

## **WebSAT Quarterly Report (April 9, 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 April 9, 2004:**

- Conducted interview sessions with key members in the Quality Assurance and Audit departments at the FedEx facility in Memphis, TN.
- Conducted observation session at Mobile, Alabama.
- Completed a trip report, documenting the information gathered from the interview sessions at Memphis, TN, and the observation session at Mobile, AL (See attached pdf file).
- Used task analysis to identify needs to support surveillance and inspection performance.
- Defining the impact variables to be considered for WebSAT, in association with key members in the Quality Assurance and Audit departments, at the FedEx facility at Memphis, TN.
- Presented a paper at the SAHI conference at St Louis, MO, in March 2004 (See attached pdf file).
- Two research papers have been accepted for presentation at Houston, TX, at the IERC conference, in May 2004. (See attached pdf files).
- Presented the research in 2 poster competitions in the department of Industrial Engineering, Clemson University.
- Presented a poster at the research at the Clemson University research forum.

### **2.) Work in Progress from April 9, 2004 – September, 2004 (The dates in parenthesis indicate the deliverable date):**

- Completing the second Quarterly report. (April 9, 2004)
- Present a poster related to the WebSAT research at the Clemson University research forum. (April 12, 2004)
- Schedule a trip to Mobile, AL maintenance site. (April 16, 2004)
- Make a seminar presentation at the Clemson University Industrial Engineering doctoral colloquium. (April 23, 2004)
- Present two papers related to the WebSAT research at the Industrial Engineering Regional Conference. (May 15-16, 2004)
- Develop the survey tool to validate the defined impact variables with other airlines. (May 15, 2004)
- Complete an analysis report documenting the results of the web based impact variables validation survey with other airlines. (May 15, 2004)

- Design a framework of the WebSAT tool which would include the goals and the functions that would be accomplished by WebSAT. (May 15, 2004)
- Conduct a web based impact variables validation survey with other airlines to ascertain the accuracy of the selected impact variables. (May 30, 2004)
- Identify impact variables using the need-metrics matrix. (June 30, 2004)
- Identify the modules that will be incorporated in WebSAT. (June 30, 2004)
- Finish the next Quarterly report. (July 14, 2004)
- Develop the goals and functions to be included in each module. (July 15, 2004)
- Develop objectives for each module and sub – objectives for modules. (July 15, 2004)
- Schedule a trip to a participating airline company to validate the selected impact variables. (August 31, 2004)
- Present paper/poster in the proceedings of Human Factors and Ergonomics Society Conference. (September 20-24, 2004)
- Schedule a trip to the FedEx Greensboro maintenance base. (September 30, 2004)
- Started preliminary work on designing the iteration prototype for each module using the conceptual design methodology. (October 31, 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, Texas, 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, Texas, 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 48<sup>th</sup> Annual Conference of Human Factors and Ergonomics Society, New Orleans, Louisiana, 2004.