**INTRODUCTION**

IMP Aerospace is a subsidiary of IMP Group based in Goff’s, Nova Scotia. They are one of the largest aircraft engineering and maintenance operations in Canada, and they specialize in aircraft maintenance and modifications for military, government, and commercial operations.

**Acronyms**

TCP: Tool Crib Personnel  
PP: Production Personnel  
GSE: Ground Support Equipment  
FOD: Foreign Object Debris

**OBJECTIVE**

Improve tool and equipment management by increasing automation, improving data collection, and utilizing resources more efficiently.

**CONCLUSIONS**

**Deliverables**

- Pilot project for scanning out all tools and removing redundant sign out processes  
- Implementation plan to achieve expected state in tool crib (continuation of SS, proposed layout, and self-serve tool crib training)  
- Microsoft Power BI Dashboard for better tool and equipment data management  
- Microsoft Power App for standardizing the request process between hangars  
- Implementation plan for recommended RFID tracking solution (vendor, setup, training)

The deliverables will result in a significant improvement in the accuracy and consistency of data collection, making tool and equipment usage and locations easily accessible. Furthermore, by standardizing processes, a self-serve tool crib will be achievable for IMP.

**Self-Serve Tool Crib**

**Expected State**

- PP enter tool crib to retrieve tools  
- All tools scanned out of tool crib  
- Not reliant on the TCP to operate  
- Security cameras and ID badge readers for accountability

**To Achieve Expected State**

- 5S action plan in Hangar 1 tool crib  
- Red-tagging event to create space  
- New layout to meet quality standards  
- Scanner script modifications for increased efficiency with sign ins/outs

**MS Power BI**

- Dashboard to allow users to easily access data, as opposed to the existing system  
- Increases tool control and decreases risk of FOD  
- Interactive layout to display tool locations in tool crib  
- Shows employees with signed out tools  
- Provides filterable and insightful summary data

**Benefits**

- Additional tools tracked: 93%  
- Eliminated queue time: 100%  
- Hours saved / yr (TCP + PP): 2346  
- Sign out methods eliminated: 5

**MS Power App**

**Capabilities**

- Application to standardize methods for submitting and managing requests  
- Manges consumables, tools, and part requests between 3 different hangars (1, 6, and 9)

**New Consumable Request**

- Requesting manpower  
- Cost integration w/ current system: $0  
- Central request processing system

**My Consumable Requests**

**RFID TRACKING**

- Passive ultra-high frequency RFID system  
- Tags to be added to all GSE to track location  
- Requires specialized tags to avoid interruption with metal equipment  
- Threshold RFID reader setup at each hangar bay door  
- A → B or B → A configuration to recognize when GSE leaves or enters a hangar

**ROI Calculation**

- RFID GSE Tracking: $33,450 savings/year  
- Serve Tool Crib: $75,260 savings/year  
- IMP Aerospace is a subsidiary of IMP Group, specializing in aircraft maintenance and modifications for military, government, and commercial operations.

**GSE SOLUTION**

**Problem Description**

- GSE is shared between 4 hangars, spanning ~1km (see map below); time consuming to locate  
- GSE movement is not tracked; lack of visibility  
- GSE is expensive and critical to production; seizing resources to locate and causes schedule delays

**Design Process**

- Conducted a survey to gain feedback from PP  
- Explored industry standard GSE tracking solutions  
- Determined RFID technology is the best option for level of visibility desired by IMP

**RFID:**

- Proposed layout and self-serve tool crib will be achievable for IMP.