



Aerospace Control and Guidance Systems Committee Meeting No. 131

Fall 2023

Newport News, VA

DRAFT AGENDA - r3

TUESDAY, 24 October 2023

07:00 pm -9:00 pm	PLANNING ADVISORY BOARD MEETING – Enterprise Boardroom
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Chairman	Jeb Orr
Vice-Chairman	John Valasek
Immediate Past Chairman	Piero Miotto
Treasurer	Stan Pszczolkowski
Secretary	Kevin Duda

Planning Advisory Board Members		
Mike Bolender	Philippe Goupil	Raman Mehra
Oliver Brieger	Irene Gregory	Chris Miller
Dave Doman	Phil Hattis	Dave Mitchell
Marge Draper-Donley	Dave Klyde	Kevin Wise
Jared Grauer	Brian Lee	Tansel Yucelen

PAB Emeritus				
Shawn Donley	Ron Hess	Lou Knotts	Gavin Jenney	Dave Schmidt

WEDNESDAY, 25 October 2023 – Day 1	
7:00 am – 8:00 am	Registration and Breakfast
8:00 am – 8:30 am	GENERAL BUSINESS MEETING – Virginia A Jeb Orr – Chairman
8:30 am – 9:40 am	GENERAL COMMITTEE TECHNICAL SESSION 1 – Virginia A <ul style="list-style-type: none"> ● Dave Schmidt, <i>PAB Emeritus</i>, DK Schmidt & Associates, LLC ● Oscar Murillo, NASA Langley Research Center ● Marge Draper-Donley, Naval Air Warfare Center Aircraft Division ● Ryan Caverly, Dept. of Aerospace Engineering, University of Minnesota ● Imraan Faruque, Oklahoma State University
9:40 am – 10:00 am	Break
10:00 am – 11:10 am	GENERAL COMMITTEE TECHNICAL SESSION 2 – Virginia A <ul style="list-style-type: none"> ● John Valasek, Texas A&M University ● Raman Mehra, Scientific Systems Company, Inc. ● John Doerr, Sentra ● Phillipe Goupil, Airbus ● Kevin Duda, Draper
SUBCOMMITTEE A – AERONAUTIC AND SURFACE VEHICLES Co-Chairs: Dave Mitchell, Oliver Brieger, and Chris Miller Room: Virginia A	
11:10 am – 11:50 pm	A.1 “Investigating Effects of Instantaneous Center of Rotation Location on Handling Qualities for Up-and-Away Tasks,” Joey Duncan and Capt. Luke Babich, 773 TS/ENFA, US Air Force, Edwards AFB, CA
12:00pm – 1:30 pm	LUNCHEON – (Meet in Subcommittees) – Virginia BC
1:30 pm – 2:10 pm	A.2 “Handling Qualities Test Guide for Part 23 VTOL Aircraft with Indirect Flight Controls,” Dave Mitchell, Mitchell Aerospace Research
2:10 pm – 2:50 pm	A.3 TBD , Buddy Denham, Joby Aviation
2:50 pm – 3:10 pm	Break
3:10 pm – 3:50 pm	A.4 “Use of UAS to Aide in Agriculture Decision Making,” John Doerr, Sentera
SUBCOMMITTEE C – AVIONICS AND SYSTEM INTEGRATION (Session 1 of 2) Co-Chairs: Raman Mehra and Jared Grauer Room: Virginia A	
3:50 pm – 4:30 pm	C.1 “Aerospace’s Trajectory Towards the Year 2050: Sustainability, Mobility, and Challenges for Control,” Kevin Wise, Boeing
6:00 pm – 9:00 pm	RECEPTION – Newport Room

THURSDAY, 26 October 2023 – Day 2

07:00 am-8:30 am	Breakfast
SUBCOMMITTEE C – AVIONICS AND SYSTEM INTEGRATION (Session 2 of 2) Co-Chairs: Raman Mehra and Jared Grauer Room: Virginia A	
8:30 am – 9:10 am	C.2 “Perspectives on Computation and Flight Control,” Robert Stengel, Princeton University
9:10 am – 9:50 am	C.3 “An Overview of SIDPAC Capabilities,” Eugene Morelli, NASA LaRC
9:50 am – 10:30 am	C.4 “Aero-Propulsive Modeling for eVTOL Aircraft Using Experimental Data,” Benjamin Simmons, NASA LaRC
10:30 am – 10:40 am	Break

SUBCOMMITTEE B – MISSILES AND SPACE Co-Chairs: Phil Hattis and Kevin Wise Room: Virginia A	
10:40 am – 11:20 pm	B.1 “Analytical Describing Function Approach for Actuators Under Rate and Amplitude Saturation,” Colter Russell, Mclaurin Aerospace
11:20 am – 12:00 pm	B.2 “Challenges of Vehicle Attitude Control Prior to and During On-Orbit Propellant Transfer,” Jing Pei and Liam Elke, NASA LaRC

12:10 pm – 1:30 pm	LUNCHEON – Virginia BC PAB LUNCHEON – Enterprise Boardroom
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1:30 pm – 2:10 pm	B.3 “Efficient Uncertainty Propagation and Optimal Feedback Control Design for Uncertain Systems,” Puneet Singla, Penn State
2:10 pm – 2:50 pm	B.4 “Nighttime Field Testing of a Wearable Vision Navigation System for Lunar Surface Mobility,” Kevin Duda, Draper
2:50 pm – 3:00 pm	Break

SUBCOMMITTEE E – FLIGHT, PROPULSION, AND AUTONOMOUS VEHICLE CONTROL SYSTEMS Co-Chairs: John Valasek, Irene Gregory (Session 1 of 2) Room: Virginia A	
3:00 pm – 3:40 pm	E.1 “Uncertainty Quantification for Systems with Parametric Uncertainty,” John Schierman, AFRL

FRIDAY, 27 October 2023 – Day 3

07:00 am – 8:00 am	Breakfast
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SUBCOMMITTEE E – FLIGHT, PROPULSION, AND AUTONOMOUS VEHICLE CONTROL SYSTEMS
Co-Chairs: John Valasek, Irene Gregory (Session 2 of 2)
Room: Virginia A

8:00 am – 8:40 am	E.2 “Port-Hamiltonian Modeling and Energy-Based Control and Estimation for Aircraft”, Craig Woolsey, Virginia Tech
8:40 am – 9:20 am	E.3 “Predictive Drag Modulation De-Orbit Control for the Re-Entry Targeting of the Hypersonic Configurable Unit Ballistic Experiment (HyCUBE)”, Ryan Caverly, University of Minnesota

9:20 am – 9:40 am	Break
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SUBCOMMITTEE D – DYNAMICS, COMPUTATIONS, AND ANALYSIS
Co-Chairs: Dave Doman, Mike Bolender, Dave Klyde, and Brian Lee
Room: Virginia A

9:40 am – 10:20 am	D.1 “Application of Kane’s Method to Various Aerospace Systems,” Carlos Roithmayr, NASA LaRC
10:20 am – 11:00 am	D.2 “MAGIC STRAW,” Alexandra Songy, NAVAIR

11:00 am – 11:30 am	Adjourn
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