FEDERAL AVIATION ADMINISTRATION
Research, Engineering and Development Advisory Committee
Subcommittee on Aircraft Safety (SAS)
2022 Summer Meeting Minutes
August 2-3, 2022

The 2022 Summer Research, Engineering and Development Advisory Committee (REDAC) Subcommittee on Aircraft Safety (SAS) meeting was held virtually on August 2-3, 2022. Attendee sign-in sheets are attached in Appendix I and the meeting agenda is attached in Appendix II. This document summarizes discussions and activities occurring during the meeting. The meeting resulted in five findings and five 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 at http://www.faa.gov/go/redac.

Day 1 – August 2, 2022

Introduction/Opening

The SAS Designated Federal Official (DFO) David Atwood, FAA William J. Hughes Technical Center Director Shelley Yak, and Subcommittee Chair Terry McVenes jointly kicked off the meeting with brief opening remarks. Atwood described purpose of the meeting, as well as an overview of the 2-day meeting agenda, and Yak provided opening remarks, including an update on the Technical Center's COVID-19 status, overall budget, R&D Landscapes, and the need for an R&D roadmap.

SAS Chair Report on Full REDAC Meeting

SAS Chair McVenes reported on the April 14, 2022 full REDAC meeting. He summarized his cross-cutting observations during the full REDAC meeting as impressive amount of R&D completed during the pandemic, particularly on sustainable aviation fuel. He also introduced several candidates for SAS membership: Chris Dyer of Pratt & Whitney, Dan Diessner of Embry-Riddle Aeronautical University (ERAU), Greg Bowles of Joby Aviation, Bob Ireland of Airlines for America (A4A), Lowell Foster of the General Aviation Manufacturers Association (GAMA), and Steve Cook of Northrop Grumman.

FAA Budget Update

Elizabeth Delarosby, Manager of R,E&D Budget Formulation, presented the President's FY23 budget request for FAA's R,E&D. The House of Representatives funded R,E&D at $260.5 million, equal to the request and $12 million above FY 2022. The Senate funded R,E&D at $266.1 million, $5.6 million above the request and $17.6 million above FY 2022. Delarosby briefed attendees on the House and Senate language.

The established target levels for FY24, FY25, FY26, FY27, and FY28 are $267M, $273M, $279M, $286M, and $292M, respectively. Delarosby mentioned that the current FAA Authorization legislation signed by the President on Oct 5, 2018 extends the authorization through 2023.

30-Minute Presentations

Nine research topics were selected for 30-minute presentations based on SAS members' feedback and comments on the FY22 research outputs that were elicited a few weeks before this meeting. The nine research topics are: Advanced Damage Tolerance and Risk Assessment Methods for Engine Life-Limited Parts; Improved Nondestructive Evaluation (NDE) to Prevent Uncontained Engine Failures; Additive Manufacturing, particularly as it relates to non-destructive testing (NDT) in the future; Risk-based decision making; Civil Aerospace Medical Institute (CAMI) Accident Prevention and Investigation, UAS Automation and Intelligent Systems; UAS Cyber Security and Safety; Complex Digital Systems, and Adapting a NAS-Wide, Top-Down Safety Risk Model to Accommodate Bottom-Up Safety Assessment.

Principal research personnel associated with each topic briefed attendees and a Q&A session was held for each topic. While SAS members appreciated the 30-minutes presentations, they suggested it may be better to focus on goal(s), objective(s), and impact of research as well as how the sponsoring organization would use research products in future SAS meetings.

Day 2 – August 3, 2022

Review of FY23 R&D Portfolio

Ahead of the SAS meeting, the FAA provided read-ahead materials, including the FY23 R&D portfolio at the project level with an executive summary for every project, to the SAS members for review and comments. SAS members returned their comments in writing before Day 1 of the SAS meeting. In this session, Atwood and Orr led the review of the SAS members' comments on the FY23 R&D portfolio. The FAA research teams addressed SAS comments during this session.

This session covered Fire and Safety Research; Propulsion and Fuel Systems (including Aircraft Catastrophic Failure); Advanced Materials/Structural Safety; Continued Airworthiness; Digital System Safety; Aircraft Icing; Alternative Fuels for General Aviation; Flightdeck/Maintenance/System Integration Human Factors; Aeromedical; System Safety Management/Terminal Area Safety; and Unmanned Aircraft Systems.

FY24 BLI Plans Discussion

While the FY24 R&D portfolio was reviewed at the 2022 Winter/Spring SAS meeting, there have been additional comments from SAS members on the FY2024 R&D portfolio. During this session, Atwood and Orr led the review of the aforementioned comments and research teams addressed the comments. This session covered comments on research projects within Digital System Safety; Flightdeck/Maintenance/System Integration; Human Factors; Aeromedical; and Unmanned Aircraft Systems programs.

Closeout Discussion

Atwood and McVenes led the close-out discussion for the meeting. Attendees decided to hold the Winter/Spring meeting on February 28- March 1, 2023 at RTCA, Inc. in the Washington DC area and the Summer/Fall meeting on August 8-9 at the Technical Center.

Appendix 1

Attendee Sign-In Sheets (Day 1)

Hossein Eghbali	Shelley Yak	Bob Ireland (A4A)
Steve Summer	Jorge Fernandez	Greg Bowles (Joby Aviation)
John Crowley (US DOD)	Caprice Brown	Lowell Foster (GAMA)
Jeff Warner	Nick Lento	Chuck Agava
Dave Atwood	Stephen Cook (Northrop Grumman)	Richard E Lyon
Chinita Roundtree-Co	Jim Reynolds	David Rathfelder
Mike Paglione	Lyn Pham	Thomas Van Dillen
Carla Hackworth	Jon Schleifer	Kylie Key
Dave Galella	Doug Rodzon	Cody Nichols
Ferne Friedman-Berg	Hong Jiang	Bill Kaliardos
Terry McVenes (RTCA)	David Polland (Boeing)	Svyatoslav (Slava) Guznov
Frank Wondolowski	Beth Delarosby	William Oehlschlager
Dave Guy	Angela Campbell	Somil Shah
Ezgi Oztekin	Danielle Stephens	Jacob Powers
Thomas Nesthus	Eric Neiderman	Manny Rios
Jeff Gardlin	John Hensyl	Shane Bertish
Richard Lin	Jon Doyle	Mayank Bendarkar
Jimmy Bruno	Kevin Stonaker	Ken Alexander
Larry McDonald	Yongzhe Tian	Walt Sippel
Vasudeva Kolli	Tom Flournoy	Paul Strande
Mark Orr	Cliff Johnson	Obadele Akan
Robert Steinle	Huasheng Li	Eddie Austrian
Stuart Scarangella	John Peace	Hank Marek
Srini Mandalapu	Chris Dumont	Paula Martinez
Lindsey Anaya	John Bakuckas	Patrick Kong
John Fisher	Curtis Davies	Matt Novak
Todd Lewis	Carleen Houston	Anthony Long
Robert Ochs	Tara (Holmes) Gibson	Daniel Cordasco
Daniel Diessner (Embry-Riddle Aeronautical University)	Akbar Sultan (NASA)	Tim Marker
Ahmet Oztekin	Tong Vu	Rich Golden
Timothy G Smith - FAA	Katrina Avers	Rany Azzi
Chris Dyer (PrattWhitney)	Maria Dipasquantonio	Stafford Duncan
Tina Emami	John Mixon	Erin Sunshine
Robert Ellis	Robert J McGuire	Scott Nicholson
Daniel Keslar	Anthony Tvaryanas	Bruce DeCleene
Jim Mangie (Delta Airlines)	Stacey Hamilton	Kimberly Noonan
Edward Weinstein	Jason Coon	Thomas Maloney
Tim Salter	George Romanski	Monique K Moore
Walter Desrosier (GAMA)	Cindy Ashforth	
Jonah Albert	Stacey Zinke	

Attendee Sign-In Sheets (Day 2)

Jason Coon	Doug Rodzon	Jon Schleifer
Jeff Warner	Robert Ochs	Vasudeva Kolli
John Bakuckas	Chinita Roundtree-Co	Huasheng Li
Stuart Scarangella	Cliff Johnson	Timothy G Smith - FAA
Jeff Gardlin	Tom Flournoy	Stacey Zinke
Stephanie DiVito	Jim Mangie (Delta Airlines)	Hong Jiang
Akbar Sultan (NASA)	Ahmet Oztekin	Edward Weinstein
Trung Pham	Mark Orr	Angela Campbell
Danielle Stephens	Daniel Cordasco	Carla Hackworth
Thomas Maloney	Jonah Albert	John Crowley
John Hensyl	Tong Vu	John Fisher# FAA
Chris Dyer	Dave Galella	Edward Weinstein
Frank Wondolowski	Tim Mouzakis	Ken Alexander
Hossein Eghbali	Shane Bertish	Scott Nicholson
Aziz Ahmed	Carole Perry	Colleen Donovan
Dan Diessner (Embry-Riddle Aeronautical University	Thomas Nesthus	Colleen Donovan
Jon Doyle	Rich Golden	Jacob Powers
Anthony Tvaryanas	Jorge Fernandez	Chuck Agava
Jimmy Bruno	David Polland (Boeing)	Mark Rumizen
Jason Coon	Walter Desrosier (GAMA)	Maria Dipasquantonio
Eddie Austrian	Yongzhe Tian	Lisa C Thomas
Kevin Stonaker	Ezgi Oztekin	Manuel Rios
Cindy Ashforth	Curtis Davies (FAA)	Robert Steinle
Mike Paglione	Rany Azzi	Jacob Powers
Dave Atwood	Bryan Lesko (ALPA)	Richard Lin
Steve Summer	Todd Lewis	Stephen Cook
Lynn Pham	Tina Emami	Scott Nicholson
Deepak Kamath	Stephen Cook	Stacey Zinke
Patrick Kong	Caprice Brown	Thomas Van Dillen
Robert J McGuire	Srini Mandalapu	Chris Dyer
John Peace	Stafford Duncan	Don Kauffman (Honeywell)
Angela Campbell	Paul Strande	Chris Dumont
Robert Ochs	Lisa C Thomas	Ferne Friedman-Berg
Francisco Capristan	Cody Nichols	Steve Summer
Edward Weinstein	Stephen Cook	Bob Ireland (A4A)
Terry McVenes (RTCA)	Lowell Foster (GAMA)	Greg Bowles (Joby Aviation)
Stephen Cook (Northrop Grumman)		

Appendix II

2022 Summer/Fall REDAC SAS Meeting
Agenda
Aug 2 – 3, 2022

Aug 2, 2022 (Tuesday)		
Time	**Topic**	**Presenter(s)**
0815 - 0830	Arrival at Zoom for remote participation	
0830 - 0845	Opening Remarks/Purpose of the Meeting	David Atwood
0845 - 0900	Opening remarks	Shelley Yak
0900 - 0930	SAS Chair Opening & Report on REDAC Meeting	Terry McVenes
0930 - 1000	FAA Budget Update	Beth Delarosby
1000 - 1015	Comfort Break	
Requested 30-Minute Presentations Based on FY22 Accomplishments		
1015 - 1045	A11B.PS.1 - Advanced Damage Tolerance and Risk Assessment Methods for Engine Life-Limited Parts	David Galella
1045 - 1115	A11B.PS.4 - Improved Nondestructive Evaluation (NDE) to Prevent Uncontained Engine Failures	David Galella
1115 - 1200	A11C.SIC.15 - Additive Manufacturing, particularly as it relates to NDT in the future	Kevin Stonaker
1200 - 1300	Lunch Break	
1300 - 1330	A11G.HF.10 - Risk-based decision making	Drs. Katrina Avers & Kylie Key
1330 - 1400	A11J.AM.2 - CAMI Accident Prevention and Investigation	Scott Nicholson
1400 - 1430	A11L.UAS.61 - UAS Automation and Intelligent Systems	Phil Maloney
1430 - 1500	A11L.UAS.78 - UAS Cyber Security and Safety	Matt Novak
1500 - 1515	Comfort Break	
1515 - 1545	A11D.SDS.6 - Complex Digital Systems	Srini Mandalapu
1545 - 1615	A11H.SSM.25 - Adapting a NAS-Wide, Top-Down Safety Risk Model to Accommodate Bottom-Up Safety Assessment	Huasheng, Li
1615 - 1630	First Day Review – Homework Assignments	Terry McVenes/David Atwood
1630	Adjourn	

August 3, 2022 (Wednesday)		
Time	**Topic**	**Presenter(s)**
0900 - 0915	Arrival at Zoom for remote participation	
0915 – 0930	Review Day1: Homework, Feedback, etc.	Terry McVenes/David Atwood /Mark Orr
0930 – 1015	Address SAS comments on FY23 portfolio	Mark Orr/David Atwood
1015 - 1030	Comfort Break	
1030 - 1200	(Cont.) Address SAS comments on FY23 portfolio	Mark Orr/David Atwood
1200 - 1300	Lunch	
1300 – 1500	FY24 BLI Plans Discussion – continued from Spring 2022 meeting	Mark Orr/David Atwood
1500 - 1515	Comfort Break	
1515 - 1600	(Cont.) FY24 BLI Plans Discussion – continued from Spring 2022 meeting	Mark Orr/David Atwood
1600 - 1630	SAS Summer/Fall 2022 F&R discussions and feedback/Closing remarks	Terry McVenes/David Atwood/Mark Orr
1630	Adjourn	