



AHS, International Technical Meeting

7th VTOL Unmanned Aircraft Systems Preliminary Program

Sponsored by the AHS Arizona Chapter

January 24-26, 2017

Sheraton Mesa Hotel Wrigleyville West, Mesa, Arizona



Tuesday, January 24, 2017

Registration and Check-in: 7am-4p

Continental Breakfast: 7:30-9am

No.	Title	Authors	Affiliation	Time
Opening General Session, 08:30				08:30
1	Welcome	Ram JanakiRam, AHS VTOL UAS Meeting Technical Chair	The Boeing Company	08:30 - 08:45
2	Regulations that Allow Growth & Safe Integration of UAS: How do we Get There?	James A. Viola, FAA Flight Standards Service Division Manager (AFS-800)	Federal Aviation Administration, Gen Aviation & Commercial Division	08:45 - 09:15
3	Challenges in Unmanned (Helicopter) Aviation – Lessons Learned in the Development of the MQ-8C RDC	Bob Ernst, PMA-266 Chief Engineer	Naval Air Systems Command (NAVAIR)	09:15 - 09:45
4	Army S&T Activities Leading to Future UAS Capabilities: A Vision to the Future	Layne Merritt, Chief Engineer	U.S. Army Aviation Development Directorate	09:45 - 10:15
Break				
5	NATO STANAG Airworthiness Code Development for small VTOL Unmanned Aircraft Systems	George "Leo" Flynn, Chief Engineer	U.S. Army Aviation Engineering Directorate	10:45 - 11:15
6	VTUAV Autonomous Operations and Collaboration in the Maritime Domain	Daniel Redman, Advanced Unmanned Systems, ASW Mission Lead	Northrop Grumman Corporation, Aerospace Systems	11:15 - 12:00
Lunch: 12-1:30				12:00 - 13:30
7	Autonomy for Aircraft: Current Portfolio, Future Needs.	Barbara Lindauer, Government Business Development Director	Sikorsky Aircraft, a Lockheed Martin Company	13:30 - 14:00
8	OPA: An Alternative Development Method for UAV Hardware & Software	Roger Hehr, Experimental Test Pilot	The Boeing Company	14:00 - 14:30
9	Path Planning for UAV Collision Avoidance	Srikanth Saripalli, Director	Texas A&M University, Unmanned Systems Lab	14:30 - 15:00
10	A Functional Safety Management Approach for Certification of Small VTOL sUAS	Daniel P. Schrage	Georgia Institute of Technology	15:00 - 15:30
Break				
UAV Aerodynamics Session, 4pm				16:00
11	Basic Understanding of Airfoil Characteristics at Low Reynolds Numbers	Justin Winslow, Hikaru Otsuka, Bharath Govindarajan, Inderjit Chopra	University of Maryland	16:00 - 16:30
12	Flow Analysis of Flapping Wing from Rotorcraft Perspective	Camli Badrya, Bharath Govindarajan, James D. Baeder	University of Maryland	16:30 - 17:00
13	Performance and Sizing Tool for Quadrotor-Biplane-Tailsitter UAS	Marius Strom, James D. Baeder	University of Maryland	17:00 - 17:30

Social Hour, 6pm



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Wednesday, January 25, 2017

Registration and Check-in: 8am-4pm

Continental Breakfast: 7:30-9am

No.	Title	Authors	Affiliation	Time
Micro Air Vehicles Session				08:30
14	Visual Odometry Onboard a Micro Air Vehicle Using Snapdragon Flight	Eric Solomon, Cyrus Vorwald, Vikram Hrishikeshavan, Inderjit Chopra	University of Maryland	08:30 - 09:00
15	Controllability Analysis of a Quadrotor in Hover using Empirical Gramians	Vikram Hrishikeshavan, Elena Shrestha, Inderjit Chopra, J. Sean Humbert	University of Maryland and University of Colorado	09:00 - 09:30
16	Development of MAV-scale Quad-Cyclocopter Capable of Aerial and Terrestrial Locomotion	Elena Shrestha, Benjamin Williams, Vikram Hrishikeshavan, Inderjit Chopra	University of Maryland	09:30 - 10:00
Break				
17	System Identification of a Meso-Scale Cyclocopter	Carl Runco, David Coleman, Moble Benedict	Texas A&M University	10:30 - 11:00
18	Maneuverability and Disturbance Rejection Analysis of a Hover-Capable Robotic Hummingbird	David Coleman, Moble Benedict	Texas A&M University	11:00 - 11:30
19	Flight Performance of a Package Delivery Quadrotor Biplane	Brandyn Phillips, Vikram Hrishikeshavan, Derrick Yeo, Inderjit Chopra, Omri Rand	University of Maryland and Israel Institute of Technology	11:30 - 12:00
Lunch: 12-1:30				12:00 - 13:30
VTOL UAV Flight Control & Navigation Session				13:30
20	Adaptive Pure Pursuit Based Autonomous Landing of Quadrotors	Alvika Gautam, P.B. Sujit, Srikanth Saripalli	Texas A&M University	13:30 - 14:00
21	Obstacle Detection Algorithms in Thermal Infrared Images for Collision Avoidance	Adrian Carrio, Srikanth Saripalli, Pascual Campoy	Texas A&M University	14:00 - 14:30
22	Turbulence Modeling of a Small Quadrotor UAS Using System Identification from Flight Data	Ondrej Juhasz, Mark J. S. Lopez, Marcos G. Berrios, Tom Berger Mark B. Tischler	San Jose State University and U.S. Army Aviation Development Directorate	14:30 - 15:00
Break				
23	Landing Path Generation Algorithm for Autonomous Shipboard Recovery of Rotorcraft	Junfeng Yang, Joseph F. Horn	Pennsylvania State University	15:30 - 16:00
24	Wind Gust Estimation on a Small Vtol UAV	Venkatasubramani S.R. Pappu, Yande Liu, Joseph F. Horn and Jared Cooper	Pennsylvania State University and Barron Associates	16:00 - 16:30
25	Fire Scout Operations in Parametric Like Roll Ship Conditions	Bernard Ferrier	NAVAIR Dynamics Interface Lab (SETA)	16:30 - 17:00

Social (Cash Bar): 5-6pm

Dinner Banquet: 6-7pm

Speaker: 7-8pm

Professor Dan Schrage, "Why Helicopters Can, and Should Fly on Mars"



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Thursday, January 26, 2017

Continental Breakfast: 7:30-9am.

<u>No.</u>	<u>Title</u>	<u>Authors</u>	<u>Affiliation</u>	<u>Time</u>
VTOL UAV Operations Session, 8:30am				08:30
26	A Foresight of Utilizing Unmanned Logistical VTOL Aircrafts	Yu Ito	Yamato Holdings Co., Ltd.	08:30 - 09:00
27	Automatic Landing on a Moving Platform Using Deep Neural Network Estimation	Toshinobu Watanabe, Eric N. Johnson	Georgia Institute of Technology	09:00 - 09:30
Break				
28	Runway Independent High Speed Unmanned: CarterCopter Jet VTOL UAS	Jay Carter, Jr., Jeffrey R. Lewis	Carter Aviation Technologies, LLC	10:00 - 10:30
29	A Multi-Modality Mobility Concept for a Small Package Delivery UAV	Larry A. Young	NASA Ames Research Center	10:30 - 11:00
End of Conference				