www.dasconline.org

Hyatt Regency Sacramento
Sacramento, CA
September 25-29, 2016

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ABSTRACT DETAILS

Authors are invited to submit abstracts of no more than 750 words before 1 March 2016, and using www.dasconline.org. Student papers and ideas for invited sessions are welcome. Please avoid the use of acronyms or abbreviations in the title of the paper.

With each paper submission, please include a short biographical sketch of the author(s), mailing address, email, telephone, and fax numbers. Final manuscripts of selected papers are due 8 August 2016.

35th DIGITAL AVIONICS SYSTEMS CONFERENCE

CALL FOR PARTICIPATION
Technical Papers, Tutorials & Exhibits

Enabling Avionics for UAS/UTM (UAS Traffic Management)


Photo by photosbyflick

We welcome everyone to join us for the 35th DASC in Sacramento, CA!

CONFERENCE THEME: The conference theme for the 35th DASC is the design of air transportation systems that accommodate aircraft and unmanned aerospace systems (UAS). The presentations, posters, papers, and discussions that will comprise this conference build upon the theme of Air Traffic Management (ATM). Participants will be challenged to show how their work helps to develop, promote, or enable UAS Traffic Management (UTM) including small-UAS in class G airspace. Of particular interest will be perspectives that describe the use of policy, avionics, and optimization for safe and reliable airspace coordination between aircraft and UAS. Talks of interest may focus on methods of ground, air, and space coordination between commercial and recreational UAS for various societal applications. The future of UAS presents a broad range of applications requiring proactive consideration of avioinics design, navigation strategies, and airspace use.

TECHNICAL CHALLENGES REMAIN:

- Decision-support tools to improve system state awareness and predict change
- Avionics designs to enable appropriate engagement with automated systems
- Integrated information management systems (airborne and ground-based)
- Systems that can monitor the hazard space with adequate time-to-avoid
- UTM strategies affording the safe introduction of UAS in the NAS
- CNS developments to support more efficient aircraft-ATM coordination
- Air transportation services to under-served markets
- Role for humans and RPVs in an increasingly automated ATC system
- Safety management systems including UTM performance metrics
- Airport operations affordability, reliability, and sustainability
- Environmental impact assessment and management
- Reliable communications, navigation, and surveillance technologies

OTHER TOPICS: DASC will continue to offer opportunities to publish and present on a wide range of topics of interest to the avionics technology community (see next page).

PAPERS, PANELS, EDUCATION AND WORKSHOPS: The Technical and Professional Education Programs will incorporate hundreds of papers and dozens of tutorials from international researchers, innovators, engineers, users, and designers. There will be panel discussions and keynote presentations by engineering, management and operational leaders that are shaping international developments. Attendees can participate in active conversations with colleagues, researchers, and practitioners who are the experts and leaders in the field. We welcome you to join us and participate in the 35th DASC as we engage in the important issues of the aviation electronics (i.e., "avionics") industry!

35th DASC

IEEE AIAA The World's Forum for Aerospace Leadership AESS DATC AIAA Digital Avionics Technical Committee

TECHNICAL PROGRAM

Our theme is fundamental to the conference and will be used to frame our discussion on many topics during the technical program.

Topics of Interest Include, But Are Not Limited To:

Open Architectures: Open interface standards, viability of open and closed architectures, operating systems, ARINC-653, alternate API solutions, communication standards, use of Commercial-Off-The-Shelf (COTS) technologies; modularity vs. scalability.

IMA Design, Integration and Optimization: Allocation process and tools for Integrated Modular Avionics (IMA) system resources and performance, integration tools, verification & certification, configuration strategies, scalability, assessing system demand and resource availability, mitigation of common mode failures, system maintenance, and optimization techniques.

Avionics Communications Infrastructure: Self-forming/healing networks, wireless networks, quality of service (QoS), data buses, intra-processor and inter-process communication, data partitioning, protocols, multi-protocol gateways, message routing, spectrum, and passenger communication mechanisms.

Integrated Avionics for Information Security and/or Integrity: Multiple Independent Levels of Security/Safety (MILS), physical & virtual system firewalls, data security for shared data buses, operating system security, information monitoring and quality assurance, information management.

Communications/Navigation/Surveillance (CNS) Systems: Communications systems, data links, satellite-based navigation and landing systems, inertial navigation, and surveillance systems for traffic and collision avoidance.

Human Factors: Issues on human interaction with automation such as mode awareness, flight deck displays and decision support tools, methods for avoiding the presentation of hazardously misleading information, and information abstraction and conveyance concepts that enable appropriate levels of workload and crew coordination.

Flight Deck Systems and Interfaces: Advanced systems, interfaces, and enabling avionics technologies that can combine multiple sources of disparate data to provide coherent and effective displays that also reduce the propensity for pilot error, confusion, or misinterpretation.

Systems Engineering, Design Methods, and Tools: Optimization of the hardware and software systems development process including solutions and lessons-learned. Predictive capabilities with quantified confidence levels for uncovering latent design flaws or undesired performance characteristics.

Software Engineering: Development of large-scale systems with multiple design assurance levels, including novel approaches, processes and formal methods for design, testing, V&V and certification.

Flight Critical Systems: Methods, techniques, and tools for the definition, design, verification, integration, validation, and certification of complex and highly integrated flight critical systems.

UAS/UTM: Issues, challenges, and opportunities infolding from UAS developments. Of interest are designs and methods for testing and analyzing UAS into the airspace.

DASC always considers ideas for sessions and papers that feature topics not covered by the above topics. If you are interested in leading a session or track, please contact our Technical Program Chairs. For more information on the Technical Program, contact:

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Professional Education

DASC will offer two full days of Professional Education sessions span-ning many engineering disciplines. These tutorials will be presented by educators and practicing professionals who are recognized experts in their field. Topics may include for example: Basic and Advanced Avionics Systems; System Engineering; Integrated Modular Avionics; Space Systems; Surveillance and Collision Avoidance; Program Management; Synthetic Vision; Communications and Networks; Navigation Systems; Software Development, Test, and Certification (DO-178); Environmental Qualification (DO-160); System Safety; and many more. All professional education sessions will offer Continuing Education Units (CEUs) through IEEE. For more information, contact:

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Sponsors and Exhibits

This year's conference will feature exhibits and product demonstrations by representatives of key avionics-related industries and institutions. To have your organization represented in our exhibit hall, please contact our Sponsors and Exhibits Chair at exhibits.chair@dasconline.org.