

## WebSAT Quarterly Report (July 9th, 2004)

**Title:** Development of an Industry Standardized Auditing and Surveillance Tool:  
Minimizing Maintenance Errors

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**Institution:** Clemson University

**Category:** Aviation Maintenance

**Project Status Category:** Green (G) – Indications are that the project is on track and will be completed as planned.

### 1.) Significant Milestones achieved as of July 8th, 2004:

- Conducted interview sessions with key members in the Quality Assurance and Audit departments at the FedEx facility in Memphis, TN.
- Completed a trip report, documenting the information gathered from the interview sessions at Memphis, TN. (*See attached pdf file*)
- Conducted observation session at Mobile, AL.
- Completed a trip report, documenting the information gathered from the observation session at Mobile, AL. (*See attached pdf file*)
- Identified the modules that will be incorporated in WebSAT.
- Developed the goals and functions to be included in each module.
- Developed objectives for each module and sub – objectives for modules.
- Used task analysis to identify needs to support surveillance and inspection performance.
- Designed a framework of the WebSAT tool which presents the WebSAT model.
- Presented a paper at the IERC conference at Houston, TX, in May 2004. (*See attached pdf file*).
- Completed the third Quarterly report. (July 9th, 2004)

### 2.) Work in Progress from July 8<sup>th</sup> – September, 2004 (The dates in parenthesis indicate the deliverable date):

- Define the process measures to be considered for WebSAT, in association with key members in the Quality Assurance and Audit departments, at the FedEx facility at Memphis, TN.
- Arrange for a conference call with Quality Assurance to gain clarity on certain processes.
- Develop the survey tool for the first round of survey with FedEx on process measures.
- Conduct a web based process measures validation survey with FedEx to ascertain the accuracy of the selected process measures. ( July 30<sup>th</sup>, 2004)
- Schedule a trip to a participating airline company to validate the selected impact variables. (August 14<sup>th</sup>, 2004)
- Incorporate the feedback from FedEx and conduct a similar web based process measures validation survey with other airlines to validate WebSAT's global application of the selected process measures. ( August 9<sup>th</sup>, 2004)



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- Complete a survey analysis report documenting the results of the web based impact variables validation survey with other airlines. The report findings will be included in the HFES presentation. (September 1<sup>st</sup>, 2004)
- Schedule a trip to Memphis, TN. (September 13<sup>th</sup>, 2004)
- Present paper/poster in the proceedings of Human Factors and Ergonomics Society Conference. (September 20<sup>th</sup> - 24<sup>th</sup>, 2004)
- Schedule a trip to the FedEx Greensboro maintenance base. (September 30<sup>th</sup>, 2004)
- Complete the next Quarterly report. (October 7<sup>th</sup>, 2004)
- Started preliminary work on designing the iteration prototype for each module using the conceptual design methodology. (October 31<sup>st</sup>, 2004)

### **3) Future delays in meeting milestones:**

- Delays -- None anticipated.

### **4) Dissemination to-date:**

- Dharwada, P., Iyengar, N., Kapoor, K., Gramopadhye, A.K., and Greenstein, J.S., Web-Based Surveillance and Auditing Tool (WebSAT): A Proactive System to Capture Maintenance Errors, Proceedings of Safety Across High-Consequence Industries, St. Louis, Missouri, 2004.
- Iyengar, N., Kapoor, K., Greenstein, J.S., and Gramopadhye, A.K., Selection of Data Gathering Methodologies for the Aviation Maintenance Industry, Proceedings of the Industrial Engineering Research Conference, Houston, 2004.
- Kapoor, K., Dharwada, P., Iyengar, N., Greenstein, J.S., and Gramopadhye, A.K., Standardized Auditing and Surveillance of the Aircraft Maintenance Operations, Proceedings of the Industrial Engineering Research Conference, Houston, 2004.
- Kapoor, K., Dharwada, P., Iyengar, N., Greenstein, J.S., and Gramopadhye, A.K., A Strategy for the Development of a Web-based Tool to Reduce Aviation Maintenance Errors, Proceedings of the Human Factors and Ergonomics Society, New Orleans, 2004.