Command, Control, Communications, Intelligence and Networks

Acquisition Challenges and the Future:

Emerging Systems and Technologies, Solutions, Platforms and the Cloud

Maj Gen Michael J. Schmidt
Program Executive Officer/Director

10 March 2020
Heritage Today - Air Force Materiel Command Video

https://www.airman.af.mil/HeritageToday/
AFPEO/C3I&N
Portfolio “Swim Lanes”

Crypto & Cyber

Aerial Networks

Enterprise IT & Cyber Infrastructure

Special Projects

BACN

Link-16 Enhancements

Air Force Network

Kill Chain-Campaign of Experiments

Common Video Extension & Unified RelaY

Full Motion Video Extension & Unified RelaY

AF Intranet Control

Cyber Security & Control System

Cyber Mission Platform

Airborne Network Interface

Foreign Military Sales

Cloud Hosted Enterprise Services

Unified Platform

Link-16 Alaska

Foreign Military Sales

Enterprise IT as a Service

Advanced Technology

LevelUP Code Works

AERONet

Advanced Technology

Enterprise IT as a Service

Developmental Planning

Cyber Mission Platform

Foreign Military Sales

Electronic Warfare
Delivering Capability
Foundational Focus

Key Enablers
✓ Delegated Authorities
✓ Section 804/874
✓ Pitch Days
✓ Innovative Contracting
  ✓ Crypto ID/IQ
  ✓ Cyber
  ✓ IT/Infrastructure
  ✓ T&M
  ✓ Basic Ordering Agreements
✓ OTAs
  ✓ 2373
  ✓ 2371B

DCA
• Overhire
• PAQs/Interns
• SupvTrng
• Cyber/IT 101 Trng
• CODB

Unified Platform
• JCC2
• Cyber Mission Platform
• PMO/16 AF Partnership
• Cyber RCO

Breckenridge
• MATCHSTRIKE
• HANNIBAL
• ENIGMA
• AI/Machine Learning

Machete
• TDN Lab (AERONet)
• BACN
• SPIDR
• Theater Deployable Comm

EITaaS
• NaaS
• EUS
• C&S
• SEITaaS
• Cloud ONE
• O365

Digital Engineering
AF/AFMC We Need
DevSecOps
C4I Architecture
Digital Transformation

Innovation & Agility

Talent Mgt/Human Capital
Cyber/Crypto Mods/Sust
‘Weaponizing’ Data
Aerial Networks/Comm Center of Excellence
IT Infrastructure Mod & User Experience

Measure of success = Speed of delivered capabilities...D.I.G. In!
S&T Partnership Opportunities

- Moving to a true Enterprise IT ‘As A Service’ solution at ALL levels
- **Institutionalize** DevSecOps software factory tenets & principles
- **Build out/migrate** a warfighting Cloud architecture
- **Best of breed partnerships** for an agile/tactical communication solution
- Increase **velocity** of Cyber Acquisition
- **Affordable/exportable** aerial C2 solutions (i.e. AERONet)
- Adopting **commercial innovations** across entire portfolio
- **Rapid experimentation/prototyping** across ABMS spectrum of ‘ONEs’
- **Infuse** C3I&N portfolio with start-up/venture capital industry partners

Continued partnership with AFRL/RI & industry critical to success!
Leveraging Commercial Practices
Agility in Action

JADC2 Powered by ABMS – Multiple FtS Events/

Rapid Prototyping – Section 804

Inaugural AF Pitch Day - NYC

Agile Acquisition – Multiple Basic Ordering Agreements & ID/IQ vehicles

Innovative Contracting - Other Transaction Authorities

LOEs
Network as a Service
End User Services
Compute and Store

SEITaaS
Special Programs

Azure
AWS
iCloud
Google Drive

Mission Apps & Development
Focused on specific AF mission areas

Platform and Development Tools
- Continuous Integration/Continuous Delivery (CI/CD) Pipeline
- Reusable software components
- Built in security (with a CTO)

Cloud Infrastructure
- Supporting development and operations
- Multiple Classification levels

DELIVER...INNOVATE...GROW...D.I.G. In!

Public Affairs Case: 66ABG-2020-0015
Agile Contracting - Getting After Cloud, S/W Platforms & EITaaS!

- **LevelUP Basic Ordering Agreements**
  - 2 BOAs awarded in 45 days (from strategy development to contract award/onboarding
    - Pipeline and Platform Integration and Licensing Services (9 Companies on-boarded)
    - Cloud Services (27 Companies on-boarded)
  - 3rd BOA initial award in 45 days (effective date 125 days due to protest resolution)
    - Software DevSecOps Services (19 Companies on-boarded)
  - Streamlined ordering procedures to target contract award in < 30 days
  - Other initiatives
    - Monthly AQ Onboarding – Created to mirror technical on-boarding with pathfinder programs (1st session held Feb 2020)
    - Hosting monthly Contracting “sprints” modeled after AFRL & SBIR processes

- **Fair Opportunity Contracting (FAR Part 16 vice FAR Part 15)**
  - Cloud One Application Migration Team was able to go from RFP release to award in 113 days
    - Orders from existing contract vehicles reduce administration costs & provide for streamlined processes
    - All prospective Offeror’s were vetted on GSA’s Alliant-2 contract vehicle
  - Incorporates an agile TRN (Task Requirement Notice) process, which drives speed & significantly reduce costs

- **Use of 5 Other Transactional Agreements for “EIT as a Service” Risk Reduction Efforts across 8 bases**
  - Feasibility assessment to explore AF technical, operational, security, and organizational requirements for enterprise IT across three lines of effort (LOEs): Network as a Service ( ), End User Services ( ) & Compute and Store ( )
  - Experimental by design to test EITaaS commercial principles
  - Maximizes learning outcomes by exploring multiple vendor solutions
  - Informed lessons learned for current & future-state business model processes for AF Enterprise IT planning & execution
AFPEO/C3I&N
Division Lineup

- Aerial Networks Divisions (AFLCMC/HNA)
- Cryptologic & Cyber Systems Division (AFLCMC/HNC)
- Enterprise IT & Cyber Infrastructure Division (AFLCMC/HNI)
- Special Programs Division (AFLCMC/HNJ)
Acquisition Challenges and the Future:

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Colonel Shane “Aggie” Louis
Senior Materiel Leader
Aerial Networks Division

10 March 2020
## Aerial Networks Division Technology Needs

### Initiatives
- ABMSOne Product Lines
- High Capacity Backbone (HCB)
- Combat Cloud
- Open Communication Subsystems (OCS)
- AERONet (ATAK)
- Software Defined Radios (SDR)

### Technology Needs
- Interoperability with existing capabilities
- Open/Modular Systems & Industry Innovation
- Interoperability with coalition & US networks
- Airborne Communications in the highly contested environment
- Network management for multi-beam antennas

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Partnership to Restore Hanscom as the ‘Aerial Networks Center of Excellence’!
• Aerial Networks Center of Excellence
  - Hanscom Collaboration and Innovation Center / 46 Test Squadron
  - Allies/Partner Nation Interoperability (includes cyber)

• ABMS Interoperability/Connectivity – Implementing the CSAF’s Vision
  - “…start thinking about networks as connecting computer technology as opposed to connecting platforms…”

• Expanding Opportunities for Industry
  - Data Link Enterprise (DLE) ID/IQ contract – Partnering with primes
  - Pitch Days - Tapping into the innovation of non-traditional companies
  - Experimentation/prototyping, leave behind capabilities – Faster fielding
  - Use of Open Systems (OMS/UCI/OCS standards) – Enable meaningful competition to foster innovation
    - Common Network Convergence (CNC) Reference Architecture / Open Missions Systems (OMS)
    - Interoperability among waveforms; standardized interface controls
    - Open architecture radios
    - Advanced Link 16 capabilities
Aerial Networks Division -
Common Data Link DLE ID/IQ Contract

Common Data Link

Business Opportunity

• Subcontracting Opportunities to develop advanced Tactical Data Link technologies to include Common Data Link, Software Programmable Open Missions Systems Compliant (SPOC) radios, Gateways, and aerial/tactical network enterprise solutions

Schedule

• ID/IQ Contract Awarded: Jan 2018
• Post Award Conference: Feb 2018
• Additional RFIs Posted: TBD
• Subsequent dates based on additional RFIs

Contract Information

ID/IQ Contract Awardees (9): BAE, Boeing, Booz Allen Hamilton, Cubic, L3, Lockheed Martin, Northrop Grumman, Raytheon, Collins Aerospace
Value: $496M (Contract Ceiling)

Customers: Army, Navy, Marines, AF, JITC, Joint Spectrum Center

POCs:
PM: Mr. Bill Leavis, AFLCMC/HNAG, (781) 225-4300
PCO: Ms. Allorria Harris, AFLCMC/HNAK, (781) 225-4068
Airborne Extensible Relay & Over-Horizon Network (AERONet)

Business Opportunity

- Provide low cost/exportable communications and shareable data network
- Allow for joint & international partners, aircrews, ground forces, and operation centers to securely share information
- Customers: FMS, AFSOC and Civil Air Patrol

Schedule

- RFI Posted: TBD
- Responses due: TBD
- Industry Day: TBD
- RFP Release: TBD
- Contract Award: TBD

Contract Information

Anticipated Contract Strategy / Vehicles:

- AFSOC validating requirement – Apr 2020
- Contract vehicle(s) - TBD

Anticipated Contract Types:

- Various - TBD

POC: Major Scott Frye, (781) 225-6424
Mobile Aerial Video Relay Kit (MAVRK)

- **Business Opportunity**
  - Mobile requirement for the Full Motion Video Extension and Unified Relay (FEURY) program
  - Pulls video feeds from ISR and NTISR aircraft targeting pods at extended range; remote management capable
  - Customers: CENTCOM, ACC

- **Schedule**
  - RFI Posted: Dec 2019
  - Responses due: Dec 2019
  - Industry Day: Dec 2019
  - FOPR Release: Mar 2020
  - Contract Award: TBD

- **Contract Information**
  - Anticipated Contract Strategy/Vehicles:
    - Data Link Enterprise (DLE) ID/IQ contract
  - Anticipated Contract Types:
    - RDT&E Effort
    - Follow-on O&M

  **POC:** Ms. Juliane Corey, (781) 225-4135
Acquisition Challenges and the Future:

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Colonel Abel Carreiro
Senior Materiel Leader
Cryptologic & Cyber Systems Division

10 March 2020
Crypto & Cyber Systems Division

Information Warfare Capabilities for Multi-Domain Warfighting

Joint Cyber Warfare Architecture Products

UNIFIED PLATFORM
by LEVEL UP

Command, Control
Situational Awareness

Cyber Weapons Systems

Cutting Edge Solutions to Outpace Adversaries

Crypto Mod 2
Advanced Crypto Capabilities

Intel
COMSEC Products

Acquire and Sustain Solutions
Persistent & Emerging Threats

Deliver...Innovate...Grow...D.I.G. In!
Classified Data At Rest (CDAR) Potential Opportunity

**Anticipated Schedule**
- Conduct prototyping Efforts: FY20
- Modifications/Development: 1Qtr FY22

**Business Opportunity**
- CDAR must include NSA approved encryption when physical protection is not adequate
- Incremental acquisition strategy leveraging off-the-shelf crypto for near term solutions while developing long term solutions
- CDAR Inline Media Encryptor (IME) Development
  - High throughput over a single channel
  - Size Weight and Power (SWaP) constrained Interface Agility

**Contract Information**
Anticipated Contract Strategy/Vehicles:
- FIA2T ID/IQ contract

Anticipated Contract Types:
- Task Order Deliveries

POC:
PM: Mr. Dennis Becker, AFLCMC/HNCCA, (210) 925-1116
PCO: Mr. Ivy J. Furnace III, AFLCMC/HNCKA, (210) 925-1104
Cryptographic Modernization 2 (CM2) Potential Opportunity

**Anticipated Schedule**
- Studies/Analysis and Prototyping efforts: FY20/21
- Modifications/Development: FY21 and beyond

**Business Opportunity**
- CM2 extends the original Crypto Mod activity to modernize cryptographic equipment to defend against advanced Classical and Quantum Computing Threats
- Cryptographic resilient tech maturation risk reduction efforts via multiple prototyping efforts & conduct multiple studies and analysis

**Contract Information**

**Anticipated Contract Vehicle(s):**
- Exploring multiple vehicles such as FIA2T ID/IQ

**POC:**
- PM: Mr. Jason Janik, AFLCMC/HNCCM
  - (210) 925-1108
- PCO: Ms. Christina Fernandez, AFLCMC/HNCK
  - (210) 925-1088
Joint Cyber C2 (JCC2) Potential Opportunity

Joint Cyber Command & Control

Anticipated Schedule
• Prototyping Efforts: FY20-22
• Development: FY20+

Business Opportunity
• Joint Cyber C2 provides Situational Awareness and Battle Management for cyberspace operations missions and forces
• JCC2 will focus on development of capabilities FY20+
• Partnership with industry to leverage their R&D investments
  – High throughput over a single channel
  – Size Weight and Power (SWaP) constrained
  – Interface Agility

Contract Information
Anticipated Contract Vehicle(s):
• ID/IQ, Basic Ordering Agreement (BOA), OTAs

Anticipated Acquisition Approach:
• IT Box / Middle Tier Acquisition

POC:
• PM: Mr. Henry Badillo; Enrique.Badillo@us.af.mil (210) 977-1015
• PCO: Mr. Isaac Jones; Isaac.Jones@us.af.mil (210) 925-1104
AF Cyberspace Defense (ACD) Potential Opportunity

Anticipated Schedule

- Contract Award in Summer 2020

Business Opportunity

- ACD weapon system is used to assess, analyze and respond to AF network security incidents, intrusive activity, malicious logic (i.e. viruses) and vulnerabilities

- Defensive Cyber System Support: Sustain ACD weapon systems and modify weapon systems in agile framework

Contract Information

Anticipated Contract Vehicle(s):
To Be Determined

POC:
PM: Lt Col Darren Edmonds, AFLCMC/HNCD
(781) 225-1620
PCO: Capt Cyrus Olsen, AFLCMC/HNIK
(781) 225-4811
Cyberspace Defense Analysis (CDA) Potential Opportunity

Cyberspace Defense Analysis

Business Opportunity

- CDA weapon system monitors, collects, analyzes and reports on information transmitted via unsecured telecommunications systems
- Defensive Cyber System Support: Sustain CDA weapon systems and modify weapon systems within an agile framework

Anticipated Schedule

- Contract Award in Summer 2020

Contract Information

Anticipated Contract Vehicle(s):
To Be Determined

POC:
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  - (210) 395-1005
- PCO: Mr. Tommy Leos, AFLCMC/HNCK
  - (210) 395-1012
LevelUP Code Works

Potential Opportunity

PlatformONE – Produces software using the Development Security Operations (DevSecOps) Lifecycle for AF software development programs

Unified Platform - Interoperable/extendable network of systems that enable cyberspace ops

FOCUS AREAS:
- Software DevSecOps Services
- DevSecOps Pipeline and Platform Integration and Licensing Services
- Cloud Services

Anticipated Schedule
Various on-ramping opportunities over course of 5 year period of performance

Contract Information

Contracting Vehicle(s):
- 3 Basic Ordering Agreements

Details:
- 5 year period of performance
- Future on-ramping opportunities available
- Small business set-aside avail at task order level

POCs:
- PM: Lt Christopher Paul, Christopher.Paul.3@us.af.mil
- PCO: Ms. Christina Fernandez, Christina.Fernandez@us.af.mil
- PCO: Ms. Dawn Davenport, Dawn.Davenport@us.af.mil
Crypto & Cyber Systems Division
Technology Gaps Partnership with AFRL/RI

Great HNC & AFRL/RI relationship!
Expect even more wins in 2020!

Crypto & Cyber Focus Areas

• Modernizing/develop/integrate current & future Cyber systems

• Trusted Systems and Networks (TSN)
  • S/W assurance tools
  • Modernizing/developing current & future Crypto systems and supporting technologies

• Transition of DARPA Enhanced Attribution to AF. Requires continued development to enable operational use.
• Transition of DARPA HACCS to AF. Requires continued development to enable operational use.
• Continue work with AFRL fusion efforts

S&T Needs/Partnerships/Opportunities

• TSN:
  • Quarterly refinement/expansion of software assurance tools

• Crypto
  • Advancements in Homomorphic Encryption
  • Future Quantum: Processing, Resistance, Architecture, Algorithms
  • Crypto Situational Awareness
  • Advanced Tactical Key Management

• Cyber
  • Partnerships with AFRL/RI
  • Mature X5n and K2 technologies - examine new data schemas for further development
  • Develop modularized approach to raise-the-bar compliant cross-domain solutions
  • Mature integration into JCC2 ecosystem
  • AI/ML enhancement for cyber weaponeering
Acquisition Challenges and the Future:

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Colonel Robert “Bobby” King
Senior Materiel Leader
Enterprise IT & Cyber Infrastructure Division

10 March 2020
HNI - Division Successes and Challenges
Strategic Successes Since Last New Horizons

All 5 EiTaaS Risk Reduction Experiment vendors gaining momentum
- Information Technology Services Management (ITSM) tool (ServiceNow) launched by Unisys
- Buckley AFB approved for 100% of users on AT&T network
- C&S agreement modification awarded adding on-prem operations (Buckley & Offutt) and discovery at Spangdahlem
- Offutt AFB approved for 10% of users on AT&T network
- Expect ORR for first Microsoft base (Maxwell-Gunter) in next 30 days
- Google is on agreement and in their study phase

CCE transformation into CloudOne
- 39 apps live in the cloud
- 3 DevSecOps MVPs
- Multi-level security cloud in work
- Awarded new Cloud One Contract to SAIC

Cloud Hosted Enterprise Service (Office 365) deployed Air Force wide
- All Office 365 services available to all 600k Air Force wide
- Office 365 external access capability in work
- Possible addition of ANG, TRANSCOM, & NORTHCOM to the AF tenant

DataONE
- SAF/FM deploying Cloud One –Native analytics application (SMART-FM) in Cloud One
- 7 core services of Chief Data Officer’s data reference architecture available within CloudOne
- DataVault PEO assignment to PEO C3I&N

RoleIT end user experience successes
- Web proxy bypass
- Endpoint testing (Tanium, McAfee, Standard Desktop)

Challenges
- Air Force cultural changes/organizational learning as we work towards as a service model
- Proving to OSD, DISA, NSA, USCC, and JHQ DoDIN that commercial solutions are as secure or more secure than current infrastructure
- Getting results from RRE fast enough to inform acquisition strategy for Air Force wide scaling
EIT & Cyber Infrastructure Division Technology Gaps and S&T Direction

Next Generation Networks
- 5G Software Defined Networking
- Automation enabled Enterprise Management
- Connective resiliency

Enterprise to Edge Cloud
- Enterprise Cloud with Enterprise Edge delivery
- Tactical Edge computing
- Disconnected ops
- Auto-configuration
- Constant operations

Zero Trust
- Paradigm shift from detect and react to prevent and avoid
- Shrink the attack surface
- Assume untrusted HW and SW
- Micro segmentation
- Strict ICAM

Data Analytics
- Build ML Ops pipeline: Data Engineers, Data Scientists, Platform Engineers
- Data Education: Understand AF problems that will benefit from data analytics

Multi-level Enterprise
- Data centric infrastructure vs stovepiped classification levels
- Need innovation in cross domain solutions; multi-level enterprise applications
Enabling JADC2

- Anywhere Anytime Access
- Resilient Global Reach
- Cloud Processing Anywhere
- Holistic Data Fusion
**Enterprise IT as a Service Potential Opportunity**

**EITaaS**

**Business Opportunity**
- Enterprise IT as a Service (EITaaS) – Leverage best practices from commercial industry to provide standardized, innovative & agile Information Technology (IT) services to the Air Force (AF) as a service
- IT and resources managed across the AF providing connect, protect, storage, computing, hardware, software, common IT services, commodities, and hosting for Enterprise mission and business systems

**Schedule**
- Draft Solicitation(s): FY21
- Anticipated Award: 1st post-RRE (AF Wide) FY22
- Period of Performance: TBD

**Contract Information**

**Anticipated Contract Strategy/Vehicles:**
- Available decentralized IDIQ contracts

**Anticipated Contract Types:**
- Incentive Arrangement

**POC:** Lt Col Erickson, 978-226-4471
**PCO:** Mr. Kiel Anderson, 781-225-4725
Air Force Networks
Potential Opportunity

Cyber Security and Control System (CSCS)

Business Opportunity
• Current focus is on capability upgrades, tech refresh, program sustainment and operational support
• Modernize the existing Enterprise IT System Management (EITSM) to ensure future viability

Schedule
• Fair Opportunity Proposal Request Release: 2Q FY 20
• Delivery Order Award: 3Q FY20
• Period of Performance: 6 Months

Contract Information

Anticipated Contract Strategy/Vehicles:
• GSA
• Small Business

Anticipated Contract Types:
• Firm Fixed Price

POC: Mr. Joe Thrope, 781-225-9614
PCO: Ms. Themoula Poirier, 781-225-2660

Public Affairs Case: 66ABG-2020-0015

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## Theater Deployable Communication

### Theater Deployable Communication

#### Schedule
- Fair Opportunity Proposal Request Release: 2Q FY20
- Delivery Order Award: 2Q FY20
- Period of Performance: 1 Year

#### Business Opportunity
- Information Transport Infrastructure – TDC is the communications infrastructure designed to transmit and receive voice, data and video securely from wired, wireless, and satellite sources
- Renew software support for the entire TDC system

#### Contract Information
- **Anticipated Contract Strategy/Vehicles:** Available decentralized IDIQ contracts
- **Anticipated Contract Types:** Incentive Arrangement

**POC:** Lt Col Charles O’Connor, 781-225-1744
**PCO:** Mr. Nick Mathews, 781-225-2655
**Business Opportunity**

- Activities include infrastructure and application sustainment, developing new functional capabilities, to include minor functional Change Requests and new version releases of existing hosted mission applications as well as developing new data related mission applications to be hosted in the Discovery infrastructure.

**Schedule**

- Fair Opportunity Proposal Release: 3Q FY20
- Order Award: 3Q FY20
- Period of Performance: TBD

**Contract Information**

**Anticipated Contract Strategy/Vehicles:**
- Small Business Enterprise Application Solutions (SBEAS) Contract: decentralized IDIQ contracts

**Anticipated Contract Types:**
- Incentive

**POC:** Ms. Jackie Whittaker, AFLCMC, 312-787-5667
**PCO:** Ms. Traci Renzella, AFLCMC, 781-225-0191
Industry Access to AFLCMC/HNI…

… Enterprise IT & Cyber Infrastructure

Mike Platteel
Technology & Strategic Planning
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Intro call → Presentation → Demo
Acquisition Challenges and the Future:

Emerging Systems and Technologies, Solutions, Platforms and the Cloud

Colonel Nathan White
Senior Materiel Leader
Special Projects Division

10 March 2020
Special Programs Division
Technology Gaps/Adoption

Special Project Focus Areas

• Implementation of SAP EITaaS
• ENIGMA - 5th to 5th Comms
• Data Weaponization
• Open Radio architecture, Open Mission Systems, etc.
• Agile & Incremental

Needs/Partnerships/Opportunities

• Provide streamlined solutions for classified environment
• Low cost SATCOM antennas for UAVs
• OMS compliant Software Defined Radios
• LPI/LPD Jam resistant waveforms
• Lasercom from UAV to LEO/MEO/GEO
• Open-architecture building blocks of an ABMS capability
Special Programs Division
Challenges and Solutions

- Open Architectures - Open Systems
  - Motivation/intent
  - Business case/Model
## HNJ Potential Opportunity

### Special Projects

**ABMS**
- Executed from SAF/AQ CAO and AFLCMC/XZ CAIO
- Approach:
  - 4 month live fly demo cadence
  - Business rhythm still being defined
- Product line owners guide tech & demo priorities
- HNJ will continue to support ABMS demos and integration efforts

### Business Opportunity

- **MDO-ABMS BAA**
  - Notice ID FA8726-19-S-0004
  - PoP: 15 Aug 19-14 Aug 2020
- **MDO-ISR BAA**
  - Notice ID FA8726-19-S-004
  - PoP: 15 Aug 19-14 Aug 2020
- **Data Weaponization**
  - S/W MVP dev & Op Integration

### Truth in Lending

- Funding for BAA’s doesn’t exist in HNJ
- Source funding from stakeholders
- Industry: Help vector funding sources
  - How are you enabling warfighter (quantifiable metrics)
  - Teaming and open systems – connect what the AF has now; connect what we’ll bring tomorrow

### Contact Information

- **HNJJ**
  - Lt Col Lehmann: Branch Chief
  - Ms. Amy Smith: Dep Branch Chief
  - Ms. Lydia Olsen: Chief Engineer
## AFPEO/C3I&N Follow-Up Points of Contact

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