

American Institute of Aeronautics and Astronautics

By Dr Michael S. Francis

The World's Forum for Aerospace Leadership ... Today's AIAA is the shaping, dynamic force in aerospace - the profession's forum for innovation, excellence and global leadership. The Institute is undergoing a transformation that mirrors the profession it represents. In the 21st century, aerospace systems are evolving to provide ever-increasing capabilities through the infusion of advanced technologies. One of the areas most representative of this trend is that of *unmanned systems*. AIAA's groups and members continue to be on the leading edge of this change.

The AIAA's Unmanned Systems Program Committee (USPC) was formed explicitly to coordinate a range of activities within this emerging interest area. Originally formed to represent the emerging unmanned aerial vehicle (UAV) community in 1997, the committee has since grown in scope to meet the rapidly expanding area of unmanned systems (aerospace, land, and maritime); their evolving 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. The USPC charter is comprised of the following overarching goals:

- Serve as the Aerospace Technical Community Focus for Unmanned Systems Integration and Enabling Technologies;
- Broker Resolution of National 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 has sponsored a variety of workshops and conferences devoted to unmanned systems, encompassing their technologies, development, fielding, and operation, and including air, space, and even terrestrial systems. Special emphasis has been given unmanned aircraft systems (UAS). Their newfound interest and explosive growth supports a broad range of existing and evolving aerospace missions and applications.

The USPC has been responsible for the Institute's successful series of unmanned systems-focused conferences known as *Unmanned ... Unlimited*, and it was the catalyst for launching AIAA's newest technical forum - *Infotech @Aerospace*. This newly established event brings together information technologists in many disciplines, vehicle designers, system developers, and operational users in an interactive environment, reaching beyond the traditional conference-workshop-exhibit format to create a unique opportunity for interdisciplinary dialog and integration.

The USPC has focused on providing opportunities for dialog and interchange among the many disparate technical disciplines required to develop and evolve these systems. It has been active in the brokering and resolution of key

issues impacting 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, nontraditional aerospace disciplines into the AIAA professional community.

Dr. Michael Francis (General Atomics, Photonics and Electro-optic Systems Division), currently serves as the Program director for the USPC. The group maintains an active roster of 34 members representing all segments of the unmanned systems community, including international representation. The committee conducts meetings on a quarterly basis.

In April 2009, the Unmanned Systems Program Committee will sponsor its flagship conference, *Unmanned ... Unlimited*, for the 4th time. That occasion will also see the AIAA's 3rd *Infotech @Aerospace* conference co-located to create a unique opportunity for the aerospace technical community. The combined event will take place at the Sheraton Seattle Hotel in Seattle, Washington from 6–9 April 2009. To exploit this synergy, foster dialog on common technologies, and advance the science of aerospace systems integration, this multidimensional forum will feature joint sessions, workshops, mini-workshops, panel discussions, exhibits, and other special activities ... all organized to provide participants with the most comprehensive opportunity for networking and technical exchange possible. The event is yet another example of how the AIAA serves as the aerospace technical community's source for «one-stop shopping» in the pursuit of technical opportunities and the resolution of issues affecting the contemporary aerospace landscape.

The AIAA was established in 1963 through the merger of the Institute of Aeronautical Sciences and the American Rocket Society. Each of these organizations had a long, eventful history, dating back to 1930 and 1932, respectively. The merger created the world's largest technical society devoted to the global aerospace profession. AIAA has been the leading publisher in aerospace for over seven decades, and the premier provider worldwide of information on aerospace technology, engineering, and science. AIAA titles document the most important developments and research in air and space history.

AIAA brings together industry, academia, and government to advance engineering and science in aviation, space, and defense. It now boasts 31,000 professional members, 5000 student members and 80 corporate members, with representation in some 500 universities, 93 countries, and a wide range of industry and government organizations. AIAA's members are engineers, scientists, researchers, executives, and educators-leaders in the aerospace field, each bringing a wealth of technical knowledge and expertise to the ranks of AIAA. With this significant and diverse membership, the technical voice of the aerospace

community is well represented.

The AIAA organization comprises both centralized and geographically oriented elements. AIAA's Technical Activities, Publications, Public Policy, Educational Programs, Member Services, Honors and Awards, and International Activities components are structured to support the Institute's worldwide membership. Its 64 Local Sections, distributed throughout the United States and several overseas locations, are organized into seven AIAA Regions. Each Section provides technical programs and activities tailored to local aerospace professionals. Section activities keep members informed about local news, developments in the profession, the industry, and emerging research. Sections enable members to join forces as an active community of local professionals all committed to the development of aerospace technology.

The AIAA membership is led by an elected President, currently Mr. George Muellner, and is supported by the Board of Directors, all of whom are also elected officials. There are 71 Technical Committees (TC), each specializing in a specific technology area within the aerospace domain. Collectively, the TCs provide the intellectual knowledge and core competency of the Institute, canvassing every scientific and engineering discipline. AIAA TC members are the organizing nucleus for the 40 technical conferences, symposiums, and workshops held each year.

AIAA recently introduced a new organizational element - the Program Committee (PC) - of which there are now nine. The PCs, including the Unmanned Systems PC, are focused on emerging new areas within aerospace that are

both significant in impact to the profession and inherently multidisciplinary in nature. The PCs work with their «stakeholder» Technical Committees to facilitate interdisciplinary communication and, where possible, integration that contributes to progress in the program area. Supporting the individual and corporate members is a professional staff of approximately 100 led by its Executive Director, currently Robert Dickman. AIAA's headquarters is located in Reston, Virginia, near Washington, D.C., with a satellite office in El Segundo, California. For more information, visit www.aiaa.org.



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