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NASA Awards Saab a Cooperative Agreement to Develop New Methods for Optimizing Flight Efficiency in Multiple Phases of Operations

Defense and security company Saab has announced that the National Aeronautics and Space Administration (NASA) Aeronautics Research Institute (NARI) has awarded the company a cooperative agreement to prototype and test a new tool for the optimization of air traffic across multiple phases of operations, including the airport surface and terminal airspace, with more efficient 4D trajectory solutions. This research project will enable the aviation industry to more precisely develop future solutions for the Next Generation Air Transportation System (NextGen).

Saab, along with its partner NextGen Aerosciences (NGA), will apply two separate techniques (NGA's Continuous Re-planning Engine and Probabilistic Graphical Models) to address optimal 4D (three spatial dimensions plus time) flight across multiple operational phases of flight. In addition, the research will examine how rapidly changing situations will impact operations and how to more effectively address uncertainty in future operations.

The study will focus on managing traffic in the highly congested and complex New York airspace and on the surface at four busy airports in the New York City (NYC) area that form a metroplex, (a group of proximal airports whose arrival and departure operations are highly interdependent). Currently, controllers at the airports and in the New York TRACON implement a wide variety of traffic management strategies to manage the airspace and surface traffic interactions. These strategies, which include miles-in-trail restrictions, surface holds for TRACON approval, and indirect routings, contribute to delays and additional fuel consumption. The proposed research aims to alleviate such adverse effects of the metroplex interactions on air traffic.

“In many cases, researchers are developing and testing complex efficiency solutions that focus on one phase of flight, such as the surface, without being able to accurately see the impact on multiple phases in real time,” said Ken Kaminski, general manager of Saab ATM. “We are taking a new approach by integrating two different techniques to determine their ability to paint a more





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accurate, holistic picture of the effect of new operational procedures on the entire flight path.”

Saab is a thought leader and developer of solutions and systems that enable the aviation community to operate more safely and efficiently both today and into the future. This includes creating and implementing decision support tools for enhancing airport surface safety and improving National Airspace System efficiency through departure metering and en-route traffic flow management.

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