

## Analytical Approach for Quantifying Noise from Advanced Operational Procedures

**Massachusetts Institute of Technology**

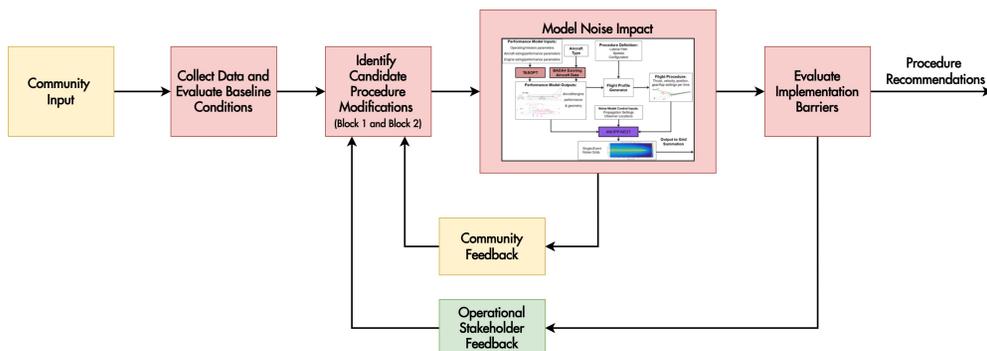
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Cost Share Partner: Massachusetts Port Authority

### Research Approach:

This project involves the development of a noise modeling framework to be used to evaluate candidate advanced operational procedures for community noise reduction, with additional focus on identifying implementation and operational barriers to advanced noise-reducing flight procedures.



### Objective:

The primary objectives of this work are: 1) to develop and evaluate concepts of advanced noise-reducing flight procedures using an analytical framework, and 2) to develop tools and metrics for effectively communicating the impact of new procedures to communities and operational stakeholders. Through previous work, several barriers to the implementation and operation of advanced flight procedures have been identified. Documenting and studying these constraints is a current focus of this project.

### Project Benefits:

The current phase of the project is focused on approaches to mitigate system constraints that were found to limit the implementation and operation of noise-reducing flight procedures identified in earlier phases of the project. Benefits of this phase will include the identification of potential technical approaches to overcome barriers that limit the ability to implement more effective low-noise flight procedures.

### Major Accomplishments (to date):

- Developed tools and metrics to communicate the impact of proposed flight procedure changes to communities and operational stakeholders.
- Identified two sets of low noise flight procedures (Block 1 and Block 2) at BOS (Boston Logan), which were supported by the Massport Community Advisory Committee. Two Block 1 procedures have been published and are in operation. Additional procedures based on the Block 2 recommendations are in development.
- Identified a set of key flight procedure design constraints applicable to the design and operation of flight procedures in the NAS.

### Future Work / Schedule:

- Document and disseminate lessons learned from Boston project to relevant stakeholder groups.
- Analyze identified flight procedure development constraints and identify ATM strategies for relaxing key constraints to enable advanced low-noise flight procedures.