



Project 64

Alternative Design Configurations to Meet Future Demand

Georgia Tech

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Cost Share Partner(s): Georgia Tech

Objective:

Assist FAA in projection of long-term CO₂ emissions forecasts by assessing the aircraft technology and configurations possible in the 2050 time frame and utilize results to inform FAA of possible future scenarios to support for engagement at ICAO

Project Benefits:

This project will provide the FAA with an understanding of the impacts of future trends in aircraft technology on fuel burn and CO₂ emissions from international aviation
The work will support FAA engagement and decision-making at the International Civil Aviation Organization (ICAO), in particular relating to the effort to assess the feasibility of a Long-Term Aspirational Goal for CO₂ emissions from international aviation

Research Approach:

Development of an overall analysis methodology to support the CO₂ Long Term Aspirational Goal (LTAG) effort, including the role of aircraft/technology inputs in this analysis workflow

Execution and assessment of 2050 projections of all technology reference aircraft, all five classes of vehicles (turboprop, business jet, regional jet, narrow body, wide body)

Execution and assessment of 2050 projection of advanced configuration aircraft

Major Accomplishments (to date):

- Conducted the full analysis across all aircraft types for conventional and alternative configuration aircraft through 2050
- Coordinated with Modeling and Databases Group (MDG) and Cost Estimation Ad Hoc Group since early summer
- Submitted Technology Subgroup inputs to MDG
- Wrote the Tech SG final report for the broader LTAG

Future Work / Schedule:

- Address shortcomings of advanced configuration modeling in MDG
- Assess the impact of design and technology changes to a single aisle class of vehicles