



NASA SBIR 2019 Phase I Solicitation

A3.01 Advanced Air Traffic Management System Concepts

Lead Center: ARC

Participating Center(s): LaRC

Technology Area: TA15 Aeronautics

This subtopic addresses contributions towards advanced Air Traffic Management (ATM) systems and concepts with potential application in the near- to mid-term National Airspace System (2020-2035), focused on conventional, and mostly commercial, operations. The goals for this system are addressing established ATM challenges of improving efficiency, capacity, and throughput while minimizing negative environmental impact and maintaining or improving safety. The subtopic also seeks to accelerate the implementation of NASA technologies in the current and future National Airspace System (NAS), generally focused on conventional commercial air transportation operations and FAA air traffic management.

NASA's work in this area: Some NASA technologies that are relevant to this subtopic include, but are not limited to, Integrated Arrival, Departure, and Surface (IADS) capabilities, and routing and rerouting around weather from ground-based and cockpit-based systems.

The subtopic is seeking proposals that can apply novel and innovative technologies, concepts, models, algorithms, architectures, and tools towards bridging the gap from NASA's R&D to operational implementation, and should address such nearer-mid-term ATM challenges such as:

- Safe, end-to-end, Trajectory-Based Operations (TBO)
- Enabling and integrating existing independent systems and domains, and increasingly diverse and unconventional operations (gradually enabling the future integration of large Unmanned Vehicles, unconventional commercial airline business models, space traffic management, advanced subsonic and supersonic vehicles)
- Applying elements of the service-based architecture concept towards near-future/NextGen and beyond, NAS applications (the approach originally was pioneered for application in the UAS traffic management (UTM) domain).

Expected TRL for this project is 1 to 4.

Relevance to NASA

This technology is applicable to the Airspace Operations and Safety Program (AOSP).

References:

<https://www.nasa.gov/aeroresearch/programs/aosp>