Management Committee Displays Luck of the Irish with a Full Docket

The Program Management Committee (PMC) met on St. Patrick’s Day and approved changes to seven existing documents and revised Committee Terms of References (TORs) for several Special Committees (SCs). continued on Page 2

Operational Committee Approves Recommendations on Procedure Cancellation and Airport Construction

During its March meeting, the Tactical Operations Committee (TOC) covered a number of issues affecting current and future operations in the National Airspace System (NAS), including cancellation of instrument flight procedures, improving airport construction, one-engine inoperative procedures and operational performance in the Caribbean. The TOC approved a report from the National Procedure Assessment Task Group that provides continued on Page 4

Advisory Committee Demonstrates the Value of Government-Industry Collaboration

The recent meeting of the RTCA NextGen Advisory Committee (NAC) featured actions on Performance Based Navigation (PBN), along with the implementation and evaluation of other NextGen capabilities. continued on Page 5
In addition to approved documents and Committee revisions, PMC members received reports on:

- the SC-147 kick-off meeting and coordination efforts with SC-228;
- the PMC Integration and Coordination Committee’s review of the PMC Ad Hoc Workshop on Integrated Cockpit recommendations;

To conclude the meeting, the PMC members unanimously approved nominations for the RTCA Awards Ceremony, honoring Committee members for all their hard work. Awards will be presented at the RTCA Global Aviation Symposium on June 1st in Washington, DC.

The next PMC meeting is scheduled for June 21.

For more information on the recent meeting, view the PMC page.
The NextGen Advisory Committee (NAC) recently endorsed an updated Navigation Strategy for the National Airspace System. There are three key objectives for the NAS PBN strategy:

- to develop a clear vision of PBN as the basis for daily operations throughout the NAS;
- identify the key navigation capabilities that will be available in the NAS over the next 15 years; and
- define service groups for navigation capabilities.

It is not an entirely new plan, but an update that builds on the progress that has already been made. The FAA published the first roadmap for PBN in 2003. It detailed a way of providing more efficient aircraft navigation than existing ground-based navigation aids, employing satellite-based navigation to enhance safety, increase airspace capacity and efficiency, improve airport access and reduce aviation’s impact on the environment. Since then, the FAA has successfully deployed thousands of PBN procedures and routes throughout the NAS and stakeholders are now realizing significant benefits from these routes. PBN routes and procedures cover the NAS, providing access to over 95% of the instrument runways in the country. User equipage with PBN capabilities has improved dramatically.

At the June 2015 NAC meeting, the FAA proposed an update navigation strategy and asked for industry and stakeholder collaboration to complete it. The move to a PBN-centric NAS requires balancing the objectives of all stakeholders. This includes airport operators and the surrounding communities, as well as the airlines, air traffic controllers, pilots, avionics manufacturers and trade associations, such as the National Business Aviation Association, the Aircraft Owners and Pilots Association and the Regional Airline Association.

The NAC asked the Performance-Based Operations Aviation Rulemaking Committee (PARC) to conduct a technical review of the strategy and provide industry feedback. A PARC task group was established, co-chaired by Mark Bradley, Delta Air Lines’ Chief Technical Pilot, and Joshua Gustin, FAA’s PBN Program Manager. Over several months, the PARC reviewed the strategy in detail and strengthened the connection to industry needs and equipage plans. The team used in-depth focus groups to ensure industry alignment. In February, the results were briefed to the NAC, which endorsed the new strategy.

The strategy is divided into three timeframes: near-term (2016-2020), mid-term (2021-2025) and far-term (2026-2030). The strategic goals for transitioning to a PBN-centric NAS include:

- Operating with PBN throughout the NAS
- Using the right procedure to meet the need
- Using navigation structure where beneficial and flexibility where possible
- Shifting to time- and speed-based air traffic management
- Delivering and using resilient navigation services
- Modernizing the FAA navigation service delivery to reduce delivery time
- Enabling lower visibility access
- Innovating and continuously improving

The new PBN NAS NAV strategy is designed to streamline PBN procedure development and deployment along with the reduction of conventional procedures, and expedite the transition to a PBN-centric NAS. It plans for the integration of PBN with data communications, and recognizes the value of new technologies for low visibility access. The strategy also recognizes that it is critical to engage all stakeholders. Increasing public awareness of the changes that PBN procedures bring to communities, regions and the nation as a whole, is a shared responsibility for all stakeholders. Continued success requires consistent outreach by the FAA to airport operators and the surrounding communities in PBN procedure design and implementation.

As an outgrowth of this activity, the FAA has also tasked the NAC with developing a strategy for managing the time, speed and spacing of aircraft. While the navigation strategy describes the evolution of individual aircraft navigation capability, the ability to take full advantage of that navigation requires techniques and tools to manage the spacing between the aircraft. The NAC plans to forward recommendations to the FAA after their October 2016 meeting.

Validating the Performance-Based NAS Navigation Strategy

By Bruce DeCleene, Manager, Flight Technologies and Procedures Division, FAA

Increasing public awareness of the changes that PBN procedures bring…is a shared responsibility for all stakeholders.
recommendations on criteria and process for cancellation of redundant or unnecessary instrument flight procedures in the National Airspace System (NAS). The recommendations support the FAA’s efforts to reduce maintenance costs on legacy procedures as the NAS transitions to greater emphasis on NextGen procedures.

The TOC also approved a recommendation from the Airport Construction Task Group that focuses on improving three aspects of airport construction and enhanced safety: 1) stakeholder awareness of construction of all airport projects in the NAS, 2) the planning of large and complex construction projects, primarily at the largest hubs, and 3) execution of construction projects. The group also offered recommendations to enhance safety during construction.

During the meeting there were briefings from the FAA on three previous recommendations from the TOC:

- Mr. Jim Linney, Director of Air Traffic Systems, FAA Program Management Office, reviewed the FAA’s assessment of each recommendation included in the TOC’s July 2015 report, “Improving Operations in the Caribbean.” The FAA concurred with nearly all of the recommendations and Mr. Linney explained that the FAA continues to evaluate which recommendations may be implemented immediately and which require additional research.

- Mr. Ken Ready, Acting Manager, FAA Airspace and Rules Team, provided an assessment of the TOC’s recommendations around design, designation and evaluation of Class B airspace.

- Mr. Danny Hamilton, Deputy Assistant Division Manager, Flight Technologies and Procedures Division, and Mr. Steve Szukala, Manager, Instrument Flight Procedures Group, provided an update on the FAA’s efforts to mitigate obstacles in the 20:1 visual area surface which corresponds to the final segment of flight. The TOC previously provided recommendations on interim policy guidance for mitigation to penetrations of the 20:1 visual area surface. Mr. Hamilton and Mr. Szukala informed the TOC that the FAA had gone through a two-year process of reviewing more than 16,000 procedures at over 3,000 airports. The effort identified 20:1 penetrations at about half of the airports, most of which have been resolved through removing obstacles or amending procedures. Initial efforts to evaluate penetrations today suggest that the frequency of penetrations has decreased.

Additionally, the TOC received updates on key areas of interest to the operational community from Mr. John Speckin, FAA. He provided a briefing on its proposed policy for identifying a single operator path for One Engine Inoperative (OEI) procedures for use in determination of hazard/no hazard decisions of proposed obstacles. OEI procedures are proprietary to individual operators and are not considered today in determination of whether a new obstacle poses a hazard.

Prior to the conclusion of the meeting, new tasks were proposed and decided on by the Committee. The TOC will soon begin a task to provide recommendations regarding a Concept of Operations for a future PBN Route Structure. The TOC’s Western Regional Task Group was requested to provide operational feedback to specific community-provided ideas for improving noise in Northern California. Third, the FAA indicated an intent to task the TOC in the near future on improving consistency and accuracy of Graphical Temporary Flight Restrictions (TFRs).

The TOC is led by Co-Chairs Captain Bryan Quigley, Managing Director of Flight Operations, United Airlines, and Mr. Dale Wright, Director, Safety and Technology, National Air Traffic Controllers Association (NATCA), and Ms. Elizabeth “Lynn” Ray, Vice President Mission Support, Air Traffic Organization, FAA, serves as the Designated Federal Official. Mr. Quigley noted, “As a relative new comer to the Committee, I am so impressed with the quality of work this team is delivering. As a federal Advisory Committee, our charter is to respond to the tasking that the FAA asks us to consider, and to make recommendations on how to solve very complicated issues. The scope and depth of the recommendations the TOC delivers to the FAA, is very impressive and a testament to the collaborative nature of the government and industry participants.”

Mark Hopkins (l), Delta Air Lines, leads discussion in consideration of the Airport Construction Recommendation.
At the forefront of this effort are the four FAA-Industry teams of the NextGen Integration Working Group (NIWG) that are tracking 2016 implementation commitments, and developing 2017-19 plans. The participants are identifying the specific actions required to address risks, as well as those actions necessary to ensure that critical components such as training, decision support tools, procedures and policies for the successful deployment of PBN, DataComm, Improved Multiple Runway Operations (IMRO), and Improved Surface Operations capabilities are sufficiently addressed.

The Joint Analysis Team (JAT) is evaluating the performance improvements attributable to the implementation of PBN and Wake Recategorization at specific locations. The JAT leadership presented the methodology for analyzing Wake ReCat at Charlotte Douglas International Airport that will be the basis for the evaluation of Chicago O’Hare International and Chicago Midway International airports to be presented at the next meeting. The JAT is also reaching an agreement on the methodology for assessing the impacts of the North Texas Metroplex and Established on RNP (EOR) procedures in Denver.

Specific to a PBN implementation, the Committee received a report from JetBlue Airways on RNAV procedures at New York’s JFK International Airport that increased arrival utilization of runway 13L at JFK by as much as 50%. The procedures helped mitigate adverse effects of a runway repair project, and is now improving efficiency and access.

Looking beyond the technical and operational issues associated with successful PBN implementation, the Committee is addressing the impact on airport communities. The NAC discussed a recommendation under development, addressing community outreach to assist the FAA and the industry with the growing environmental and noise challenges associated with PBN.

The Committee and its Subcommittee (NACSC) continue to receive regular updates on the FAA’s longer term plans contained in the PBN Aviation Rulemaking Committee (PARC) that establishes a vision for PBN as the basis of all NAS daily operations in a 15-year plan. This was endorsed at the February meeting and is being referenced by the NAC’s PBN Time, Speed, Spacing Task Group to identify and prioritize tools and technologies that are ground-based, and those in aircraft that are appropriate in various operating conditions. The outcome will be a 15-year plan for deployment in five-year increments of near-2020; mid-2025, and far-2030, that optimize PBN in a mixed equipage environment using both ground-based and aircraft-based technologies.

The Committee is also actively engaged in tracking and facilitating the status of aircraft ADS-B Out equipage in meeting the regulatory mandate of January 1, 2020, and ensuring that impediments to equipage are being addressed. The operators represented on the NAC emphasized the need for NextGen to deliver near-term capabilities on the significant cockpit equipage investments made by airlines and general aviation.

To keep the Committee informed on the activities in Europe, Florian Guillermet, SESAR Joint Undertaking, and Frank Brenner, EUROCONTROL, provided an overview of the European Air Traffic Management Masterplan that outlines operations and technology and links it to system performance. The SESAR roadmap is driven by security, capacity, environmental, operational efficiency, and safety performance objectives.

Chaired by Delta Air Lines CEO Richard Anderson with Mike Whitaker, FAA’s Deputy Administrator and Chief NextGen Officer serving as the Designated Federal Official, the 34-member NAC continues its consensus-based work to provide recommendations to the FAA for implementing NextGen. The next meeting of the Committee is June 17 in the Washington, DC area. For additional information on the February meeting see The NAC Page.
One of the most significant dangers facing nations around the globe is also one of the most challenging dangers facing the world’s aviation system: cyber security. And while businesses and governments have been dealing with these concerns since the advent of the internet, it is only in the last twenty-five years that the vulnerabilities of aircraft have been studied and addressed. This need for the study and evaluation of current security concerns, and mapping out the future direction of aeronautical systems security led to the creation of SC-216, co-chaired by Dan Johnson of Honeywell International, Inc., and Chuck Royalty of The Boeing Company.

“Moving forward, I have great faith in RTCA; they are the key to making our safety processes so effective,” says Dan. “While Chuck ran the Committee, and took on more than his fair share, I ran the documents and editorial staff,” says Dan. “He’s been a pleasure to work with and I think together we were able to equally address the concerns on each side of the equation.”

“IT is impressive to see Committee Chairs like Chuck and Dan operate in ways that perfectly complement each other and leverage the specific skills and expertise they bring to the table,” said Margaret. “The industry has benefitted greatly from their collaboration on the vitally important concern of cyber security.”

Although SC-216 has concluded its current mission, aeronautical systems security is an evolving process that will need ongoing work; the Committee has recently been assigned another tasking. However, it will have to go on without two very important players: Hal Moses, who helped SC-216 along its path, has recently retired from RTCA, and Chuck Royalty, who just retired from Boeing in March.

Both Chuck and Dan see an ongoing need to continue the work began by SC-216, particularly as EUROCAE works to catch up with our country’s system, and advances in technology continue to evolve.

“Moving forward, I have great faith in RTCA; they are the key to making our safety processes so effective,” says Dan.

...we’ve brought together Co-Chairs who have been able to define their roles in ways that have perfectly complemented each other

Triggered by the concerns that arose when manufacturers began building systems that connected airplanes to ground systems, and the resulting reality that this process opened up the system’s vulnerability to cyberattacks, SC-216 was founded. Originating almost 10 years ago, the Committee was tasked to work on guidance that the FAA and industry could use when evaluating software designs that would identify how and why planes were exposed to cyber security attacks. The Committee has evolved since then, and now addresses new and emerging concerns.

“The mission given to SC-216 was challenging,” said RTCA President Margaret Jenny. “In addition to devising acceptable processes and means of compliance for ensuring safe, secure and efficient aircraft network design, the Committee was tasked to address operations for aircraft manufacturers, system designers and operators, airlines maintenance and operations personnel and government how business is done.

Dan explains the two components the Committee had to tackle when addressing these concerns. First, he says, are safety processes and flight safety certifications that protect aircraft against failures and the fact that processes need to be able to work on aircraft that may be flying for twenty years. Second, and equally important, are IT and business concerns, which involve complex processes to protect against threats, fire, accidents and failures within computer systems. He noted the concerns of these two components often clash, which means the Committee needs to constantly balance and rebalance priorities and remain flexible as they work through safety processes.

Luckily, both Dan and Chuck have effectively worked together to meet SC-216’s deliverables.

“I have the utmost respect for Dan,” says Chuck. “I respect his skills and insight, and I don’t think SC-216 would have gotten this far without him. Our skill-sets have complemented each other—him building in safety, and my experience from a manufacturing standpoint. Our efforts together have been synergistic and balanced.”

Dan concurs. “While Chuck ran the Committee, and took on more than his fair share, I ran the documents and editorial staff,” says Dan. “He’s been a pleasure to work with and I think together we were able to equally address the concerns on each side of the equation.”

To that end, SC-216 produced three documents for RTCA under the leadership of Chuck and Dan, working in a partnership that balanced their skills, and the expertise Chuck learned during his thirty-eight-year career with Boeing, and Dan’s three decades at Honeywell.

Chuck says the cyber security issue involves two overall concerns. First, it’s a difficult, complex and ever-evolving topic, and second, there are challenges applying standards to this industry, considering the industry is highly regulated and the measures they come up with have to fit
SC-159 met for their 95th meeting and progressed in several working groups (WG): WG-2, GPS/WAAS; WG-2A, GPS/GLONASS; WG-2C, GPS/Inertial; WG-4, GPS/Precision Landing Guidance; WG-6, GPS/Interference; and WG-7, GPS/Antennas.

WG-2 is validating the pseudorandom noise (PRN) expansion possibilities, to include validating the total number of PRNs needed by the FAA in the foreseeable future, and validating the upper limit on Space Based Augmentation Systems (SBAS) PRNs, based on an interference analysis being conducted by the FAA and The MITRE Corporation on the radio frequency interference. Revisions to DO-229D, Minimum Operational Performance Standards for Global Positioning System/Wide Area Augmentation System Airborne Equipment, will be open for Final Review and Comment (FRAC) in September 2016. The revision will support the PRN expansion.

WG-2A and WG-7 are working to identify concerns for the interference criteria on the proposed optimized integrated antenna mask in a new document for Minimum Operational Performance Standards (MOPS) for Global Positioning System/Antenna (GNSS) L1-only airborne equipment. Following this, work on the MOPS will be released for FRAC. WG-6 is working to include a recommendation on a new antenna mask for this report.

WG-2C is working on a MOPS for Global Navigation Satellite System (GNSS) aided inertial systems, including attitude and heading reference system (AHRS) grade sensors.

WG-4 is working on revisions to DO-253C, Minimum Operational Performance Standards for GPS Local Area Augmentation System Airborne Equipment, and DO-246D, GNSS-Based Precision Approach Local Area Augmentation System (LAAS) Signal-in-Space Interface Control Document (ICD). The Committee updated their document schedules in their Terms of Reference and presented it to the PMC for approval.

Committee: SC-159, Global Positioning Systems
Co-Chairs: Chris Hegarty, The MITRE Corporation, and George Ligler, PMEI, Inc.
Next Meeting: June 20, 2016, Location, TBD

Committee: SC-147, Traffic Alert & Collision Avoidance System (TCAS)
Co-Chairs: J. Stuart Searight, Federal Aviation Administration and Ruy Brandao, Honeywell International, Inc.
Next Meeting: September 22, 2016 at MIT LL, Boston, MA
When you learn all the demands on the schedule of RTCA’s new Vice President of Aviation Technology and Standards, you can’t help but marvel at how Al Secen is able to manage all that he does.

First, Al has stepped into this demanding, newly-created position with RTCA, overseeing the work of the Program Directors, managing special committees and developing concepts, standards, and guidance materials for aviation. Second, Al moonlights as an Adjunct Professor of Engineering at the Johns Hopkins Whiting School of Engineering. Third, he is a dedicated family man, raising two high-achieving college students. And fourth, Al serves as a Ski Instructor at Whitetail Ski Resort in Pennsylvania on winter weekends. But despite this vast workload, Al is relishing his new role with RTCA and the challenges it brings.

The decision to come onboard to RTCA in January was a longtime coming for Al, who had spent the previous two decades as a software and systems engineer at Lockheed Martin, after earning a Bachelor of Science degree in Airway Science from Embry-Riddle Aeronautical University, a Masters of Science degree in Computer Science from Johns Hopkins University, as well as licenses as both a Commercial Pilot and a Certified Flight Instructor.

During his time at Lockheed Martin, Al tracked the trajectory of RTCA, impressed by the process of bringing together industry experts who effectively worked together as a group to deliver standards to FAA, forming working partnerships that he says would have been unheard of prior to the Federal Advisory Act.

“It’s very collaborative, which is the hallmark of RTCA,” says Al. “It is impressive to see committees with so many talented experts saying, in these positions, we’re not competitors, we’re partners. It is a great draw for me to be able to work with so many talented people across so many companies, across the whole spectrum of aviation; it’s one of the great things about RTCA.”

Al has also known RTCA President Margaret Jenny for many years. “I was always impressed with how Margaret worked, her breadth of knowledge, her decision-making and her understanding of the collaborative process,” Al says.

So when Margaret approached him, while looking for someone who may be right for this new position at RTCA, at the same time, Al’s division at his former employer was being sold to another company—the timing proved fortuitous for both him and RTCA. Al said he found himself at a crossroads in his career, having to decide whether he wanted to spend his entire professional career in systems engineering, or veer off on a challenging new road with RTCA. He says the great thing about this position being a new one for RTCA is that it provides him the opportunity to define the role. He also looks to expand, and hire two additional Program Directors.

“In the few months I’ve been here, I’ve found it refreshing,” says Al. “I went from a company where I was one of 140,000 employees, and I was a number in a large bureaucratic organization, to working for this tight-knit small group at RTCA.”

“We are excited to have Al on our team,” said Margaret. “He brings a wealth of knowledge in aircraft and ground automation systems that will drive NextGen.”

Airborne Weather Detection Systems

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The Committee held a joint meeting with EUROCAE WG-95 to work on a report about the feasibility to standardize In-Flight Ice Crystals Long Range Awareness capabilities by Weather Radar (WXR). They are on target for a November 2016 completion.

The next meeting is set for April at the Hilton Melbourne Beach Oceanfront Hotel.
RTCA 2016 GLOBAL AVIATION SYMPOSIUM
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- Making Top Priorities a Reality (From Surface to Metroplex to Controller-Pilot Data Communications and Beyond)
- Integrating Unmanned Aircraft Systems into the NAS – Performance Standards, Performance-based Regulations
- Tackling Tactical Operational Challenges in the NAS
- International Harmonization – Initiatives Underway to Ensure Safe and Seamless Global Operations
- Challenges and Opportunities of the Increasingly Sophisticated and Integrated Cockpit
- Conversation on FAA Reauthorization: Outlook for What’s Ahead
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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.

*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.

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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-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 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 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.

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*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.
Airborne Selective Calling Equipment

DO-93A, Minimum Operational Performance Standards (MOPS) for Airborne Selective Calling Equipment

ISSUED 03-17-2016 | PREPARED BY SC-232

This document contains Minimum Operational Performance Standards for Selective Calling (SELCAL) systems installed in all types of aircraft. The document provides information needed to understand the rationale for equipment characteristics and performance for the expansion of the 16-tone system with 16 new tones, for a total of 32 tones.

The FAA intends to use the document to update Technical Standard Order, TSO-C59.

The SELCAL system is a signaling method used to alert individual aircraft that a ground station wishes to communicate with the aircraft. The system uses common HF and VHF radio communication paths. The document was developed in parallel with ARINC Characteristic 714A, Mark IV Airborne SELCAL, and ICAO Annex 10, International Standards and Recommended Practices for Aeronautical Telecommunications.

Communications

DO-353A, Interoperability Requirements Standard for Baseline 2 ATS Data Communications, ATN Baseline 1 Accommodation (ATN Baseline 1 - Baseline 2 Interop Standard)

ISSUED 03-17-2016 | PREPARED BY SC-214

This standard defines the backward compatibility interoperability requirements on air and ground systems compliant with the ATS Interoperability Standard in order to support the CDR, IER, ACM and AMC services when talking to Baseline 1 (B1) ground and air implementations. This document provides interoperability requirements for the Baseline 2 (B2) ground systems to interoperate with known B1 compliant airborne implementations and interoperability requirements for the B2 aircraft system to interoperate with known B1 compliant ground implementations. It provides also a separated set of requirements for each of these two capabilities, which can be implemented and qualified independently.

This revision modifies the B1 backward compatibility rules for the CPDLC messages that have been added or modified in DO-351A/ED-229A.

DO-352A, Interoperability Requirements Standard for Baseline 2 ATS Data Communications, FANS 1/A Accommodation (FANS 1/A - Baseline 2 Interop Standard)

ISSUED 03-17-2016 | PREPARED BY SC-214

This standard provides the interoperability requirements for an aeronautical telecommunication network for Baseline 2 ATS data communication services (B2) ground system that provides B2 air traffic data link services to future air navigation system 1/A (FANS 1/A) aircraft in oceanic and continental airspaces. This document provides interoperability requirements for the B2 ATN ground system to provide FANS 1/A aircraft with B2 data link services, and interoperability requirements to ensure seamless transition of ATS communications for bilingual aircraft (i.e., aircraft equipped with FANS 1/A and ATN data link technologies transitions from a FANS 1/A ground system to a B2 ATN ground system and vice versa).

This revision modifies the accommodation rules for the CPDLC messages that have been added or modified in DO-351A/ED-229A.

DO-351A Vol. I and II, Interoperability Requirements Standard for Baseline 2 ATS Data Communications (Baseline 2 Interop Standard)

ISSUED 03-17-2016 | PREPARED BY SC-214

This standard provides the interoperability requirements (INTEROP) standard for the implementation of the Air Traffic Service (ATS) applications supporting the Baseline 2 data link services as specified in the Baseline 2 Safety and Performance Requirements (SPR) document, DO-350. This document addresses the interoperability of the ATS applications using the Aeronautical Telecommunication Network (ATN). It represents the minimum set of interoperability requirements and allocations necessary to provide adequate assurance that the elements of the communication, navigation, and surveillance/air traffic management (CNS/ATM) system are compatible with each other, and when operating together will perform their intended function. These elements comprise the aircraft system, the Air Traffic Service Provider (ATSP) system, and the operators’ provisions to use the air traffic services.

This revision includes, among other things, the addition of the Interval Management (IM) and Dynamic Required Navigation Performance (DRNP) data link services and associated CPDLC messages, ADS-C reports, and the supporting operational, safety, and performance requirements to support IM and DRNP Operations.

continued on Page 13
New Documents

continued from Page 12

DO-350A Vol. I and II, Safety and Performance Requirements Standard for Baseline 2 ATS Data Communications (Baseline 2 SPR Standard)

ISSUED 03-17-2016 | PREPARED BY SC-214

This standard provides the operational, safety, and performance requirements (SPR) for the implementation of data communication services that support air traffic services (ATS). It provides with provision of data communications in all operational environments e.g., continental, oceanic, and surface. It is intended to support the communication element of the implementation of communication, navigation, and surveillance/air traffic management (CNS/ATM) systems in worldwide application. Data link communications are expected to be used for routine or frequent types of transactions, as well as for communication functions in which the use of voice communication is considered inefficient or unnecessary, thereby reducing voice-channel use and, where resulting controller workload reduction allows increases in sector size, reduction in the number of required voice channels. This SPR standard is intended for use with interoperability requirements (INTEROP) standards, and the guidelines described in RTCA DO-264/ EUROCAE ED-78A.

This revision includes, among other things, the addition of the Interval Management (IM) and Dynamic Required Navigation Performance (DRNP) data link services and the associated CPDLC messages, ADS-C reports, and the supporting operational, safety, and performance requirements to support IM and DRNP Operations.

DO-262B Change 1 to Appendix D, Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems (NGSS)

ISSUED 12-15-2015 | PREPARED BY SC-222

This document corrects typographical errors, clarifies document language in several places, and updates test requirements and test procedures in support of AMS(R)S safety services.

This updated appendix to DO-262 provides information and requirements specific to an Aircraft Earth Station (AES) using the Iridium communication system for the purpose of providing Aeronautical Mobile Satellite (Route) service (AMS(R) S). The International Civil Aviation Organization and the International Telecommunications Union reserve the designation “(Route)” for services related to the “priority and regularity of flights along national and international air routes”. This document represents a significant update to the Iridium-specific minimum operational performance standards currently published in DO-262B. The document contains a provision for identifying and potentially certifying several configurations of Iridium AES equipment.

Radar

DO-220A, Minimum Operational Performance Standards (MOPS) For Airborne Weather Radar Systems

ISSUED 03-17-2016 | PREPARED BY SC-230

DO-220A incorporates corrections to the previous version and technological advances in the field of airborne weather radar. In addition to modernizing the requirements and test procedures for the weather, ground mapping, and predictive windshear functions set out in its predecessors, specifications were added for radar detection of turbulence and atmospheric threat awareness. Any of these functions may be implemented individually or in combination with any others. DO-220A is designed such that the requirements and test procedures for each function are grouped into distinct sections to facilitate testing and the showing of compliance. The document supersedes DO-173 and DO-220, including Change 1.

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

ISSUED 03-17-2016 | PREPARED BY SC-230

DO-213A incorporates the many advances in the field of radome design and testing, as well as updates and corrections to the previous version. The document 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. The document was completed in conjunction with DO-220A.

For additional information and to order documents, visit RTCA's store. RTCA Members may download electronic documents at no cost and qualify for a 60% discount on paper documents.
SC-206, hosted by Delta Air Lines in Atlanta, GA, met in Sub-Group (SG) working sessions along with their 43rd Plenary.

SG1/6, Minimum Aviation System Performance Standards (MASPS), continued work on the MASPS by sections for Final Review and Comment (FRAC) release in June 2016. They plan to conduct their next meeting May 10-12 in Kansas City, MO.

SG4, Minimum Operational Performance Standard (MOPS) for Eddy Dissipation Rate (EDR), Co-Chairs Tammy Farrar, FAA, and Bill Watts, Delta Air Lines, led activities that matured the intended function of the EDR Data and finalized document outline. The MOPS team is working towards a FRAC release for June 2017.

SG5, Flight Information Services Broadcast (FIS-B) with Universal Access MOPS, Co-Chairs John Ferrara, John Ferrara Consulting, and Paul Freeman, Harris Corporation, are expected to hold a kick-off meeting for a new tasking.

SG7, Wind Information Guidance, Co-Chairs Ernie Dash, AvMet, and Michael McPartland, MIT/LL, developed an initial outline of the document and a survey for the operators and the FAA. The group continues to address the document for FRAC release in September 2016.
SC-217 met jointly with EUROCAE WG-44 in Neu-Isenburg, Germany, to update DO-201/ED-77, Standards for Aeronautical Information.

The update is targeted towards data supporting new airborne and ground navigation applications, but it does not aim to standardize the applications themselves. DO-201A/ED-77 will be updated to be in line with the developments in the navigation domain over the past 15 years, and in particular with the Performance Based Navigation principles. The update will consider the requirements of the new ATM application – with inputs from SESAR and NextGen, e.g., 4D trajectory, Advanced PBN, SWIM, etc., as well as changes suggested by industry and derived from authorities experienced feedback. The update will aim at ensuring consistency with ICAO, ARINC and other related EUROCAE and RTCA standards in terms of standards for data processing, in particular data quality, ED-76A/DO-200B, published in 2015. The target date for publication of the revised DO-201/ED-77 is 2018.

406 MHz Emergency Locator Transmitters (ELTs)

SC-229 and EUROCAE WG-98 met to continue the progress on revisions for DO-204A/ED-62A, Minimum Operational Performance Standard for 406 MHz ELTs.

SC-229 has five working groups (WG), verifying, discussing and updating specific parts of the specifications for feedback and updates on both documents. Working Group (WG)-1, led by Philippe Plantin de Hugues and Chris Parfitt, is working to provide specific input for the In-Flight Triggering criteria (MASPS). WG-2, led by Chad Stimson, is focusing on crash survivability and reliability of ELTs in aviation accidents, to improve the performance of 2nd generation of ELT systems. WG-3, led by Allan Knox and Ed Thiedeman, is focusing their work on second-generation beacon (SGB) homing activities and active participation in the Cospas-Sarsat Task Group. WG-4, led by Chris Hoffamm, is focusing on GNSS and Battery specificities and Return Link Services capabilities. WG-5, led by Tom Pack, provided an overview of the 2015-2016 milestones for the Revision to DO-204A and ED-62A.

SC-229 is working on the harmonization of DO-204A/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 5), both 1st and 2nd generation Beacons, consideration of rotorcraft requirements, incorporation of some TSO requirements and addressing FAA issuance on battery safety.

Committee: SC-229, 406 MHz Emergency Locator Transmitters (ELTs)
Next Meeting: September 6-8, 2016, Location TBD

Terrain Awareness Warning System (TAWS)

The eighth meeting of SC-231 was held at RTCA to continue the development of single TAWS Minimum Operation Performance Standards (MOPS). The document will cover both legacy Ground Proximity Warning Systems (GPWS) modes as well as new TAWS modes. The new MOPS will also provide the foundation for revising Technical Standard Order (TSO)-C151c. The committee membership includes regulatory agencies, airframe manufacturers and avionics manufacturers.

The initial draft of the Class A TAWS requirements was completed. This included reaching consensus on the Mode 1-5 alert envelopes, as well as the Premature Descent Alerting (PDA) envelope and the Forward Looking Terrain Awareness (FLTA) alert conditions. The Work Group holds monthly teleconferences to work all sections of the document.

Committee: SC-231, Terrain Awareness Warning System (TAWS)
Co-Chairs: Yasuo Ishihara, Honeywell International, Inc., and Rick Ridenour, ACSS
Next Meeting: June 7-10, 2016 at RTCA, Washington, DC
Addressing Human Factors/Pilot Interface Issues for Avionics

SC-233 met in early March at RTCA and continued its Working Group (WG) efforts.

WG-2, led by Don Stephen of Transport Canada, is working to identify HFE design issues seen during product development, encountered by regulators, and seen in-service post certification.

WG-3 is working to identify steps for the evaluation of human factors/pilot interface to include the roles and responsibilities of the applicants and regulatory authorities, expanding upon 8110.98. Led by Chris Hamblin of Honeywell International, Inc., the WG is discussing how these steps can be used for Technical Standard Order/Supplemental Type Certificate/Type Certificate (TSO/STC/TC), and expanded to be universally useful. The WG also identified a log of issues that have been saved for future consideration.

WG-4, led by Paul Schutte of NASA, is working to identify methods and best practices used to address HFE issues during the design process that can be discussed with evaluators.

The Committee is targeting June 2016 for an initial draft document review, and is on track for a final deliverable by the end of June 2017.

SC-233, Addressing Human Factors/Pilot Interface Issues for Avionics
Next Meeting: June 21-23, 2016, at FedEx Express, Memphis, TN

Automatic Dependent Surveillance – Broadcast

SC-186 met at RTCA Headquarters in early March to receive status briefings on various topics including FAA Surveillance and Broadcast Services (SBS) Program, Extended Squitter MOPS/SC 209 Transponder MOPS revisions, Application technical Requirements and the final release of CPDLC messages for IM and AADC and PTM from SC-214/WG-78, and ADS-B Implementation. The Committee also received a briefing on the status of the 1090 MHz Spectrum Study. The Wake/MET Data SC-206 Tiger Team also briefed their deliverable. The Next meeting is tentatively planned for November 4th in Chicago, IL.

SC-186, Automatic Dependent Surveillance – Broadcast
Co-Chairs: Rocky Stone, United Airlines, and Jesse Turner, The Boeing Company
Next Meeting: November 4, 2016, Location TBD

SC-186 listens intently to a briefing
**Accord North America LLC**
Phoenix, Arizona USA  
**Rakesh Nayak**
Accord North America LLC performs business development activities and engineering services in the avionics domain.

**Airport Consultants Council**
Alexandria, Virginia USA  
**T.J. Schulz**
The Airport Consultants Council (ACC) is the global trade association that represents private businesses involved in the development and operations of airports and related facilities. ACC is the only association that focuses exclusively on the business interests of firms with airport-related technical expertise. ACC informs its members of new trends while promoting fair competition and procurement practices that protect the industry's bottom line.

**Allegiant Air LLC**
Las Vegas, Nevada USA  
**Timothy Johnson**
Allegiant was founded in 1997 and is certified by the U.S. Department of Transportation (DOT) as a “Scheduled Air Carrier” with authority to fly scheduled and chartered airline operations throughout the U.S. and charted services to Canada and Mexico.

**Ameri-King Corporation**
Huntington Beach, California USA  
**Keith Van**
Ameri-King designs and manufactures FAA Technical Standard Orders (TSO), Quality Avionic Equipment for Transport Airplanes (Part 25), General Aviation (Part 23), and Rotorcraft (Part 27 & 29). Ameri-King has been an Original Equipment Manufacturer (OEM) for many Airframe Manufacturers (FAA TC approved), including the New Piper Aircraft, Mooney Aircraft, Aviat Aircraft, American Champion Aircraft, Skystar Luscomb Aircraft, Diamond Aircraft of Canada, Aerospaciale Socata Aircraft of Germany, Piper Aircraft of Germany, Robinson Helicopter, Eurocopter of Canada, etc., in addition to Major Avionics Manufacturers including Garmin International Inc. and engine manufacturer S.M.A Groupe SAFRAN.

**Apex Flight Operations**
Brookvale, New South Wales AUSTRALIA  
**Andrew Burton**
Apex Flight Operations is a global market leader in satellite-tracking for the aviation industry, with clients spread around the world. Emerging from a June 2013 management buy-out of IndigoSat Australia, Apex Flight Operations continues to build on 10 years of aircraft tracking experience, and has introduced the next generation Falcon tracking system. Apex’s belief is that satellite tracking of aircraft not only increases passenger and crew safety, but also brings tremendous benefit to aircraft operations. Their clients have experienced dramatically improved quality of management information, and streamlined seamless introductions of accurate flight data into back-office systems, such as maintenance tracking, crew times, accounting and performance review.

They have developed tracking systems and software that are customizable for use in any aircraft, from helicopters and general aviation, to commercial airline operations.

**ARCON Corporation**
Waltham, Massachusetts USA  
**Siva Sivanathan**
ARCON Corporation is celebrating 50 years of award-winning, high-level engineering design, scientific research, and technical evaluation for government agencies and international customers. ARCON is a small business that specializes in analyzing engineering systems, identifying problems, and formulating and implementing solutions.

**Aviation Traders Ltd**
Christchurch, Dorset UNITED KINGDOM  
**Oli Micklefield**
Aviation Traders Ltd has been at the leading edge of aircraft technology, the name synonymous with pioneering and innovative modification design. The company’s customer base, which includes most of the world’s leading airlines, electronic systems manufacturers and maintenance organizations, is testimony to the quality of Aviation Traders Ltd’s all-around design capability.

Formerly Britavia, Aviation Traders Ltd, now trading as ATL, is a European Aviation Safety Agency (EASA), Civil Aviation Authority (CAA) and Ministry of Defense (MoD) approved design consultancy, and offers a broad range of design, development and modification services to civil and military operators and aircraft manufacturers. ATL’s experienced and qualified engineers, many of whom are Chartered Engineers, have extensive design and certification experience on a broad range of aircraft types, and hold BS EN ISO 9001, EASA 21J.016, CAA DAI/9525/96 (group E3), CAA AD/2005/13 (Design) and MoD approvals (ALTG/07).

**Branch R&D Institute of Air Navigation of GosNII GA**
Moscow, RUSSIAN FEDERATION  
**Andrey Galyamov**
Branch “Aeronautical Research Institute” Federal State Unitary Enterprise State Research Institute of Civil Aviation is the leading research organization in the field of development of the Air Navigation System of Russia. The Institute carries out research and development in the following areas: system-wide and complex development task air navigation systems; air traffic management and the use of airspace; development of communications, navigation, surveillance / Air Traffic Management (CNS/ATM); CNS/ATM systems implementation and funds programs; technologies of CNS; protection of objects of the European Union (EU ATM) Information; justification safety requirements for air navigation services and ensuring the development of their programs; development of requirements, testing and certification of ground-based radio engineering aviation, aeronautical telecommunications, air traffic, on-board navigation, piloting and avionics aircraft and modernization of aircraft; in order to ensure current and future requirements of air navigation.

The Institute carries out research and development on the orders of the Federal Air Transport Agency and other federal bodies of executive power. They perform work under contracts with the Federal State Unitary Enterprise “State ATM Corporation”, the country’s aviation infrastructure companies, airlines and other organizations.

**CGH Technologies, Inc.**
Washington, DC USA  
**C. Troutman**
CGH Technologies, Inc. was founded in 1989 as a woman-owned small business. The company headquarters is located in Washington, D.C., with offices in Herndon, Virginia, and a workforce located throughout the United States. The company has over 20 years of experience in federal and international government agencies, as well as commercial and private sector organizations.

CGH is an International Organization for Standardization (ISO) 9001:2008 and is Capability Maturity Model Integration (CMMI) for Development (CMMI-DEV) Level 3 certified. The company expertise includes: migration of legacy data to centralized knowledge repositories, engineering, re-engineering and automation of critical business processes,

continued on Page 19
### New Members

**continued from Page 18**

development of custom and web-based applications, including solutions that use Geographic Information Systems (GIS) and spatial technologies.

### Compass Engineering

**Yorktown, Virginia USA**

**Victor Carreno**


### European Satellites Services Provider

**Torrejon de Ardoz, Madrid SPAIN**

**Miguel Aguilera**

The European Satellites Services Provider (ESSP) mission is the provision of the European Geostationary Navigation Overlay Service (EGNOS) Open Service (OS) and Safety of Life (SoL) service, compliant with International Civil Aviation Organization (ICAO) Satellite-Based Augmentation Systems (SBAS) standards and recommended practices throughout the European Civil Aviation Conference (ECAC) region. ESSP is also in charge of the provision of the EGNOS Data Access Service (EDAS).

### Exonetik, Inc.

**Sherbrooke, Quebec CANADA**

**Brigitte Fortin**

Exonetik redefines human-machine interaction. The company has been working with industry leaders to solve motion control challenges with conventional actuator technologies.

### Feiji Consulting LLC

**Seattle, Washington USA**

**Howard Au**

Feiji Consulting LLC specializes in human factors engineering, usability, system safety analysis, flight tests, and flight operations.

### Geyser-Telecom, Ltd.

**Moscow, RUSSIAN FEDERATION**

**Dmitry Aronov**

Geyser-Telecom, Ltd. was established in 2010. The company performs work in the interests of federal bodies of executive powers and other state and commercial organizations in the field of telecommunication and transport.

Geyser-Telecom, Ltd. has its core activity in developing and introducing radio-relay communication and wideband wireless access systems, Geo-information systems (GIS), applied hardware & software, and information security systems. The company renders legal and scientific/technological support in the spheres of licensing, certification and frequency management for radio systems of various purposes on both domestic and international levels.

### Harris Miller Miller & Hanson Inc. (HMMH)

**Burlington, Massachusetts USA**

**Mary Eagan**

HMMH is an international leader in environmental and capacity planning, including noise and vibration control, air quality analysis, airport and airspace planning, and climate and energy solutions. With three offices throughout the country, HMMH serves government and private industry clients with a broad range of innovative and effective solutions.

HMMH’s services encompass everything from sophisticated simulation modeling, to customized software tools, to program planning and management.

HMMH is certified as a Woman-Owned (WBE) and Disadvantaged Business Enterprise (DBE) in the Commonwealth of Massachusetts and several other states. HMMH is also recognized as an Economically Disadvantaged Women-Owned Small Business (EDWOSB) by the U.S. Small Business Administration (SBA).

### Kiwitalia Ltd.

**Wellington, NEW ZEALAND**

**Lapo Ancillotti**

Kiwitalia Ltd. is an aviation composites & special projects coordination/PM & design consulting company.

### Memscap as

**Skoppum, Norvège NORWAY**

**Stian Strand**

MEMSCAP®, the high-added value MEMS leader, provides innovative products and solutions based on Micro-Electro-Mechanical Systems® as well as MEMS contract manufacturing services.

MEMSCAP® mainly addresses 4 market segments: aerospace/defense, optical communications, medical and biomedical, and the IT/consumer market.

*MEMS, or micro-systems, are microscopic mechanical systems that combine some mechanical, optical, electromagnetic, thermic and fluidic elements with electronic components on semi-conductor substrate electronics. They act as sensors able to identify physical parameters in their environment (pressure, acceleration, etc.) and/or actuators able to act on this environment.*

### National Association of State Aviation Officials (NASAO)

**McLean, Virginia USA**

**Greg Principato**

Founded in 1931, NASAO is one of the most senior aviation organizations in the United States, predating even the Federal Aviation Administration’s predecessor, the Civil Aeronautics Authority. The states’ first established NASAO to ensure uniformity of safety measures, to standardize airport regulations and develop a truly national air transportation system responsive to local, state, and regional needs.

NASAO works very closely with the Department of Transportation, the National Aeronautics and Space Administration, the Transportation Research Board and the American Association of State Highway and Transportation Officials. It is also the only organization of its type to have an official Memorandum of Understanding with the Federal Aviation Administration and the U.S. Department of Agriculture. NASAO maintains strong relationships with all aviation groups and similar associations, such as the National Governors’ Association and the National Conference of State Legislatures.

### NextGen Air Transportation (NGAT) Consortium

**Raleigh, North Carolina USA**

**Kyle Snyder**

The NextGen Air Transportation (NGAT) Program is a consortium of academia, industry, and government members. It was created at North Carolina State University to provide a research and application-oriented technology as a transfer-focused organization conducting aviation technology development, investigations, and field trials. Through sponsored research and collaborations with consortium members, the NGAT team is developing practical experience using Unmanned Aircraft Systems (UAS) technologies for a wide range of services including agriculture (imaging and aerial application), surveying, infrastructure inspection, cargo delivery, and insurance assessments.

NGAT is also supporting state agencies like law enforcement, emergency manage...
Igor Sikorsky in 1925, is a world leader in the Sikorsky Aircraft Corporation, established by Feyzan Dalay in 1956 for the U.S. Military. RAMI began engineering and manufacturing fixtures, tools, and gauges. Sikorsky helicopters are used by all five branches of the United States armed forces, along with military services and commercial operators in 40 nations. Previously owned by United Technologies Corporation (UTC), in November 2015, Sikorsky was sold to Lockheed Martin.

Sikorsky helicopters have saved an estimated 2 million lives since performing the world’s first helicopter rescue in 1944.

Tel-Instrument Electronics
E.Rutherford, New Jersey USA
Ken Filardo
Tel-Instrument Electronics Corp. is the industry leader in developing and producing field-tested, rugged avionic flight line and bench test sets for demanding military and commercial customers.

Tel’s products have led the avionics support equipment industry to higher levels of integration by combining more test functions into a single unit, and thereby reducing customer acquisition, training, and life-cycle support costs.

Tel’s products are ISO-9001:2000 quality certified; is compliant to ESD standard ANSI/ESD S20.20 and its products have received CE certification for sales into Europe.

The Aerospace Corporation
El Segundo, California USA
Mark Cowdin
The Aerospace Corporation has provided independent technical and scientific research, development, and advisory services to national security space (NSS) programs since 1960. They operate a federally funded research and development center (FFRDC) for the United States Air Force’s Space and Missile Systems Center (SMC) and the National Reconnaissance Office (NRO). They also apply more than 55 years of space systems experience to projects in the national interest for civil agencies like NASA, the National Oceanic and Atmospheric Administration, commercial companies, universities, and international organizations.

The Aerospace Corporation functions as the nation’s independent testing, assessment, and research center for national security space systems, specializing in advanced military space systems. Research is focused on fields pertaining to space and space-related systems, including electrical power systems for rockets and spacecraft, microelectronics, optoelectronics and microelectromechanical systems, laser technologies, active optical remote-sensing systems, optical communications, fiber-optic sensor applications, and applications of atomic physics.

Virgin America
Burlingame, California USA
Paul Harrison
Virgin America, Inc. is a United States-based airline that began service August 8, 2007. The airline’s stated aim is to provide low-fare, high-quality service for “long-haul point-to-point services between major metropolitan cities on the Eastern and West Coast seaboard.” San Francisco International Airport is Virgin America’s main hub, but the airline also has focus city hubs at Los Angeles International Airport and Dallas Love Field.

Virgin Department of Aviation
Richmond, Virginia USA
Randall Burdette
The Virginia Department of Aviation is a state transportation agency whose mission is to progressively develop and maintain a safe, technologically-advanced, market driven air transportation system that provides the citizens of Virginia with convenient and efficient access to the expanding world community. It provides financial and technical assistance to eligible sponsors for the planning, development, promotion, construction and operation of airports and aviation facilities. It administers applicable provisions from the Code of Virginia, plans for the development of a state aviation system, promotes aviation and licensed aircraft, airports, and landing areas.

Volans-I, Inc.
San Francisco, California USA
Hannan Parvizian
Volans-I, Inc. is a start-up company specializing in designing and building a fully autonomous, battery powered unmanned aerial vehicle capable of transporting a payload (up to 10lbs) between two locations at incredible speeds (up to 400mi/h).

The company provides an on-demand delivery service for time sensitive critical shipments, such as, but not limited to, human organs. The applications for this service range from high-tech to medical to industrial transportation services.
European ATM Masterplan

To keep the NextGen Advisory Committee (NAC) informed of the activities in Europe, NAC Members Florian Guillermet, SESAR Joint Undertaking, and Frank Brenner, EUROCONTROL, provided an overview of the European Air Traffic Management Masterplan that outlines operations and technology, and links it to system performance. The SESAR roadmap is driven by security, capacity, environmental, operational efficiency, and safety performance objectives.

Standards of Navigation Performance

SC-227 held its Plenary at RTCA in early March to update DO-257A, Minimum Operational Performance Standards for the Depiction of Navigational Information on Electronic Maps. The work is being conducted in Work Group 3 led by Sam Miller, The MITRE Corporation, and is driven by the need from the industry to provide greater detail and specificity. The Committee will update the document to be consistent with DO-236C Change 1 and DO-283B, to ensure its minimum standards for display of navigation information on electronic maps, further facilitating the implementation of PBN. The Committee will also remove out-dated requirements and update the document with newer, more appropriate guidance material and regulatory document references.

Committee: SC-227, Standards of Navigation Performance
Chair: Dave Nakamura, Advanced PBN Solutions/SAIC
Next Meeting: June 13-17, 2016, at RTCA, Washington, DC

Laying the Foundations for NextGen

FAA’s Air Traffic Organizations Chief Operating Officer and RTCA NAC member Teri Bristol, recently wrote an article in CANSO’s AirSpace Journal about the modernization of the US airspace. She explained the RTCA NextGen Advisory Committee and the progress they’ve made to achieve a safer, more seamless and efficient, global airspace system. Visit https://www.canso.org/sites/default/files/Article%20-%20Laying%20the%20foundations%20for%20NextGen.pdf to view the article.
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JUST RELEASED

DO-350A Volume I and II, Safety and Performance Requirements Standard for Baseline 2 ATS Data Communications (Baseline 2 SPR Standard)

DO-351A Volume I and II, Interoperability Requirements Standard for Baseline 2 ATS Data Communications (Baseline 2 Interop Standard)

For additional information and to order documents, please visit www.rtca.org.
JUST RELEASED

DO-352A, Interoperability Requirements Standard for Baseline 2 ATS Data Communications, FANS 1/A Accommodation

DO-353A, Interoperability Requirements Standard for Baseline 2 ATS Data Communications, ATN Baseline 1 Accommodation (ATN Baseline 1 - Baseline 2 Interop Standard)

DO-262B Change 1 to Appendix D, Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems (NGSS)

DO-220A, Minimum Operational Performance Standards (MOPS) For Airborne Weather Radar Systems

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

DO-93A, Minimum Operational Performance Standards (MOPS) for Airborne Selective Calling Equipment

For additional information and to order documents, please visit www.rtca.org.
Airport Security Access Control Systems

SC-224 held Plenary’s in January and March to finalize operational checklists for inclusion in DO-230G, Standards for Airport Security Access Control System. The document is in the Final Review and Comment (FRAC) process, and the Committee is expected to present DO-230F to the Program Management Committee (PMC) in June for approval.

Committee: SC-224, Airport Security Access Control Systems
Co-Chairs: Mike Duffy, Transportation Security Administration, and Christer Wilkinson, AECOM Technology Solutions
Next Meeting: May 5, 2016, at RTCA, Washington, DC

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

Calendar of Events
APRIL 2016 – JULY 2016

April 12-14
SC 225, Rechargeable Lithium Batteries and Battery Systems
Washington, DC | Hosted by RTCA

April 12-14
SC 230, Airborne Weather Detection Systems
Melbourne, FL | Hosted by UTAS, INSTRUMAR Limited and Rockwell Collins, Inc.

April 12-15
SC 234, Portable Electronic Devices
Frankfurt, Germany | Hosted by Lufthansa

April 26-28
SC 223, Aeronautical Mobile Airport Communication System
Washington, DC | Hosted by RTCA

April 26-28
SC 233, Addressing Human Factors/ Pilot Interface Issues for Avionics
Washington, DC | Hosted by RTCA

April 26-27
SC 235, Non-Rechargeable Lithium Batteries
Sarasota, FL | Hosted by Radiant Power Corp.

May 3-5
SC 216, Aeronautical Systems Security
Washington, DC | Hosted by RTCA

May 5
SC 224, Airport Security Access Control Systems
Washington, DC | Hosted by RTCA

May 31
Bordeaux, France | Hosted by Thales

June 7-10
DO-160G Training
Wichita, KS | Hosted by WSU/NIAR

June 7-10
SC 231, TAWS
Washington, DC | Hosted by RTCA

June 13-17
SC 206, Aeronautical Information and Meteorological Data Link Services
Ottawa, Ontario | Hosted by Nav Canada

June 13-17
SC 227, Standards of Navigation Performance
Washington, DC | Hosted by RTCA

June 15-17
SC 216, Aeronautical Systems Security
Washington, DC | Hosted by RTCA

June 17
NAC, NextGen Advisory Committee
Washington, DC | Hosted by TBD

June 20
SC 159, Global Positioning Systems Location and Host TBD

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

June 21-23
SC 233, Addressing Human Factors/ Pilot Interface Issues for Avionics
Memphis, TN | Hosted by FedEx Express

June 21-23
DO-178C Training
Washington, DC | Hosted by RTCA

June 23
TOC, Tactical Operations Committee
Washington, DC | Hosted by RTCA

June 24
Supplements to DO-178C Training
Washington, DC | Hosted by RTCA

July 14-15
SC 228 Minimum Operational Performance Standards for Unmanned Aircraft Systems
Washington, DC | Hosted by RTCA

July 18-22
SC 217, Aeronautical Databases
Seattle, WA | Hosted by The Boeing Company

July 19-21
SC 225, Rechargeable Lithium Batteries and Battery Systems
Washington, DC | Hosted by RTCA

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.

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