



# WebSAT

With support from the Federal Aviation Administration (FAA), Clemson University's Department of Industrial Engineering and industry partner FedEx will focus on developing a Web-based Surveillance and Auditing Tool (WebSAT) to minimize maintenance errors prior to aircraft dispatch by airlines. The research will be pursued over three years using a task analytic and user-centered software lifecycle development methodology.

## Background

- Recognizing the importance of the human in the complex system of aircraft maintenance, the FAA has pursued human factors research, placing continuing emphasis on developing interventions and tools to make the inspection/maintenance system more reliable and more error-tolerant.
- One area for the application of such an approach is in the arena of dispatching aircraft following service.
- Different factors, such as human error and technical data inconsistency, result in maintenance errors.
- To identify and monitor these factors, Clemson University's Industrial Engineering department and FedEx, under the supervision of the FAA, will focus on developing WebSAT to minimize maintenance errors prior to aircraft dispatch by airlines.

## Objectives

- The general objective of this research will be to develop and implement a web-based tool to perform surveillance and auditing activities that ensure a consistent level of supervision is maintained over aircraft maintenance operations.
- The research will identify an exhaustive list of impact variables that affect aviation safety and transcend various aircraft maintenance organizations.
- The system will promote a standardized format for data collection, reduction and analysis to proactively identify factors contributing to improper maintenance.

## Benefits

- **Identification:** This research will identify factors that contribute to maintenance errors and minimize the effects of these factors to reduce errors and improve the reliability of aircraft inspection operations.
- **Standardization:** WebSAT will provide the capability to standardize the data collection process supporting the analysis of maintenance errors prior to aircraft dispatch. This will facilitate analysis across airlines.
- **Training:** WebSAT can be combined with existing training programs to facilitate consistency in inspection training, to provide adaptive training and to support record keeping and performance monitoring.
- **FAA Requirements:** This research supports the FAA's mandate to reduce aviation accidents by conducting guidelines-based human factors research and identifying and implementing intervention strategies.
- **Intellectual Merit:** This effort will bring together a research university and an industrial partner. It will tap the research expertise of Clemson University's Department of Industrial Engineering and the aviation industry knowledge base of FedEx.

## Research Contacts

Clemson University

Anand Gramopadhye

[agramop@ces.clemson.edu](mailto:agramop@ces.clemson.edu)

Joel Greenstein

[joel.greenstein@ces.clemson.edu](mailto:joel.greenstein@ces.clemson.edu)

FedEx

Rocky Ruggieri

[ruggieri@fedex.com](mailto:ruggieri@fedex.com)

## FAA Contacts

Aviation Flight Standards Service

Research Requirements Point of Contact

Aviation Maintenance Human Factors

Program Manager

Jean Watson

[jean.watson@faa.gov](mailto:jean.watson@faa.gov)

William Krebs

[william.krebs@faa.gov](mailto:william.krebs@faa.gov)