Navy SBIR / STTR Topic Workshop

(Small Business Innovation Research & Small Business Technology Transfer)

Smaller Business Association New England (SBANE)

05 December 2017

Presented by:

Ms. Donna H. Attick

NAVAIR SBIR Program Manager

NAVAIR

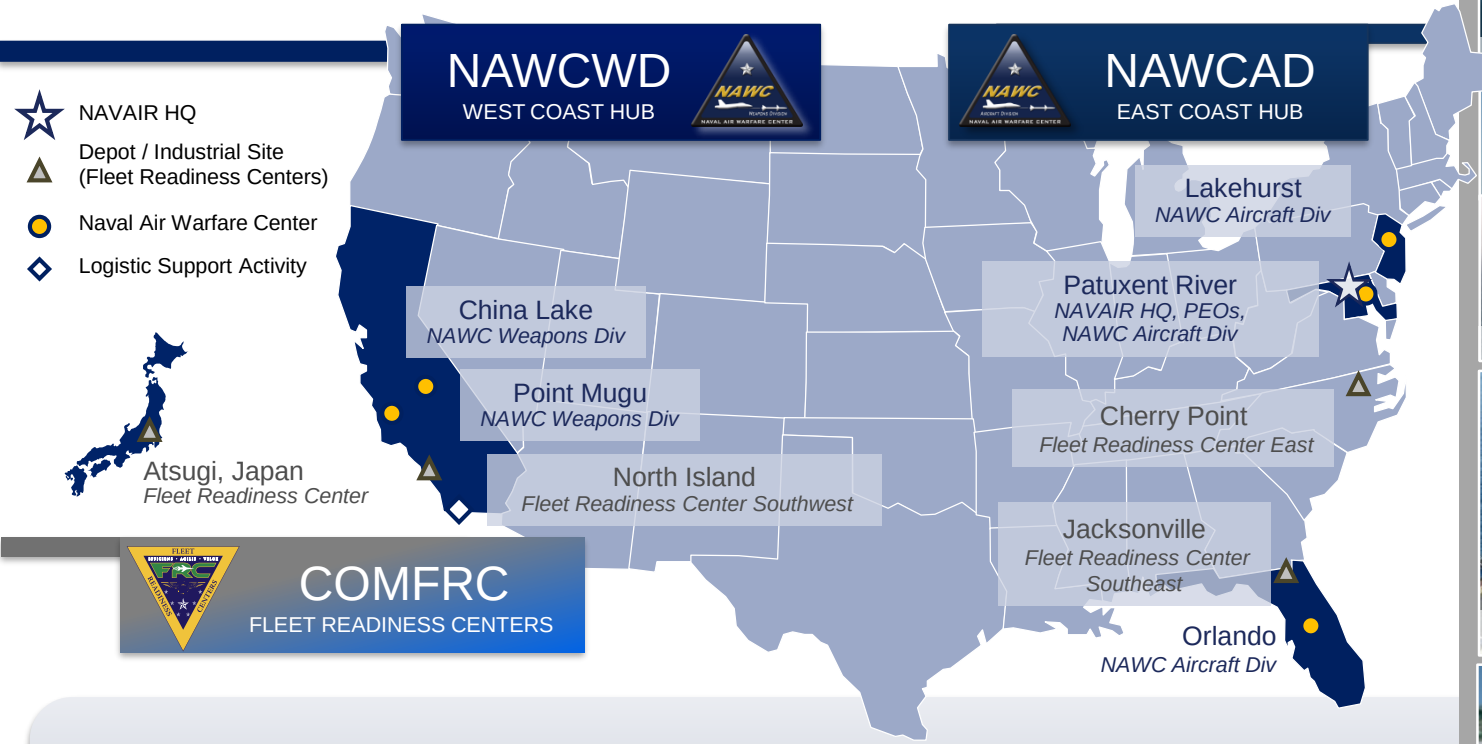
Agenda

- Who is NAVAIR?
- What is NAVAIR?
- NAVAIR SBIR Process
- NAVAIR SBIR/STTR Topics

NAVAIR Snapshot

Full Life-cycle Management

Req'ts / Risks from Fleet / OPNAV	Materiel Solution Analysis	Technology Maturation & Risk Reduction	Engineering And Manufacturing Development	Production & Deployment	Operations & Support



26,221 Civilians | **1,657** Military | **9,050*** Contractors

** The CSS number reflects that of FY14, other numbers reflect FY15*

Products

Tactical Aircraft

Air ASW, Assault & Special Mission

Unmanned Aircraft & Strike Weapons

Common Systems / Mission Systems / Training / ALRE

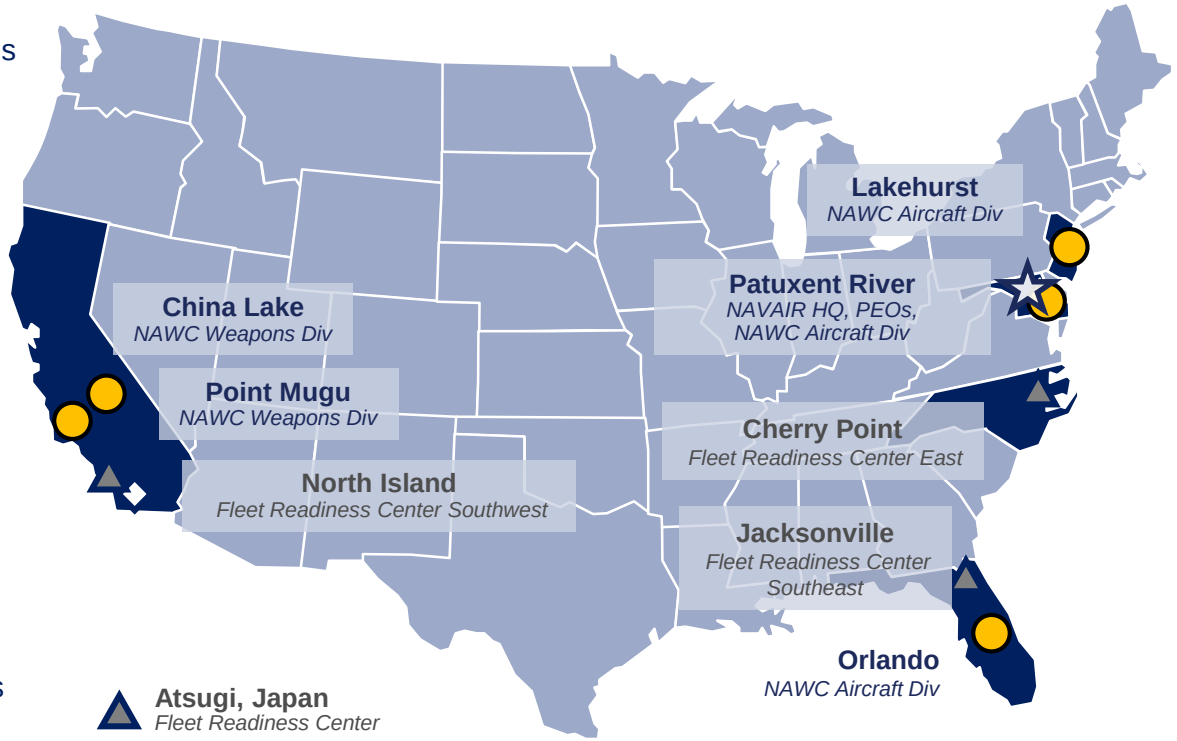
Command Locations

NAWCWD
WEST COAST HUB

- Research and Engineering
- Air-to-air Weapons
- Air-to-ground Weapons
- Missiles / Freefall Weapons
- Weapons/ Platform Integration
- Systems-Of-Systems Integration
- Survivability/Lethality/ Vulnerability
- Electronic Warfare
- Energetics
- Modeling, Simulation and Analysis
- Unmanned Systems
- Land and Sea Ranges
- Test and Evaluation

NAWCAD
EAST COAST HUB

- Research and Engineering
- Manned and Unmanned Air Vehicles and Systems
- Aircraft Systems Integration
- Propulsion and Power
- Avionics and Sensors
- Human Systems Integration
- Aircraft Launch and Recovery Equipment / Support Equipment
- Ship Interface and Support Systems
- Human Performance / Simulator Systems
- Training and Training Systems
- Logistics Analysis and Support
- Atlantic Test Range
- Test and Evaluation



NAVAIR HQ

Depot / Industrial Site (Fleet Readiness Centers)

Naval Air Warfare Center

Logistic Support Activity

COMFRC
FLEET READINESS CENTERS

- Depot Level Maintenance And Repair (Airframe, Engines, Components And Support Equipment)
- Intermediate Level Maintenance
- Inservice Engineering And Logistics Support
- Air Launch And Recovery Repairs

WHAT IS NAVAIR

NAVAIR PRODUCTS

Fixed Wing

Rotorcraft

Unmanned Air Systems

Weapons

Aviation Systems

Delivering RESULTS

Actual FY16 Deliveries
136 New Aircraft
15,108 Missiles / Bombs
129* Unmanned Air Vehicles (UAV)
6 UAV Ground Systems
41 Training Devices
494 Aircraft Repairs (Includes Commercial / Inter-Service)
1,777 Engine Repairs (Includes Commercial / Inter-Service)
68,893 Component Repairs
4,506 Support Equipment Repairs

* Includes Program of Record & Non-PoR UAVs for USMC (PMA-263)

PEO(T) PROGRAMS

PMW/A-101
Multifunctional Information Distribution System

PMA-231
E-2 / C-2

PMA-234
EA-6B Prowler

PMA-251
Aircraft Launch & Recovery Equipment

PMA-257
AV-8B Harrier

PMA-259
Air-to-Air Missile Systems

PMA-272
Advanced Tactical Aircraft Protection Systems

PMA-265
F/A-18 / EA-18G

PMA-298
Air Warfare Mission Area

PMA-213
Naval Air Traffic Management Systems

PMA-273
Naval Undergraduate Flight Training Systems

PROGRAM EXECUTIVE OFFICE
TACTICAL AIRCRAFT PROGRAMS

PEO(A) PROGRAMS

PMA-261
Heavy Lift Helicopters

PMA-264
Air ASW Systems

PMA-275
V-22 Osprey

PMA-276
Light / Attack Helicopters

PMA-299
Multi-Mission Helicopters

PMA-290
Maritime Patrol & Reconnaissance Aircraft

PMA-271
Airborne Strategic Command, Control & Communications

PMA-207
Commercial Transport & Support

PMA-274
Presidential / Executive Lift Helicopters

PEO(U&W) PROGRAMS

PMA-281
Strike Planning & Execution Systems

PMA-201
Precision Strike Weapons

PMA-263
Small Tactical UAS

PMA-208
Navy Aerial Targets & Decoys

PMA-262
Persistent Maritime UAS

PMA-242
Direct & Time Sensitive Strike

PMA-266
Multi-Mission Tactical UAS

PMA-268
Unmanned Carrier Aviation

PMA-280
Tomahawk Weapons System

AIR-1.0 PROGRAMS

PMA-260
Aviation Support Equipment

PMA-205
Aviation Training Systems

PMA-226
Specialized & Proven Aircraft

AIR 1.0
ASSISTANT COMMANDER FOR ACQUISITION
ACQUISITION EXCELLENCE

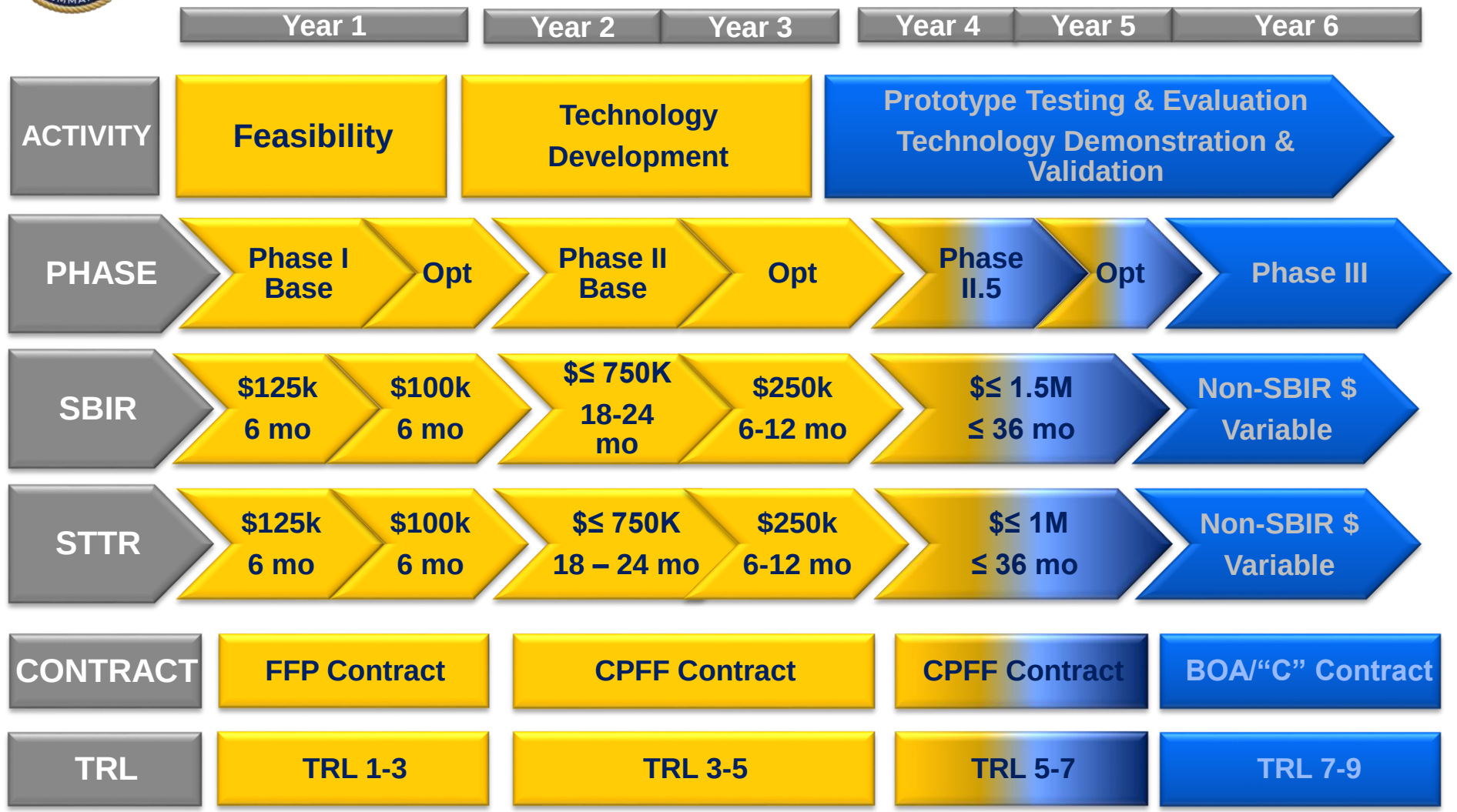
PMA-202
Aircrew Systems

PMA-209
Air Combat Electronics

PMW/A-170
Communication & GPS Navigation

Program Management Competency/Functional Lead
Policy / Process / Tools Stewardship across AIR-1.0 & PEO (A, T, U&W, JSF) Programs

NAVAIR SBIR Phase Structure



Opt – Option
TRL – Technology Readiness Level
FFP – Firm Fixed Price
CPFF – Cost Plus Fixed Fee

CONNECT WITH NAVAIR

Website

www.navair.navy.mil

Fleet Requests

www.navair.navy.mil/index.cfm?fuseaction=home.contact_us

Facebook

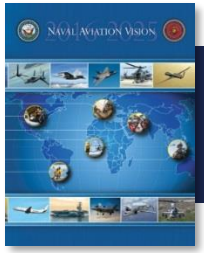
www.facebook.com/navair

Naval Aviation News

navalaviationnews.navylive.dodlive.mil

Twitter

www.twitter.com/navairnews



Naval Aviation Vision

www.nae.navy.mil

YouTube

www.youtube.com/navairsyscom

NAVAIR Overview

https://youtu.be/sKpyg5CRrr8

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PEO(A)
SBIR 18.1 / STTR 18A Topics

Shawn Slade
Asst. PEO(A) for Science and Technology

PEO(A) PROGRAMS

PMA-261
Heavy Lift Helicopters

PMA-264
Air ASW Systems

PMA-275
V-22 Osprey

PMA-276
Light / Attack Helicopters

PMA-299
Multi-Mission Helicopters

PMA-290
Maritime Patrol & Reconnaissance Aircraft

PMA-271
Airborne Strategic Command, Control & Communications

PMA-207
Commercial Transport & Support

PMA-274
Presidential / Executive Lift Helicopters

N181-010

Topic Title: Rotorcraft Integrated Electro-Optic/Infrared (EO/IR) Plumes and Effects Signature Modeling

Description: Investigate and develop a robust, Electro-Optic/Infrared (EO/IR) signature modeling capability that integrates rotorcraft full-body, asymmetric plume, downwash, and laser radar signature effects based on existing, widely-used, and validated air vehicle signature model(s).

Sponsoring PMAs: PMA-261, PMA-275, PMA-299, PMA-272

TPOC: NAWCAD, (301) 757-7605

N18A-T003

Topic Title: Repurposing Computational Analyses of Tactics for Training Assessments

Description: Design and develop a software technology that leverages data science and advanced computational analyses of tactical data sources to improve training scenarios and assessments and make training more adaptive, efficient, and effective.

Sponsoring PMAs: PMA-276

TPOC: NAWCTSD, (407) 380-4773

N181-028

Topic Title: Precision Machining of Composite Structures

Description: Develop an innovative machining process that can effectively and precisely machine holes in composite structures while preventing induced damage.

Sponsoring PMAs: PMA-261, PMA-262

TPOC: NAWCAD, (301) 342-0297

N181-019

Topic Title: Innovative Material (and Application Method) for a Hydrophobic/Oleophobic Coating to an Aluminum-Bodied Heat Exchanger

Description: Develop a material (and application method) for a hydrophobic/oleophobic coating to an aluminum-bodied, air-cooled, fluid-managing heat exchanger, with the subject heat exchanger of the tube-and-fin configuration.

Sponsoring PMAs: PMA-275

TPOC: NAWCAD, (301) 342-0865

N181-021

Topic Title: Innovative Ultra Violet and Ozone Resistant Material for Hydraulic Clamp Cushions

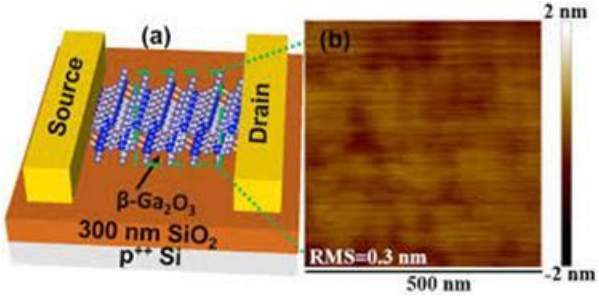
Description: Develop an alternative material for hydraulic clamp cushions that is resistant to both ultra violet (UV) and ozone exposure and compatible with the relevant hydraulic fluids of the Navy.

Sponsoring PMAs: PMA-261, PMA-265

TPOC: NAWCAD, (301) 757-2931

N18A-T004

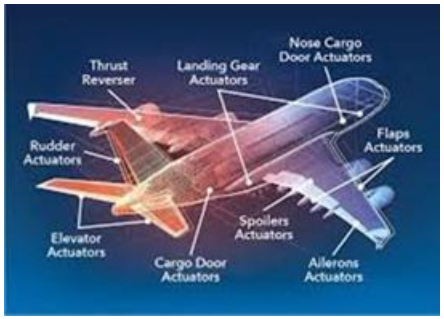
Topic Title: Next-Generation, Power-Electronics Materials for Naval Aviation Applications



Description: Develop wide-band gap (WBG) electronic material systems for naval aviation applications.

Sponsoring PMAs: PMA-262, PMA-234, PMA-265, PMA-275, PMA-290

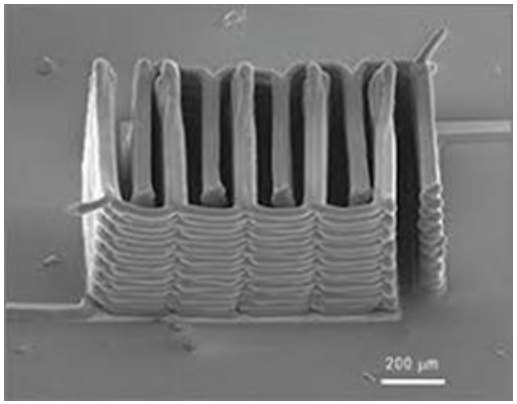
TPOC: NAWCAD, (301) 342-0365



Pictures acknowledgement: google.com

N18A-T008

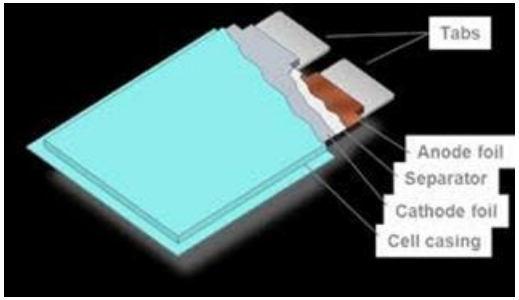
Topic Title: Additive Manufacturing for Naval Aviation Battery Applications



Description: Leverage additive manufacturing (AM) for innovative battery design, fabrication, packaging, and integration.

Sponsoring PMAs: PMA-275, PMA-242, PMA-263, JSF

TPOC: NAWCAD, (301) 342-0365



Pictures acknowledgement: google.com

4.5
SBIR 18.1 / STTR 18A Topics

Anthony Brescia
4.5 National S&T Lead

N181-006

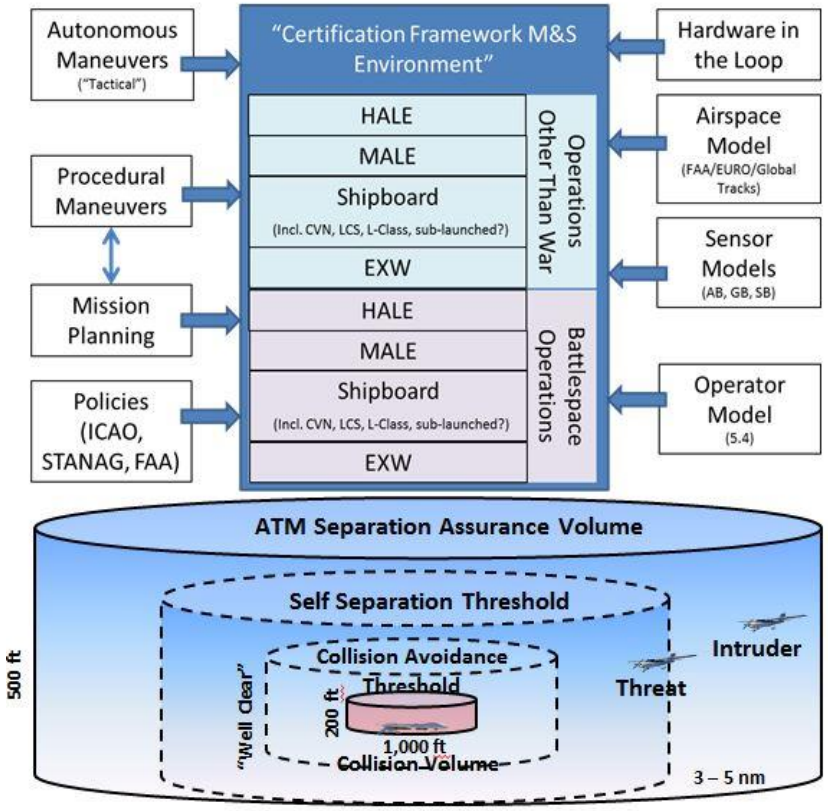
Topic Title: S-Band Transmit/Receive Module for Airborne Navy Radars

Description: Develop an S-band transmit/receive (T/R) module suitable for use in a next-generation Navy airborne radar.

Sponsoring PMAs: PMA-231

TPOC: NAWCAD, (301) 757-7014

N18A-T007



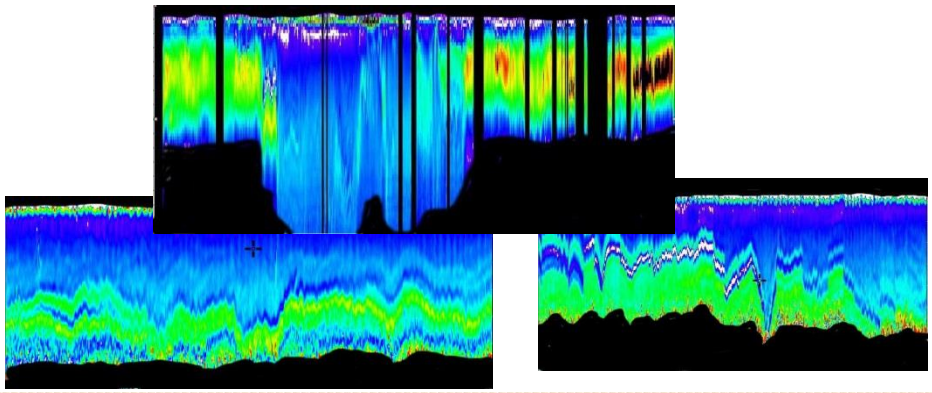
Topic Title: Detect and Avoid Certification Environment for Unmanned Air Vehicles (UAVs)

Description: Develop a software application capable of assessing the level of safety of various detect and avoid (DAA) technologies as they might be integrated on an unmanned aircraft (UA) operating in representative operational environments.

Sponsoring PMAs: PMA-266, PMA-262, PMA-263, PMA-268

TPOC: NAWCAD, (301) 904-4742

N181-012



Topic Title: Low Cost Persistent Environmental Measurement System

Description: Develop an air-launched persistent ocean environment measurement system that is capable of gathering and transmitting water column information at a low cost per profile.

Sponsoring PMAs: PMA-264, PMA-290

TPOC: NAWCAD, (301) 342-2034

N181-020

Topic Title: High-Power, Low-Frequency, Textured PMN-PT Underwater Projector

Description: Develop, fabricate, test, and demonstrate a low-frequency, high-powered, underwater acoustic transducer that employs the enhanced properties of PMN-PT (lead magnesium niobate - lead titanate) textured ceramic and allows for integration into an air-deployable sensor.

Sponsoring PMAs: PMA-264, PMA-290

TPOC: NAWCAD, (301) 757-3617

4.5
SBIR 18.1 / STTR 18A Topics

Adoum Mahamat
Optical Engineer/Physicist

N181-022

Topic Title: Laser Periscope Detection

Description: Develop a technology for long-range detection of periscopes in maritime environments using a high-power Short Wave Infrared (SWIR) laser to detect submarine periscopes and submarine optics masts from aircraft at both low and high altitudes.

Sponsoring PMAs: PMA-264, PMA-299

TPOC: NAWCAD, (301) 342-3378

N181-023

Topic Title: Multispectral/Hyperspectral Imaging System for Small Boat Detection under Wake Clusters

Description: Develop a lightweight, low-cost, turreted, multispectral/hyperspectral imaging system capable of detecting, recognizing, identifying, and tracking fast-moving boats while either partially or completely obscured by highly reflective water wakes.

Sponsoring PMAs: PMA-299, PMA-290, PMA-268

TPOC: NAWCAD, (301) 342-3378

N18A-T001

Topic Title: Cooling System for Laser Enclosure

Description: Develop an efficient laser cooling system for heat removal from a laser enclosure system.

Sponsoring PMAs: PMA-299, PMA-272, PMA-266, PMA-264

TPOC: NAWCAD, (301) 342-3378

PEO(U&W) Advanced Technology Overview for Smaller Business Association of New England

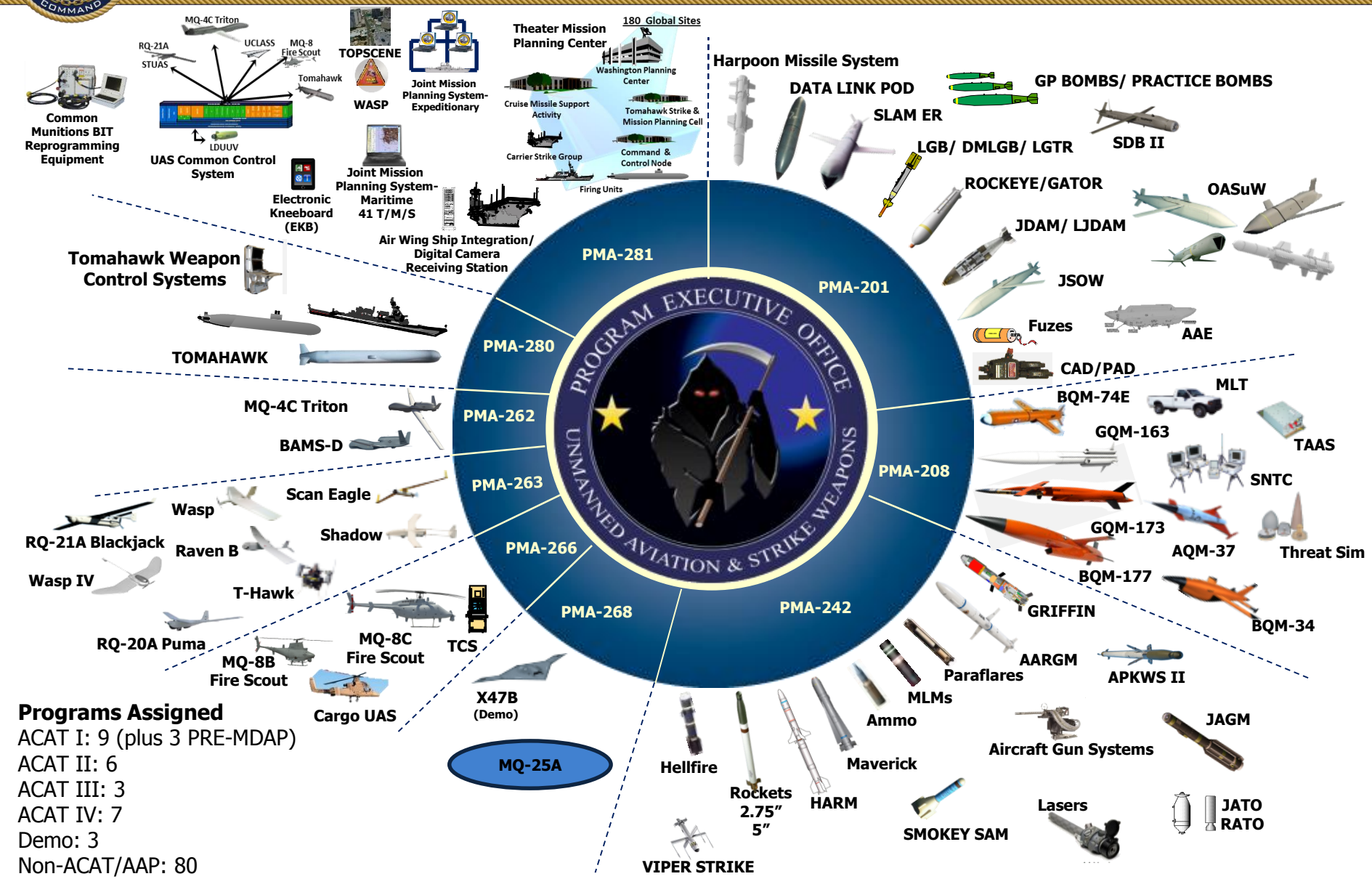
05 December 2017

Presented by:

Pete Wolt

ADPEO(U&W)-Advanced Technology-Unmanned Aviation
UAS Science and Technology Portfolio Manager
Naval Aviation Enterprise Chief Technology Office

Welcome to PEO(U&W)



Programs Assigned

ACAT I: 9 (plus 3 PRE-MDAP)
ACAT II: 6
ACAT III: 3
ACAT IV: 7
Demo: 3
Non-ACAT/AAP: 80

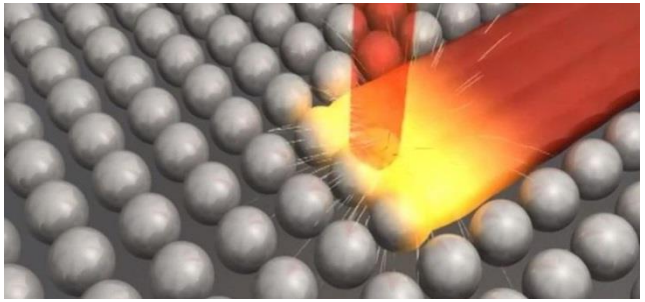
N18A-T005

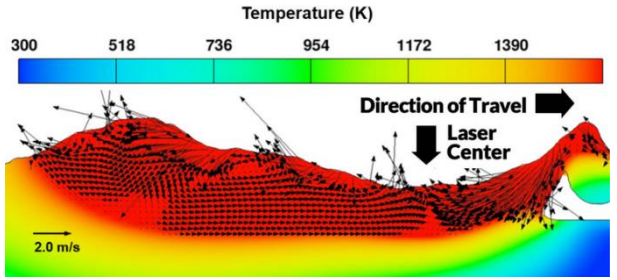
Topic Title: Innovative Processing Techniques for Additive Manufacture of 7000 Series Aluminum Alloy Components

Description: Develop an innovative additive manufacturing (AM) process to successfully produce 7000 series (e.g., 7075 and 7050) aluminum alloy components.

Sponsoring PMAs: PMA-201, PMA-242, PMA-275, PMA-276

TPOC: NAWCAD, (301) 995-4298





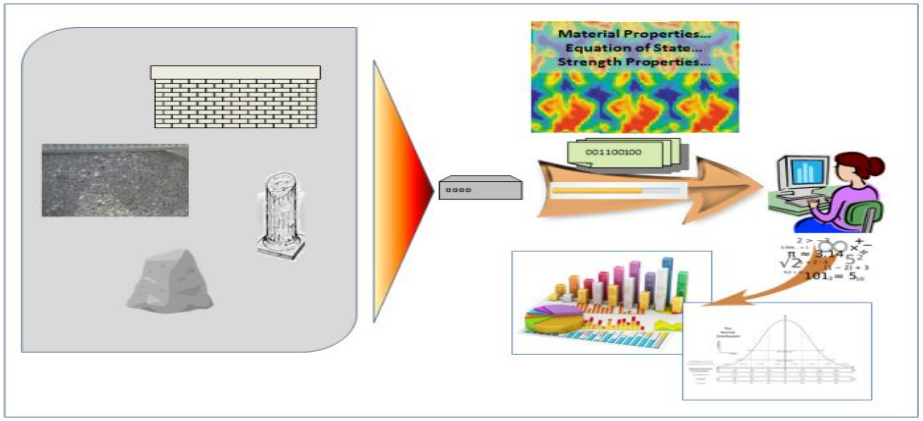
N18A-T006

Topic Title: Non-Destructive Concrete Interrogator and Strength of Materials Correlator

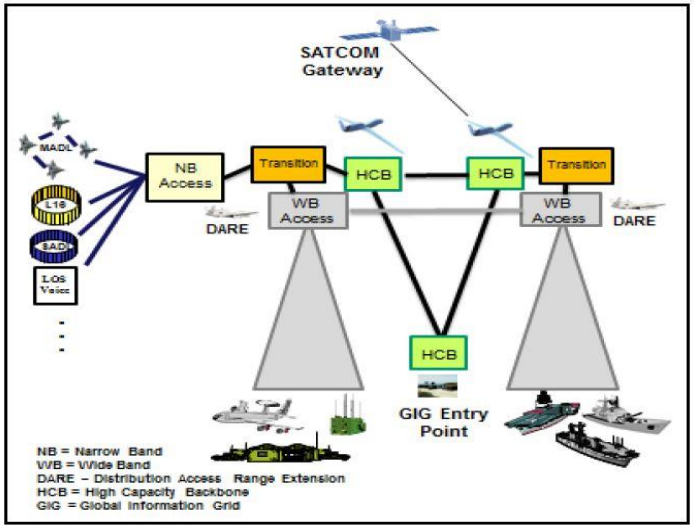
Description: Develop a non-invasive and non-destructive way of evaluating concrete strength of material properties and behavior along with relevant spatial and statistical information associated with them.

Sponsoring PMAs: PMA-201

TPOC: NAWCWD, (760) 939-3942



N181-007



Topic Title: Robust Communications Relay with Distributed Airborne Reliable Wide-Area Interoperable Network (DARWIN) for Manned-Unmanned Teaming in a Spectrum Denied Environment

Description: Design and develop a networked Line of Sight (LOS) communications capability to share high-data rate Intelligence, Surveillance, and Reconnaissance (ISR) data and tactical information between ships and DoD aircraft in local area of operations for distributed operations; to provide communication relay targeting updates for network-enabled weapons; and to move high data rate ISR data back and forth to ground entry points (GEPs) in support of ISR and long-range strike missions.

Sponsoring PMAs: PMA-262, PMA-266, PMA-299, PMA-209, PMA-231, PMA-263, PMA-268, PMA-276

TPOC: NAWCAD, (301) 757-1116

N181-015 & N181-018

N181-015

Topic Title: Interactive 4D Overlay Tool for Joint Mission Planning System

Description: Develop a tool capable of providing dynamic interactive 4D (3D+time) geographically referenced overlays of multiple data formats in support of situational awareness to make dynamic tactical decisions and to re-evaluate decisions.

Sponsoring PMAs: PMA-201, PMA-281, PMA-268

TPOC: NAWCAD, (301) 757-1884

N181-018

Topic Title: Develop and Apply Artificial Intelligence and Machine Learning Techniques for Next-Generation Mission Planning

Description: Develop an approach to exploit artificial intelligence (AI) and machine learning (ML) techniques (e.g., deep learning [DL]) to improve mission planning capability, and to provide autonomous and dynamic mission and strike planning capabilities in support of manned and unmanned vehicles and weapon systems.

Sponsoring PMAs: PMA-281, PMA-264, PMA-276, PMA-290

TPOC: NAWCAD, (301) 757-1884

N181-017

Topic Title: Real-time Turbulence Recognition and Reporting System for Unmanned Systems

Description: Develop an on-aircraft system to recognize and quantify the real-time turbulence levels being experienced by an unmanned aircraft and provide actionable information to a remotely located operator.

Sponsoring PMAs: PMA-262, PMA-268

TPOC: NAWCAD, (301) 995-2788

N181-029 & N181-008

N181-029

N181-008

Topic Title: Maritime Target Automatic Target Recognition from Inverse Synthetic Aperture Radar (ISAR) Utilizing Machine Learning

Description: Develop an innovative automatic target recognition (ATR) system that leverages state-of-the-art machine learning technology to automatically find and extract a ship's salient features from its inverse synthetic aperture radar (ISAR) images for high-speed weapons applications.

Sponsoring PMAs: PMA-280, PMA-290

TPOC: NAWCWD, (760) 939-3689

Topic Title: Maritime Lethality Analysis Toolset

Description: Develop an innovative physics-based lethality toolset useful to analyze the effects of multiple weapons against maritime targets.

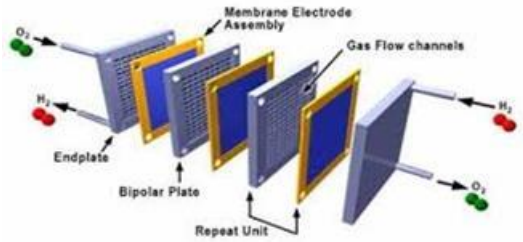
Sponsoring PMAs: PMA-242, PMA-280, PMA-201, JSF

TPOC: NAWCWD, (760) 939-3942

N181-013

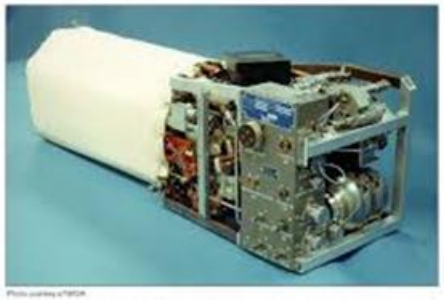
Topic Title: Compact, Lightweight, Power-Dense, Integrated Fuel Cell System

Description: Develop a lightweight, compact, drop-in and highly efficient integrated fuel cell-based hybrid propulsion and power system.



Sponsoring PMAs: PMA-262, PMA-263, PMA-275, NAVAIR CTO

TPOC: NAWCAD, (301) 342-0365



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