## Aircraft Design and Integration

**Aircraft Design (AD)**  
POC: Hernando Jimenez, Ph.D.  
*hernando.jimenez@asdl.gatech.edu*  

Technical Papers are sought on all aspects of aircraft design. Topics include tools, methodologies, processes, and techniques used in the design of aircraft, as well as aircraft performance and design case studies. Papers examining novel or unconventional configurations, subsystems, and architectures, such as hybrid wing airframes or electric architectures, are also sought, as well as any topic of interest relative to V/STOL, including Design, Analysis and Test. Design studies focusing or emphasizing core aeronautical sciences (aerodynamics, structures, stability and control, propulsion and integration) are sought, as are those addressing other design considerations such as environmental issues, energy optimization, reduction of manufacturing/operating/life-cycle costs, safety, etc.

- Aircraft design methods and tools
- Innovative or unconventional aircraft configurations
- Aircraft subsystems, integration, and architectures (e.g. hybrid/electric aircraft)
- Aircraft performance studies and specialized design studies (e.g. environmental impact reduction)
- Aeronautic discipline considerations in aircraft design (aerodynamics, structures, stability and control, propulsion, affordability, operations, manufacturing, safety, etc.)
- Unmanned aircraft design and integration

## General Aviation (GA)

**General Aviation (GA)**  
POC: Nicholas K. Borer, Ph.D.  
*nicholas.k.borer@nasa.gov*  

Technical Papers are sought regarding aircraft design, technology integration, airspace design/usage, safety, and other challenges associated with general aviation applications. This includes topics such as technologies and system concepts for personal on-demand mobility, approaches to lower operator or controller skill level with respect to typical or future general aviation operations, high-speed point-to-point transportation solutions, near- and far-term general aviation’s missions and applications, quantification/identification of salient safety issues and remedies for light aircraft, and environmentally-conscious concepts and operations.

- Transformational general aviation mission, airspace, and vehicle concepts
- Environmentally-conscious concepts and technologies for general aviation (i.e. low-noise, low-emissions, high-throughput, etc.)
- Design for on-demand supersonic flight with low perceived sonic boom
- Human-system teaming and/or fully autonomous operation for reduced operator/controller requirements
- Quantification/improvement of general aviation safety through analysis or new technologies
- Integration of GA and UAS operations
- Investigate general aviation’s possible benefits from and adoption of emerging UAS technologies

## Design Engineering (DE)

**Design Engineering (DE)**  
POC: Sidney Rowe  
*sidney.rowe@nasa.gov*  

Papers are solicited on design engineering, design process and design education in the aerospace industry, as well as industries employing similar design techniques. Design-oriented papers should focus on innovative, novel, or otherwise distinctive designs or concepts resulting in or leading toward products that effectively satisfy requirements or demonstrate design efficiency improvements. Design process-oriented papers should focus on process definition, analysis, architecture, and metrics, as applied to aerospace hardware products from the exploratory design phase through the detailed design phase. Papers on advances in model based design processes and related activities are especially encouraged. Education-oriented papers are solicited that emphasize design in curriculum development, class content, student design/build activities, and student access to space. Computer Aided Enterprise Systems papers are solicited that emphasize the emerging technology of crowdsourcing using cloud computing to determine how it might be customized and scaled up for use in the global commercial aerospace industry.

- Innovative & creative designs in aerospace and other areas
- Improved Designs Using MDAO
- Emerging Processes and Tools
- Model Based Design, Knowledge Based Engineering
- Design Education - STEM in K-12, University Curriculums, Projects and Activities
- Computer Aided Enterprise Systems

## Lighter Than Air Systems (LTA)

**Lighter Than Air Systems (LTA)**  
POC: Prof. Rajkumar S. Pant  
*rpant@iitb.ac.in*  

Lighter-Than-Air (LTA) systems (balloons, airships, aerostats and hybrids) are aerial systems in which the principal mechanism to overcome gravity is buoyancy. They are gaining global attention due to concerns about climate change, increasing cost and decreasing availability of fossil fuels, and the need for cost-effective persistent surveillance. They offer the promise of an aerial platform with green, low-vibration, stable, long-endurance system, for a variety of applications.

- Design and Development of LTA systems
- LTA Disciplinary Analyses
- LTA Operations and Support Systems
- Materials for LTA systems
- Stratospheric Airships
- Tethered Aerostats
- Modeling and Simulation of LTA systems
- Hybrid LTA systems
- LTA transportation systems
- Remotely Controlled LTA systems