Voice Inspection Maintenance System

Jim Ottinger
Robins AFB / 559th LRDP Chief
Matt Nichols
Honeywell
Problem Statement

- Current state of the art for C-5 aircraft inspection maintenance operations is paper based and very labor intensive, requiring significant monitoring and review.
- Data must be recorded and input multiple times. Furthermore, task execution may not go according to plan, due to issues discovered or variations in time to complete work.
- Mechanics off the aircraft typing discrepancies therefore not turning wrenches.
- Mechanics work multiple 173 inspection operations on a/c without logging in or out.
Technical Approach

• The proposed VIMS System / Dashboard will assist both maintainers and their managers in streamlining the process of performing inspection tasks, recording results, and generating Corrective Actions and signoffs.

• The ultimate goal is to reduce Mechanic’s time away from performing A/c maintenance and the total amount of maintenance time required for aircraft from 220 days to 185 days, supporting the Air Force’s AOP goal of maintaining and repairing a C-5.

• The core parts of VIMS will be leveraged from Honeywell’s development /experience, working with other users of the system. Conversely, the automatic form completion development for WR/ALC will also benefit the Air Force and this capability will be available.
Overall Benefits

• The primary business objectives:
  – Increase productivity and reduce C-5/F15 Inspection labor costs
  – Reduce cycle times/increase capacity of Inspection activities
  – Provide accurate TAA accounting
  – Provide accurate task durations
  – Provide faster supply ordering
  – Provide accurate assessment of 202s by utilizing pictures
  – Standardize and synchronize execution of inspections
Technology Deployment

• Deployed by KBRwyle- Supports Hill AFB, C130 APU inductions
• Deployed by KBRWyle- Supports USMC - Blount Island, Amphibious Assault Vehicle
• Deployed by U.S. Dept. of Energy- Supports National Labs in Livermore, CA, National Laser Firing Range energy creation program
Project Team Participants

• Bill Chenevert, NCMS Program Manager
• Frank Zahiri, Robins AFB, AFMC AFSC/ENRB
• Jim Ottinger, Robins AFB, AFMC 402 AMXG/559th LRDP
• Shelia Barnett, Robins AFB, 402 AMXG/Process Engineer
• James O’Conner, Honeywell Sr. Account Exec
• Corey Sawatzky, Honeywell Sr. Business Consultant – U.S. Public Sector
HONEYWELL MAINTENANCE & INSPECTION
Maintenance and inspection processes are time consuming and error prone

Workers are continually interrupted by paperwork and data entry.

Existing improvement options present new challenges

Hardware that’s not well-suited for dirty, hands-busy environments.

Sensors, and smart solutions are expensive to adopt and complex to implement.
Honeywell’s Maintenance & Inspection Solution

Greater efficiency by removing the need for data entry and improving the data collection process.

Improved accuracy by eliminating transposition errors and recording information at the time of observation.

Near real-time visibility into enterprise level operations information and the ability to quickly adapt to workflow changes.

Increased employee satisfaction and reduced training time for new employees.
Eliminate Data Entry and Improve Data Capture

**Lufthansa Technik**
Maintenance and induction of APUs at one site Live since April 2015. Multiple mechanics trained and using the system. Eliminated all redundant documentation.

**Honeywell at Hill Air Force Base**
Maintenance and induction of APUs at one site Live since July 2015. Multiple mechanics trained and using the system. 25% reduction in inspection time.
Realize the value of your data

Ensure consistent performance across sites by comparing step completion times with measured, established standards.

Steps that aren’t completed in an adequate amount of time may be incomplete or low quality. Eliminate shortcuts and quality issues with visibility into step time anomalies.

Where are your maintenance costs adding up? Identify assets that require the most activity from your workforce.

What are the common and most costly points of failure? Summarize step results to identify high risk areas of improvement.
Variety of Industries Currently Deployed

85+ Global Sites fully deployed and live as of today

- Over 20 POC and pilots
- Over 85 live sites
- Over 700 live users
- Deployed globally
Options for a Variety of Environments

The Voice Inspection solution supports multiple device options for different end user environments.

• Mobile Facility
  • The Talkman solution provides a rugged, reliable interface for indoor, Wi-Fi enabled users

• Workstations
  • For the less mobile, VCPC has now been added for stationary users who require interaction with additional PC applications

• Field Services
  • The Honeywell CT-50 combined with VoiceCheck in the cloud supports outdoor users.
Takeaways

• The Voice Inspection system is allowing mechanics to focus on the work they were trained to do.

• By collecting data as it is discovered, customers are able to improve quality and increase standardization.

• Customers are realizing value in multiple industries with reductions to inspection time, increases in quality, and analysis of data captured.