

**MEETING NO. 117**  
**PRELIMINARY AGENDA**  
**AEROSPACE CONTROL AND GUIDANCE SYSTEMS COMMITTEE**

Embassy Suites Napa Valley  
1075 California Blvd  
Napa, CA 94559  
707-253-9540

**15-18 March 2016**

**Tuesday**

15-Mar-16

6:00pm

**1.0 PLANNING ADVISORY BOARD MEETING**

Pinot Noir B

<b>Chairman</b>	Phil Hattis
<b>Vice-Chairman</b>	Brian Lee
<b>Immediate Past Chairman</b>	Lou Knotts
<b>Treasurer</b>	Stan Pszczolkowski
<b>Secretary</b>	Marge Draper-Donley

**Board Members**

Christine Belcastro  
Oliver Brieger  
Jan De Luca  
Dave Doman  
Shawn Donley  
Dale Enns

Sanjay Garg  
Irene Gregory  
Klaus-Uwe Hahn  
Ron Hess  
Steve Jacobson  
Gavin Jenney  
Dave Klyde

Raman Mehra  
Piero Miotto  
Dave Mitchell  
Dave Schmidt  
Mark Tischler  
Kevin Wise

**Wednesday**

16-Mar-16

7:30am – 8:30am

**2.0 REGISTRATION**

Pinot Noir BC

8:30am – 9:00am

**3.0 GENERAL BUSINESS MEETING**

Pinot Noir BC

Phil Hattis – Chairman

**Wednesday**

16-Mar-16

9:00am – 12:00pm

**4.0 GENERAL COMMITTEE TECHNICAL SESSION**

Christine Belcastro and Dale Enns Co-Chairs

**4.1 Government Agencies Summary Reports**

4.1.1 ONERA – Bruno Lamiscarre

4.1.2 DoD

4.1.2.1 AFRL – Dave Doman

4.1.3 NASA

4.1.3.1 Glenn- Sanjay Garg

4.1.3.2 Armstrong – Steve Jacobson

4.1.3.3 Ames – Nahn T. Nguyen

4.1.4 DLR – Oliver Brieger

**4.2 Research Institutions, Industry, and University Reports**

4.2.1 Research Institutions and Companies

4.2.1.1 Systems Technology, Inc. - Dave Klyde

4.2.1.2 Calspan Flight Research Group - Lou Knotts

4.2.1.3 Scientific Systems Company - Raman Mehra

4.2.1.3 Mitchell Aerospace Research - Dave Mitchell

4.2.1.5 D. K. Schmidt & Associates – Dave Schmidt

4.2.1.6 Optimal Synthesis – P. K. Menon

4.2.1.7 Robert Heffley Engineering – Bob Heffley

4.2.2 Technical Committee Liaison

4.2.2.1 SAE S-7 Committee – Brian Lee

4.2.3 Universities

4.2.3.1 Ohio State University – Rama Yedavalli

12:00pm – 1:30pm

**LUNCHEON – The Terrace I (Meet in Subcommittees)**

Subcommittee chairs, members and attendees will meet for lunch and agenda planning for Meeting No. 118.

1:30pm – 2:50pm

**5.0 SUBCOMMITTEE B – MISSILES AND SPACE**

Piero Miotto, Chair

Kevin Wise, Vice Chair

5.1 “Green Run Frequency Response Testing of Space Launch System Thrust Vector Control,” Jeb Orr, Draper

5.2 “Passively Safe Satellite Cluster Design,” Michael Messina, Northrop Grumman

**Wednesday**

16-Mar-16

2:50pm – 3:10pm

**BREAK**

3:10pm – 4:30pm

**5.0 SUBCOMMITTEE B – MISSILES AND SPACE (cont.)**

Piero Miotto, Chair

Kevin Wise, Vice Chair

5.3 “Dual Exploration Architectures for Breaking the Decades-Long Cycles of Planetary Science,” Brett Streetman, Draper

5.4 “Solar Radiation Pressure Applications on Geostationary Satellites,” Ricardo Bevilacqua, University of Florida

4:30pm – 5:10pm

**6.0 SUBCOMMITTEE C – AVIONICS AND SYSTEM INTEGRATION**

Raman Mehra, Chair

Jan DeLuca, Vice Chair

6.1 “Towards Automated Validation and Verification of Guidance and Control Systems,” Misty Davies, NASA Ames

6:00pm – 7:00pm

**Catered Reception– The Terrace I**

**Thursday**

17-Mar-16

7:30am – 8:00am

**Registration – Pinot Noir BC**

8:00am – 10:00am

**6.0 SUBCOMMITTEE C – AVIONICS AND SYSTEM INTEGRATION (cont.)**

Raman Mehra, Chair

Jan DeLuca, Vice Chair

6.2 “Robotic Landing Gear of Helicopter,” Mark Costelo, Georgia Tech

6.3 “Multicore in Flight Critical Avionics – Current Practices, Trends and Outlook for Certification,” Larry Kinnan, WindRiver

6.4 **TBD**

10:00am – 10:20am

**BREAK**

10:20am – 12:20pm

**7.0 SUBCOMMITTEE D – DYNAMICS, COMPUTATIONS, AND ANALYSIS**

Ron Hess and Dave Doman, Co-Chairs

Dave Schmidt, Vice Chair

7.1 “Controller State and Reference Governor for Enforcing State and Control Constraints in Aerospace Applications” Ilya Kolmanovsky, University of Michigan

7.2 “Control Law Design of the Bell 525 Fly by Wire Helicopter,” Jillian Allfred, Bell Helicopter

7.3 “Unmanned Air Traffic Management,” by Parimal Kopardekar, NASA Ames

**Thursday**

17-Mar-16

12:30pm – 2:00pm

**LUNCHEON – The Terrace I**

PAB will meet for lunch and agenda planning for Meeting No. 118

Meeting attendees have open seating for lunch.

2:00pm – 2:40pm

**7.0 SUBCOMMITTEE D – DYNAMICS, COMPUTATIONS, AND ANALYSIS (cont.)**

Ron Hess and Dave Doman, Co-Chairs

Dave Schmidt, Vice Chair

7.4 “Aircrew Labor In-Cockpit Automation System (ALIAS),” Jim Paduano, Aurora Flight Sciences

2:40 pm–3:20 pm

**8.0 SUBCOMMITTEE E – FLIGHT, PROPULSION, AND AUTONOMOUS VEHICLE CONTROL SYSTEMS**

Sanjay Garg and Irene Gregory, Co-Chairs

8.1 “NASA Aeronautics Autonomy Roadmap and Current Activities,” Shivanjali Sharma, NASA/ARC

3:20 pm – 3:40 pm

**BREAK**

3:40 pm–5:00 pm

**8. SUBCOMMITTEE E – FLIGHT, PROPULSION, AND AUTONOMOUS VEHICLE CONTROL SYSTEMS (cont)**

Sanjay Garg and Irene Gregory, Co-Chairs

8.2 “Sikorsky Rotorcraft Autonomy Research Program,” Igor Cherepinsky, Sikorsky

8.3 “Dynamics and Controls in the Next Generation Air Traffic Management,” P.K. Menon, Optimal Synthesis

**Friday**

18-Mar-16

7:00 am – 8:00 am

**Registration – Pinot Noir BC**

8:00 am – 8:40 am

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

Sanjay Garg and Irene Gregory, Co-Chairs

8.4 “Aero-Propulsion Controls and Diagnostic Research under NASA Aeronautics Programs – An Overview,” Sanjay Garg, NASA/GRC

8:40 am – 9:20 am

**9.0 SUBCOMMITTEE A – AERONAUTIC AND SURFACE VEHICLES**

Steve Jacobson, Chair

Klaus-Uwe Hahn, Dave Mitchell, Vice Chairs

9.1 “The Man4Gen Project – Managing the Unexpected,” Jan-Philipp Buch, DLR

**Friday**

18-Mar-16

9:20 am – 9:40 am

**BREAK**

9:40 am – 11:20 am

**9.0 SUBCOMMITTEE A – AERONAUTIC AND SURFACE VEHICLES (cont.)**

Steve Jacobson, Chair

Klaus-Uwe Hahn, Dave Mitchell, Vice Chairs

9.2 “Safe and Mission Efficient Cooperation of Autonomous and Heterogeneous Vehicles,” Bruno Lamiscarre, ONERA

9.3 “X-56 Control and Dynamics Challenges and Lessons Learned from Flight,” by Jacob Schaefer, NASA/Armstrong

9.4 “F-16 Automatic Air and Ground Collision Avoidance Systems,” by Charles Eger and Rebecca Mitchell, USAF Flight Tet Center