



# Data-Driven, Lean-Agile Solutions



## ***Case study : B-52 CERP***

Date: 08/09/2021

### **1) What is the problem?**

- Reduced fuel consumption, can extend operational range and reduce in-flight refueling.
- Other mods compete for space in leading edge of wing
- Digital fly-off between commercial engine candidates required

### **3) What established DoD policy would be fulfilled?**

- DoD Digital Strategy 2019

### **2) What solutions or features of Innovaton Platform will be useful?**

- Contract and CDRL management
- Document Management, existing common drive does not support Configuration Management
- Airworthiness is eating our lunch
- “all I want is an environment with my data in it”

### **4) What are the Lessons Learned?**

- Daily standup with B-52 and Anautics
- Sprint review and approval process
- MVP built and approved in 9 months with user test and approval
- Continuous Integration processes built

## ***Case study : Propulsion PEEPPS***

Date: 08/09/2021

### **1) What is the problem?**

- Engineers using Access database to manage assignments and result
- UI needs improvement

### **3) What established DoD policy would be fulfilled?**

- Unclear

### **2) What solutions or features of Innovation Platform will be useful?**

- Part and CAD data under CM
- App using real time data

### **4) What are the Lessons Learned?**

- Dev team need real, fresh data for effective communication with users
- Lack of clear policy guidance is a blocking issue
- Lack of User Stories in the voice-of-the-customer is a blocking issue

## ***Case study : Jedmics Modernization***

Date: 08/09/2021

### **1) What is the problem?**

- Difficult to find drawings
- Structure data poorly supported
- Configuration management was never included in the program charter

### **3) What established DoD policy would be fulfilled?**

- Driven by requirements gathered from annual user conferences

### **2) What solutions or features of Innovation Platform will be useful?**

- Built in CM functionality
- Management of Parts, BOM and CAD data
- Modern platform UI
- Integrated access with newly created RESTful API

### **4) What are the Lessons Learned?**

- Slow negotiation of formal “Problem statement”
- Funding not released

## ***Case study : NAVAIR PMA-209***

Date: 08/09/2021

### **1) What is the problem?**

- About 100 weapon systems used cross multiple programs have components that are no longer available
- New acquisition data needs to be created from legacy data and new sources validated

### **3) What established DoD policy would be fulfilled?**

- Follow current contractual and acquisition practices

### **2) What solutions or features of Innovation Platform will be useful?**

- Transcribe legacy parts lists and other data to Part, CAD and Document
- Follow ASME Y 14.1 closely.

### **4) What are the Lessons Learned?**

- Parts lists should be granular data, not documents
  - This takes advantage of modern tools, rather than adhering to legacy, paper based practices
- manual scraping data is very time consuming

## ***Case study : Jedmics Lite-UI***

Date: 08/09/2021

### **1) What is the problem?**

- Legacy UI is outdated and difficult to use

### **3) What established DoD policy would be fulfilled?**

- Driven by requirements gathered from annual user conferences

### **2) What solutions or features of Innovation Platform will be useful?**

- App demos were created using multiple tools
- And demonstrated at user conferences

### **4) What are the Lessons Learned?**

- users want easy to use tools
- Lite-UI is in gov testing now, and will be deployed in the upcoming Jedmics release

Date: 08/09/2021

## ***Case study : F-16 HAFB***

### **1) What is the problem?**

- HAFB using image-based technology in JEDMICS
- Contractors are downgrading data from their model based systems for image-based deliveries to meet contractual obligations
- F-16 program alone are processing 30,000 downgraded documents a year

### **3) What established DoD policy would be fulfilled?**

- DoD Digital Strategy 2018

### **2) What solutions or features of Innovation Platform will be useful?**

- Channel efforts of current work from perpetuating image-based practices to promote model-based practices

### **4) What are the Lessons Learned?**

- OEM is still providing C4 images because that is in the contract
- BOM and other lists as pdfs, contain readily accessible granular data



## ***Case study : B-1 ASIP***

Date: 08/09/2021

### **1) What is the problem?**

- Intended design life of BI was 10,000 hours, aircraft are now at 12,000 hours, required life is now extended to 20,000 hours.
- We need a place to store data [models, fatigue analysis and field inspection data] and project future [fatigue results] legacy data not tracked well under CM

### **2) What solutions or features of Innovation Platform will be useful?**

- Environment with CAD and FEA tools
- Ability to store CAD, FEA and field data
- Tie data together

### **3) What established DoD policy would be fulfilled?**

- Digital Campaign, guidance
  - Structural experts for B1, able to conduct their work
  - B1 program, select recommendations for action
  - Air Force, sustaining existing aircraft for extended life

### **4) What are the Lessons Learned?**

- Concept database completed in 8 weeks (including holiday period)
- B-1 team members got hands on experience
- CM processes complete for temporary and permanent repair for major ASIP issue

## ***Case study : DLA Supplier Collaboration***

Date: 08/09/2021

### **1) What is the problem?**

- DLA needs to supply replacements for obsolete parts from whatever data is available. This process takes 9 months instead of the desired 45 days
- There are 10,000 open requisitions
- Replacement parts or repairs for new equipment needs competition for OEMs

### **3) What established DoD policy would be fulfilled?**

- DoD Digital Strategy 2018

### **2) What solutions or features of Innovation Platform will be useful?**

- insight based on B-52 and Jedmics projects for how to use available data for procurement of replacement parts

### **4) What are the Lessons Learned?**

- Demo created with real KC-135 data in 4 weeks
- Demo to Dr Duchak
  - “How do we change the behavior of the people who do the work?”
- Demo to Dr Kurtz
  - “I can see how this is working”

## ***Case study : AFRL Wright Brothers Institutue***

Date: 08/09/2021

### **1) What is the problem?**

- AFRL/RQ Training Next, Goal
  - Lead the revolution of AFRL training to instill the tenets of S&T 2030 into culture and practice

### **3) What established DoD policy would be fulfilled?**

- DoD Digital Strategy 2018

### **2) What solutions or features of Innovation Platform will be useful?**

- Discover the value of Digital Engineering principles in a collaborative, agile manner
- Prototype MVP Integrated Deveelopment Environment
- Create a digital technical baseline for AFRL/RQ DigEN and workforce development

### **4) What are the Lessons Learned?**

- Program completed in 8 weeks
- Extraordinary work by 20 college students
- Search and rescue drone modeled in SOLIDWORKS under CM
- 80 SysML diagrams created for import to IDE
- Simulation of imaging system conducted
- Software for image recognition demonstrated

## ***Case study : AFSC Tech Roadmap Discovery***

Date: 08/09/2021

### **1) What is the problem?**

- Develop a living high- level visual technology plan
- Implement an AFSC roadmap life cycle digital model

### **What established DoD policy would be fulfilled?**

- AFSC Digital Strategy 2021

### **2) What solutions or features of Innovation Platform will be useful?**

- Digital Fabric (woven digital threads)
- Non-Destructive Inspection
- Robotics and Automation
- Smart Depots

### **4) What are the Lessons Learned?**

- Framing Proposal for SOW
- Contract Kickoff Aug-03 2021