

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

Chairman	Phil Hattis
Vice-Chairman	Brian Lee
Immediate Past Chairman	Lou Knotts
Treasurer	Stan Pszczolkowski
Secretary	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 Ames – Nhan T. Nguyen

4.1.3.3 Langley – Irene Gregory

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

4.2.1.8 Aurora Flight Sciences – Jim Paduano

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

4.2.3.2 Moscow Aviation Institute – Alexander Efremov

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 “Modelling of Test of Space Launch System Core Stage 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 – 3:50pm

5.0 SUBCOMMITTEE B – MISSILES AND SPACE (cont.)

Piero Miotto, Chair

Kevin Wise, Vice Chair

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

3:50pm – 5:10pm

6.0 SUBCOMMITTEE C – AVIONICS AND SYSTEM INTEGRATION

Raman Mehra, Chair

Jan DeLuca, Vice Chair

6.1 “Visual to Beyond Line of Sight: Challenges in Unmanned Traffic Management,” Raja Sengupta, US Berkeley

6.2 “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 – 9:20am

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

Raman Mehra, Chair

Jan DeLuca, Vice Chair

6.3 “Robotic Landing Gear of Helicopter,” Mark Costello, Georgia Tech

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

9:20am – 10:00am

5.0 SUBCOMMITTEE B – MISSILES AND SPACE (cont.)

Piero Miotto, Chair

Kevin Wise, Vice Chair

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

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 Alfred, Bell Helicopter

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

Thursday

17-Mar-16

12:30pm – 2:00pm

LUNCHEON

PAB will meet in Pinot Noir A for lunch and agenda planning for Meeting No. 118
Other meeting attendees go to the Atrium for an open seating 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,” Shivanjli 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 “Evaluation of Spatial Disorientation Demonstration Scenarios for Commercial Pilot Training,” Dave Klyde, STI

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 – 11:40 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 “F-16 Automatic Air and Ground Collision Avoidance Systems,” by Charles Eger and Rebecca Mitchell, USAF Flight Test Center

9.4 “A Short History of the Space Shuttle Orbit Flight Control System Development and Application Evolution,” by Philip Hattis, Draper