NASA SBIR 2015 Phase I Solicitation

A3.01   Advanced Air Traffic Management Systems Concepts

Lead Center: ARC

Participating Center(s): LaRC

This subtopic addresses user needs and performance capabilities, trajectory-based operations, and the optimal assignment of humans and automation to air transportation system functions, gate-to-gate concepts and technologies to increase capacity and throughput of the National Airspace System (NAS), and achieving high efficiency in using aircraft, airports, en route and terminal airspace resources, while accommodating an increasing variety of missions and vehicle types, including full integration of Unmanned Aerial Systems (UAS) operations. Examples of concepts or technologies that are sought include:Â

- Develop verification and validation methods and capabilities to enable safe, end-to-end NextGen Trajectory-Based Operations (TBO) functionality and seamless UAS operations, as well as other future aviation system concepts and architectures.
- The development of performance requirements, functional allocation definitions, and other critical data for integrated, end-to-end NextGen TBO functionality, and seamless UAS operations, as well as other future aviation system concepts and architectures.
- Development of prognostic safety risk management solutions and concepts for emergent risks.
- Development of TBO concepts and enabling technology solutions that leverage revolutionary capabilities and that enable capacity, throughput, and efficiency gains within the various phases of gate-to-gate operations.
- Networked/cloud-based systems to increase system predictability and reduce total cost of National Airspace System operations.

It is envisioned that the outcome of these concepts and technologies will provide greater system-wide safety, predictability, and reliability through full NextGen (2025-2035 time frame) functionality.