Digital Analytics Infrastructure & Technology Advancement Group

October 2022
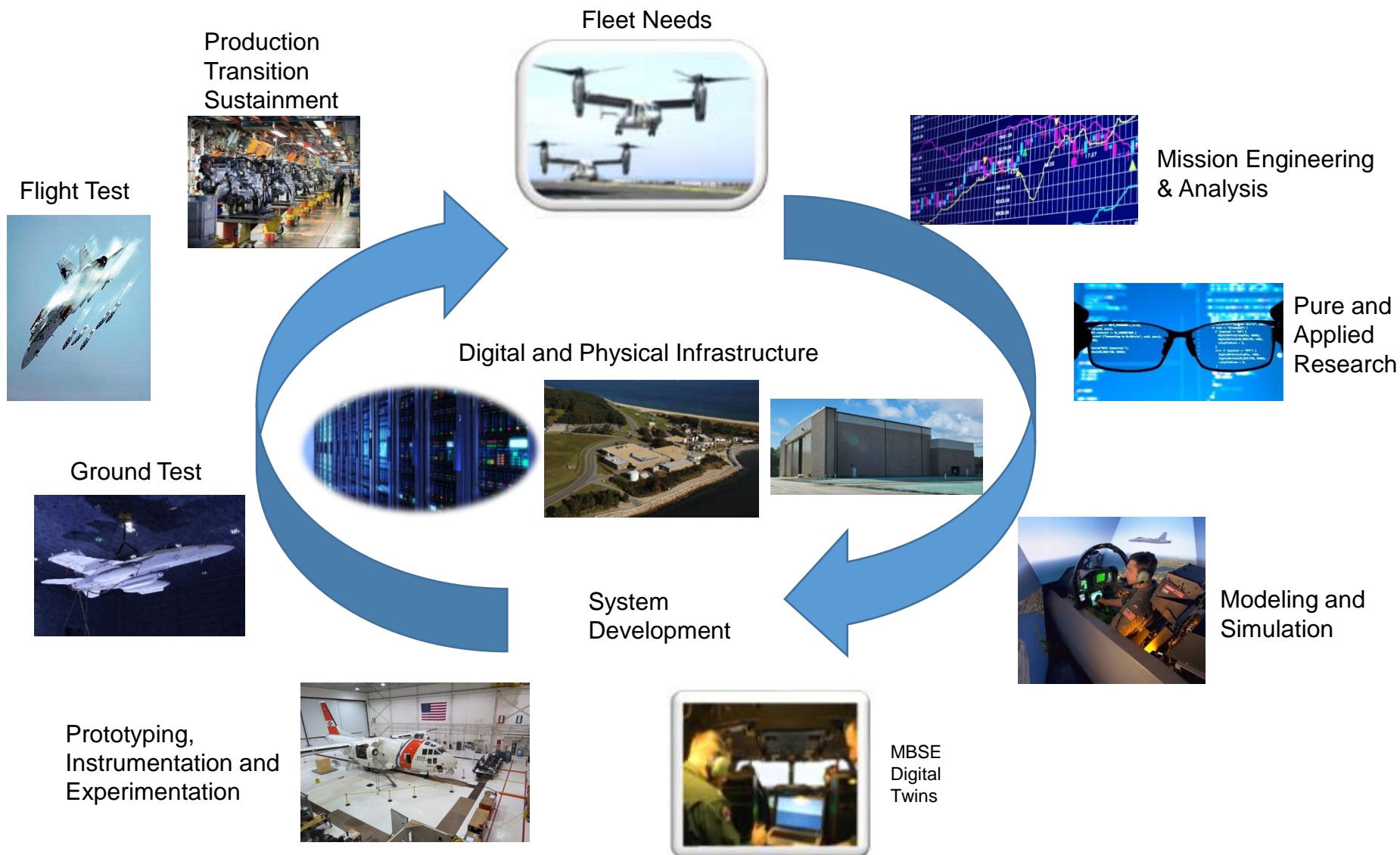
Presented to: Industry Partners

Presented by: John Kriz
Deputy Director, DAiTA Group

NAVAIR

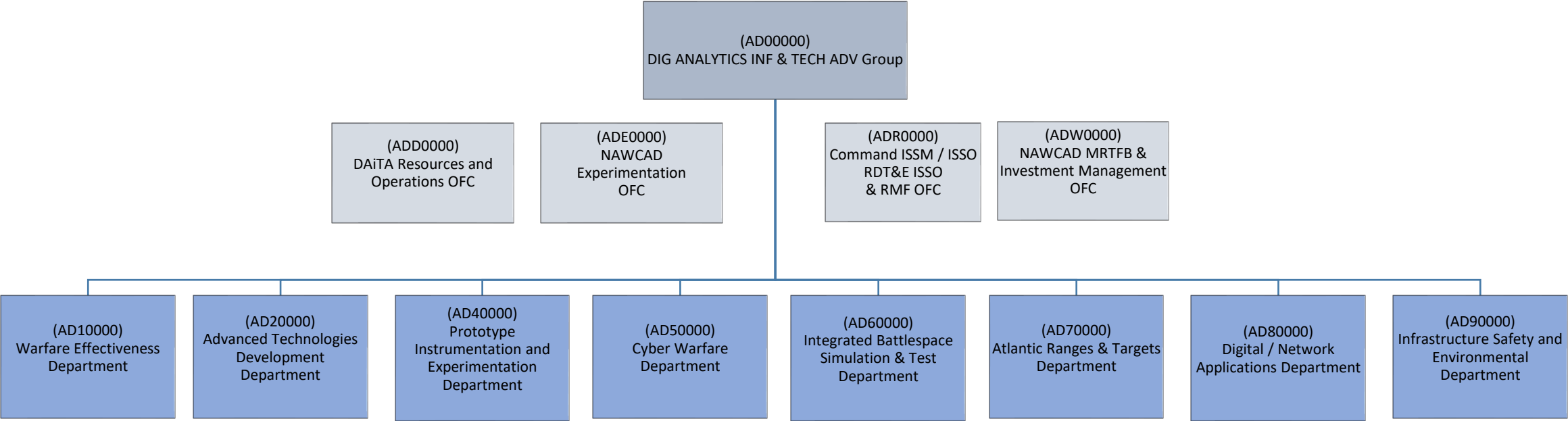# DAiTA Group Top Level Functions

- Warfare Effectiveness / Mission Engineering and Analysis
- Experimentation & Demonstration
- Prototyping, Instrumentation & Experimentation
- Cyber Warfare
- Integrated Battlespace Development and Modeling & Simulation
- Atlantic Ranges and Targets
- Digital Networking and Application
- Facilities Infrastructure, Safety and Environmental

Digital Analytics Infrastructure & Technology Advancement (DAiTA) Group

Fleet Needs

Production Transition Sustainment

Flight Test

Mission Engineering & Analysis

Pure and Applied Research

Digital and Physical Infrastructure

Ground Test

Modeling and Simulation

Prototyping, Instrumentation and Experimentation

System Development

MBSE Digital Twins

Digital Analytics Infrastructure & Technology Advancement (DAiTA) Group (AD00000)
Group Org Chart

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(AD00000)
DIG ANALYTICS INF & TECH ADV Group
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- (ADD0000) DAiTA Resources and Operations OFC
- (ADE0000) NAWCAD Experimentation OFC
- (ADR0000) Command ISSM / ISSO RDT&E ISSO & RMF OFC
- (ADW0000) NAWCAD MRTFB & Investment Management OFC

- (AD10000) Warfare Effectiveness Department
- (AD20000) Advanced Technologies Development Department
- (AD40000) Prototype Instrumentation and Experimentation Department
- (AD50000) Cyber Warfare Department
- (AD60000) Integrated Battlespace Simulation & Test Department
- (AD70000) Atlantic Ranges & Targets Department
- (AD80000) Digital / Network Applications Department
- (AD90000) Infrastructure Safety and Environmental Department
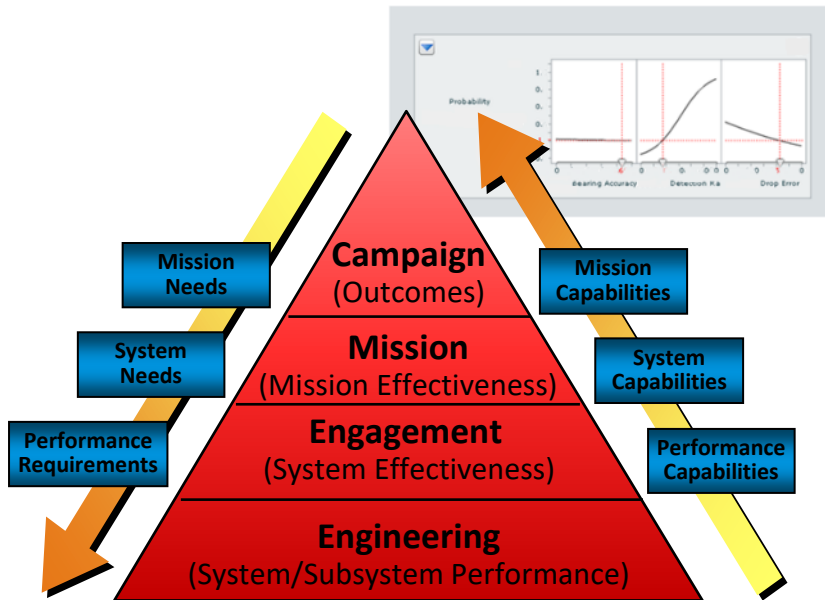
NAVAIR

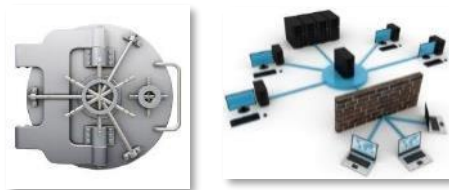# DAiTA Group Major Range and Test Facility Base (MRTFB) National Asset Capabilities

- **Immersive environments for avionics testing, virtual M&S and prototyping - Air Combat Environment T&E Facility (ACETEF) Ground and Large Chamber Environment:**
  - **Software Regression Testing**
  - **Interoperability testing**
  - **Flight Test Mission Rehearsal and Test Plan Optimization**
  - **Aircrew Proficiency Training and Human Factors Evaluations**
  - **Accident / Incident investigation**
  - **Integrated mission systems testing**
  - **Electronic Warfare (EW), Electronic Support Measures**
  - **Sensor Correlation and Fusion Algorithms**
  - **Communication, Navigation & Identification**
  - **Radar, Laser Warning, Jamming Systems**
- **DoD Electromagnetic Environmental Effects (E3) COE**
  - **E3 and Electromagnetic Interference (EMI) Testing**
  - **Mobile Electromagnetic Compatibility (EMC)**
  - **Precipitation Static (P-Static) and Lightning**
  - **Electromagnetic Pulse (EMP)**
  - **Hazard of Electromagnetic Radiation to Ordnance (HERO)**
  - **Directed Energy Weapon Test**
- **Atlantic Ranges & Targets (ART)**
  - **FQ&P Evaluations / Weapons Separation**
  - **Mission Systems Test**
  - **Target Presentation, Experimentation and Exercises**
- **RDT&E Networks**
- **Air Vehicle Modification and Instrumentation (AVMI)**
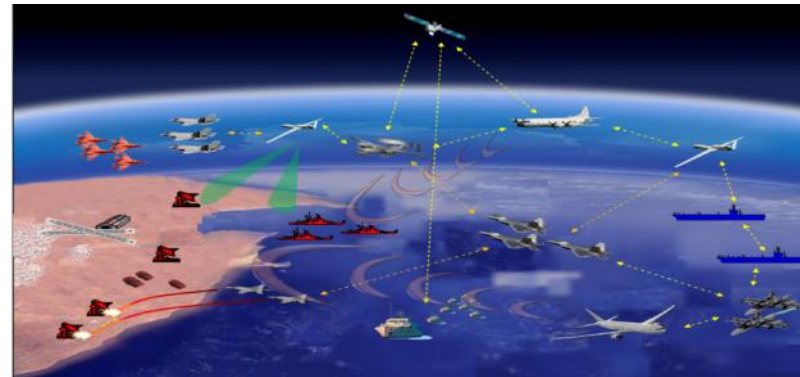- **Aircraft Prototype Systems Division (APSD)**

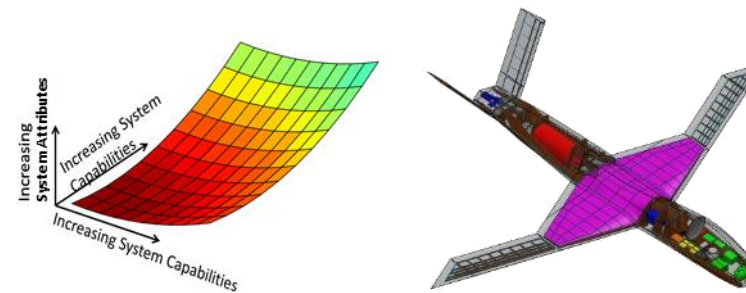## Warfare Modeling Simulation & Analysis at All Levels

- **Mission Needs**
- **Mission Capabilities**
- **System Needs**
- **System Capabilities**
- **Performance Requirements**
- **Performance Capabilities**

Campaign (Outcomes)

Mission (Mission Effectiveness)

Engagement (System Effectiveness)

Engineering (System/Subsystem Performance)

Threat Assessments, Mission Architectures and Analysis, and Concepts of Employment

Advanced Aircraft Design

KEY PRODUCTS

- Warfare Analysis (Engagement, Mission, and Campaign) across multiple warfare domains
- Advanced Concept Design (Fixed and Rotary Wing)
- NATOPS/NATIP
- CONEMPS Development
- Mission Technical Baselines (MTBs)
- Integrated Capability Technical Baselines (ICTBs)
- Critical Intelligence Parameters (CIPs)
- Lifecycle Mission Data Plan (LMDP)
- Validated Online Lifecycle Threat (VOLTs)
- Intelligence Mission Data Plans
- Threat Studies (Research, Analysis, and Reporting)
- Special Security Products (SSO – SCI security)
- Program Security Products (GSSO – SAP security)
- Model Based Systems Engineering (MBSE) Simulation Support
- Mission Environment LVC Architects (MELA)

Specialized Security Support

Assessing Warfighting Effectiveness in a Realistic Operational Context

- Concentrated focus on the research, development, experimentation, exploitation and transition of new and emerging technologies

- Partnerships with FFRCs, ONR, NRL, AFRL, DARPA, etc., in conjunction with CTO

- Fosters discovery and innovation in order to create cutting-edge solutions for the Warfighters while outpacing our adversaries.

- Targeted initial Technologies: Autonomy, Artificial Intelligence, Quantum Sensing, ASW, Biometrics and Sensor Innovation.

- Infuse NAWCAD's existing centers of excellence and NAVAIR Programs of Record with new critical technologies in support of the warfighter.

- Hands-on 'Sandbox' for workforce development.
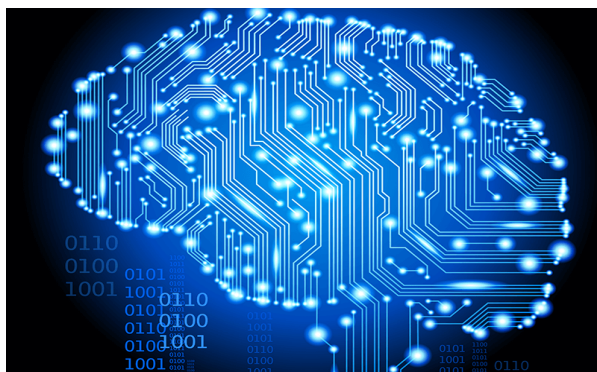
The **Prototyping, Instrumentation and Experimentation (PIE) Department** is part of the Digital Analytics Infrastructure and Technology Advancement (DAiTA) Group within Naval Air Warfare Center Aircraft Division (NAWCAD) located at Patuxent River Naval Air Station (NAS), Maryland.

PIE's mission is to provide integrated airworthy prototypes, flight test instrumentation and system experimentation capabilities for Navy and Marine Corps aircraft programs.

PIE consists of three specialized divisions that provide a single-system solution to fully meet the requirements for all Navy research, development, test, and evaluation (RDT&E) flight test programs across the NAVAIR enterprise and participates in joint DoD flight-test instrumentation projects with the Air Force, Army, Coast Guard, and Foreign Military Sales (FMS) programs.

PIE
PROTOTYPING INSTRUMENTATION & EXPERIMENTATION
A DAiTA Group Department

Mission: *Integrate Cyber Warfare and Anti-Tamper into the acquisition and sustainment of weapons systems to enhance security, readiness, safety, increase lethality, and improve resiliency in the expected environments.*

Vision: *Fully mission capable aviation systems that enable the fleet & force to fight and win in cyber contested environments while protecting critical technologies from exploitation*

MAJOR CWD FOCUS AREAS

Design in cyber resiliency into weapon systems	Develop and deliver agile and adaptive cyber defensive AND offensive capabilities for weapon systems	Develop a consistent and repeatable process in implementing cyber warfare attributes in requirements, acquisition and contract documentation	Develop integrated facilities, tools and policies in executing the requirements to deliver cyber capable (survivable and available) systems to warfighters	Develop/establish and train the cyber acquisition workforce

GROUND
TEST CAPABILITIES

Sensor Test | Modeling and Simulation
Avionics Test | Datalinks and Interoperability
Weapons Test | Radar Cross Section Measurements
Mission Rehearsal | Electromagnetic Environmental Effects
Experimentation | Advanced Prototyping (Aircraft, Trainers, and Other)
System Integration Labs | P-8A PaxSIL, E-2C ESTEL, Triton
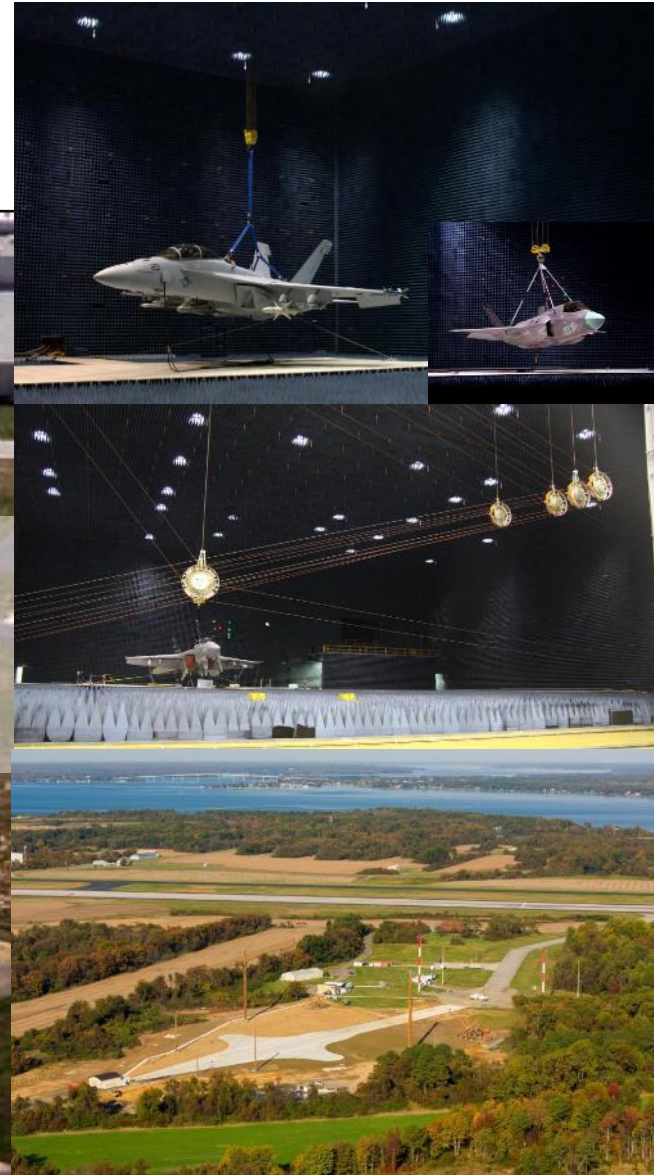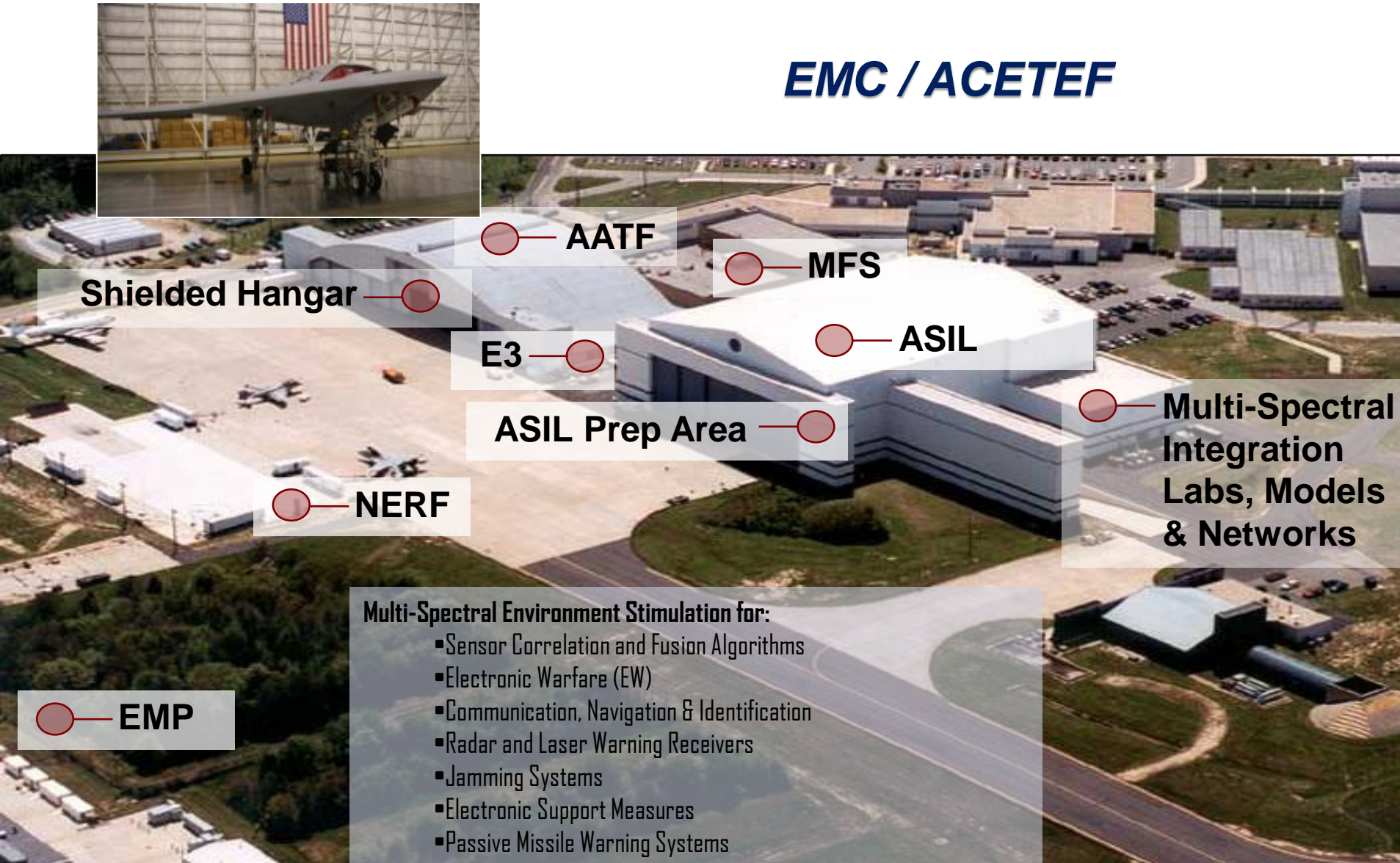
LIVE · VIRTUAL · CONSTRUCTIVE

EMC / ACETEF

AATF

MFS

Shielded Hangar

E3

ASIL

ASIL Prep Area

Multi-Spectral Integration Labs, Models & Networks

NERF

Multi-Spectral Environment Stimulation for:
- Sensor Correlation and Fusion Algorithms
- Electronic Warfare (EW)
- Communication, Navigation & Identification
- Radar and Laser Warning Receivers
- Jamming Systems
- Electronic Support Measures
- Passive Missile Warning Systems

EMP

NAVAIR

- As NAWCAD's open air range, schedules and controls air, land, and sea range operating areas and provides range resources for conducting aircraft and weapons RDT&E, training and experimentation events, including decision-quality data in support of Naval Aviation T&E

- Provides test management/coordination; range safety; high-rate telemetry data delivery; voice communications; data processing and display; time, space, position information of tracked air vehicles, vessels, and ordnance; mission control rooms and Range Control Center

- Manages and provides positive airspace control in special-use, restricted airspace covering regions over the Chesapeake Bay and the Atlantic Ocean along the coastline of Delaware, Maryland and Virginia

- Fields mobile range assets and deploys to support test programs across the country, aboard ships and around the world—using proven range systems

- Serves as the command and control center for complex lab, flight testing, training, experimentation Live, Virtual, Constructive (LVC) events for acquisition programs, USFF and other organizations

- Supports the NAWCAD Range Commander with sustainability, safety, weather, airspace management and radio frequency management functions

- Integrating with other ranges to provide a larger and enhanced East Coast test and training range capability

- Provides land, sea and aerial target services with locations at Patuxent River, Norfolk, Dam Neck, and Key West

In-shore: Chesapeake Test Range
- Restricted Areas R-4006, R-4008, R-6609, R-4007, Chessie A, B, C
- Approximately 2,700 square miles
- Surface to 85,000 feet
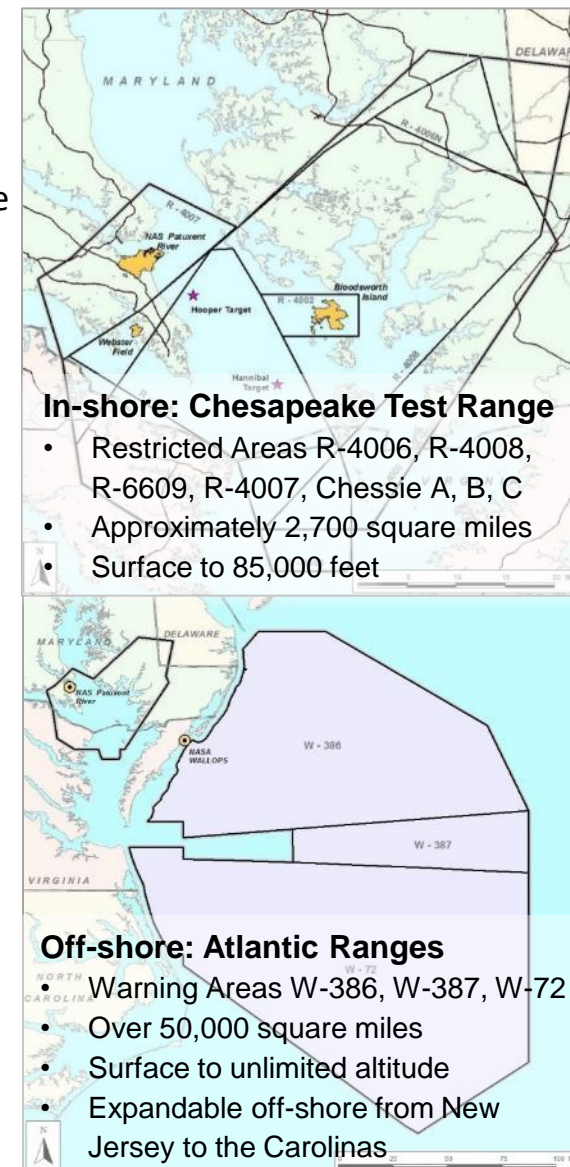
BQM-74 Aerial Targets

AQM-37

HSMST

Off-shore: Atlantic Ranges
- Warning Areas W-386, W-387, W-72
- Over 50,000 square miles
- Surface to unlimited altitude
- Expandable off-shore from New Jersey to the Carolinas

OUR MISSION IS TO SUPPORT YOURS !

Providing the people, processes, technologies, skills, knowledge, and abilities necessary to support IT/CS strategic planning, portfolio management, systems development, operations & maintenance, and cyber security services for the purpose of enabling an efficient and effective business environment for the command.

- **RDT&E IT Services**
  - DREN/SDREN Network Infrastructure
  - Network Engineering and System Administration
  - Network Operations Support Center
  - Voice and Video IP Communications
  - DREN/SDREN/SIPRNet Hosting Services
  - Security Operations Center
  - Cyber Security Risk Management
  - Program/Lab Embedded System Administration Support

- **CRM and Horizontal Integration**
  - National Help Desk
  - Project Management
  - Embedded DNA Strategic Planning Support
  - Automated Call Distribution
  - Digital Signage

- **Application Integration & Business Intelligence**
  - Application & Web Development (COTS & GOTS)
  - Collaboration Data - MyTeam (SharePoint)
  - Business Intelligence, Data Analytics, and Visualization
  - Database & Web Systems Administration (COTS & GOTS)
  - Scanning & Electronic Document Storage
  - Embedded DNA Application and BI Support

- **Infrastructure and Operations**
  - NMCI CTR Support
  - Communications (Video, Mobile, Voice, Defense Messaging)
  - Network Services and Security
  - System Administration
  - Enterprise Hosting (On-Premise Data Center and Cloud)
  - DON CIO Appointed Navy Cloud Broker (Execution)
  - Embedded DNA Technical Support

- **Cyber Security**
  - Risk Management (Assessment & Authorization, Validation)
  - Computer Network Defense
  - Embedded DNA ISSM & ISSO Support

- **Logistics IT**
  - Project Management support
  - Logistics IT Life Cycle Management support
  - IT Type/Model/Series (TMS) Aircraft Support
  - Technical Support
  - Cyber Security Support
  - Contract Support

DEVELOPING AND DELIVERING INNOVATIVE SOLUTIONS FOR OUR CUSTOMERS TO MEET TODAY'S CHALLENGING RDT&E AND ACQUISITION INFRASTRUCTURE & SAFETY NEEDS . . .
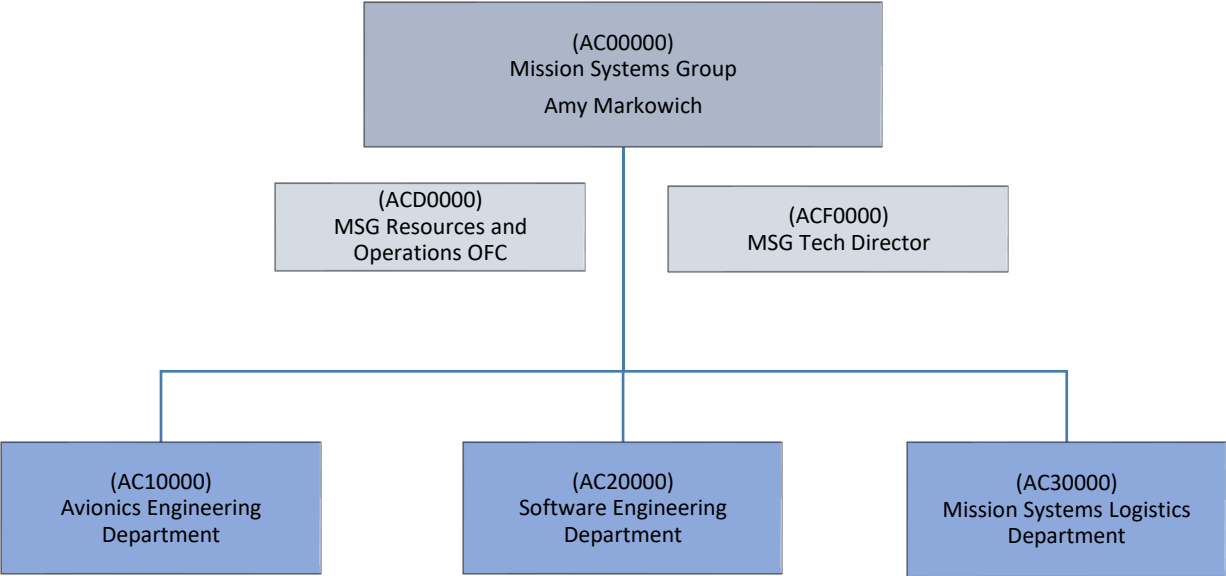
- Safety and Environmental Division
  - **Safety, Emergency and Environmental Management**

    - OSH Safety Support
    - Ionizing and Non-Ionizing Radiation Safety
    - Mission Safety Representative for Navy IG Inspections/ Audits
    - Destructive Weather planning (Key & Essential Lists)
    - Environmental; Provide HAZMAT support with mission facilities

- Resource Planning and Execution Division
  - **Facilities and Space Allocation Management**

    - Maintenance UIC Requirements Management
    - MILCON, CIP, LRP and Major Repair Requirements Management
    - Lease Management - Relocatable Trailers and Off-base Commercial Spaces
    - Program Moves and Furniture Acquisitions
    - Energy Conservation
    - Infrastructure Business Operations Navy-NAVAIR-NAWC Support (IBONS) Database

- Facilities Coordination Division
  - **Common Facilities Administration**

    - Business operation Support/Supply
    - Workspace services
    - Facilities/Safety Coordination

- Space Management Division
  - **Space Allocation and Management**

    - New space requirements and conversion
    - Furniture procurement
    - Move Services

MANAGING THE INFRASTRUCTURE THAT SUPPORTS PROGRAM AND MISSION EXECUTION

Mission Systems Group Group
(AC00000)
Group Org Chart

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                    (AC00000)
                Mission Systems Group
                   Amy Markowich

      (ACD0000)                    (ACF0000)
  MSG Resources and              MSG Tech Director
    Operations OFC


   (AC10000)            (AC20000)              (AC30000)
Avionics Engineering  Software Engineering  Mission Systems Logistics
   Department            Department             Department
```

NAVAIR

- **_Direct fleet products_**

- **_Avionics Engineering Department_**
  - **_Technology research, systems development, acquisition and in-service support of Naval avionics, mission systems and equipment_**
  - **_Communication, Navigation and Surveillance/Air Traffic Management (CNS/ATM) and Traffic Collision Avoidance System (TCAS) certifications_**
  - **_Mission system software and hardware upgrades_**

- **_Software Engineering Department_**
  - **_Acquisition, development and sustainment of integrated software systems_**
  - **_Operational Software loads with new capability, enhancements and bug fixes_**

- **_Mission Logistics Department_**
  - **_Acquisition, development and integration of support considerations into mission system designs_**
  - **_Tech data_**
  - **_Grounding bulletins_**
  - **_Training and training data_**

- **_Indirect Fleet Products_**
  - **_80% of personnel are embedded in PMA program teams providing technical engineering services that ultimately result in delivering mission system hardware, software, training and supportability artifacts to the Fleet_**

Airborne Multi-Intelligence Special Missions (AMISM) Lab

Provides research, development and testing of new airborne multi-INT and special mission capabilities

- *Services:*
  - *Network Engineering*
  - *Cyber Security / Cyber Warfare*
  - *Electronic Warfare / Threat Battlespace Development*
  - *Software Development*
  - *Autonomy (Behavioral Modeling)*
  - *AI / Machine Learning* – Integrated Weapons Systems and supporting Operational, Sustainment and Business Data Systems
- *Hardware*:
  - Next Generation Aircraft Systems (Sensors) Test Equipment
  - Next Generation Range and Aircraft Instrumentation

- *General:*
  - Flexibility and Capacity to Surge across the entire portfolio
  - Controlling internal administrative and contract cost while balancing industry realities and the ability to execute within Navy financial constraints

Upcoming DAiTA and Mission Systems Acquisition Opportunities

October 2022

Presented to: Industry Partners

Presented by: Christopher Beard
Acquisition Manager, DAiTA Group / Mission Systems Group

Digital Analytics Infrastructure & Technology Advancement (DAiTA) Group
Mission Systems Group
Highlighted Upcoming Opportunities

GROUP	DEPT	Contract Number	Requirement Name	Incumbent	Planned Value	Acq Strategy	Set Aside	Proposed NAISC	Predominant PSC	Expected RFP Release
DAITA	IBST	N0042119D0054	Battlespace Modeling and Simulation Services	AMEWAS	$100M<$<$250M	SAIDIQ / FAR 15	Small Business Set Aside	541715	AC12	Oct 17th
DAITA	ATD	NEW	ATD Research and Development Support Services (RADSS)	NEW	<$100M	Anticipate Seaport-NG	Small Business Set Aside	AC11	AC11	Late Nov 2022
DAITA	PIE	N0042120D0076	APSD Air Systems Prototyping Engineering, Fabrication, and Installation Services	AMEWAS	$100M<$<$250M	Anticipate SAIDIQ / FAR 15	TBD	541715	AC13	May-23
DAITA	ATD	N0042120D0123	ATD Anti-Submarine Warfare Engineering Services	ASEC	$100M<$<$250M	Anticipate SAIDIQ / FAR 15	TBD	541715	AC12	3rd QTR FY24
DAITA	IBST	N0042119D0070	SAIL	Wyle	<$50M	Anticipate SAIDIQ / FAR 15	TBD	541330	AC13	Feb-23
DAITA	IBST	N0042119D0074 / 20D0008	Simulation Systems Engineering, Fabrication, and Operation and Sustainment Support Services	J.F. Taylor	>$250M	Anticipate SAIDIQ / FAR 15	TBD	541715	AC12	Mar-23
DAITA	PIE	N0042119C0023	Aircraft Instrumentation Support Services	SA-Tech	$100M<$<$250M	Anticipate SA C-Type / FAR 15	TBD	541715	AC13	3rd QTR FY24
DAITA	IBST	NEW	Reconfigurable and Expandable Advanced Closed-Loop Threat Simulator (Hardware Development and Production)	NEW	<$50M	Anticipate SA C-Type / FAR 15	Unrestricted	334515	6625	Feb-23
MSG	Avionics	N0042119D0024	Core Avionics Engineering Support Services	Greenfield Engineering	$100M<$<$250M	Anticipate SAIDIQ / FAR 15	TBD	541330	R425	Jun-23
DAITA	ART	N0042119D0023	REGIONAL MULTI-DOMAIN AWARENESS CAPABILITY (RMAC)	PAE	<$100M	Anticipate SAIDIQ / FAR 15	TBD	541512	D318	May-23
DAITA	DNA	NEW	NAVAIR / NAWCAD IT Infrastructure Engineering, Operations, and Hosting Services (replaces EHS and REID contracts)	NEW	>$500M	TBD	TBD	518210 / 541513	DC01	Mar-23
DAITA	DNA	N0042118C0007 / N0042120C0040	DNA Unified Communications and IT Customer Support	AAST / RIVA	<$100M	TBD	TBD	541513	DG01	Jun-23

NAVAIR

- *APSD Systems Prototyping Engineering, Fabrication, and Installation Services:*
  - Competitive Follow On to N0042119D0076
  - NAICS Code: 541715
  - PSC: AC13 - National Defense R&D Services; Department of Defense - Military; Experimental Development
  - Anticipate Single Award IDIQ
  - Over $100M under $250M
  - Sources Sought – Planned Release in 1st QTR FY23
  - Currently a Small Business Set Aside, do not anticipate a change
  - Anticipated RFP Release in May 2023
  - Award late Fall 2023
  - Major changes:
    - Significant increase in labor and material/odc requirement
    - New capability requirements for Contractor site performance:
      - Engineering
      - Fabrication
      - Aircraft Installation
    - New capability requirements for access to Contractor owned and operated prototyping and experimentation platforms for technology demonstration and maturation
    - Expansion of "Prototyping" from an aircraft modification focus to include airframe and avionics components

- **_Simulation Systems Engineering, Fabrication, and Operation and Sustainment Support Services_**
  - Proposed Consolidation: Competitive Follow On to N0042119D0074, N0042120D0008, and N0042122C0003
  - NAICS Code: 541715
  - PSC: AC12 - National Defense R&D Services; Department of Defense - Military; Applied Research
  - Anticipate Single Award IDIQ
  - Over $250M
  - **Sources Sought – Currently available on SAM.Gov and has been extended to Oct 19th**
  - Currently a Small Business Set Aside, do not anticipate a change
  - Anticipated RFP Release in Mar 2023
  - Award late Fall 2023
  - Major Highlights:
    - Consolidation due to significant overlap of scopes and capabilities required to perform, interdependency of the work, and over $5M in administrative cost avoidance
    - Significant Contractor site infrastructure requirements including some required to be provided in the local commuting area of NAS Patuxent River
    - Inclusion of TS/SCI security performance requirements

- ***Core Avionics Engineering Support Services:***
  - Competitive Follow On to N0042119D0024
  - NAICS Code: 541330
  - PSC: R425 – Engineering Services
  - Anticipate Single Award IDIQ
  - Over $100M under $250M
  - Sources Sought – Planned Release in late 1st QTR FY23
  - Currently a Small Business Set Aside, do not anticipate a change
  - Anticipated RFP Release in June 2023
  - Award late Fall 2023
  - Major changes:
    - Inclusion of SCI performance requirements at Government site
    - Increase in Level of Effort and Material / ODC requirements
    - Expansion of expected customers supported to include entire Naval Aviation Enterprise
    - Increased provisions for support of experimentation, demonstration, prototyping and technology maturation

- **_NAVAIR / NAWCAD IT Infrastructure Engineering, Operations, and Hosting Services:_**
  - NEW REQUIREMENT / Not considered a direct follow on
  - NAICS Code: 541513, 518210, and 541330 all under consideration
  - PSC: DC01: IT and Telecom - Data Center Support Services (Labor) or DK01: IT and Telecom - Storage Support Services (Labor) under consideration
  - Anticipating a C-type or a Task Order F-type with Technical Direction Letters
  - Anticipated over $500M
  - Considering a Period of Performance of 1 Base Year with either 4, 6, or 9 option years.
  - Set Aside status has not yet been determined
  - Anticipated RFP Release in March / April 2023
  - Award late Fall 2023
  - Major Highlights:
    - Reflects organizational changes from MAO and internal to Digital Network and Applications Department business operations model and other contract consolidations and changes
    - Network Agnostic Services Capability focused regardless of environment
    - Inclusion of SCI performance requirements at Government site
    - Multi-Level and Multi-Caveat Security environments in Cloud and On-Premise
    - Updated Cyber IT Work Force Labor categories to reflect changes in the DOD 8140 and 8570 guidance and expand qualification options for work force
    - Major focus on Cloud Hosting and data environment engineering and transition in addition to IT infrastructure administration and operational support
    - New performance requirements to reflect evolving DNA capability delivery requirements
- **Sources Sought – Planned Release week of October 17th**