

American Institute of Aeronautics and Astronautics

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AIAA Increases Emphasis on Unmanned Systems

The AIAA (American Institute of Aeronautics and Astronautics) is the world's largest technical society dedicated to the global aerospace profession. Established in 1963 by the merger of the Institute of Aeronautical Sciences and the American Rocket Society, today AIAA represents 30,000 professional members, 7,000 student members, and 91 corporate members from 93 different countries. AIAA brings together industry, academia, and government to advance engineering and science in aviation, space, and defense.

AIAA has been the leading publisher in the aerospace profession for seven decades, chronicling the most important developments and research in air and space history and leading the way in global distribution of information relevant to aerospace issues in technology, engineering, and science. Beyond publications, the organization's Technical Activities, Public Policy, Educational Programs, Honors and Awards, and International Activities components support the Institute's worldwide membership.

In recognition of the growing trends towards the development and use of unmanned system technology, AIAA established its Unmanned Systems Program Committee (USPC) to coordinate a wide range of activities within this interest area. Originally formed to represent the emerging unmanned aircraft systems (UAS) community in 1997, the committee has expanded its scope to meet the rapidly growing area of unmanned aerospace systems, encompassing their operational applications, roles, and capabilities; the advanced technologies that enable and enhance them; the design and development requirements that define them; and the associated supporting elements necessary to ensure their effective operation. Although AIAA's natural focus is on aerospace systems and applications, the technologies are also relevant to unmanned systems in other venues. Consequently, the USPC also has interests in insights gained from maritime and terrestrial applications. The USPC charter includes these overarching goals:

- Serve as the aerospace technical community focus for unmanned systems integration and enabling technologies;
- Broker resolution of major national & international issues affecting unmanned systems' development and maturation;
- Focus science & technology on unmanned systems' needs and opportunities;
- Promote cultural acceptance by potential users & the public.

The USPC sponsors a variety of events and activities devoted to unmanned systems, and their technologies, development, fielding, and operations in air, space, and other domains, with a special emphasis placed on unmanned aircraft systems. In recent years, AIAA has featured unmanned systems, and their related technology topics, at a large number of its technical specialty conferences.

The USPC has also established a successful series of unmanned systems-focused conferences known as *Unmanned ... Unlimited*, as well as AIAA's newest technical forum – *Infotech@Aerospace*. This recently established event brings together information technologists from many disciplines and operational environments in an interactive environment, reaching

beyond the traditional conference format. The two conferences were co-located in a combined event held in Seattle in April 2009.

AIAA, through the USPC, is pursuing collaboration opportunities with other professional organizations to expand the technical interchange opportunities for the unmanned systems and technology community and to promote the «science of integration» associated with use of these often complex systems for a growing variety of defense, homeland security, civil, and commercial applications.

The USPC has focused on providing opportunities for dialog and interchange among the disparate technical disciplines required to develop and evolve these systems. It has been active in brokering and resolving key issues that impact the industry and user communities, including, for example, routine access of unmanned air systems to the civil airspace and full realization of the potential of unmanned systems beyond today's defense applications. The USPC has also sought to serve as a «lightning rod» for bringing more engineers and technologists from the new age, non-traditional aerospace disciplines into the AIAA professional community.

As unmanned system technology and platforms continue to expand in number and capabilities, international collaboration is essential for developing rules for the use of the platforms, along with creating common safety protocols to ensure that unmanned systems do not jeopardize manned systems operating in ever crowded skies. AIAA, through its existing global structure of membership and professional events, could serve as a valuable conduit for the necessary collaboration on these important issues, as well as being a forum to spur continued international R&D efforts in the field of unmanned systems. Greater amounts of collaboration between nations on issues presented by the use of unmanned system technology increases the likelihood of the creation of successful operational platforms which meet the diverse needs of end-users, as well as ensuring that the systems are safe and pose no risks to those using them, or those using the airspace around them.

As aerospace systems continue their evolution in the coming years and provide ever-increasing capabilities through the infusion of advanced technologies, AIAA's technical activities and members will be on the leading edge of this and other changes throughout our aviation and space community.

