

FEDERAL AVIATION ADMINISTRATION
Research, Engineering and Development Advisory Committee
Subcommittee on Aircraft Safety (SAS)
2021 Summer Meeting Minutes
August 10-11, 2021

The 2021 Summer Research, Engineering and Development Advisory Committee (REDAC) Subcommittee on Aircraft Safety (SAS) meeting was held virtually on August 10-11, 2021. 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 six findings and seven 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's REDAC website.

Day 1 – August 10, 2021

Introduction/Opening

The SAS Designated Federal Official (DFO) Dr. Eric Neiderman, FAA William J. Hughes Technical Center Director Shelley Yak, and Subcommittee Chair Terry McVenes jointly kicked off the meeting with brief opening remarks. Dr. Neiderman described purpose of the meeting, Yak, provided opening remarks, including Covid-19 challenges and FAA's return to workplace.

SAS Chair Report on Full REDAC Meeting

SAS Chair McVenes reported on the April 21, 2021 full REDAC meeting. McVenes presented a summary of F&Rs from all Subcommittees from their last meeting. Participants also discussed the effect of COVID-19 from the aviation industry's perspective.

FAA Budget Update

Elizabeth Delarosby, Manager of R,E&D Financial Management, presented the FAA's enacted FY21 R,E&D budget. Delarosby then presented FY22 R,E&D budget Bill in the House, i.e., House language. The Senate Bill is yet to be determined. The established target levels for FY23, FY24, FY25, FY26, and FY27 are \$264M, \$270M, \$276M, \$282M, and \$289M, respectively.

Delarosby mentioned that the current FAA Authorization signed by the President on Oct 5, 2018 extends the FAA authorization through 2023.

Review of FY2021 Research Portfolio Accomplishments

The attendees reviewed R&D funding status for FY21, FY22, and FY23 as well as FY2021 portfolio accomplishments in Aircraft Safety Assurance, Digital System Safety, Environment and Weather Impact

Mitigation, Human Performance and Aeromedical Factors, and Aviation Performance and Planning domains.

The use of UAS research outputs – a few examples

Mr. Paul Strande, acting director of FAA's UAS Research, Engineering, & Analysis Division, provided examples of applications of UAS R&D products.

Day 2 – August 11, 2021

Update on FY2024 Portfolio Process Update

Mark Orr, FAA AVS R,E&D Manager, provided an update on the portfolio development process for FY24. Orr described the Research, Engineering, and Development Management Team (REDMT) charter and the REDMT's roles and responsibilities. He also provided a list of FY24 research Budget Line Items (BLI), including Fire Research and Safety, Propulsion and Fuel Systems, Advanced Materials/Structural Safety, Aircraft Icing/Digital System Safety, Continued Airworthiness, Flight deck/Maintenance/System Integration Human Factors, System Safety Management/Terminal Area Safety, Aeromedical Research, Unmanned Aircraft System research, and Air Fuels for General Aviation. He also described 5-year plans for each BLI.

February 2021 SAS Meeting F&Rs Discussion

Dr. Neiderman and Orr provided an overview of the February 2021 SAS meeting's F&R and the FAA's response to F&Rs. Focused sessions were held on select F&Rs as documented below.

Industry inputs on AI/ML

Subcommittee Member Don Kauffman of Honeywell provided industry's perspective on the benefits of Artificial Intelligence and Machine Learning. Attendees discussed certification considerations and challenges surrounding AI/ML in the context of FAA research portfolio.

Facilities and Equipment (F&E) Funded Research Presentation (Feb 2021 F&R #1)

John Maffie of FAA's NextGen Office provided a briefing on the FAA's F&E-funded research projects. Several SAS members expressed their interest in attending REDAC's sub-committee on NAS Operations to learn more about FAA's F&E-funded research portfolio.

JAMS COE Capabilities Presentation

Dr. Ahmet Oztekin of the FAA provided an overview of Joint Centers of Excellence (COE) for Advanced Materials (JAMS). JAMS was established by the FAA as a Joint Centers of Excellence in 2004: COE for Composites and Advanced Materials (CECAM) and COE for Advanced Materials in Transport Aircraft Structures (AMTAS). JAMS includes nine Core Member Universities. Dr. Oztekin's presentation included the benefits of JAMS, its program scope and focus, and its accomplishments and impact on aviation safety.

Partnership to Enhance General Aviation Safety, Accessibility and Sustainability (PEGASAS) COE Capabilities Presentation

Dr. Bill Crossley, PEGASAS Director, provided an overview of PEGASAS. Six core members of the PEGASAS COE are Purdue University, The Ohio State University, Georgia Institute of Technology, Iowa State University, Florida Institute of Technology, and Texas A&M University. Established in 2012, PEGASAS is one of six active FAA Centers of Excellence. Dr. Crossley's presentation included the benefits, capabilities, program scope, and projects of PEGASAS COE.

Covid-19-Related Research (ongoing/planned)

Dr. Anthony Tvaryanas of FAA's Civil Aerospace Medical Institute (CAMI) provided an overview of FAA's Covid-19-related research. Dr. Tvaryanas' presentation included organizational roles in managing communicable disease risk in the flying public, research activities supporting COVID-19 pandemic response, and proposed research activities to inform planning for, and mitigating future communicable disease outbreaks.

Dr. Ahmet Oztekin briefed an FAA research project geared to investigate effects of disinfecting materials (e.g., cleaning fluids) and methods (e.g., UV, electrostatic fogging, ionization) on performance of aircraft materials.

Alliance for System Safety of UAS through Research Excellence (ASSURE) COE Capabilities Presentation

Colonel (USAF, Retired) Steve 'Lux' Luxion, ASSURE Executive Director, provided an overview of ASSURE. ASSURE include 13 Core Member Universities. Colonel Luxion presentation included the benefits, capabilities, program scope, and projects of ASSURE COE.

Closeout Discussion

Neiderman and McVenes led the close-out discussion for the meeting. Attendees decided to hold the Winter/Spring meeting on March 1-2, 2022. The location for the meetings is TBD.

Appendix 1

Attendee Sign-In Sheets

Ahmet Oztekin (FAA)	Jacob Powers	Thomas Flournoy (FAA)
Akbar Sultan NASA	Jeff Gardlin (FAA)	Thomas Maloney (FAA)
Annie B Augustin (FAA)	Jim Mangie	Timothy G Smith (FAA)
Anthony Long	John Bakuckas (FAA)	Timothy Smith (FAA)
Anthony Tvaryanas (FAA)	John Crowley (FAA)	Tina Emami (FAA)
Ben Willems	John Mixon (FAA)	Tong Vu (FAA)
Beth Delarosby (FAA)	Jon Doyle (FAA)	Traci Stadtmueller (FAA)
Bob Ellis (FAA)	Jon Schleifer (FAA)	Vasudeva Kolli (FAA)
Bryan Ilesko	Jorge Fernandez (FAA)	Vicki Ahlstrom (FAA)
Burak Kumas	Katie Constant-Coup (FAA)	Warren Underwood(FAA)
Caprice Brown (FAA)	Katrina Avers (FAA)	Wilfredo Villafane
Carleen Houston (FAA)	Kenneth Allendoerfer (FAA)	William Oehlschlager (FAA)
Chinita Roundtree-Co (FAA)	Kevin Stonaker (FAA)	Yongzhe Tian (FAA)
Chris Dumont (FAA)	Lynn Pham (FAA)	Angela Campbell (FAA)
Chris Heck	Manny Rios (FAA)	Bill Crossley (PEGASAS)
Chuck Agava (FAA)	Maria DiPasquantonio (FAA)	Donald W Harper
Chuck Perala	Mark Orr (FAA)	John Maffei (FAA)
Cliff Johnson (FAA)	Matthew Hollomon	
Colleen Donovan (FAA)	Matthew Karp	
Cristina Tan (FAA)	Michael Vu (FAA)	
Cunping Huang (FAA)	Michel Hovan (FAA)	
Curtis Davies (FAA)	Mike Burns (FAA)	
Dan Brock (FAA)	Mike Paglione (FAA)	
Dan Dellmyer (FAA)	Muharrem Mane	
Dan Keslar (FAA)	Nick Lento (FAA)	
Daniel Cordasco (FAA)	Paul E-CTR Swindell	
Dave Atwood (FAA)	Paul Strande (FAA)	
Dave Stanley (FAA)	Paul Tan (FAA)	
David Galella (FAA)	Rany Azzi (FAA)	
Dhaval Dadia (FAA)	Rich Golden	
Don Kauffman Honeywell	Rich Walters	
Doug Rodzon (FAA)	Robert J McGuire (FAA)	
Eddie Austrian (FAA)	Robert Ochs (FAA)	
Edward Weinstein (FAA)	Sabrina Saunders-Hodge - FAA/AUS	
Eric Neiderman (FAA)	Shane Bertish (FAA)	
Ezgi Oztekin (FAA)	Shelley Yak (FAA)	
Ferne Friedman-Berg (FAA)	Sohrob Mottaghi (FAA)	
Frank Wondolowski (FAA)	Somil Shah (FAA)	
Hailey CTR Abaee (DIGITALiBiz)	Srini Mandalapu (FAA)	
Hannah M Baumgartner	Stacey Zinke (FAA)	
Holly Cyrus (FAA)	Stafford Duncan	
Hosseini Eghbali(FAA)	Steve Summer (FAA)	
Huasheng Li (FAA)	Tara (Holmes) Gibson (FAA)	
Isidore Venetos (FAA)	Terry McVenes RTCA	

2021 Fall REDAC SAS Meeting**Agenda****Aug 10 – 11, 2021****Dress code:** *Business Casual***Location:** Virtual Meeting**Zoom Meeting info:** <https://faavideo.zoomgov.com/j/16180887053>**Password:** **067806****Phone Audio Only:**

- Call 1-888-924-3239; enter Meeting ID: 161 8088 7053

Aug 10, 2021 (Tuesday)

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1000 – 1015	Arrival to Zoom	
1015 - 1030	Opening Remarks/Purpose of the Meeting	Eric Neiderman
1030 - 1100	Opening remarks	Shelley Yak
1100- 1130	SAS Chair Opening & Report on REDAC Meeting	Terry McVenes
1130 - 1200	FAA Budget Update	Beth Delarosby
1200 - 1300	Lunch Break	
1300 - 1430	FY2021 Aircraft Safety Assurance Portfolio Accomplishments (Fire Research and Safety, Propulsion and Fuel Systems, Advanced Materials/Structural Safety, Continued Airworthiness – Systems, Continued Airworthiness – Structures, and Aircraft Catastrophic Failure Prevention Research)	Mark Orr/ Eric Neiderman
1430 - 1445	Comfort Break	
1445 - 1515	Continuation of FY2021 Aircraft Safety Assurance Portfolio Accomplishments	Mark Orr/ Eric Neiderman
1515 - 1530	FY2021 Digital Systems & Technologies Portfolio Accomplishments (Digital System Safety and Aircraft Systems Information Security Protection)	Mark Orr/ Eric Neiderman
1530 - 1545	FY2021 Environment & Weather Impact Mitigation (Aircraft Icing)	Mark Orr/ Eric Neiderman
1545 - 1615	FY2021 Human Performance & Aeromedical Factors Portfolio Accomplishments (Flight Deck/Maintenance/System Integration Human Factors and Aeromedical Research)	Mark Orr/ Eric Neiderman
1615 - 1645	FY2021 Aviation Performance & Planning Portfolio Accomplishments (System Safety Management/Terminal Area Safety and Unmanned Aircraft Systems Research)	Mark Orr/ Eric Neiderman
1645 - 1700	The use of UAS research outputs – a few examples	Paul Strande
1700	First Day Review – Homework Assignments	

Dress code: Business Casual

Location: Virtual Meeting

Zoom Meeting info: <https://faavideo.zoomgov.com/j/16180887053>

Password: 067806

Phone Audio Only:

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August 11, 2021 (Wednesday)		
0745 – 0800	Arrival to Zoom	
0800 – 0830	Review Day1: Homework, Feedback, etc.	Terry McVenes/ Eric Neiderman /Mark Orr
0830 – 0930	Update on the process <ul style="list-style-type: none">• SAS members provide insight to their strategic planning approach	Mark Orr/SAS members
0930 – 1000	February 2021 SAS Meeting F&Rs	Eric Neiderman/Mark Orr
1000 – 1015	Comfort Break	
1015 – 1100	Industry inputs on AI/ML	Participants
1100 - 1130	F&E research, engineering, and development Presentation (Feb 2021 F&R #1)	John Maffei
1130– 1245	Lunch	
1245 – 1315	JAMS COE capabilities Presentation	Ahmet Oztekin (FAA)
1315 – 1345	PEGASAS COE capabilities Presentation	William Crossley (Purdue University)
1345– 1430	Covid-19 related research (ongoing/planned)	Anthony, Stacey, Ahmet Oztekin
1430 – 1500	Industry COVID-19 concerns/discussion Where are the gaps from industry perspective?	Participants
1500 – 1515	Comfort break	
1515 – 1600	Update on UAS Research (ASSURE)	Stephen Luxion of ASSURE COE
1600 – 1700	SAS Fall 2021 F&R discussions and feedback/Closing remarks	Terry McVenes/ Eric Neiderman /Mark Orr
1700	Adjourn	