BUSINESS AND ENTERPRISE SYSTEMS DIRECTORATE

VENDOR INDUSTRY DAY

MAY 22, 2024

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OPENING REMARKS

CAPTAIN SHAWN HAMEL

AGENDA

AGENDA

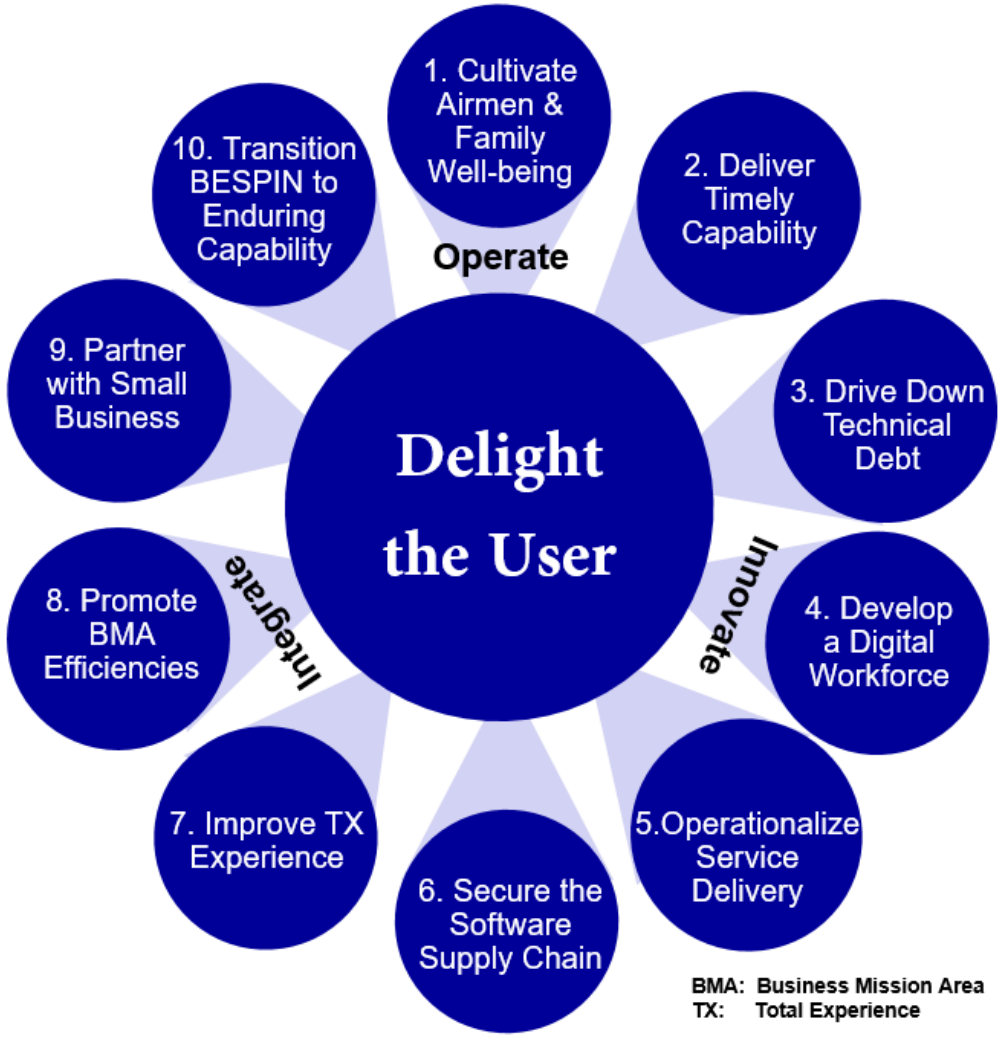
1300 – 1325	ATTENDEE CHECK-IN
1330 – 1335	OPENING REMARKS – SHAWN HAMEL, CAPTAIN, USAF
1335 – 1345	**WELCOME – MR. ALVIN BURSE** Program Executive Officer, Business and Enterprise Systems Directorate
1345 – 1435	**BES ENTERPRISE – WHERE ARE WE NOW? (Roundtable Discussions)** **SBOM Analysis & Open-Source Component Dangers** DR. JOSEPH BESSELMAN, Chief Disruption Officer MR. STEVEN DUFFIELD, Director of Engineering (Acting) MS. PRISCILLA MERRIWEATHER, Eagle Eye Program Manager MR. LARRY CHARBONNEAU, Senior Innovation Engineer **Automated Testing** MR. SHAUN LINDSEY, Director, Test Automation Lead MR. SAMUEL HAYES, Director, Software Testing, 45th Test Squadron OL-A **Application Programming Interfaces & Generative Artificial Intelligence** Dr. JOSEPH BESSELMAN, Chief Disruption Officer
1435 – 1445	BREAK

1445 – 1520	UPCOMING ACQUISITION OPPORTUNITIES ENTERPRISE LOGISTICS SYSTEMS PROGRAMS TO BRIEF: - Enterprise Environmental Safety & Occupational Health – Management Information System (EESOH MIS) • Mr. Roger Zinke – Capability Delivery Manager • Jordan Butler, Captain, USAF – Contracting Officer • Mr. Eric Batteiger – Lead Engineer - Reliability & Maintainability Information System (REMIS) • Mr. George Touchette – Maintenance and Installation Systems Portfolio Manager - Integrated Logistics System Supply (ILS-S) • Ms. Latavia Hall – Capability Delivery Manager • Mr. Christopher Artis – Contracting Officer - Geospatial Engineering Operations Mapping and Analysis (GEOMAP) • Ms. Brittany Blackmon – Project Manager • Mr. Robert Hopek – Capability Delivery Manager MISSION SUPPORT SYSTEMS PROGRAMS TO BRIEF: - Global Force Management - Data Initiative (GFM-DI) • Evan Prosise, First Lieutenant, USAF – Capability Delivery Manager • Alfredo Baking, Captain, USAF – Contracting Officer - Logistics Feasibility and Analysis Capability (LOGFAC) • Jarrett Joyner, Captain, USAF – Capability Delivery Manager • Ms. Kelsey Rand – Contracting Officer
1520 – 1530	CLOSING REMARKS – SHAWN HAMEL, CAPTAIN, USAF

WELCOME

MR. ALVIN BURSE
PROGRAM EXECUTIVE OFFICER
BUSINESS & ENTERPRISE SYSTEMS
DIRECTORATE

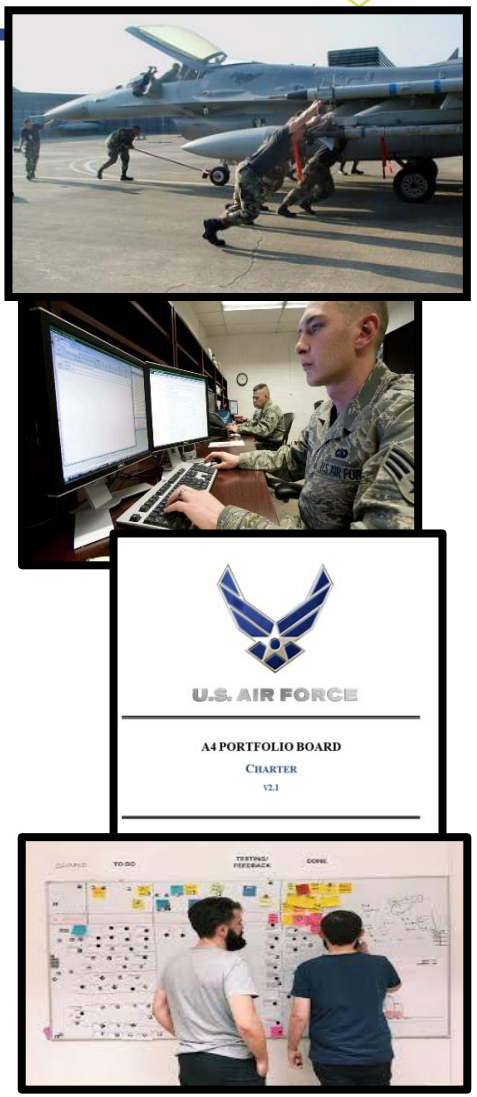
BES Strategic Objectives and PEO Priorities



- Training/developing/taking care of people (reform)
- Deliver on our “Commitments”
- Partner w/functionals & stakeholders to eliminate tech Debt
- Rebranding and workplace of choice
- Align Services and capability delivery
- Implement tech solutions to identify /correct SBOM issues
- Acting on user’s feedback; close the loop with timely implementation
- Leading the effort for “Enterprise solutions” in the BMA
- Reform Small Business processes and engagement strategies
- BESPIN: revamp strategic Innovation roadmap; work with the DAF (users/functls); adopt OI/GPC key tenets

Call to Action (Moving Forward)

- **OPERATE:**
  - Maximize the execution of our current delivery capacity to “Delight the user”
  - Investigate/implement more efficient/effective ways to deliver capabilities to our users faster --- remove slow bureaucratic processes
- **INTEGRATE:**
  - Actively engage industry to motivate continuous process improvements in the Agile deliveries --- reduce timelines
  - Solicit industry’s help with integration of technologies (Low Code, Large Language Models, CHAT GPT, Gen AI, RPA/BOTS, etc..) into legacy and/or development programs
- **INNOVATE:**
  - Investigate Public/Private opportunities to decrease the time it takes to get new IT capability in the hands of our users; remove the valley of death
  - Seek opportunities for BESPIN to partner with BMA functionals, customers, stakeholders and industry to standup a design studio concept to allow our customers to drive it before they buy it…



SBOM ANALYSIS & OPEN-SOURCE COMPONENT DANGERS

DR. JOSEPH BESSELMAN
CHIEF DISRUPTION OFFICER

MR. STEVEN DUFFIELD
DIRECTOR OF ENGINEERING (ACTING)

MS. PRISCILLA MERRIWEATHER
EAGLE EYE PROGRAM MANAGER

MR. LARRY CHARBONNEAU
SENIOR INNOVATION ENGINEER

Dangers of Open-Source Components

- **Vulnerability Exposure: Open-source components often lack stringent security audits, exposing systems to potential breaches and exploits.**
- **Impact on DoD: For defense systems, vulnerabilities in open-source software can lead to critical security risks, compromising national security.**
- **Need for Rigorous Analysis: Continuous and automated vulnerability assessments using AI are essential to identify and mitigate these threats effectively.**

SBOM Vulnerabilities	Total Count	Average
Critical	62	8
High	219	27
Medium	78	10
Low	20	3
Total	379	
Packages needs to be updated	97	

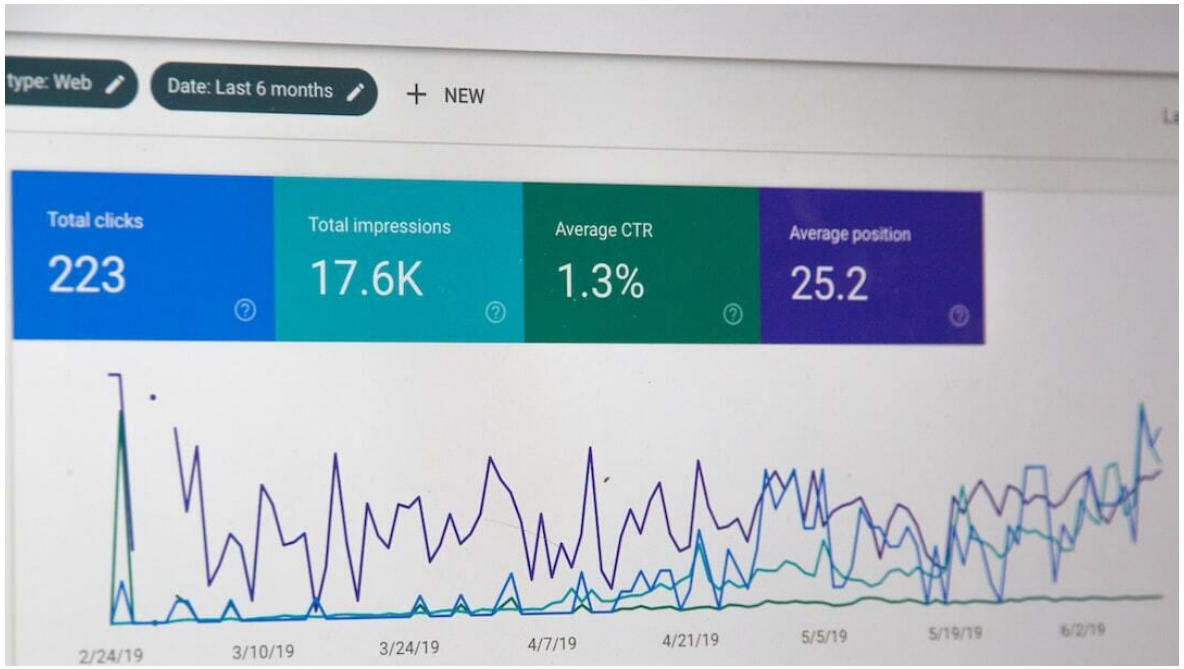
Data from Eagle Eye Pilot Phase I

Advanced SBOM Analysis Techniques

- **Deep Data Analytics: Use advanced data analytics to deeply understand software composition, enabling precise risk assessments and better decision-making.**

- **Integration with CI/CD Pipelines: Integrate SBOM analysis directly into Continuous Integration/Continuous Deployment pipelines to ensure real-time security compliance and efficiency.**

- **Enhanced Reporting Capabilities: Develop comprehensive reports that highlight vulnerabilities, licensing issues, and dependencies to foster informed security decisions.**



Most CDT's lack these capabilities

Collaborative Approaches to SBOM Management

- **Cross-functional Team Engagement: Collaboration is encouraged between security, development, and service provider teams to enhance SBOM management and response strategies.**
- **Tooling and Automation: Adopt specialized tools that facilitate SBOM generation, analysis, and remediation tasks, promoting efficiency and accuracy.**
- **Stakeholder Communication: Regular updates and clear communication with all stakeholders to ensure alignment on security practices and priorities.**

Gen AI's Role in Mitigating Risks

- **AI-Driven Risk Assessment: Utilize AI to perform continuous, real-time analysis of SBOMs to detect new vulnerabilities quickly.**
- **Predictive Threat Modeling: Use AI to predict potential threat scenarios by analyzing historical data and trends within open-source projects.**
- **Automated Patch Management: Implement AI systems that automatically apply patches and updates to vulnerable components, reducing human error.**
- **Collaborative AI Frameworks: Develop frameworks that allow different AI systems to share insights and strengthen defense mechanisms collaboratively.**
- **Lineaje's Bombot Tool: Utilizes AI to automate and streamline SBOM analysis, enhancing detection of vulnerabilities and compliance issues within software components.**

Summary

- BES applications are highly vulnerable to attack due to not updating packages
- More tools are needed to provide full coverage (BES Provided)
- Full coverage of attack vectors needs to be established
- SBOM and cybersecurity goes hand in hand
- Cross functional qualified teams are imperative
- How can you help

AUTOMATED TESTING

MR. SHAUN LINDSEY
TEST AUTOMATION LEAD

MR. SAMUEL HAYES
DIRECTOR, SOFTWARE TESTING, 45TH TEST SQUADRON OL-A

Why, What, and How?

- Why Automate?
  - Easier to keep pace with development activities
  - Automated tests can be reused multiple times
  - Improves software quality as you can run more tests to increase test coverage
- What to Automate?
  - Unit, Integration, Regression and Performance tests
  - Tests that run very often or for multiple builds
  - Tests tough to execute manually / time consuming / cause human error
- How to Automate?
  - Use automated test tool
  - Determine test cases to automate
  - Develop automation test scripts

Core Capabilities & Benefits

- **Automated Testing Support**
  - **Saves time ($$$) - tests can be run on demand or automatically**
  - **Not a replacement for manual testers but an enabler**
  - **Automated Reporting - provides early insight on test results and test coverage (Zephyr Scale API)**
  - **Various Testing - Smoke, Integration, Regression, Government Acceptance**
  - **Parallel testing – Run multiple tests simultaneously**
  - **Supports agile development CI/CD/CT**
- **Automated Capability Build/Deployment**
  - **Builds and deployments become less error-prone, repeatable, and faster**
  - **Tested and proven within the DSO Pipeline (Zone A)**

Continuous Testing

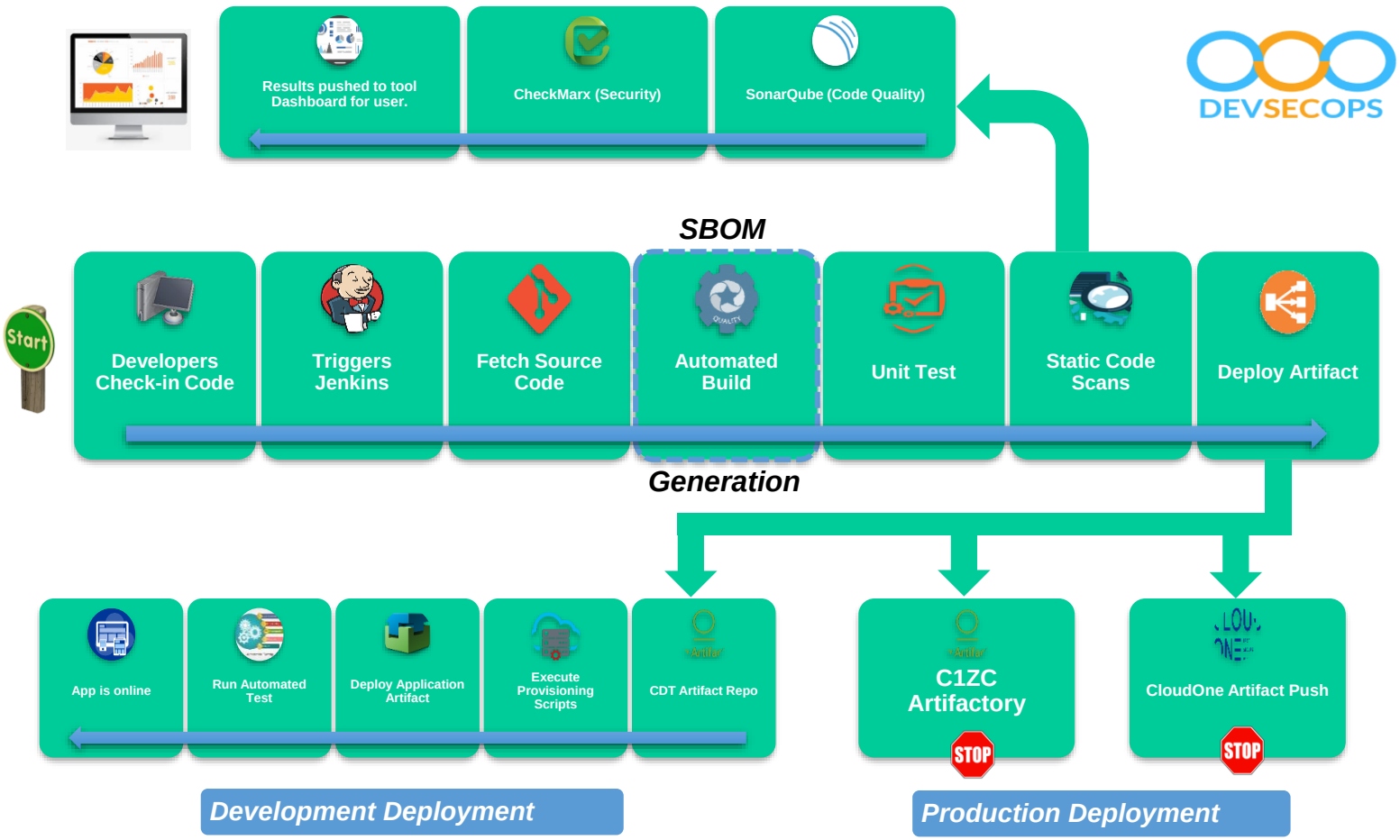
- **Why is CT important?**
  - **Continuous Testing is embracing change. Survey says that only about 70% of organizations has adopted Agile and about 30% of those organizations have adopted automated testing.**
  - **Continuous Testing is critical because automated testing is embedded in the software delivery process to obtain feedback on the business/warfighter risk that is associated with each software release.**
  - **Provides instant insight on whether it is too risky to proceed through the delivery pipeline.**
  - **Continuous Testing embraces everything from "shift left" (unit, component, coverage…) to "shift right" (monitoring/ APM, testing in production).**
  - **Struggle now or struggle later.**

Shifting Right

- **Test application that mimics real-world production conditions that can't be obtained in test environment (Zone A vs DISA)**
- **Catch errors before the warfighter does**
- **Fail little Fail Fast**
- **Blue/Green Deployment – Minimize risks/downtime**
- **A/B testing**

Typical CI/CD Workflow

GBE DSO Sample Pipeline Flow



Lessons Learned

- Tools and Licenses Cost
- Complexity of learning COTS tools
- Ownership of scripts and maintenance for the future
- Expensive to set up environments
- Outsource developers for script development
- Multiple tools lead to lack of support to our customers
- Difficulty integrating with CI/CD (Jenkins)
- Tools are coupled with their provider for test management
- We have adopted and paid for tools with a net loss because the previous work is non-existent

Test Tools

Test Tool	Description	Test Focus Area	Usage
**BAT Zephyr Scale	Zephyr Scale provides powerful visibility across your entire test management lifecycle, right inside Jira.	Test Management	Used with JIRA
JUnit	Open source, automated unit test framework for Java programming language	Unit Testing	Development Team
Selenium	Suite of tools to automate web application testing across many platforms. Supported by many popular browsers such as Firefox, Chrome.	UI, Functional, Integration, Regression Testing	Portable (dev/test) Open Source Integrates into DevSecOps pipeline
JMeter	Load testing tool for analyzing and measuring performance of services, with a focus on web applications	Performance (Load/Stress) Testing	Portable (dev/test) Open Source Integrates into DevSecOps pipeline

Test Automation Service

GBE Provides

- Tool training
- Tool support
- DSO Jenkins Integration support
- 24/7 Service Desk ticket submittal
- Confluence “How To” Documentation

CDT/Dev Responsibility

- Tool hosting
- Tool deployment
- Manage & maintain tool/test automaton scripts
- Script development
- Functional and Performance testing & analysis

Lead Developmental Test and Evaluation (DT&E)

- **Air Force Test Center is the Lead Developmental Test and Evaluation (DT&E) Organization. The 45TS is the assigned Executing Test Organization**
- **Provides independent developmental test oversight of Defense Business Systems: Maintain separation from the program office, but support the PM and Integrated Test Team through the Chief Developmental Tester and/or Test Manager in a provider-customer relationship with regard to the scope, type, and conduct of required DT&E**
- **Plan, manage, and/or conduct government DT&E**
- **Objective and unbiassed assessment of developmental test activities**
- **Developmental test support provided through cost reimbursement**

Lead Developmental Test and Evaluation (DT&E)

- Creating test scripts (manual and automated) from requirements
- Manage test environments
- Participate as part of the Program Test Team
- 508 Compliance Testing
- Quality Advocacy to assist programs in improving test efficiency and effectiveness
- Work in a collaboration with the Capability Delivery Team (CDT) to improve the quality of the end product through evaluation of DT&E processes, assessment of sources of risk, recommending solutions to mitigate risk, budding capabilities, training and mentorship of CDT in adoption of new processes, tools, and techniques, use our cross-portfolio visibility to share best practices

APPLICATION PROGRAMMING INTERFACES & GENERATIVE ARTIFICIAL INTELLIGENCE

DR. JOSEPH BESSELMAN
CHIEF DISRUPTION OFFICER

ENTERPRISE ENVIRONMENTAL SAFETY & OCCUPATIONAL HEALTH – MANAGEMENT INFORMATION SYSTEM (EESOH–MIS)

MR. ROGER ZINKE
CAPABILITY DELIVERY MANAGER

Enterprise Environmental Safety & Occupational Health Management System (EESOH-MIS)

- **Scope of work:**
  - **Persistent Support**
    - Continue with a hybrid SAFe Methodology in the functional, security, and technical sustainment services areas
    - Help desk (levels 1, 2, & 3) services
    - Data stewarding services (Chemists/team required on-site in San Antonio, TX until approved)
    - Technical and functional planning, suspenses, and audit compliance support
  - **Surge Support**
    - Sustainment services for the United States Army users and requirements
    - Additional hybrid SAFe Agile functional sustainment services
- **Anticipated Dollar Value:** $53M - $57M
- **Acquisition Strategy:** Small Business Enterprise Application Solutions (SBEAS)
- **Contract Need date:** 27 April 2025
- **Current State:** 15,800+ / 474 sites (USAF, USSF, USA, USCG), Cloud One, CAC Enabled, Web based, Linux 2, Oracle 19C
- **Priorities/Challenges/Opportunities:** Functional and technical backlogs / 19+ releases per year
- **Future considerations:** Utilize BES approved test automation tools, reduce open-source component dangers, explore Gen AI use cases and applications, functionality growth, and technical debt compliance

RELIABILITY & MAINTAINBILITY INFORMATION SYSTEM (REMIS)

MR. GEORGE TOUCHETTE
MAINTENANCE & INSTALLATION SYSTEMS PORTFOLIO MANAGER

Reliability & Maintainability Information System (REMIS)

- **Scope of Work:** Contractor shall support and maintain existing capabilities, development of new capabilities, sustain AWS Cloud development, DISA pre-production and production environments, provide support across all life cycle areas of system development and maintenance, support implementation and refinement of all REMIS Agile process areas, and maintain a modernized, stable and secure environment with authority to operate (ATO)
- **Anticipated Dollar Value:** Estimated $120M - $125M
- **Acquisition Strategy:** Small Business Enterprise Application Solutions (SBEAS)
- **Contract Need Date:** 1 December 2025
- **Current State:**
  - ~1,300 Users
  - Currently hosted in DISA Montgomery (IaaS), (Pending Relocation)
  - 19 system-to-system interfaces
- **Current State:** Utilize BES approved test automation tools, reduce open-source component dangers, explore Gen AI use cases and applications

INTEGRATED LOGISTICS SYSTEM – SUPPLY (ILS-S)

MS. LATAVIA HALL
CAPABILITY DELIVERY MANAGER

Integrated Logistics System-Supply (ILS-S)

- **Scope of Work:** Support Operational, Log IT Consolidation/Integration, and New Development Efforts
- **Anticipated Dollar Value:** Estimated $37M - $49M
- **Acquisition Strategy:** Small Business Enterprise Application Solutions (SBEAS)
- **Contract Need Date:** 23 April 2025
- **Current State:** Exercised Option 4 of the existing contract
- **Priorities/Challenges/Opportunities:** Challenge - Proper skill-sets
- **Future Considerations:** Utilize BES approved test automation tools, reduce open-source component dangers, explore Gen AI use cases and applications

GEOSPATIAL ENGINEERING OPERATIONS MAPPING AND ANLYSIS (GEOMAP)

MS. BRITTANY BLACKMON
PROJECT MANAGER

MR. ROBERT HOPEK
CAPABILITY DELIVERY MANAGER

Geospatial Engineering Operations Mapping and Analysis (GEOMAP)

- **Purpose:** GEOMAP is an enterprise Geographic Information System (GIS) that supports DAF operational and business missions through enabling the collection, maintenance, analysis, display, and sharing of geospatial information and products. GEOMAP represents real-world features and conditions on AF installations, ranges, and property by depicting real objects such as runways, buildings, etc., as digital maps.
- **Scope of Work:** Contractor shall support and maintain existing capabilities, develop new capabilities, operate service desk, sustain cloud hosted environments to include development, testing, and production, provide support across all life cycle areas of system development and maintenance, serve as the lead for all Agile process areas, and maintain a modernized, stable, and secure environment with authority to operate (ATO).
- **Anticipated Dollar Value:** $20M - $25M
- **Acquisition Strategy:** Small Business Administration 8(a) Competitive
- **Contract Need Date:** 1 September 2025
- **Current State:** 21,000+ DAF users (~215TB of data) 69 AFGIMS servers across application, database, and web tiers. Main servers hosted at Langley AFB and 39 other AF installations. Currently migrating to CloudOne AWS with goal of eliminating on-premise servers.
- **Priorities/Challenges/Opportunities:** Achieve secure, reliable, cloud hosted version of GEOMAP that runs most current approved COTS Esri Enterprise version with limited customization.
- **Future Considerations:** Incorporate parallel MAJCOM systems into GEOMAP, migrate legacy tools to Esri Portal and cloud native services, implement Agile processes to modernize capabilities and optimize system performance while being capable of surging development capacity to meet emergent/dynamic needs.

GLOBAL FORCE MANAGEMNT – DATA INITIATIVE (GFM-DI)

1LT EVAN PROSISE
CAPABILITY DELIVERY MANAGER

Global Force Management – Data initiative (GFM-DI)

- **Scope of work:** Program Management Office Support. The areas of requirements include, but are not limited to, requirements analysis, risk management, test management, and configuration management
- **Anticipated Dollar Value:** $3.9M
- **Acquisition Strategy:** 8(a) Direct Award
- **Contract Need date:** 2QFY25
- **Current State:** GFM-DI is a Joint Staff and Office of the Secretary of Defense (OSD) initiative to standardize force structure data, making it visible, accessible, and understandable across the Department of Defense (DoD). Program recently migrated both NIPR and SIPR instances to Cloud One. Current version is v3.1 with expected program releases every 1-to-2 months
- **Priorities/Challenges/Opportunities:** Updating force structure data to include Space Force-specific requirements. Assist as liaison between Program Management Office and Joint Staff-led Global Force Management Configuration Control Board in determining future program requirements
- **Future considerations:** Utilize BES approved test automation tools, reduce open-source component dangers, explore Gen AI use cases, and applications. The program is currently undergoing a complete rework of our standardized force structure data used in reporting service-unique Global Force Management Identifiers (GFMIDs); expected completion is Fall 2026

LOGISTICS FEASIBILITY & ANALYSIS CAPABILITY (LOGFAC)

CAPTAIN JARRETT JOYNER
CAPABILITY DELIVERY MANAGER

Logistics Feasibility & Analysis Capability (LOGFAC)

- **Scope of work:** Software Operations and Sustainment support. These continuous development projects will use agile development principles with robust documentation, user-centered design, and an extensible infrastructure
- **Anticipated Dollar Value:** $8.8M
- **Acquisition Strategy:** Small Business Enterprise Applications Solutions (SBEAS)
- **Contract Need date:** 3QFY25
- **Current State:** LOGFAC is a mathematically intense application that produces feasibility assessments for executing planned wartime aircraft activities while also generating the associated cost estimates for wartime requirements. The current version, LOGFAC v5.0, is undergoing refactoring to become browser agnostic - LOGFAC v6.0
- **Priorities/Challenges/Opportunities**: Reacting to unanticipated changes from both Air Force and Joint interface partners that could affect the current fielded version of LOGFAC
- **Future considerations:** Utilize BES approved test automation tools, reduce open-source component dangers, explore Gen AI use cases and applications. Recommend upgrades to the LOGFAC Oracle 19C database

CLOSING REMARKS

CAPTAIN SHAWN HAMEL

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