MEETING NO. 115

GENERAL MEETING AGENDA

AEROSPACE CONTROL AND GUIDANCE SYSTEMS COMMITTEE

The Crowne Plaza Portland Downtown
1441 NE 2nd Avenue
Portland, OR 97232
503-233-2401

3-6 March 2015

Tuesday 3-Mar-15 6:00pm — **1.0 PLANNING ADVISORY BOARD MEETING**
Location – Windsor C

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

Board Members

Christine Belcastro	Sanjay Garg	Raman Mehra
Oliver Brieger	Irene Gregory	Piero Miotto
Jan De Luca	Klaus-Uwe Hahn	Dave Mitchell
Dave Doman	Ron Hess	Dave Schmidt
Shawn Donley	Steve Jacobson	Mark Tischler
Dale Enns	Gavin Jenney	Marty Waszak
	Dave Klyde	Kevin Wise

Wednesday
4-Mar-15

7:00am – 8:30am **2.0 REGISTRATION AND BREAKFAST**
Location – Belmont C Foyer

8:30am – 9:00am **3.0 GENERAL BUSINESS MEETING**
Location – Belmont C
Phil Hattis – Chairman

Wednesday

4-Mar-15

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 DLR – Oliver Brieger

4.1.2 DoD

4.1.2.1 Army – Tom Berger

4.1.3 NASA

4.1.3.1 Glenn – Sanjay Garg

4.1.3.2 Langley – Irene Gregory

4.1.3.3 Armstrong – Curt Hanson

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 Scientific Systems Company – Raman Mehra

4.2.1.3 Barron & Associates – Neha Gandhi

4.2.1.4 Rockwell Collins - Darren Cofer

4.2.1.5 Robert Heffley Engineering – Robert Heffley

4.2.1.6 Optimal Synthesis – P.K. Menon

4.2.1.7 Aurora Flight Sciences – Jim Paduano

4.2.1.8 Crew Systems, Inc. – Dick Newman

4.2.2 Technical Committee Liaison

4.2.2.1 SAE S-7 Committee – Brian Lee

4.2.3 Universities

4.2.2.1 University of Minnesota – John Weyrauch

12:00pm – 1:30pm **LUNCHEON – Belmont B (Meet in Subcommittees)**

Subcommittee chairs, members and attendees will meet for lunch and agenda planning for Meeting No. 116.

1:30pm – 3:30pm **5.0 SUBCOMMITTEE D – DYNAMICS, COMPUTATIONS, AND ANALYSIS**
Ron Hess and Dave Doman, Co-Chairs
Dave Schmidt, Vice Chair

5.1 "Control Science for Hypersonic Systems," Michael Bolender, AFRL (by telephone & DCO)

5.2 “Finite-Element Modeling of the Structural Dynamics of a Flying-Wing Research Drone”, Claudia Patricia Moreno, University of Minnesota

5.3 “Matlab-Based Flight Dynamics and Flutter Modeling of a Flexible Flying-Wing Research Drone,” Dave Schmidt, Univ. of CO, Colorado Springs

3:30pm – 3:50pm **BREAK**

3:50pm – 4:30pm 5.4 “Exposing Pilot Behavior from Flight Test,” Dave Klyde, STI

Wednesday 4-Mar-15 4:30pm – 5:10pm	**6.0 SUBCOMMITTEE E – FLIGHT, PROPULSION, AND AUTONOMOUS VEHICLE CONTROL SYSTEMS** Sanjay Garg and Irene Gregory, Co-Chairs 6.1 "Aero Controls Technology Challenges for NASA Aeronautics Research Strategic Thrusts," Sanjay Garg, NASA Glenn Research Center
5:30pm – 6:30pm	**SOCIAL HOUR – Belmont B**
Thursday 5-Mar-15	
7:00am – 8:00am	**BREAKFAST – Belmont C Foyer**
8:00am – 9:20am	**6.0 SUBCOMMITTEE E – FLIGHT, PROPULSION, AND AUTONOMOUS VEHICLE CONTROL SYSTEMS (cont)** Sanjay Garg and Irene Gregory, Co-Chairs 6.2 . "Single Pilot Operations for Commercial Aircraft – Concept of Operations and Technology Needs," Walter Johnson, NASA Ames 6.3 "Indirect Manifold Construction Approach for Control of Nonlinear Non-Minimum Systems," Anshu Narang-Siddharth, U. of Washington, Seattle
9:20am – 10:00am	**9.0 SUBCOMMITTEE C – AVIONICS AND SYSTEM INTEGRATION (cont)** Raman Mehra and Marty Waszak, Co-Chairs Jan DeLuca, Vice Chair 9.1 "Practical Aspects of the Frequency-Domain Approach for Aircraft System Identification," Gene Morelli, NASA Langley
10:00am – 10:20am	**BREAK**
10:20am – 12:20pm	**7.0 SUBCOMMITTEE A – AERONAUTIC AND SURFACE VEHICLES** Steve Jacobson, Chair Klaus-Uwe Hahn, Dave Mitchell, Vice Chairs 7.1 "Helicopter and Multi-Rotor Autopilot Development," Michael Allen, Cloud Cap Technology 7.2 "Flying Qualities Criteria for Unmanned Aircraft ," Kara Greene, AFIT 7.3 "Flight Testing the 787-9: Opportunities and Challenges in Certifying a Simple Derivate," Nikos Mills, Boeing
12:30pm – 2:00pm	**LUNCHEON – Belmont B** PAB will meet for lunch and agenda planning for Meeting No. 116 Meeting attendees have open seating for lunch.
2:00pm – 2:40pm	**7.0 SUBCOMMITTEE A – AERONAUTIC AND SURFACE VEHICLES (cont)** Steve Jacobson, Chair Klaus-Uwe Hahn, Dave Mitchell, Vice Chairs 7.4 "Comparison of Envelope Limiting Schemes," Tony Lambregts, FAA-Retired
2:40 pm–3:20 pm	**8.0 SUBCOMMITTEE B – MISSILES AND SPACE** Piero Miotto, Chair Kevin Wise, Vice Chair 8.1 "MAJIC: A Gyroscopically Actuated Astronaut Mobility Unit for Future EVA Missions," Michelle Carpenter, Draper Laboratory

Thursday

5-Mar-15

3:20 pm – 3:40 pm **BREAK**

3:40 pm – 5:00 pm **8.0 SUBCOMMITTEE B – MISSILES AND SPACE (cont)**
Piero Miotto, Chair
Kevin Wise, Vice Chair

8.2 "Piloted Aircraft Testing of Launch Vehicle Manual Steering with Adaptive Augmenting Control," Curt Hanson, NASA Armstrong

8.3 "Preliminary Design and Prototyping of a Low-Cost Spacecraft Attitude Determination and Control Setup," Anthony Gong, San Jose State University

Friday

6-Mar-15

7:00 am – 8:00 am **BREAKFAST – Belmont C Foyer**

8:00 am – 8:40 am **8.0 SUBCOMMITTEE B – MISSILES AND SPACE (cont)**
Piero Miotto, Chair

Kevin Wise, Vice Chair

8.4 "Mission and Fault Management (MFM) for the NASA SLS Launch Vehicle," Kevin Melcher, NASA Glenn

8:40 am – 9:20 am **6.0 SUBCOMMITTEE E – FLIGHT, PROPULSION, AND AUTONOMOUS VEHICLE CONTROL SYSTEMS (cont)**

Sanjay Garg and Irene Gregory, Co-Chairs

6.4 "Overview of DARPA HAMCS (High Assurance Military Cyber Systems) with focus on Aerospace Applications," John Launchbury, DARPA

9:20 am – 9:40 am **BREAK**

9:40 am – 11:40 am **9.0 SUBCOMMITTEE C – AVIONICS AND SYSTEM INTEGRATION (cont)**
Raman Mehra and Marty Waszak, Co-Chairs
Jan DeLuca, Vice Chair

9.2 "Certification Considerations for Adaptive Systems," Darren Cofer, Rockwell Collins

9.3 "Small UAS Development: an Unconventional Approach," Juris Vagners, Univ. of Washington

9.4 "The Significance of Simulation for the Insitu Unmanned Aircraft Systems," Rolf Rysdyk, Insitu