

FEDERAL AVIATION ADMINISTRATION
Research, Engineering and Development Advisory Committee
Subcommittee on Aircraft Safety (SAS)
2020 Fall Meeting Minutes
August 11-12, 2020

The 2020 Fall Research, Engineering and Development Advisory Committee (REDAC) Subcommittee on Aircraft Safety (SAS) meeting was held virtually on August 11-12, 2020. This document summarizes discussions and activities that occurred during the meeting. The meeting resulted in four findings and six 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://faa.gov/go/redac>

Day 1 – August 11, 2020

Introduction/Opening

The Acting SAS Designated Federal Official (DFO) Mike Paglione, 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.

Updates on R&D Landscapes

Steve Summer briefed the attendees on the status of the Research and Development (R&D) Landscapes initiative. Broadly, the Landscapes provide an effective means for communicating research needs among stakeholders as well as for targeted research planning. The landscapes document is considered a living document that needs to be continuously updated as the aviation ecosystem evolves. Summer mentioned that there is a need for better socialization with stakeholders regarding landscape drivers' definition, utilization, and mapping to the current projects.

SAS Chair Report on Full REDAC Meeting

SAS Chair, Mr. McVenes reported on the July 9, 2020 full REDAC meeting. He mentioned that the focus of the meeting was on Covid-19 impact on the FAA research program, human factors/automation interactions challenges, NASA priorities and strategies for research, and subcommittee reports. Mr. McVenes also presented a summary of other subcommittee reports including F&Rs from last meeting and then highlighted the other subcommittee F&Rs.

R&D Budget Update

Elizabeth Delarosby, Manager of Research, Engineering, and Development (RE&D) Financial Management, presented the FAA FY21 RE&D budget. Ms. Delarosby presented highlights of the enacted FY21 budget including House language. The Senate language was still to be determined at the time of

the presentation. The target of \$170M has been established for RE&D budget for FY22 through FY26. The current FAA authorization signed by President on October 5, 2018 extends authorization through 2023.

Review of FY2020 Research Portfolio Accomplishments

The attendees reviewed briefly R&D funding status for FY20, FY21, and FY22 as well as FY2020 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.

Day 2 – August 12, 2020

Portfolio Development Process Update

Mark Orr, FAA Office of Aviation Safety (AVS) RE&D Manager, provided an update on the portfolio development process for FY23. Mr. Orr compared the changes made to the FY2023 portfolio development process with the FY2022 process to demonstrate the improvements. Highlights of the improvements are: to develop Mendoza Lines for each individual Budget Line Item (BLI) based on Finance-provided contract funding levels by BLI instead of across all proposals and BLIs, to develop BLI plans for each BLI modelled after the UAS Research Plan, and to use pairwise comparison instead of scoring/grouping methodology.

Mr. Orr mentioned that the BLI Teams currently were defining initial scope, ecosystem, funding profile, objectives and operational capabilities. The next steps are: writing proposals to meet the BLI plan objectives and operational capabilities plans, ranking, and budget programming to targets to produce draft FY2023 portfolio in time for winter/spring REDAC season.

Attendees discussed the issue of reallocating R&D funds for urgent research needs. The FAA will provide a briefing on as to how the portfolio process allows to reallocate R&D funds for urgent research needs like the Boeing B-737 Max case and how much of the funds are reallocated for what urgent research needs, if any, in the next SAS meeting.

Discussion on F&Rs from SAS February 2020 Meeting

Mr. McVenes led the review of February 2020 meeting's F&Rs on the FAA's fatigue-related projects as well as the FAA's response to the F&Rs. After discussion on the subject, the FAA agreed to provide a deep-dive presentation on the fatigue-related projects in the next SAS meeting in February 2021.

Covid-19 impact on R&D program

Mike Paglione, acting DFO, and Stacey Zinke of the FAA Mike Monroney Aeronautical Center provided a briefing on impact of Covid-19 on Phase I recovery as well as impact of Covid-19 on William J Hughes Technical Center and Civil Aerospace Medical Institute (CAMI) laboratories. The work in the laboratories was on hold due to Covid-19 when this meeting was held.

In-Time Aviation Safety Management System (IASMS)

John Koelling and Misty Davis presented NASA's In-Time Aviation Safety Management System (IASMS) initiative. The purpose of IASMS is to "leverage the emergency-response community assembled and energized by Solar TERrestrial RELations Observatory (STEReO) to develop and deliver IASMS related safety enhancements, tools and processes needed for increasingly autonomous, heterogeneous air vehicle missions. Leveraging this community lowers the cost for development and assurance of safety processes and tools while providing immediate societal benefit."

This initiative is being conducted in collaboration with the FAA, RTCA, Inc., and other stakeholders. In addition, the initiative was presented to the FAA senior executives and that they approved it for execution.

Commercial Space research briefing

Ken Davidian of the FAA Office of Commercial Space Transportation (AST) presented on the commercial space R&D program, which includes the following four research areas: aerospace access and operations; aerospace vehicles; human operations and space flight; and industry innovation. Dr. Davidian briefly presented the tasks within each research areas including tasks description and their status. He mentioned that the total AST R&D budget is approximately 1.2% of the FAA's R&D budget.

Update on UAS Research

Nick Lento of FAA's Office of NextGen, ANG-C, provided an overview of the NextGen's New Entrants Division. This division supports the evolution of the National Airspace System (NAS) by integrating Research and Development (R&D) to refine NAS operational requirements, influence NAS operational improvements and sustainment, and managing the FAA's Unmanned Aircraft Systems (UAS) R&D portfolios. Mr. Lento also provided an overview of the FAA's Center of Excellence (COE) for Unmanned Aircraft Systems (UASs). He then presented a list of ongoing UAS R&D projects with their progress status.

General Aviation 2030: GA Exploratory Analysis

Dr. Evan Harrison of the Georgia Institute of Technology briefed attendees on their research, titled as General Aviation 2030: GA Exploratory Analysis, which is geared to describe strategic general aviation research topics that can help the FAA and other GA stakeholders better prepare for general aviation issues in 2030. Dr. Harrison mentioned that his team has generated questionnaires for seven identified research areas and that they have completed interviews using the questionnaire. The final report is being finalized to help the FAA to prepare long-term GA R&D plans.

Fatigue Risk Management: FAA Fatigue Working Group and Research Update

Ashley Awwad of the FAA provided an update on the FAA's research on fatigue research as well as the fatigue Working Group (WG). She mentioned that the fatigue WG been expanded to include rotorcraft as per this committee's suggestion during the Feb 2020 meeting. Due to COVID-19, the Internal Review

Board (IRB) has issued new restrictions on the experiments involving humans, meaning, CAMI cannot perform those fatigue research tasks that involved human participation during COVID-19.

Closeout Discussion

Mr. Paglione and Mr. McVenes led the close-out discussion for the meeting. Attendees decided to hold the winter/spring meeting on Feb 23-24, 2021 and SAS summer/fall meeting on August 10-11, 2021. The location for both is TBD.

Subcommittee on Aircraft Safety
Summer-Fall 2020 - August 11 - 12, 2020
Attendees Lists

DAY 1

Number	Name	Affiliation
1	CA Roundtree-Coleman	FAA
2	Mike Paglione	FAA
3	Hossein Eghbali	FAA
4	Mark Orr	FAA
5	Terry McVenes	RTCA
6	Stacey Zinke	FAA/CAMI
7	Alanna Randazzo	FAA
8	Ken Knopp	FAA
9	Tim Marker	
10	Ahmet Oztekin	
11	Akbar Sultan	
12	Anthony Tvaryanas	
13	Ashley Awwad	
14	Bryan Lesko	
15	Caprice Brown	
16	Chris Heck	
17	Chuck Perala	
18	Cliff Johnson	
19	Curtis Davis	
20	Dan Brock	
21	Dan Cordasco	
22	Dave Atwood	
23	Don Kauffman	
24	Donliya Deneva Raza	
25	Doug Rodzon	
26	Edward Weinstein	
27	Elizabeth Delarosby	
28	Eric Neiderman	
29	Frank Wondowloski	
30	Huasheng Li	
31	Isidore Venetos	
32	Jeff Warner	
33	Jim Mangie	
34	John Bakuckas	
35	John Crowley	
36	John Fisher	
37	John Miller	
38	John Mixon	

39	Jolea Russotto
40	Jorge Fernandez
41	Kristen Piotrowski
42	Lynn Pham
43	Matt Fuller
44	Michael Vu
45	Michael Walz
46	Michelle Yeh
47	Rany Azzi
48	Rich Golden
49	Sohrob Mottaghi
50	Srini Mandalapu
51	Steve Edgar
52	Steve Summer
53	Tara Holmes
54	Thomas Flournoy
55	William A. Crossley
56	James T. Riley
57	Robert Ochs
58	Kevin Stonaker
59	Jaime Figueroa
60	Somil Shah
61	Stephanie DiVito
62	Mularrem Mane
63	Angela Campbell
64	Tim Evans
65	Lisa Smith
66	Vasudeva Kolli
67	John Van Houdt
68	Kathy Abbott
69	Robert Ellis
70	Sherri Hubbard
71	1-334-655-5134
72	1-609-478-2874
73	Dave Galella
74	1-609-338-8783
75	1-609-927-7128
76	1-860-306-1840
77	DRP 3833
78	Dan Eigenbrode

DAY 2**Number****Name****Affiliation**

1	CA Roundtree-Coleman	
2	Mike Paglione	
3	Mark Orr	
4	John Bakuckas	
5	Ahmet Oztekin	
6	Akbar Sultan	
7	Angela Campbell	
8	Bryan Lesko	
9	Caprice Brown	
10	Carla Hackworth	
11	Chris Heck	
12	Chuck Perala	
13	Cliff Johnson	
14	Colleen Donovan	
15	Curtis Davies	
16	Dan Brock	
17	Dan Cordasco	
18	Dan Dellmyer	
19	Dan Keslar	
20	Dave Atwood	
21	Doneliya Deneva Raza	
22	DRP 3833	
23	Frank Wondolowski	
24	Huasheng Li	
25	Jeff Gardin	
26	Jim Mangie	
27	John Fisher	
28	Kathy Abbott	
29	Ken Knopp	
30	Kevin Stonaker	
31	Louise Speitel	
32	Michael Vu	
33	Michelle Yeh	
34	Muharrem Mane	
35	Rany Azzi	
36	Rich Golden	
37	Sean Crowley	
38	Srini Mandalapu	
39	Stacey Zinke	
40	Steve Edgar	
41	Steve Summer	

42	Terry McVenes
43	Tong Vu
44	Vasudeva Kolli
45	Robert Ochs
46	Alanna Randazzo
47	Dan Eighenbrode
48	Jorge Fernandez
49	Lacey Thompson
50	Kevin Correl
51	Lance Prinzel
52	Misty Davies
53	Ken Davidian
54	John Koelling
55	Evan Harrison
56	John Van Houdt
57	Nick Lento
58	Thomas Nesthus
59	Robert Ellis
60	1-334-655-5134
61	Ashley Awwad
62	Don Kauffman

**2020 Fall REDAC SAS Meeting
Agenda
Aug 11 – 12, 2020**

Dress code: *Business Casual*

Location: Virtual Meeting

Zoom Meeting info: <https://faavideo.zoomgov.com/j/1606520978>

Password: 822100

Phone Audio Only:

- Call 1-888-924-3239 or 1-571-302-4908; enter Meeting ID: 160 652 0978
Password: 822100

Aug 11, 2020 (Tuesday)

Time	Topic	Presenter(s)
1000 – 1015	Arrival to Zoom	
1015 - 1030	Opening Remarks/Purpose of the Meeting	Mike Paglione
1030 - 1100	Opening remarks/ Updates on R&D Landscapes	Shelley Yak & Steve Summer
1100- 1130	SAS Chair Opening & Report on REDAC Meeting	Terry McVenes
1130 - 1200	FAA Budget Update	Beth Delarosby
1200 - 1300	Lunch Break	
1300 - 1430	FY2020 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/Mike Paglione
1430 - 1445	Comfort Break	
1445 - 1515	Continuation of FY2020 Aircraft Safety Assurance Portfolio Accomplishments	Mark Orr/Mike Paglione
1515 - 1530	FY2020 Digital Systems & Technologies Portfolio Accomplishments (Digital System Safety and Aircraft Systems Information Security Protection)	Mark Orr/Mike Paglione
1530 - 1545	FY2020 Environment & Weather Impact Mitigation (Aircraft Icing)	Mark Orr/Mike Paglione
1545 - 1600	FY2020 Human Performance & Aeromedical Factors Portfolio Accomplishments (Flight Deck/Maintenance/System Integration Human Factors and Aeromedical Research)	Mark Orr/Mike Paglione
1600 - 1630	FY2020 Aviation Performance & Planning Portfolio Accomplishments (System Safety Management/Terminal Area Safety and Unmanned Aircraft Systems Research)	Mark Orr/Mike Paglione
1630	First Day Review – Homework Assignments	

**2020 Fall REDAC SAS Meeting
Agenda
Aug 11 – 12, 2020**

Dress code: Business Casual

Location: Virtual Meeting

Zoom Meeting info: <https://faavideo.zoomgov.com/j/1607097272>

Password: 787189

Phone Audio Only:

- Call 1-888-924-3239 or 1-571-302-4908; enter Meeting ID: 160 709 7272
Password: 787189
- Please remember you can mute or unmute yourself by pressing *6.

August 12, 2020 (Wednesday)

Time	Topic	Presenter(s)
0745 – 0800	Arrival to Zoom	
0800 – 0830	Review Day1: Homework, Feedback, etc.	Terry McVenes/Mike Paglione/Mark Orr
0830 – 0900	Update on process refinement	Mark Orr
0900 – 0930	February 2020 SAS Meeting F&Rs	Mike Paglione/Mark Orr/Stacey
0930 – 1000	Covid-19 impact on R&D program- update	CAMI and WJHTC
1000 – 1015	Comfort Break	
1015 – 1100	In-Time Aviation Safety Management System (IASMS)	Akbar Sultan (NASA)
1100 – 1145	Commercial Space research briefing	Ken Davidian
1145 – 1300	Lunch	
1300 – 1345	Update on UAS Research	Bill Oehlschlager/Nick Lento/TBD
1345 – 1430	General Aviation 2030: GA Exploratory Analysis	Georgia Institute of Technology
1430 – 1515	Fatigue Risk Management: FAA Fatigue Working Group and Research Update (additional information requested by SAS in Feb meeting)	Katrina Avers
1515 – 1530	Comfort break	
1530 – 1630	SAS Fall 2020 F&R discussions and feedback/Closing remarks	Terry McVenes/Mike Paglione/Mark Orr
1630	Adjourn	