

FEDERAL AVIATION ADMINISTRATION  
**REDAC Subcommittee on Aircraft Safety (SAS)**  
**2019 Fall Meeting Minutes**  
**August 19-20, 2019**

The 2019 Fall REDAC SAS meeting was held on August 19-20, 2019 at the FAA William J. Hughes Technical Center located at the Atlantic City International Airport, NJ 08405. Attendee sign-in sheets are attached in Appendix I. The meeting agenda is attached in Appendix II. This document summarizes discussions and activities that occurred during the meeting. The meeting resulted in three findings and recommendations (F&Rs), which have been included as part of the official REDAC Chair's submission to the FAA. All presentation materials are available and can be downloaded through the FAA REDAC website (<https://redacdb.faa.gov>).

Note Taker: Hossein Eghbali

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### **Day 1 – August 19, 2019**

#### **Introduction/Opening**

The SAS Designated Federal Official (DFO) Dr. Eric Neiderman, Technical Center Director Shelley Yak, and Subcommittee Chair Terry McVenes jointly kicked off the meeting with brief opening remarks, which were followed by introduction of SAS members and all attendees. Ms. Yak mentioned that the 2017 and 2018 National Aviation Research Plans (NARP) have been released, and that the 2019 NARP was under review.

#### **SAS Chair Report on Full REDAC Meeting**

Terry McVenes, SAS Chair, reported on the April 11, 2019 full REDAC meeting. He mentioned that the focus of the meeting was on the FAA's R&D Landscapes initiative, particularly aviation industry-based research drivers within the Landscape document. Mr. McVenes presented a list of changes in drivers for all research domains including aircraft safety, which is the focus of the SAS. The new drivers for aircraft safety are: in-time system-wide safety assurance and runway friction and braking. Attendees briefly discussed the changes in drivers. Mr. McVenes also presented a summary of other subcommittees report.

#### **Research Landscape and Strategic Direction**

Steven Summer of the Research Portfolio Branch of the Research and Development Management Division presented an overview of Aviation R&D Landscapes, including a definition for the landscapes, the purpose of landscapes, REDAC subcommittees' inputs, and R&D drivers. Mr. Summer mentioned that the landscapes will be used to identify the aviation industry's evolving research areas, support the development of FAA research priorities, support discussions and decisions, and support alignment with strategic research plans. In addition, Mr. Summer mentioned that the landscapes will be regularly

updated through continued REDAC input and FAA expert review to ensure consistency with latest industry efforts.

SAS members expressed their support for the landscapes' initiatives and suggested the use of landscapes and their associated challenges in the development of new research requirements as well as in prioritizing research requirements for funding.

### **R&D Budget Update**

Mike Gallivan, Manager of R, E & D Financial Management presented the FAA FY2020 R&D budget. The FAA FY2020 RED request is \$120M, while the House funds R&D at \$191M. The Senate Appropriation Committee has yet to determine the funding levels for R&D. A Conference Committee of House and Senate will have to determine FY2020 R&D budget levels. Mr. Gallivan presented highlights of the House Language. He also mentioned the FY2021 RED request is \$120M, and that it was delivered to the Office of the Secretary of Transportation in June 2019. The established target levels of R&D funding for FY21, FY22, FY23, FY24, and FY25 are \$120M each year.

### **Software Assurance Challenges**

George Romanski of FAA briefed attendees on software assurance challenges. He described the current approach for software assurance, its associated challenges, current approval processes, and alternative approval processes, including different assurance techniques. Mr. Romanski mentioned that an Abstraction Layer Task Force was recently formed to find solutions for software assurance challenges using Abstraction Layer approach.

SAS members recommended that the FAA allocate more funds for software assurance as the certification of complex digital systems has been a significant emerging issue for several years. SAS members also emphasized the direct relationship between complex digital systems to the scope of Unmanned Aircraft Systems.

### **FY2019 Aircraft Safety Assurance Portfolio Accomplishment**

Mark Orr and Eric Neiderman led a group discussion on the FY19 portfolio. Mr. Orr presented an overview of the budget by program area with totals and contract funds. The participants continued reviewing the FY19 portfolio progress report, which was submitted to SAS members ahead of the meeting. During the review, the FAA participants provided answers to questions on FY19 accomplishments. The focus of the review was on the level of funding for ongoing projects as well as alignment with drivers identified in the Landscape document.

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## **Day 2 – August 20, 2019**

### **Aviation Safety Research - FY22 Process Update**

Mark Orr, FAA AVS R&D Manager briefed attendees on the new FY22 checklist, criteria, and rubric for development of the R&D portfolio. Mr. Orr mentioned that the new process is being developed by a representative working group based on the lessons learned from FY21 portfolio development. He

mentioned that the plan was to brief SAS members on the new process as well as the FY22 portfolio at the Winter/Spring SAS meeting to be held on February 25-26, 2020.

SAS members recommended the FAA set aside some portion of the RE&D budget to address unforeseen emerging issues.

### **Tour of Technical Center R&D Labs/Aircraft Viewing**

Attendees were given a tour of the Technical Center's Fire Safety Laboratory as well as More Electric Aircraft (MEA) Laboratory. Attendees also viewed participating aircraft ahead of Atlantic City's annual Air Show.

After the tour, the SAS meeting resumed.

### **Update on Unmanned Aerial Systems (UAS) Research**

Claude Jones of FAA's NextGen Office provided an update on UAS research status. Mr. Jones mentioned that the UAS research supports the development of: (1) standards and processes for the certification of UAS systems, pilots/crewmembers, and supporting UAS technologies; (2) policies, guidance materials, and advisory circulars for regulatory compliance for UAS operating in the NAS; and (3) procedures and mitigation strategies to ensure safe UAS operations. Mr. Jones walked attendees through the completed projects, in-progress projects, and the new projects.

SAS members were interested in what decisions, actions, and regulations have resulted from the completed UAS research.

### **Response to SAS F&R on Runway Friction**

Paul Giesman of FAA's Aircraft Certification Office provided an overview of the updated white paper that was originally developed by the FAA's Technical Working Group on Aircraft Braking Friction. The white paper was updated in response to the FY18 SAS F&R to include a plan to explore data reduction methods and provide the REDAC with an updated research approach including the overall roadmap and strategic plan. Mr. Giesman's overview included three main initiatives: analysis of operational aircraft recorded braking performance (data reduction methods), controlled-condition flight testing, and international standards development. He described each initiative in detail. Attendees did not express any reservations regarding initiatives included in the updated white paper.

### **National Artificial Intelligence R&D Strategic Plan**

Dr. Lynne Parker, from the Office of Science and Technology Policy at the White House, provided an overview of the Administration's activities in Artificial Intelligence (AI). More information on the subject is available at <https://www.whitehouse.gov/ai/>

### **Cyber Safety Commercial Aviation Team (Cyber Safety CAT)**

Isidore Venetos of FAA's Aviation Research Division provided a briefing on cyber safety for aviation and spoke about the safety and security culture. He mentioned that the importance of cybersecurity has been recognized by the aviation community and there is a need for a public and private partnership to

establish a trusted environment within which stakeholders could communicate and develop a proactive approach to raise awareness and consensus on cybersecurity challenges.

Mr. Venetos presented Cyber Safety Commercial Aviation Team's vision, mission, goals, and deliverables as well as its preliminary partners and structure. He briefly described a Risk Based Decision Making (RBDM) Process for assessing the risks associated with cyber within the aviation ecosystem titled as Aviation Systems Information Security Protection (ASISP) Safety Risk Assessment Methodology that is being developed by his team.

### **RTCA and FAA working relationship**

Terry McVenes, SAS Chair, and President and CEO of RTCA, Inc., provided an overview of RTCA operations. RTCA is a non-profit association with more than 580 members from US government organizations, manufacturers, operators, suppliers, labor, R&D organizations, and international organizations. RTCA operations include, but are not necessarily limited to, development of independent standards, support of ICAO activities, and close coordination and interaction with European Organization for Civil Aviation Equipment (EUROCAE). RTCA has produced aviation standards, standards documents, training, and holds annual symposium.

### **SAS F&R Discussions and Feedback/Closing Remarks**

Attendees discussed SAS Findings and Recommendations (F&R). SAS planned to submit three F&Rs in relation to funding of new and emerging safety risks, AVS research planning process, and additional funding for complex systems. The Winter/Spring SAS meeting to be held at RTCA, Inc. in Washington, DC on February 25-26, 2020.

**Attendees**  
**August 19-20, 2019**

**August 19, 2019**

<b>Names</b>	<b>Affiliation</b>
Shelley Yak	FAA
Andre Zelleweger	Retired
Don Kauffman	Honeywell
Chris Kmetz	Pratt & Whitney
George Romanski	FAA
Hussein Eghbali	FAA
Mike Paglione	FAA
Mark Phaneuf	ALPA
Maureen Molz	FAA
Andre Lacher	Boeing
Chinita Roundtree-Coleman	FAA
Chris DeSenti	MITRE
Mark S. Orr	FAA
Terry McVenes	RTCA
Eric Neiderman	FAA
Yongzhe Tiam	FAA
Danielle Stephens	FAA
Sohrob Mottaghi	FAA
Ed Weinstein	FAA
Alan Abramowitz	FAA
Jorge Fernandez	FAA
Stacey Zinke	FAA – MMAC OKC
Daniel Brock	FAA
Michelle Yeh	FAA
Mark Hale	FAA
Ken Knopp	FAA
Huasheng Li	FAA
Robert Elli	FAA
Ashley Awwad	FAA
Jimmy Bruno	FAA
Patrick F.	FAA
Angela Campbell	FAA
Steve Summer	FAA
James Daum	FAA HQ – Teleconference
Mike Gallivan	FAA HQ – Teleconference
Steve Edgar	Teleconference
Dan Polillo	Teleconference
Akbar Sultan	NASA, DC – Teleconference
Frank Wondowlowski	FAA - Teleconference

August 20, 2019

<b>Names</b>	<b>Affiliation</b>
Jorge Fernandez	FAA
Don Kauffman	Honeywell
Dres Zelleweger	Retired
Eric Neiderman	FAA
Terry McVenes	RTCA
Jimmy Bruno	FAA
Patrick F.	FAA
Steve Summer	FAA
Ken Knopp	FAA
Alanna Randazzo	FAA
Chinita Roundtree-Coleman	FAA
Ashley Awwad	FAA
Michelle Yeh	FAA
Daniel Brock	FAA
Rany Azzi	FAA –MMAC OKC
Stacey Zinke	FAA- MMAC OKC
Allen Abramowitz	FAA
Mark Hale	FAA
Shelley Yak	FAA
Chris Kmetz	Pratt & Whitney
John Barry	FAA
Mark S. Orr	FAA
John Peace	FAA
Maureen Molz	FAA
Mark Phaneuf	ALPA
Paul Giesman	FAA
Somil Shah	FAA
Angela Campbell	FAA
Michele Hovan	FAA
Claude Jones	FAA –UAS – Teleconference
Akbar Sultan	NASA – Teleconference
David Polland	BOEING – Teleconference
James Daum	FAA – Teleconference
Frank Wondowski	FAA - Teleconference

**2019 Fall REDAC SAS Meeting  
Agenda  
Aug 19 – 20, 2019**

**Dress code:** *Business Casual*

**Location:** WJHTC

**GoToMeeting:** <https://global.gotomeeting.com/join/368914245>

You can also dial in using your phone.

(For supported devices, tap a one-touch number below to join instantly.)

United States: +1 (571) 317-3112

- One-touch: <tel:+15713173112,,368914245#>

Access Code: 368-914-245

**Site Info:** See Page 3 for Parking/transportation and lodging information

## Aug 19, 2019 (Monday)

Time	Topic	Presenter(s)
12:00-12:30	Arrival	WJHTC/ Security Operation Center
12:30 – 12:45	Opening Remarks/Purpose of the Meeting	Eric Neiderman
12:45 – 1:00	Opening Remarks	Shelley Yak
1:00 – 1:15	SAS Chair Opening & Report on REDAC Meeting	Terry McVenes
1:15 – 1:45	R&D Landscapes	Steve Summer
1:45 – 2:15	FAA Budget Update	Mike Gallivan
2:15 – 3:00	FY2019 Aircraft Safety Assurance Portfolio Accomplishments (Fire Research and Safety, Propulsion and Fuel Systems, Advanced Materials/Structural Safety, Continued Airworthiness – Systems, Continued Airworthiness – Structures, Aircraft Catastrophic Failure Prevention Research, and Terminal Area Safety)	Mark Orr/Eric Neiderman
3:00 – 3:15	Comfort Break	
3:15 – 3:30	Continuation of FY2019 Aircraft Safety Assurance Portfolio Accomplishments	Mark Orr/Eric Neiderman
3:30 – 3:45	FY2019 Digital Systems & Technologies Portfolio Accomplishments (Digital System Safety and Aircraft Systems Information Security Protection)	Mark Orr/Eric Neiderman
3:45 – 3:55	FY2019 Environment & Weather Impact Mitigation (Aircraft Icing)	Mark Orr/Eric Neiderman
3:55 – 4:10	FY2019 Human Performance & Aeromedical Factors Portfolio Accomplishments (Flight Deck/Maintenance/System Integration Human Factors and Aeromedical Research)	Mark Orr/Eric Neiderman
4:10 – 4:30	FY2019 Aviation Performance & Planning Portfolio Accomplishments (System Safety Management and Unmanned Aircraft Systems Research)	Mark Orr/Eric Neiderman
4:30 – 5:00	First Day Review – Homework Assignments	
<b>6:00 - Group Reception</b>	<b>Eric's house</b>	

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## August 20, 2019 (Tuesday)

Time	Topic	Presenter(s)
7:30 – 8:00	Arrival	Security Operations Center
8:00 – 8:30	Review Day1: Homework, Feedback, etc.	Terry McVenes/Eric Neiderman/Mark Orr
8:30 – 9:00	FY22 strategic guidance/new process	Mark Orr
9:00 – 9:30	Software Assurance Challenges	George Romanski
9:30 – 10:30	Aircraft Viewing	Hanger
10:30 – 12:00	(1) Tour of More Electric Aircraft (MEA) lab (2) Fire Safety lab (Joint Boeing/FAA tests)	
12:00 – 1:00	Lunch	
1:00 – 1:45	Update on UAS Research	Claude Jones/Nick Lento/Sabrina Saunders-Hodge
1:45 – 2:15	Response to SAS F&R on runway friction	Paul Giesman
2:15 – 2:45	National Artificial Intelligence R&D Strategic Plan	Lynne Parker, WH Office of Science & Technology Policy
2:45 – 3:00	Comfort Break	
3:00 – 3:30	Cybersecurity-safety Commercial Aviation Team	AIA/FAA presentation
3:30 – 4:00	RTCA and FAA working relationship	Terry McVenes
4:00 – 5:00	SAS F&R discussions and feedback/Closing remarks	Terry McVenes/Eric Neiderman/Mark Orr
5:00	Adjourn	

### August 21, 2019 (Wednesday)

AC Airshow 9:00 – 5:00; <https://www.atlanticcitynj.com/events/details.aspx?id=7209>

AVSTEM Outreach Pavilion

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**Meeting Site Info: Lodging, Transportation, & Parking**

**Visitor Information**

The William J. Hughes Technical Center is the aviation's premiere research, development, engineering, test, and evaluation facility

To gain access to the Center, visitors must go to the Security Operations Center (SOC), Building 320, located near the main entrance to the Center to obtain a temporary visitor badge. Call 609-485-5210 for more access information. The SOC is open from 7:00 am to 3:30 pm only.

**Identification requirements:**

All visitors will be required to show photo identification prior to entry into the Technical Center.

**Area Lodging:**

**[Baymont by Wyndham Galloway Atlantic City Area](#)**

**202 East White Horse Pike/Route 30 East  
Galloway, NJ, 08205  
609-652-3020**

**[Country Inn & Suites by Radisson, Absecon](#)**

**100 East White Horse Pike/Route 30 East  
Galloway, NJ, 08205  
800-830-5222**

**[Days Inn by Wyndham Galloway](#)**

**224 East White Horse Pike/Route 30 East  
Galloway, NJ, 08205  
609-652-2200**

**[Hampton Inn Atlantic City/Absecon](#)**

**338 E. White Horse Pike/Route 30 East  
Absecon, NJ, 08205  
609-385-0801**

**[Holiday Inn Express & Suites Absecon](#)**

**655 White Horse Pike/Route 30 East  
Absecon, NJ 08201  
609-383-9070**

**[Homewood Suites by Hilton Atlantic City/Egg Harbor Township, NJ](#)**

**3008 English Creek Avenue  
Egg Harbor Township, NJ 08234  
609-272-7771**

**[Quality Inn & Suites Atlantic City](#)**

**328 East White Horse Pike/Route 30 East  
Absecon, NJ, 08205  
609-652-3300**

[Residence Inn by Marriott Atlantic City Airport Egg Harbor Township](#)

3022 Fire Road

Egg Harbor Township, NJ 08234

609-813-2344

[Seaview, A Dolce Hotel](#)

401 South New York Road

Galloway, NJ 08205

609-652-1800