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FAA Office of NextGen (ANG)

REDAC / NAS Ops

Review of FY2023 – 2026 Proposed Portfolio

Name of Program: Wake RECAT

BLI Number: 1A04A0

Presenter Name: Jillian Cheng

Date: 22 August 2023

Wake RECAT Overview

What are the benefits to the NAS User:

RECAT's development of enhanced means of separating aircraft from the wakes of other aircraft will enable fewer flight delays/cancellations, while ensuring the safety of the aircraft, crew, passengers & cargo by:

- Increasing flight capacity of the nation's airports when weather or other conditions require ATC's use of Instrument Flight Rule (IFR) operations

What determines program success:

- No increase in the reported wake encounters during IFR landings in the NAS
- Airport Arrival Rates (AARs) set during IFR operations closer to VFR operations AARs

RECAT
Program Support

People:

- Program Manager: Jillian Cheng
- Subject Matter Experts: wake analysis experts; ATC systems and operations experts; GA, regional and air carrier pilot experts

Laboratories/R&D Centers:

- MIT/Lincoln Laboratory
- Volpe Center
- WJH Technical Center
- National Institute of Aerospace

Current RECAT FY23 Accomplishments

Provided wake separation recommendations for ATC's use with new aircraft types

Progressed in developing the Dynamic Wake – Terminal Area (DWTA) Solution for adding flight capacity to IFR flight capacity constrained airports:

- Further refined the reductions in ATC wake risk mitigation separations that can be safely applied when winds at the airport are at a certain magnitude (both the transport and decay of aircraft wake turbulence are impacted by wind conditions)
- Assessed the results of the September 2022 WJH Technical Center STARS SIMFAST simulation of the DWTA Solution's use in an ATC operational terminal area environment – The demonstration showed the feasibility of dynamic wind-based wake separations integrated into a STARS ATPA decision support tool
- Continued analysis of how the DWTA Solution can be applied to a broad range of IFR flight capacity constrained airports
- Development underway of the DWTA technology transfer of design requirements, prototype DWTA Wind Forecast Algorithm design and adaptation process, NAS User benefit analysis and the DWTA safety assessment

Progressed in establishing a NAS wide source of real time aircraft-based weather observation data

- Initiated the analysis of the shortfall in weather data required for Dynamic Wake Hazard Mitigating Division Support Tools (DSTs)
- Completed support in the incorporation of ADS-B Wx AIREP and PIREP data requirements in TSOs for 1090 MHZ and UAT Version 3 ADS-B systems
- Continued coordination with other future users of the ADS-B Wx real-time aircraft observed weather data that comes with the Version 3 ADS-B (required design in CY 24)

Anticipated RECAT R&D in FY24

Planned Development Activities with Remainder of FY23 funding

- Complete the DWTA technology transfer of design requirements, prototype DWTA Wind Forecast Algorithm design and adaptation process, NAS User benefit analysis and the DWTA safety assessment
- Complete the analysis of the shortfall in weather data required for Dynamic Wake Hazard Mitigating ATC Decision Support Tools (DSTs)

Expected Development Products

- (Described above)

Wake RECAT

R&D Requirements

- Develop safe wake risk mitigation solutions for NAS Users increased operational efficiency – Fulfilling current needs of ATC and providing solutions to fulfill the Dynamic Wake Turbulence Separation NSIP Operational Improvement OI-102152.

Outputs/Outcomes

- None

FY 2026 Planned R&D

- None (FAA F&E budget planning precludes funding this project FY24 and beyond

Out Year Funding Requirements

	FY23 (Enacted)	FY24 (President's Budget)	FY25 (CIP)	FY26 (CIP)	FY27 (CIP)	FY28 (CIP)
F&E	$ 2.5M	$0	$ 0	$ 0	$ 0	$ 0