

NASA SBIR/STTR Technologies

Proposal: A Simulation Testbed for Dynamic Air Corridors within the Next Generation Air Transportation System

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Identification and Significance of Innovation

To develop a simulation testbed for identifying dynamic air corridors that can increase aircraft throughput in and around the terminal airspace. Dynamic air corridors can potentially increase throughput while addressing various bottlenecks currently afflicting today's national airspace:

- (a) Controller workload
- (b) Wake vortex issues
- (c) Local hazard avoidance
- (d) Minimum aircraft separation



Dynamic air corridors provide multiple routes to and from active runways

Technical Objectives and Work Plan

The technical objectives that will be addressed are:

- (a) The development of a software testbed which can dynamically identify air corridors for changing airspace conditions
- (b) The merging and spacing of aircraft within these corridors

To achieve these goals, the following tasks are planned:

- (a) Identify a set of feasible air corridors within an airspace
- (b) Fly simulated aircraft through air corridors
- (c) Implement the ATC scheduling algorithm for a fixed set of runways and corridors
- (d) Identify the combinations of corridors that maximize throughput

NASA and Non-NASA Applications

Extending NASA's Airspace Concept Evaluation System (ACES) to accommodate dynamic air corridors. This can be used by the modeling and simulation community within NASA and FAA that is focusing on the Joint Planning and Development Office's Next Generation Air Transportation System (NextGen). New procedures and corridors within any terminal airspace can be identified and tested.

Expected TRL Range at the end of Contract (1-9): 1

NON-PROPRIETARY DATA