Digital Analytics Infrastructure & Technology Advancement Group

October 2021

Presented to: Industry Partners

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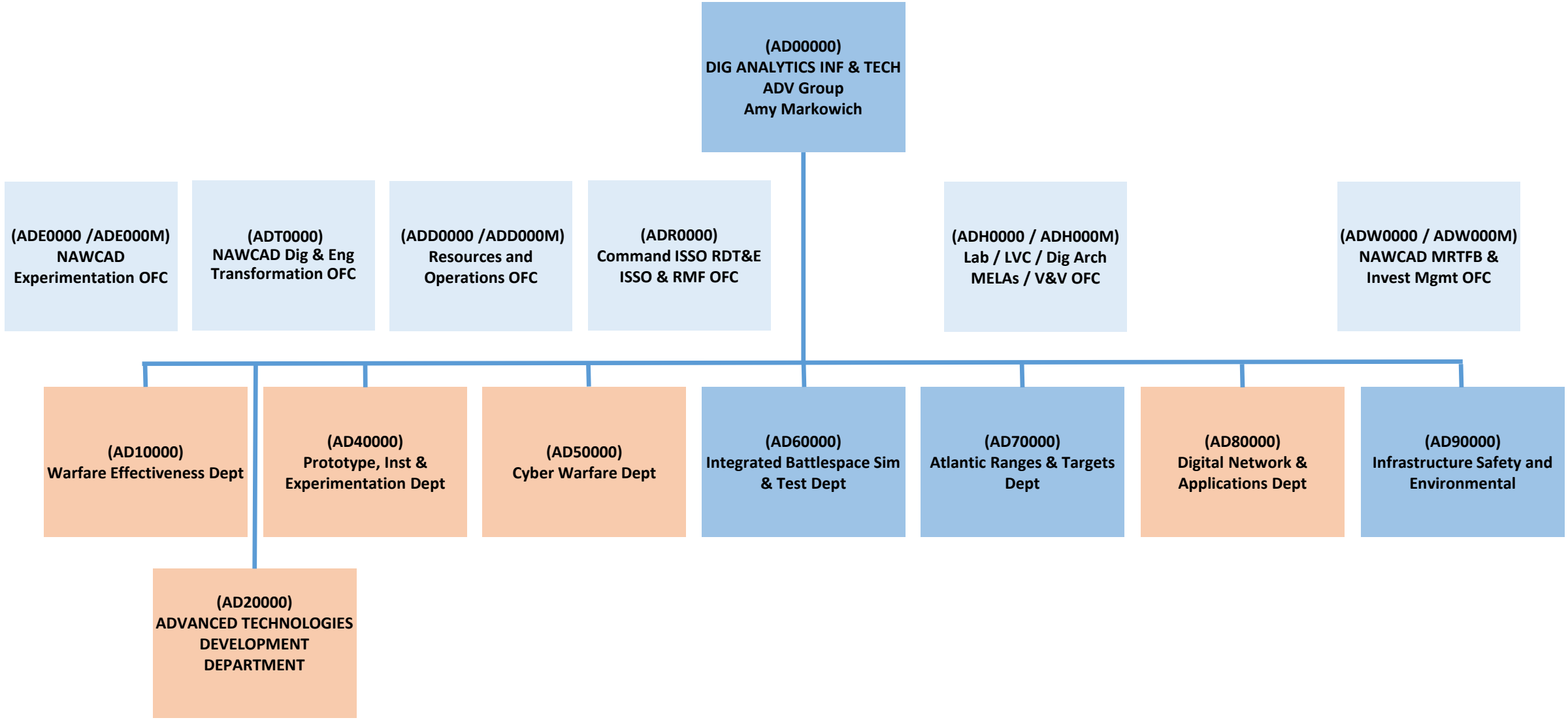
Senior Executive Service
Director, DAiTA Group

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

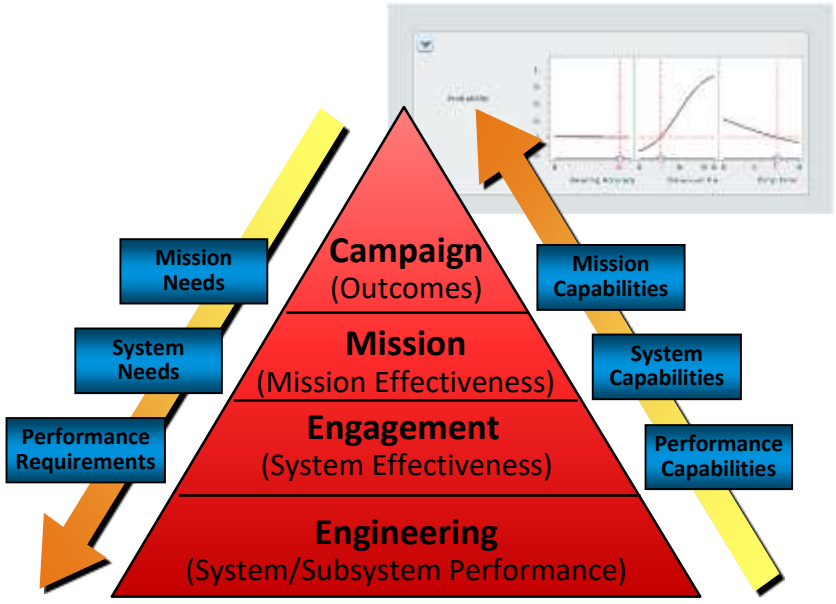
Digital Analytics Infrastructure & Technology Advancement (DAiTA) Group



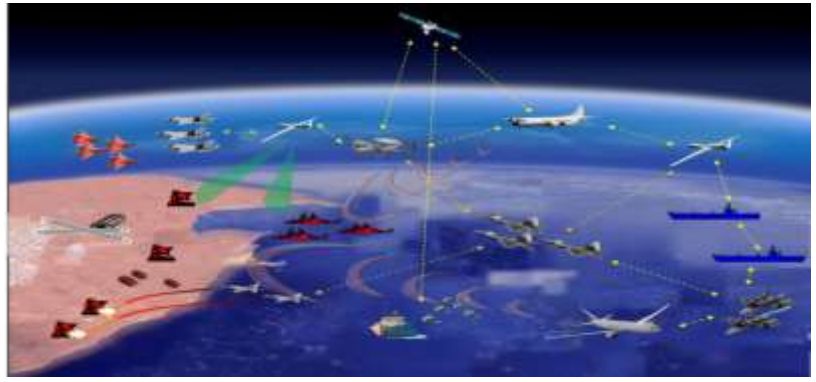
Digital Analytics Infrastructure & Technology Advancement (DAiTA) Group
Warfare Effectiveness Department (AD10000)

Assessing Warfighting Effectiveness in a Realistic Operational Context

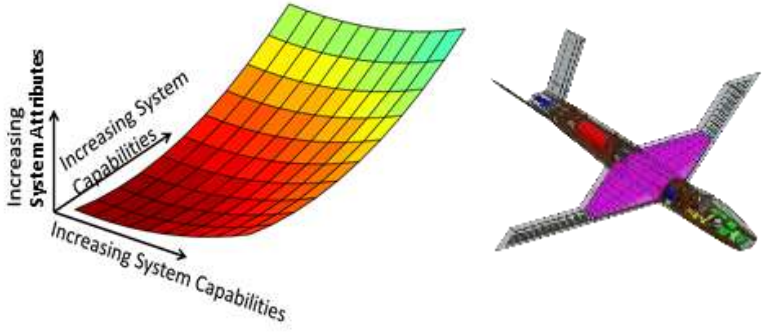
Warfare Modeling Simulation & Analysis at All Levels



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



Advanced Aircraft Design



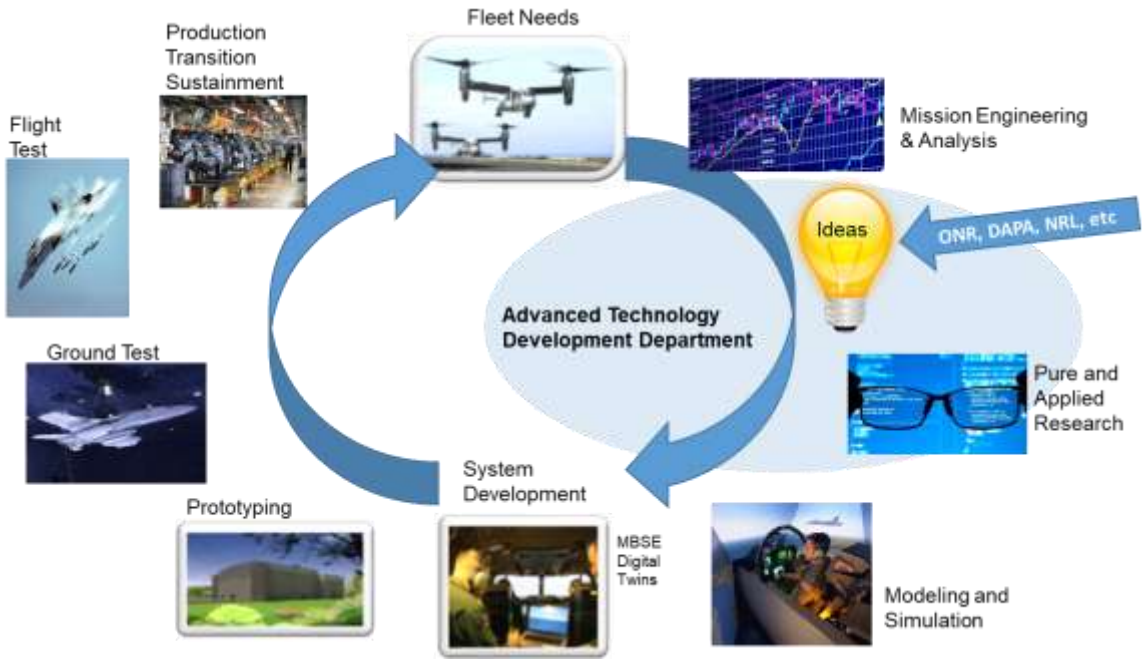
KEY PRODUCTS

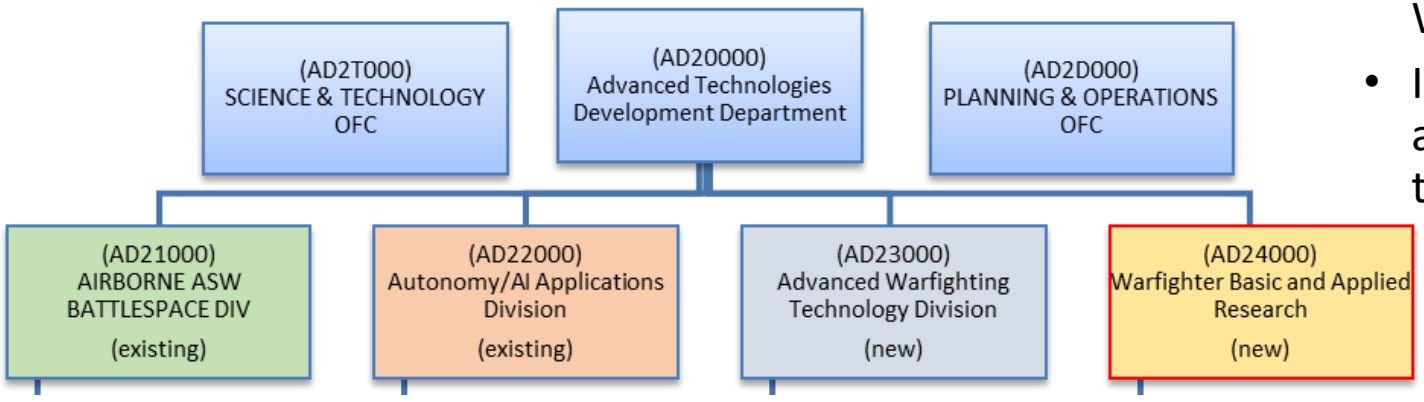
- Warfare Analysis (Engagement, Mission, and Campaign) across multiple warfare domains
- Advanced Concept Design (Fixed and Rotary Wing)
- NATOPS/NATIP
- CONEMPS Development
- Mission Technical Baselines (MTBs)
- Integrated Capability Technical Baselines (ICTBs)
- Critical Intelligence Parameters (CIPs)
- 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)
- New – Data Analytics and Tool Development
- New – Organizational and Operational Effectiveness and Investment Studies
- New – Verification, Validation and Accreditation / Model Based Systems Engineering Support

MOA between HQ, AD and WD unites the groups in a unique MAO relationship

Mission Engineering & Analysis Department NAWCWD	Mission Engineering & Analysis HQ	Mission Engineering & Analysis Department NAWCAD

Digital Analytics Infrastructure & Technology Advancement (DAiTA) Group
Advanced Technology Development Department (AD20000)





- 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, Anti-Submarine Warfare, 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.

Digital Analytics Infrastructure & Technology Advancement (DAiTA) Group
Prototyping, Instrumentation and Experimentation (PIE) Department (AD40000)

PROTOTYPING INSTRUMENTATION & EXPERIMENTATION
A DAiTA Group Department

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.

- **Aircraft Prototype Systems Division**
- **Aircraft Instrumentation Division**
- **Planned – Aircraft Experimentation Division**

Digital Analytics Infrastructure & Technology Advancement (DAiTA) Group
Cyber Warfare Department (CWD) (AD50000)
Mission and Vision

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*

KEY PRODUCTS, SERVICES & CAPABILITIES

- NAVAIR CYBERSAFE Technical Warrant Holder (TWH)
- Integrated Program Cybersecurity Engineering (IPCE)
- Cybersecurity Maturity Model Certification
- Anti-Tamper Engineering
- Cyber Risk Assessments (CRAs) in coordination with the Intel Community (IC)
- Cyber Supply Chain Risk Management (SCRM)
- Cyber Protection Research & Technology Development & Transition
- Software Assurance
- Microelectronics H/W and Firmware Assurance
- Cyber Vulnerability Research & Discovery
- Naval Aviation Red Team
- Cyber Test & Evaluation Tools
- Offensive Cyber Warfare Engineering
- Proactive Defensive Cyber Operations
- National Cyber Range

Digital Analytics Infrastructure & Technology Advancement (DAiTA) Group
Integrated Battlespace Simulation and Test Department(IBST) (AD60000)
Advanced Modeling, Simulation, and Missions System Testing

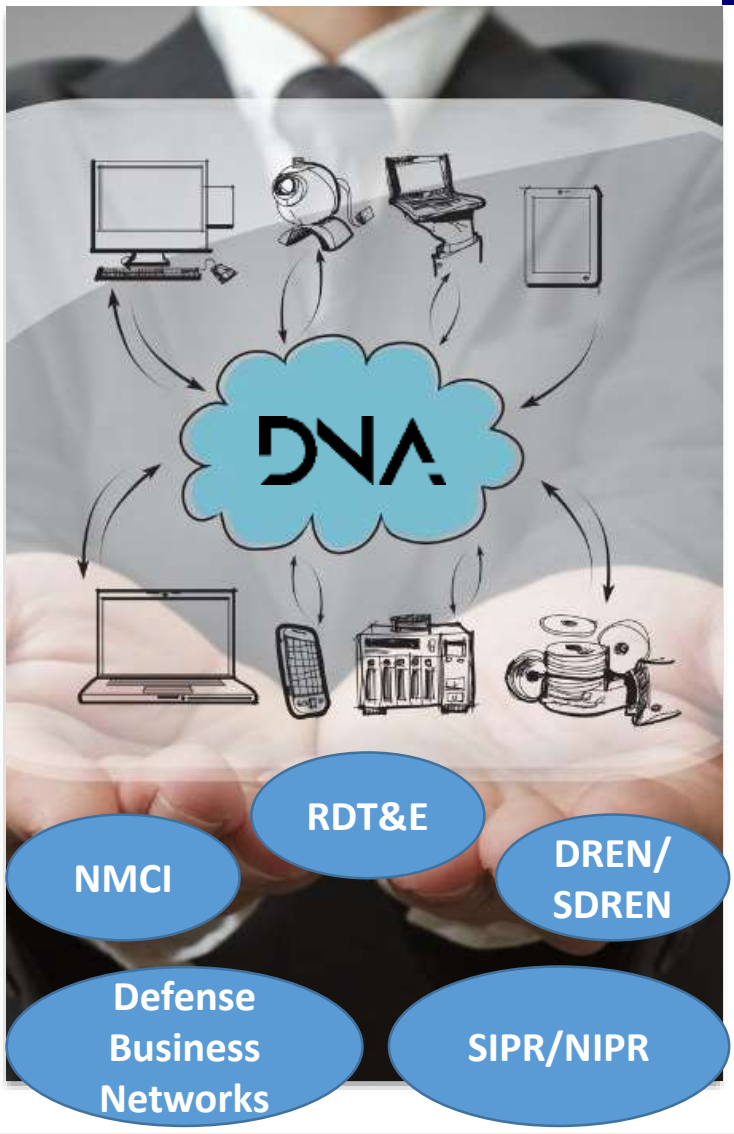
NAWCAD IBST Department provides resources required to execute RDT&E of advanced 5th generation platforms and 'systems of systems' using a mix of Installed Systems Test Facilities (ISTF) and Live – Virtual – Constructive (LVC) techniques.

- Immersive environments for avionics testing, virtual M&S and prototyping - Air Combat Environment T&E Facility (ACETEF) Ground and Large Chamber Environment:
  - Integrated mission systems testing
  - Interoperability testing
  - Electronic Warfare (EW), Electronic Support Measures
  - Sensor Correlation and Fusion Algorithms
  - Communication, Navigation & Identification
  - Radar, Laser Warning, Jamming Systems
  - Software Regression Testing
  - Flight Test Mission Rehearsal and Test Plan Optimization
  - Aircrew Proficiency Training and Human Factors Evaluations
  - Accident / Incident investigation
- DoD Electromagnetic Environmental Effects (E3) COE Testing
  - Electromagnetic Interference (EMI), Electromagnetic Compatibility (EMC)
  - Precipitation Static (P-Static) and Lightning
  - Electromagnetic Pulse (EMP)
  - Hazard of Electromagnetic Radiation to Ordnance (HERO)
- Support of Carrier Air/Wing Integration
- Advanced Modeling and Simulation
  - RDT&E and Training Systems Simulation development
  - DoD Enterprise M&S Standards
  - Synthetic Battlespace Environments
- Joint Simulation Environment
  - Cutting edge, multi-use, Pilot-in-the-Loop/Threat-in-the-Loop test environment

Digital Analytics Infrastructure & Technology Advancement (DAiTA) Group
Atlantic Ranges & Targets (ART) Department (AD70000)
Atlantic Test Ranges (ATR)
Atlantic Targets and Marine Operations (ATMO)

- 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
- 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
- Provides land, sea and aerial target services with locations at Patuxent River, Norfolk, Dam Neck, and Key West and support fleet training events around the world
- Delivers the resources required to provide NAWCAD and the fleet with threat-representative targets and presentations for test, training, and experimentation at sea, on land, and in the air
- Works with ATR to provide range clearance and other resources required for RDT&E, training and experimentation events
- Designs, develops, modifies, deploys a wide-range of threat-representative airborne, surface and land-based target systems and scenarios

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.

- Enterprise IT Infrastructure Operations and Sustainment
- Enterprise Hosting (On Premise to Cloud, CLASS and UNCLASS)
- Enterprise Network Engineering
- Enterprise Systems Administration
- Enterprise Help Desk
- Embedded IT Technical and Sys Admin Support
- Applications and Web Development, Modernization and Sustainment
- Collaboration (Sharepoint, O365, Flankspeed)
- Business Data Analytics and Visualization (EDC, QLIK, PowerBI, Tableau, etc.)
- NMCI CTR Support
- Cyber Security
  - Risk Management Framework (RMF)
  - Computer Network Defense (CND)
  - Embedded ISSM & ISSO Support
- Commercial Solutions for Classified (CSfC)
- Communications (Voice, Video, Messaging, Digital Signage)
- Logistics IT Support
  - Lifecycle Management
  - PMA / Acquisition Support
- IT Process Improvements

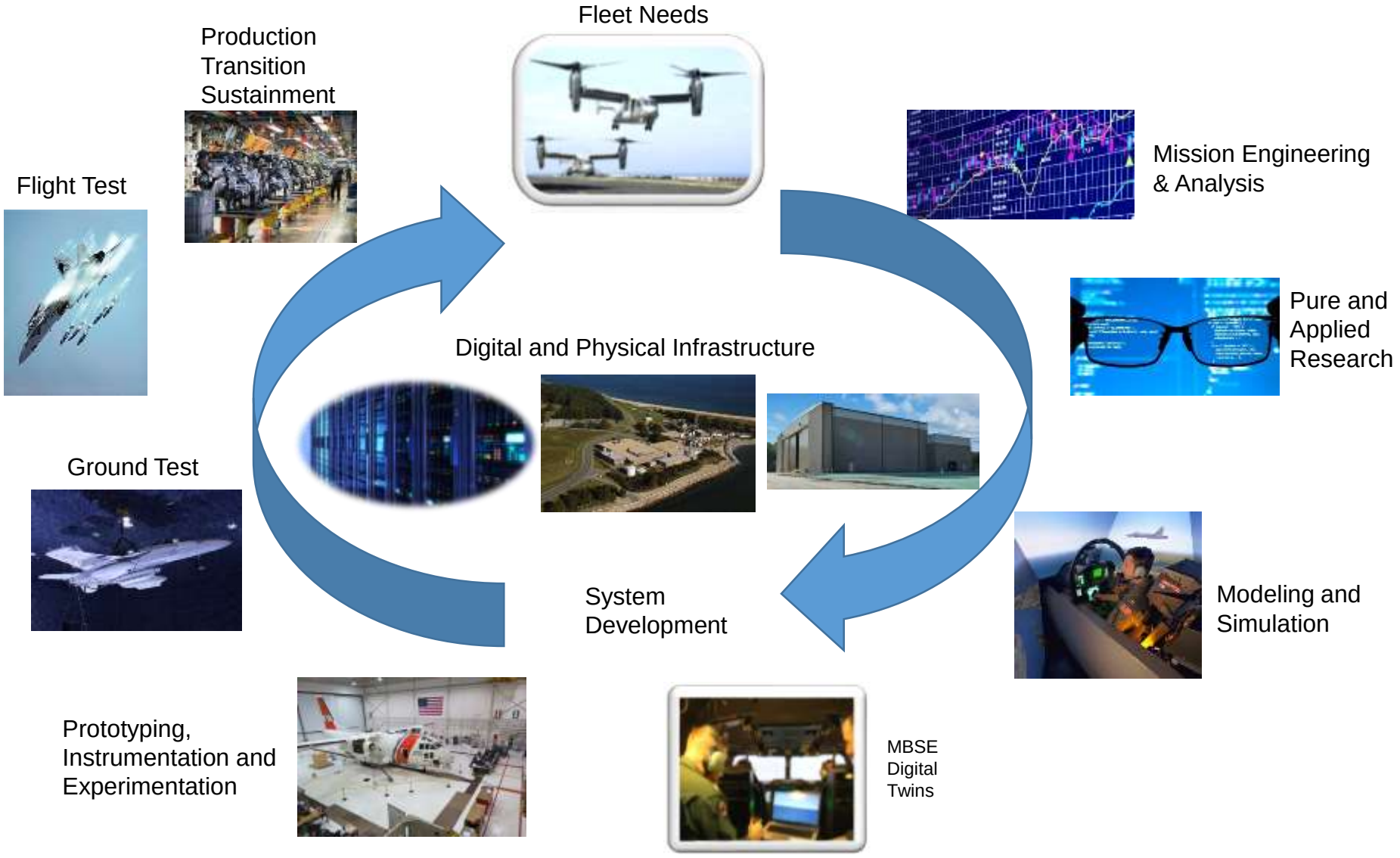
Digital Analytics Infrastructure & Technology Advancement (DAiTA) Group Areas of Need

- ***Services:***
  - Network Engineering
  - Cyber Security / Cyber Engineering/Cyber Warfare
  - Electronic Warfare
  - Autonomy (Behavioral Modeling)
  - AI / Machine Learning – Integrated Weapons Systems and supporting Operational, Sustainment and Business Data Systems
  - Data Analytics
  - Aircraft Mission Systems and Operational Use in Mission Thread

- ***Hardware***:
  - Next Generation Aircraft Systems (Sensors) Test Equipment
  - Next Generation Range and Aircraft Instrumentation

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

Digital Analytics Infrastructure & Technology Advancement (DAiTA) Group
Closing Remarks



Upcoming Highlighted DAiTA Opportunities

- ***Warfare Effectiveness Support Services:***
  - Consolidation: Competitive Follow On to N0042117D0036 and N0042120F1029 (Data Analytics / LVCE scope)
  - NAICS Code: 541330
  - PSC: R425 Professional Engineering Services
  - Single Award IDIQ
  - Over $100M
  - Sources Sought and Market Research was performed Dec 2020 / Jan 2021
  - Full and Open Competition / no set aside
  - DRAFT RFP Release in Nov 2021 pending ISTRAP signature
  - Award by June 2022
  - Naval aviation warfare and mission capability analysis, providing Modeling, Simulation and Analysis (MS&A) support to NAVAIR program offices, OPNAV, and the fleet for analytically defendable acquisition decisions, acquisition program execution and mission operational organization decisions. Analysis, strategic planning, and program implementation of the utilization of live virtual constructive environment methods, tools, infrastructure, and data analytics, and model based systems engineering techniques and methods in support of systems RDT&E, acquisition and sustainment.

- ***Naval Aviation Weaponeering Integration, NATOPS, NATIP and Systems Technical Support Services (WINN-TS):***
  - Competitive Follow On to N0042117D0036
  - NAICS Code: 541330
  - PSC: R425 Professional Engineering Services
  - Single Award IDIQ
  - Over $100M
  - Sources Sought and Market Research was performed Dec 2020 / Jan 2021
  - Full and Open Competition / no set aside
  - DRAFT RFP Release in Nov 2021 pending ISTRAP signature
  - Award by June 2022
  - Support Service efforts include to create& maintain new NATOPS and NATIP. The scope encompasses: (1) Advanced NATOPS, NATIP and (JMPS User) Component Manual Production and CM; (2) Fleet liaison / subject matter expert; (3) Fleet SCS and new systems Introduction and Train the Trainer presentation development

- ***Cyber Warfare RDT&E Engineering Services:***
  - Competitive Follow On to N0042120F1029 (Cyber Scope)
  - NAICS Code: 541715
  - PSC: AC11 – 13 R&D Defense Systems
  - Single Award IDIQ
  - Over $100M
  - Sources Sought and Market Research was performed June 2021
  - Small Business Set Aside 1,500 employees
  - DRAFT RFP Release in Dec 2021 pending ISTRAP signature
  - Award by Summer 2022
  - Cyber Warfare Department ID/IQ Engineering Services Contract. Scope will include but not limited to RDT&E of Cyber Warfare activities, penetration testing, system security engineering, offensive and defensive cyber tool development, modeling and simulation of cyber effects, cross domain cyber security, airworthiness for Cyber systems.

- ***Battlespace Modeling and Simulation RDT&E Services:***
  - Competitive Follow On to N0042119D0054
  - NAICS Code: 541715
  - PSC: AC12 R&D Defense Systems: Applied Research
  - Single Award IDIQ
  - Over $100M
  - Sources Sought and Market Research was performed June 2021
  - Small Business Set Aside 1,500 employees
  - DRAFT RFP Release in Dec 2021 pending ISTRAP signature
  - Award by late Summer 2022
  - Research, design, development, sustainment and upgrade of Battlespace models & simulation tools, application of battlespace simulation tools to specific customer requirements, R&D of warfare scenarios, dev & integration of battlespace entity models/ behaviors & delivered battlespace product support. Efforts support sys acquisition, RDT&E, upgrade, modification and training phases of system life cycle.

- ***Advanced Technology Development R&D Services:***
  - New Requirement
  - Anticipated NAICS Code: 541715 or 541330
  - PSC: AC11 R&D Defense Systems: Basic Research
  - Single Award Task Order
  - Under $50M
  - Listed as Autonomy R&D in LRAF
  - Acquisition strategy still in development (Seaport NxG, DTIC IAC MAC, other)
  - Scope Areas:
    - Autonomy / Artificial Intelligence / Machine Learning R&D
    - Non-traditional Sensor technologies R&D
    - Quantum applications R&D
    - Advanced technology transition / integration
  - Expect competition in Summer 22 / award Fall 22