



**7th AHS Technical Meeting on
VTOL Unmanned Aircraft Systems**
Sponsored by the
**Arizona Chapter of the
American Helicopter Society, International**



24-26 January 2017

Mesa, AZ 85201

<http://www.sheratonmesa.com/>

CALL for PAPERS

Overview: The 21st century has seen a continued emphasis on Unmanned Air Systems (UASs) and autonomous behavior development for both military and civilian applications. Unmanned vertical take-off and lift (VTOL) aircraft are in varying stages of development all over the world, and continue to expand into the civil and military sectors for a variety of uses. Technology advances increasingly allow UAS to fill roles once reserved for manned ground and air vehicles. As noted by last year's Keynote Speaker, the operator-interface and human factors can be one of the most significant contributions to UAS safety and successful operations. Correspondingly, technologies and regulation are being developed to safely operate UAS, and integrate them into commercial and military airspace. This biennial meeting is an excellent opportunity to learn about and discuss the latest advancements in UAS technology with academic, industry, and military engineers from around the world.

Invitation: Papers are invited in the areas of VTOL Unmanned Aircraft Systems vehicle and control station design. This includes the civilian and military platforms of all sizes, ranging from micro UAVs through full scale aircraft and the full range autonomy and associated enabling technologies, including fully autonomous, ground-controlled, and optionally manned vehicles. Papers addressing all aspects of operator interface design, including both the air vehicle and operator control stations are also invited. Topics of interest include but are not limited to:

- **Vehicle design**, including configuration design, fault tolerant control systems, low Reynolds number aerodynamics (applicable to micro and organic air vehicles), active flow control (development of hingeless aerodynamic surfaces), self-repairing structures, as well as simulation and testing of vehicle design.
- **Enabling systems design**, including interoperability, net-centric operations (NCO), and sensor systems. For example, the sharing of information across the operational field of use, command-and-control, ad hoc network enabled systems, UAS control and interoperability with both ground and other aerial systems, networked sensor integration, and NCO related analysis, modeling, and simulation.
- **Enabling Automation Design**, including innovative algorithms, sensors, etc., for autonomous rotorcraft operations in cluttered and obstacle rich environments, zero-zero sensor-based auto land, collaborative flight between unmanned and other manned/unmanned rotorcraft systems, networked communications in low altitude flights, areas of unique design and testing of unmanned micro and organic air vehicles, and design and testing of "green" rotary wing UAVs powered by fuel cells or alternative fuels.
- **Simulation and testing** of vehicle design, autonomous behaviors, and HSI
- **Improved human-system integration (HSI)** and workload reduction for vehicle and control station operator interfaces
- **Regulatory solutions** addressing the safe operational integration of these vehicles into national and military airspace,

Abstract Submittal: Abstracts should be limited to no more than 1000 words, present the status of the background data to be used, summarize figures and illustrations to be used (with samples), and include a summary of important conclusions with a statement as to whether similar results have been, or may be, presented or published elsewhere. The abstract should be sufficient to enable the reviewer to determine the quality, scope, significance, and current completion status of the information that will be submitted in the final paper. Priority will be given to papers in which significant results and conclusions will be provided and in which future research and development are clearly defined.



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Abstracts must be submitted no later than September 16, 2016. Electronic submittals (pdf format) are preferred. Abstracts should be submitted to the Meeting Technical Chairman, Dr. Ram JanakiRam.

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Completed Papers: Authors will be notified of final selection by **October 3, 2016**. Format for the papers will be sent with the notification of selection. No paper will be scheduled for presentation if a written paper has not been received by **January 16, 2017**. It will be author's responsibility to obtain all necessary clearances.

Additional Information: For additional information regarding the meeting, please contact Ms. Kristin Little, Administrative Chairman, at kristin.little@boeing.com, (480) 891- 1246 (work), or 480-390-4370 (cell).