

GETTING INSIDE THE CYBER OODA LOOP

AGILE T&E SUPPORT IN CYBERSPACE

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An Acknowledgement...





Threats from Near-Peer Competitors

Observe



Orient



Increasingly Relevant Cyber Threats



Act



Decide



Accelerating Program Requirements



AF Focus on Innovation

Observe



Enterprise IT as a Service (EITaaS)



Cyber Squadron Initiative



Test Innovation Initiatives

Observe **Cyber Squadron Initiative**

- Transition USAF Communications Squadrons to Cyber Squadrons
 - Trades current IT Services mission for Cyber Protection mission
 - Focus on cyber Mission Defense Teams (MDTs)
 - Enlisted AFSC change to 1D7xx
- Goal: Cyber ops forces under Wing C2

Requires a transition of both personnel skills
and mindset

Observe **Enterprise IT as a Service (EITaaS)**

- Goal is to move commodity IT services to industry:
 - Enterprise Network Management
 - Computer Repair
 - File / Print Services
 - Cloud Migration where appropriate
- Projected to free up manpower for Cyber Squadron Initiative



Radical change to the way our IT infrastructure is managed

Observe **Test Innovation Initiatives**

- Innovation initiatives have a dramatic effect on the cyber environment
 - Push for new and better technology
 - Rapid improvements require agile processes
 - Increased risk for increased reward
- Cyber solutions underpin MOST innovation efforts

Cyber support and cyber security have to keep up with the pace of change

Observe

Orient

Act

Decide



Orient



MDT Pathfinder Effort



Agile Software Development



Test Unique Services

Orient **MDT Pathfinder Effort**

- No longer a pathfinder – MDTs now permanent
- Edwards is up to 18 cyber operations personnel
 - Arnold and Eglin are starting / growing as well
- Senior leader focus at wing, MAJCOM and lead command / AF

Cyber Defense is an Increasing Focus, even without EITaaS manpower help

Orient Agile Software Development

- **Edwards had a four year 'head start'**
 - Adopted agile software methodology in 2015
 - Full transition took almost 2 years
- **Massive productivity increases**
 - **1100%** increase in deployments (not a typo)
 - From 4-5 deployments a year to **52** production deployments in 2018

Agile software development has provided two orders of magnitude output increase

Orient **Test-Unique Services**

- Re-orientation toward the test-unique services we already provide:
 - Spectrum and RF Management
 - Business and Flight Ops Software Development
- ...and service we can enhance in the future:
 - Business Intelligence
 - Test Support Networks

A black calculator is placed on top of an open notebook. The notebook's left page shows a hand-drawn graph with a red curve. The right page contains some text and a small table. The background of the slide is a dark, textured pattern.

Moving away from a focus on enterprise services toward Test Wing priorities

Decide & Act



Decide & Act



Cyber Monitoring, Forensics and Vulnerability Management



Agile Customer Service



Software Innovation and Agility



Test Support Networks



RF and Spectrum Enhancements

Decide & Act

Cyber Monitoring, Forensics and Vulnerability Management

- MDT absorbed vulnerability management efforts
 - Already best-in-Air Force
 - Local toolset patches faster than the enterprise
- Cyber Security Monitoring Center and Digital Forensics Lab Online
 - Over a dozen real-world missions exec'd in 2019

Focus on iterative growth of cyber defensive capabilities

Decide & Act **Agile Customer Service**

- EITaaS to absorb support in the long term, but...
 - We are increasing our agility in the short term to better support today's mission
- Pop-up helpdesks bring support directly to users
- IT Warehouse improvements will allow more efficient processing of equipment orders



Increased T&E ops tempo requires increased levels of service to reduce 'friction'

Decide & Act **Software Innovation and Agility**

- **Flight Ops Software Renovation**
 - Complete overhaul of COOL / 18F (GSA) assist
 - Puck-board scheduling already delivered
- **Test Wing Data Lake**
 - Bringing data together from disparate sources
 - ID'ing best-of-breed business intelligence tools



Working to provide user-centered tools to enhance the test business and operations

Decide & Act **Test Support Networks**

- **Secure Software Sustainment Network (S3N)**
 - Provides secure enclave for s/w dev efforts
 - Emulates NIPRNET service capabilities
 - Will be IOC for developers across the base in 2019
- **Test and Evaluation Network Conceptual Design**
 - Looking at how we can provide better T&E focused network services post-EITaaS

Concrete commitment to providing for unique network requirements of T&E ops

Decide & Act **RF and Spectrum Enhancements**

- **Radio Frequency Encroachment Monitoring Systems**
 - Upgrade of Signal to Noise Enhancement Program
 - Proactive RF environmental monitoring
- **Mobile Network Survey (MNS) Equipment**
 - Determine 4G/5G networks spectrum and channels, locate mobile radio cells, evaluate coverage and detect illegal transmitters

Ensuring the airwaves remain available for
critical T&E telemetry data

Is Agile Cyber support for T&E possible?

- Current HHQ initiatives and outside pressures provide both risk and opportunity for cyber
- A commitment to innovation, agility and (most importantly) the Test and Evaluation mission will allow us to leverage opportunities to provide better, more robust cyber for T&E

With a change in mindset, it can be done!



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