

MEETING NO. 123 AGENDA
AEROSPACE CONTROL AND GUIDANCE SYSTEMS COMMITTEE

Eldorado Hotel & Spa
309 West San Francisco St.
Santa Fe, NM 875011
505-995-4560

27-29 March 2019

Tuesday

26 March 2019

7:00pm - 9:00pm

1.0 PLANNING ADVISORY BOARD MEETING

Zia B

Chairman	Marge Draper-Donley
Vice-Chairman	Piero Miotto
Immediate Past Chairman	Brian Lee
Treasurer	Stan Pszczolkowski
Secretary	Jeb Orr

Planning Advisory Board Members

Riccardo Bevilacqua	Irene Gregory	Raman Mehra
Mike Bolender	Phil Hattis	Dave Mitchell
Oliver Brieger	Steve Jacobson	James Paduano
Jan De Luca	Dave Klyde	John Valasek
Dave Doman	Lou Knotts	Kevin Wise
Dale Enns	Xavier Le Tron	Tansel Yucelen

PAB Emeritus

Shawn Donley	Ron Hess	Gavin Jenney	Dave Schmidt
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Wednesday

27 March 2019

7:00am – 8:30am

2.0 REGISTRATION AND BREAKFAST

Anasazi South

8:30am – 9:00am

3.0 GENERAL BUSINESS MEETING

Anasazi South

Marge Draper-Donley – Chairman

Wednesday

27 March 2019

9:00am – 12:00pm

4.0 GENERAL COMMITTEE TECHNICAL SESSION

Dale Enns and Tansel Yucelen Co-Chairs

9:00am - 9:50am

4.1 Government Agencies Summary Reports

4.1.1 NASA

4.1.1.1 Ames - Hashemi, Kelley E.

4.1.1.2 Armstrong – Steve Jacobson

4.2 Research Institutions, Industry, and University Reports

4.2.1 Research Institutions and Companies

4.2.1.1 Barron Associates - Gandhi, Neha

4.2.1.2 Systems Technology, Inc. - Dave Klyde

4.2.1.3 **Calspan Flight Research Group - Lou Knotts**

9:50am – 10:10am

BREAK

10:10am – 12:00pm

4.2.1.4 **Scientific Systems Company - Raman Mehra**

4.2.1.5 Mclaurin Aerospace – Jeb Orr

4.2.1.6 Mitchell Aerospace Research - Dave Mitchell

4.2.1.7 DK Schmidt and Associates – Dave Schmidt

4.2.2 Technical Committee Liaison

4.2.2.1 SAE S-7 Committee – Brian Lee

4.1.3 Universities

4.1.3.1 Naval Postgraduate School – Isaac Kaminer

4.1.3.2 New Mexico State University – Liang Sun

12:00pm – 1:30pm

LUNCHEON – Anasazi North (Meet in Subcommittees)

Subcommittee chairs, members and attendees will meet for lunch and agenda planning for Meeting No. 124.

1:30pm – 2:10pm

9.0 SUBCOMMITTEE E – FLIGHT, PROPULSION, AND AUTONOMOUS VEHICLE CONTROL SYSTEMS

John Valasek Chair

Irene Gregory, Vice Chair, Lou Knotts, Vice Chair

1:30pm – 2:10pm

9.1 “Aerial Co-Robots of the Future”, Dr. Naira Hovakimyan, U. of Illinois, Urbana-Champaign

2:10pm – 5:10pm

5.0 SUBCOMMITTEE A – AERONAUTIC AND SURFACE VEHICLES

Steve Jacobson, Chair

Oliver Brieger, Xavier Le Tron and Dave Mitchell, Vice Chairs

2:10pm – 2:50pm

5.1 “MIL-STD-1797C Update”, Will Thomas

2:50pm – 3:10pm

BREAK

Wednesday
27 March
3:10pm – 3:50pm 5.2 “Control Law Testing at TPS”, Chris Cotting, USAF Test Pilot School
3:50pm - 4:30pm 5.3 “X-56 TBD”
4:30pm -5:10pm 5.4 “X-56 TBD”
6:00pm – 9:00pm **RECEPTION - Cava West**

Thursday
28 Mar 2019
7:00am – 9:00am **BREAKFAST – Anasazi South**
8:00am – 11:00am **6.0 SUBCOMMITTEE B – MISSILES AND SPACE-** Anasazi South
TBD, Chair
Riccardo Bevilacqua, Vice Chair; Kevin Wise, Vice Chair
8:00am – 8:40am 6.1 “Dominator UAS Research and Development”, Jeremy Clark, Boeing
8:40am – 9:20am 6.2 “Spacecraft Collisions and Fragmentation“, Norman Fitz-Coy, University of Florida
9:20am – 10:00am 6.3 “GNC for Mars Entry Systems”, Zachary Putnam, University of Illinois
10:00am- 10:20am **BREAK**
10:20am – 11:00am 6.4 “STS/ISS On-orbit Flight Control: A Historical Perspective”, Rob Hall, NASA
11:00am – 12:20am **7.0 SUBCOMMITTEE C – AVIONICS AND SYSTEM INTEGRATION**
Raman Mehra, Chairman
Jan DeLuca, Vice Chair; James Paduano, Vice Chair
11:00am – 11:40am 7.1 “Fast, Reactive, Monocular Vision-Based Obstacle Avoidance for Small UAS”, Neil Johnson, SSCI
11:40am – 12:20am 7.2 “ TBD”, possibly Guggisberg or Duda talk?
12:20pm – 2:00pm **LUNCHEON**
PAB will meet for lunch and agenda planning for Meeting No. 124 in the Chapel.
Other attendees have open seating for lunch in Anasazi North
7.0 SUBCOMMITTEE C – AVIONICS AND SYSTEM INTEGRATION (cont)
Raman Mehra, Chairman
Jan DeLuca, Vice Chair; James Paduano, Vice Chair
2:00p m – 3:20pm
2:00pm – 2:40pm 7.3 “TBD topic”, Randy Beard, Brigham Young University
2:40pm – 3:20pm 7.4 "Learning-Based Flight Control and Swarm Autonomy", Sun-jo Chung, Caltech and JPL
3:20pm - 3:40pm **BREAK**
3:40pm – 5:00pm **8.0 SUBCOMMITTEE D – DYNAMICS, COMPUTATIONS, AND ANALYSIS**
Dave Doman, Chair
Dave Klyde, Vice Chair, Mike Bolander, Vice Chair

3:40pm – 4:20pm 8.1 “Intersections between Machine Learning and Adaptive Control”, Anu Annaswamy, MIT

4:20 pm – 5:00 pm 8.2 “X-56 Control of Flexible Structures”, Jeff Ouellette, NASA AFRC

Friday

29 March 2019 **BREAKFAST** – Anasazi South

7:00am – 9:00am

8:00am – 9:20am **8.0 SUBCOMMITTEE D – DYNAMICS, COMPUTATIONS, AND ANALYSIS (cont)**

Dave Doman, Chair

Dave Klyde, Vice Chair, Mike Bolander, Vice Chair

8:00am - 8:40am **8.3** “Bringing Aerial Refueling to the E-2D”, Joe Allen, Naval Air Warfare Center

8:40am – 9:20am 8.4 “Fuel Flow Topology Optimization and Control for Aircraft Thermal Management”, Mike Oppenheimer, AFRL

9.0 SUBCOMMITTEE E – FLIGHT, PROPULSION, AND AUTONOMOUS VEHICLE CONTROL SYSTEMS (cont)

John Valasek Chair

Irene Gregory, Vice Chair, Lou Knotts, Vice Chair

9:20am – 10:00am 9.2 “NUAIR NYS Unmanned Air Vehicle Test Range”, Dr. Ray Young, Chief Integration Officer NUAIR

10:00am – 10:20am **BREAK**

10:20am – 11:00am 9.3 “Updates and Capabilities of a FAA UAS Test Site”, Nicholas T. Flom, Northern Plains UAS Test Site

11:00am – 11:40am 9.4 “Self-Driving Car or Urban Air Taxi” TBD

11:40 am **ADJOURN**