Project Plan Presentation
Automated Process for Airworthiness Release

The Capstone Experience
Team United Airlines Training
Austin Mills
Calisa Stevens
Connor Chapman
Rossi Palomba
Yash Gautam

Department of Computer Science and Engineering
Michigan State University
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Project Sponsor Overview

• Third largest airline in the world
• 4,500 flights a day reaching over 300 cities
• One of the founders of United Airlines is William Boeing
Project Functional Specifications

• United Airlines needs to store all information for an AWR form in one place

• Our solution is a website that provides automated record checks, progress tracking and notifications, and record updates for technicians and supervisors

• Digital signatures are utilized to authenticate and monitor technician progress
Project Design Specifications

• Make it easy for completing and viewing AWR forms
• Users have ability to digitally sign off forms
• Ability to track progress of an individual technician
• Capability to filter search results if the user is a supervisor
Screen Mockup: Main Page
Screen Mockup: Search Forms
Screen Mockup: Create Form
Screen Mockup: Digital Signature

Step 3 & 4 - Applicant Acknowledgments & Airworthiness Release Authority:

[Image of a digital interface showing a page titled "Airworthiness Release Authorization Request" with fields for applicant information, request type, and acknowledgment.

Go Back Complete]
Screen Mockup: Individual Progress

John Smith AWR Progress

- Step 0 - Pre-Requisites Completed
- Step 1 & 2 - Applicant Information & Fleet Type
- Step 3 & 4 - Applicant Applicant Acknowledgments & Airworthiness Release Authority
- Step 5 - Supervisor Endorsments

Back   Next Step
Project Technical Specifications

• The front end will be built using Node.js, and Power BI will be used to create progress bars to track AWR form completion.
• In the back end, Flask will be used to receive various HTTP requests.
• Postman will be used to manage APIs to various databases.
• Python will be used to create algorithms for digital signatures and pdf manipulation.
• MySQL will be used to store user data.
• SharePoint will be used to store AWR forms, and MTISe is the database where technician training records are stored.
• Duo Security will be used to implement a multi-authentication system to our application.
• Docker is used to containerize our application for deployment.
Project System Architecture

- Front End
  - node
- Back End/ APIs
  - Flask
  - Python
- User Data
  - MySQL
- MTISe
  - Training Records
- AWR Forms
- Duo
  - Authentication
- United Airlines Systems
Project System Components

• Software Platforms / Technologies
  ▪ SharePoint is a document storage system developed by Microsoft.
  ▪ MTISe is a proprietary database that stores United Airline’s technicians’ training records.
  ▪ Postman is an API development and management tool.
  ▪ Flask is a micro web framework
  ▪ Node.js is a JavaScript web framework
  ▪ Power BI is a data visualization tool developed by Microsoft.
  ▪ MySQL is a relational database system.
  ▪ Duo Security is a platform that offers various security tools.
  ▪ Python is a high-level programming language.
  ▪ Docker is a containerization tool.
Project Risks

• Security and Human Error Mitigation
  ▪ Need to protect critical data and mitigate risk of unexpected human behavior
  ▪ Meeting with security engineer, walking through mockups to understand behavior

• Implementing Digital Signature
  ▪ Need digital signatures in system to complete forms
  ▪ Meeting with United legal department, working through tutorials for cryptography

• Interacting with United Airline’s Databases
  ▪ Need to access proprietary database system MTISe
  ▪ Setting up dummy sharepoint, read internal documentation

• Using Internal Authentication Systems
  ▪ Need to set up system that matches United's internal system
  ▪ Meeting with security engineer and getting vendor numbers to interact with system
Questions?