

MEETING No. 110
AEROSPACE CONTROL AND GUIDANCE SYSTEMS COMMITTEE

Hilton Garden Inn
14 Great Falls Plaza
Auburn, ME 04210
207.784.4433

October 10 – 12, 2012

Tuesday 1.0 PLANNING ADVISORY BOARD MEETING

9-Oct-12 Location – Canal Room
7:00pm

Chairman	David Klyde
Vice-Chairman	Lou Knotts
Immediate Past Chairman	Gary Balas
Treasurer	Stan Pszczolkowski
Secretary	Jan De Luca

Board Members

C. Belcastro	P Hattis	D Schmidt
D Bodden	R Hess	M Tischler
D Doman	S Jacobson	M Waszak
S Donley	G Jenney	J Weyrauch
M Draper-Donley	B Lee	K Wise
S Garg	R Mehra	
I Gregory	D Mitchell	

Wednesday 2.0 REGISTRATION AND BREAKFAST

10-Oct-12 Location – Canal/Millpond Room
7:00 am – 8:30 am

Wednesday 3.0 GENERAL BUSINESS MEETING

10-Oct-12 Location – Canal/Millpond Room
8:30 am – 9:00 am David Klyde – Chairman

Wednesday 4.0 GENERAL COMMITTEE TECHNICAL SESSION

10-Oct-12 Marge Draper-Donley and Christine Belcastro Co-Chairs
9:00 am – 12:00 pm

4.1 Research Institutions, Industry, and University Reports

4.1.1 Research Institutions and Companies

4.1.1.1 Systems Technology, Inc. – Dave Klyde

4.1.1.2 Scientific Systems Company – Raman Mehra

4.1.1.3 Mitchell Aerospace Research – Dave Mitchell

4.1.1.4 Heffley Engineering, Robert Heffley

4.1.1.5 Draper Lab – Piero Mioyto

4.1.1.6 Calspan – Lou Knotts

4.1.1.7 Barron Associates – John Schierman

- 4.1.1.8 Aurora Flight Sciences – Jim Paduano
- 4.1.2 Universities
 - 4.1.2.1 Texas A&M – John Valasek
 - 4.1.2.2 University of Illinois at Urbana-Champaign – Enric Xargay

4.2 Government Agencies Summary Reports

- 4.2.1 NASA
 - 4.2.1.1 Dryden – Steve Jacobson
 - 4.2.1.2 Engineering & Safety Center – Neil Dennehy
 - 4.2.1.3 Glenn – Sanjay Garg
 - 4.2.1.4 Langley – Carey Buttrill
- 4.2.2 DoD
 - 4.2.2.1 AFRL – Dave Doman
- 4.2.3 DLR – Klause Uwe Hahn

Wednesday **LUNCHEON – GREAT FALLS VIEW ROOM (meet in Subcommittees)**
 10-Oct-12 Subcommittee chairs, members and attendees will meet for lunch and agenda
 12:00 pm – 1:30 pm planning for Meeting No. 111.

Wednesday **5.0 2nd ANNUAL DAVE WARD MEMORIAL LECTURE**
 10-Oct-12 “UAV Teams for Road Surveillance,” Derek Kingston, AFRL
 1:30 pm – 2:10 pm

Wednesday **6.0 SUBCOMMITTEE D – DYNAMICS, COMPUTATIONS, AND ANALYSIS**
 10-Oct-12 Ron Hess and Dave Doman, Co-Chairs
 2:10 pm – 3:30 pm Dave Schmidt, Vice Chair
 6.1 “Handling Qualities Optimization & Trade-offs for Business Jet Flight Control Design,” Tom Berger, UARC/AFDD (abstract) (presentation)
 6.2 “Incremental NDI and Global Optimization,” Bob Mulder, TU Delft (abstract) (presentation)

Wednesday **Break**
 10-Oct-12
 3:30 pm – 3:50 pm

Wednesday **6.0 SUBCOMMITTEE D – DYNAMICS, COMPUTATIONS, AND ANALYSIS (cont)**
 10-Oct-12 Ron Hess and Dave Doman, Co-Chairs
 3:50 pm – 5:10 pm Dave Schmidt, Vice Chair
 6.3 “Model Validation Using Simulink,” Darren Cofer, Rockwell Collins (abstract) (presentation)
 6.4 “Boeing Phantom Ray Flight Control,” Ian Halley, Boeing (abstract) (presentation)

Wednesday **SOCIAL HOUR – LOCATION – GREAT FALLS VIEW ROOM**
 10-Oct-12
 6:00 pm – 7:00 pm

<p>Thursday 11-Oct-12 7:00 am – 8:00 am</p>	<p>BREAKFAST – LOCATION – CANAL/MILLPOND ROOM</p>
<p>Thursday 11-Oct-12 8:00 am – 10:00 am</p>	<p>7.0 SUBCOMMITTEE E – FLIGHT, PROPULSION, AND AUTONOMOUS VEHICLE CONTROL SYSTEMS Sanjay Garg and Irene Gregory, Co-Chairs</p> <p>7.1 “Cargo UAS deployed in Afghanistan,” Curt Eshbaugh, Lockheed Martin, and Cliff Gunsallus, Kaman Aerospace, (abstract) (presentation)</p> <p>7.2 “L1 Adaptive Control: Technology Transition in Europe,” Enric Xargay Department of Aerospace Engineering, University of Illinois at Urbana-Champaign (abstract) (presentation)</p> <p>7.3 “Enhanced Engine Control for Emergency Operation,” Jonathan Litt, NASA Glenn Research Center (abstract) (presentation)</p>
<p>Thursday 11-Oct-12 10:00am – 10:20am</p>	<p>Break</p>
<p>Thursday 11-Oct-12 10:20am – 11:00am</p>	<p>7.0 SUBCOMMITTEE E – FLIGHT, PROPULSION, AND AUTONOMOUS VEHICLE CONTROL SYSTEMS Sanjay Garg and Irene Gregory, Co-Chairs</p> <p>7.4 “Centaur - Pilot Optional Aircraft GNC,” Martin Gomez, Aurora Flight Sciences Corporation (abstract) (presentation)</p>
<p>Thursday 11-Oct-12 11:00am – 12:20pm</p>	<p>8.0 SUBCOMMITTEE A – AERONAUTIC AND SURFACE VEHICLES Steve Jacobson, Chair Brian Lee and Dave Mitchell, Vice Chairs</p> <p>8.1 “Preliminary Results from the Small UAV Automatic Ground Collision Avoidance System (Auto GCAS) Demonstration,” Mark Skoog, NASA DFRC (abstract) (presentation)</p> <p>8.2 “Peak Seeking Control for Reduced Fuel Consumption with Preliminary Flight Test Results,” Nelson Brown, NASA DFRC (abstract) (presentation)</p>
<p>Thursday 11-Oct-12 12:30 pm – 2:00 pm</p>	<p>LUNCHEON – GREAT FALLS VIEW ROOM PAB will meet for lunch & agenda planning for Meeting No. 111. Meeting attendees have open seating for lunch.</p>
<p>Thursday 11-Oct-12 2:00pm – 3:20pm</p>	<p>8.0 SUBCOMMITTEE A – AERONAUTIC AND SURFACE VEHICLES (cont) Steve Jacobson, Chair Brian Lee and Dave Mitchell, Vice Chairs</p> <p>8.3 “F-111 Adaptive Control System,” Carl Droste, Lockheed Martin (retired) (abstract) (presentation)</p> <p>8.4 “Renewing Flying Qualities at USAF Test Pilot School: Changing the Culture and New Research Opportunities,” Chris Cotting, USAF (abstract) (presentation)</p>

Thursday
11-Oct-12
3:20 pm – 3:40 pm

Break

Thursday
11-Oct-12
3:40 pm–5:00 pm

9.0 SUBCOMMITTEE B – MISSILES AND SPACE

Phil Hattis, Chair

John Weyrauch & Kevin Wise, Vice Chairs

9.1 “NESC Study of the Differing Global Satellite Navigation Satellite Systems,” George Davis, Emergent Space (abstract) (presentation)

9.2 “Some Recent Developments in Guided Airdrop Capabilities,” Bobby Cohanin, Draper Laboratory (abstract) (presentation)

Friday
12-Oct-12
7:00 am – 8:00 am

BREAKFAST – LOCATION – CANAL/MILLPOND ROOM

Friday
12-Oct-12
8:00 am – 9:20 am

9.0 SUBCOMMITTEE B – MISSILES AND SPACE (cont)

Phil Hattis, Chair

John Weyrauch & Kevin Wise, Vice Chairs

9.3 “Affordable State Estimation for Guided Mortar Systems,” Jonathan Rogers, Texas A&M (abstract) (presentation)

9.4 “Status of the SLS program at NASA/Marshall,” Jeb Orr, SAIC (abstract) (presentation)

Friday
12-Oct-12
9:20 pm – 12:00 pm

10.0 SUBCOMMITTEE C – AVIONICS AND SYSTEM INTEGRATION

Raman Mehra and Marty Waszak, Co-Chairs

10.1 “Automated Synthesis of Architectural Models for the Boeing 787” Pete Manolios, Northeastern Univ. (abstract) (presentation)

10.2 “Practical Adaptive Control, Margins and Improved Transients,” Anuradha Annaswamy, MIT (abstract) (presentation)

10.3 “Nonlinear State Estimation and Sensor Optimization for Detection of Space Collision Events,” by Raman K Mehra, Adel El- Fallah and Alex Zatezalo, Scientific Systems Company (abstract) (presentation)

10.4 “A Control Systems Autocoder with Full Semantics embedded in the Code,” Eric Feron, Georgia Tech Univ. (abstract) (presentation)