressed and the final version of the document, DO-201B/ED-77A, will be approved at their next Plenary in October.

The Committee is also considering updating their Terms of Reference (TOR) to address potential additional scope.
SC-222, met jointly with WG-82, chaired by Armin Schlereth, DFS GmbH, in late June and discussed security matters dealing with revisions to DO-343A/ED-242, Minimum Aviation System Performance Standard for AMS(R)S Data and Voice Communications Supporting Required Communications Performance (RCP) and Required Surveillance Performance (RSP), and DO-262C/ED-243, Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems (NGSS). The first set of revisions are expected to be complete by early 2019.

AERONAUTICAL MOBILE-SATELLITE (R) SERVICE

SC-222, met jointly with WG-82, chaired by Armin Schlereth, DFS GmbH, in late June and discussed security matters dealing with revisions to DO-343A/ED-242, Minimum Aviation System Performance Standard for AMS(R)S Data and Voice Communications Supporting Required Communications Performance (RCP) and Required Surveillance Performance (RSP), and DO-262C/ED-243, Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems (NGSS). The first set of revisions are expected to be complete by early 2019.

SC-229 met jointly with EUROCAE WG-98 at RTCA in Washington, DC to prepare for the initiation of Open Consultation (OC) and Final Review and Comment (FRAC) for updates to DO-204A and ED-62A, which will be published jointly in December 2018.

The Committee reviewed internal comments against a full draft of the revisions, to produce a technically equivalent specification for Emergency Locator Transmitters at 406 MHz. The Committee includes members of international regulators, airframers, COSPAS-SARSAT and ELT manufacturers from both Europe and the United States.

All comments for FRAC were received by August 13. The comments will be addressed and the document finalized at the next meeting of the joint committee at EUROCAE.
SC-223 met in St. Denis, France and was hosted by EUROCAE for their first joint Plenary of SC-223 and EUROCAE Working Group (WG)-108.

The joint Committee continued its review of the current draft of the potential Request for Comment (RFC) standards, to bring consensus on the IETP RFP profiles to be included in their next document, *Aviation Profiles for Internet Protocol Suite*. They also reviewed and approved changes to the Terms of Reference (TOR), indicating the document would initiate Open Consultation (OC) and Final Review and Comment (FRAC) after their joint Plenary in September. The document is expected to be completed in December, and published in early 2019.

The group also added a new deliverable to their TOR. The *Minimum Aviation System Performance Standard (MASPS) for the Internet Protocol Suite used in Aviation A-G Communication System* is expected to be completed in late 2019.

**INTERNET PROTOCOL SUITE (IPS) AND AEROMACS**

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

**CHAIR**
Aloke Roy, Honeywell International, Inc.

**NEXT MEETING**
August 13-17, 2018, at IMARSAT, Washington, DC.
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.

*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, 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.

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.

*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](http://www.rtca.org) or email training@rtca.org.*
SC-228 met in July in Renton, Washington. Hosted by The Boeing Company, SC-228’s two Working Groups, WG-1, Detect and Avoid (DAA), and WG-2, Command and Control (C2), met for a week and conducted a plenary session on the final day. The Committee continues to make progress on the development of MOPS for a ground-based sensor, MOPS for an airborne sensor, and an update to the DAA MOPS, as well as extensions to point-to-point C2 architectures to address Beyond-Radio-Line-of-Sight (BRLOS) applications.

During the Plenary, the Committee received updates from the WGs on the status of the Phase II activities, and approved some changes for the Terms of Reference (TOR) deliverables to be discussed at the upcoming September Program Management Committee (PMC) meeting. There was also discussion of previously approved TOR language that was not completely agreed to by all of the Committee, and discussions continue to refine that language into a consensus version.

SC-228 is working toward revisions to various documents and has scheduled deliveries for 2019 and 2020.

SC-224 met to begin work on DO-230J, Standards for Airport Security Access Control System. This version will primarily update the credentialing, procurement, biometrics and video sections. The document is expected to be published in Fall 2019.
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RTCA CALENDAR

August

August 13-17
SC-223, Internet Protocol Suite (IPS) and AeroMACS
Hosted by Inmarsat
Washington, DC

August 20-24
SC-236, Standards for Wireless Avionics Intra-Communication System (WAIC) within 4200-4400 MHz
Hosted by RTCA
Washington, DC

August 28-31
SC-229, 406MHz Emergency Locator Transmitters (ELTs)
Hosted by EUROCAE
Saint Denis, France

September

September 10-12
DO-254 Training
Hosted by RTCA
Washington, DC

September 10-12
DO-178C Training
Hosted by RTCA
Washington, DC

September 13
Supplements to DO-178C Training
Hosted by RTCA
Washington, DC

September 13
SC-222, AMS(R)S
Hosted by RTCA
Virtual

September 13
SC-224, Airport Security Access Control Systems
Hosted by RTCA
Washington, DC

September 13
SC-228, Minimum Operational Performance Standards for Unmanned Aircraft Systems
Hosted by RTCA
Washington, DC

September 17-21
SC-206, Aeronautical Information and Meteorological Data Link Services
Hosted by RTCA
Washington, DC

September 20
PMC, Program Management Committee
Hosted by RTCA
Washington, DC

September 20-21
SC-214, Standards For Air Traffic Data Communication Services
Hosted by EUROCONTROL, Brussels, Belgium

September 24-28
SC-223, Internet Protocol Suite (IPS) and AeroMACS
Hosted by RTCA
Washington, DC

October

October 5
Hosted by RTCA
Washington, DC

October 9-12
SC-236, Standards for Wireless Avionics Intra-Communication System (WAIC) within 4200-4400 MHz
Hosted by Panasonic
Tokyo, Japan

October 22-26
SC-217, Aeronautical Databases
Hosted by SIA
Bordeaux, France

October 23-25
SC-213, Enhanced Flight Vision System & Synthetic Vision System
Hosted by RTCA
Location TBD

October 25
SC-135, Environmental Testing
Hosted by Honeywell International, Inc.
Morris Plains, New Jersey