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WebSAT Quarterly Report (July 09th, 2005)

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 9th, 2005:

- Developed the data model for the technical audits module prototype.
- Developed a working prototype for the technical audits module prototype.
- Made a trip to participating airline company (Northwest Airlines, Minneapolis) to validate the selected process measures.
- Tested the first set of product map iterations with FedEx for the Technical Audit Module (see attached PDF file).
- Tested the first set of screen design iterations of the Technical Audit Module with FedEx.
- Made a trip to Oklahoma City to present a paper on "*Strategy for Evaluation of Aircraft Maintenance Operations Using Process Measures*" in the International Symposium on Aviation Psychology, 2005 (see attached PDF file).
- Made a trip to Atlanta to present a paper on "*Selection Strategy for Identification of Process Measures for Surveillance in Aviation*" in the Industrial Engineering Research Conference, 2005 (see attached PDF file).
- Conducted interview sessions with Technical and Internal Audit managers and IT department at the FedEx facility in Memphis, TN.
- Made a presentation of the on-going research at the FedEx headquarters in Memphis, TN.
- Conducted a web-based process measures validation survey with other airlines to ascertain the support for the selected process measures.
- Developed objectives for each module and sub – objectives for modules.
- Developed metrics for the product.
- Developed a need-metrics matrix.
- Published a journal paper titled "WebSAT: Development of Process Measures for Aircraft Safety" submitted to IJAAS (International Journal of Applied Aviation Studies), 2005 (see attached PDF file).

2.) Work in Progress from July 9th – Oct, 2005 (The dates in parentheses indicate the deliverable date):

- Work towards more aesthetic and professional Technical Audit Module (October, 2005).
- Generate personas and scenarios for Internal Audit and Surveillance Modules (July 20th, 2005).
- Design Internal Audit Module (September, 2005).
- Design Surveillance Module (September, 2005).



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- Develop the risk model for WebSAT (August, 2005).
- Develop methods to analyze qualitative data collected by WebSAT (August, 2005).
- Submit a paper titled "Use of Product Design Methodology to Develop the Technical Audit Prototype for WebSAT" to Proceedings of Safety Across High-Consequence Industries Conference to be held at St.Louis, Missouri (August 15th, 2005).
- Embed data analysis module in Technical Audit prototype (December, 2005).
- Validate WebSAT risk model using research methodologies (January, 2006).
- Validate WebSAT User-Interface design approach using research methodologies (January, 2006).
- Disseminate User-Interface design methodology identified from WebSAT research (February, 2006).
- Disseminate quantitative and qualitative data analysis techniques identified from WebSAT research (February, 2006).

3) Future delays in meeting milestones:

- Conduct competitive benchmarking to evaluate metrics and establish target specifications.