ASCENT Project 62

Noise Model Validation for AEDT

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Cost Share Partner: Delta Air Lines

Objective:

- Assess the accuracy of AEDT in estimating noise compared to real-world measurements in both the vicinity of airports as well as further afield under various modeling assumptions
- Study incorporation of high-fidelity weather in AEDT noise modeling for real-world flights

Project Benefits:

- One of the main benefits of this project is to suggest possible improvements that could be made in future releases that enhance the predictive capability with respect to real world measurement data

Research Approach:

- Using real-world data (flight data, noise monitoring data, high-fidelity weather) identify the various modeling options available in AEDT
- Develop capabilities to automatically model real-world flights in AEDT and compare outputs against noise measurements from corresponding events
- Identify discrepancies, quantify differences, and document possible improvements for future efforts
- Collaborate with PSU on high-fidelity weather modeling in AEDT

Major Accomplishments (to date):

- Completed bulk modeling of real-world flight operations using automation scripts developed earlier at any desired settings in AEDT; automated post-processing
- Explored different analyses and visualization capabilities to be incorporated into a dashboard

Future Work / Schedule:

- Explore statistical perspectives based on weather/weight/monitor locations/aircraft configuration etc.
- Interactive analyses using a dashboard

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