



# USW Electromagnetic Systems Department Overview

Presented to:  
National Contract Management Association (NCMA)  
RI Industry Day  
14 June 2016



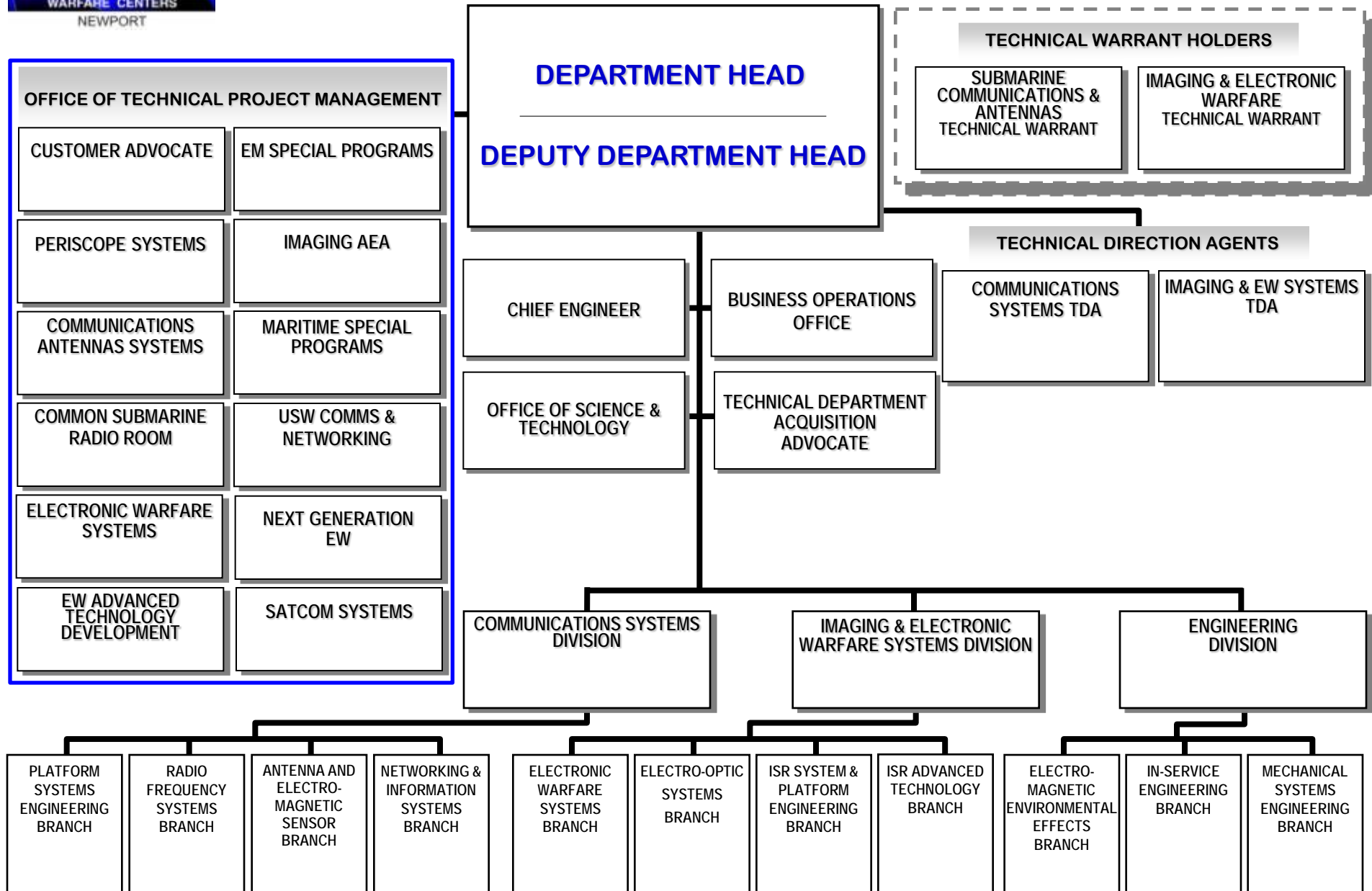


# ***USW Electromagnetic Systems Department Mission***

- **Serve as the Navy's principal activity for developing, acquiring, installing, modernizing and maintaining the world's most capable USW Electromagnetic systems including Antennas, Periscopes, Electronic Warfare, Communications, Electro-Optics Systems, and Electromagnetic Compatibility. As well as provide electromagnetic capability to unmanned systems that support undersea warfare including UXV, USW Networks, and Distributed USW Systems and Sensors.**



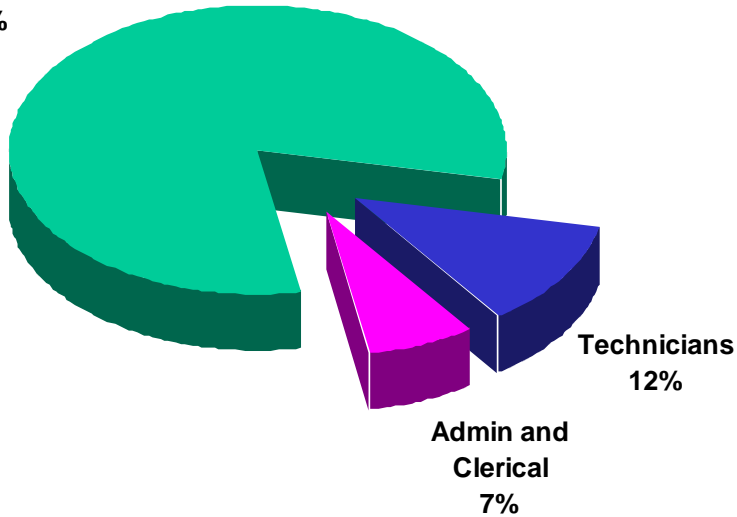
# USW Electromagnetic Systems Department



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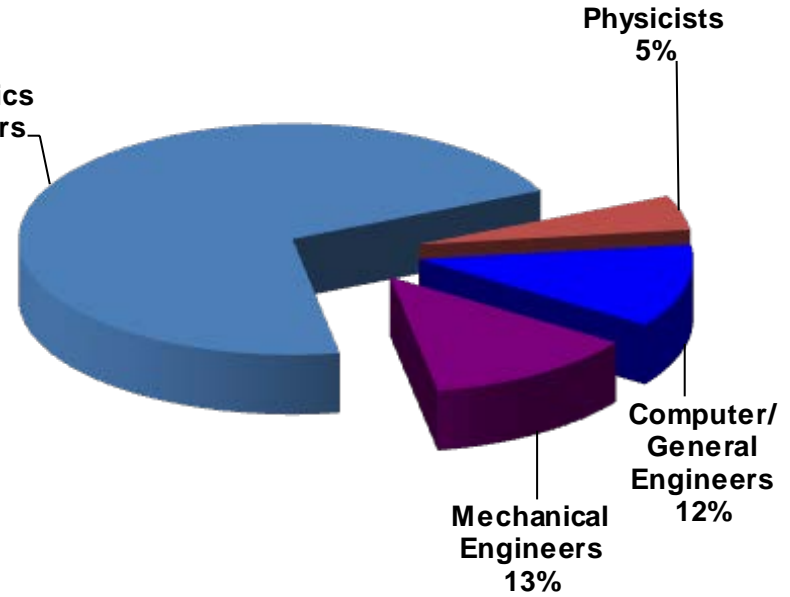
## Our People

Scientists and Engineers  
81%



**Total – 317**

Electronics Engineers  
73%



**Scientists & Engineers - 257**



### CODE 34 ADVANCED DEGREES

10 - PhDs

83 - Masters Degrees



# USW Electromagnetic Systems Department Product Areas

## IMAGING

- Integrated Submarine Imaging System (ISIS)
- Photonics Mast
- SUBIS Imaging
- Type 8 Mod 4 IR
- In-Service Periscopes
- National Maintenance
- Panoramic Periscope
- PATRIOT
- TOPGATE
- Imaging Sensor Development (ONI)



## COMMUNICATIONS

- Submarine Comms TDA
- Submarine Radio Room Integration & Test
- Submarine SATCOM
- Internet Protocol Transition
- Submarine Comms Technology
- USW FORCEnet
- Electromagnetic Compatibility
- Advanced Submarine Sail
- C4ISR Systems Engineering
- UUV Communications
- Undersea Constellation
- Virtual Submarine



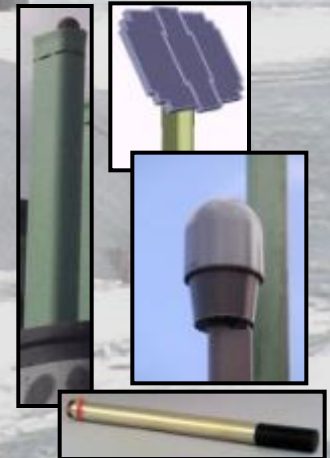
## ELECTRONIC WARFARE

- AN/BLQ-10 ESM
- ISCRS/ICADF
- Type 18I Antenna
- Surveillance Sensors
- In-Service ESM
- Signature Reduction
- Periscope Automatic Direction Finder
- Early Warning Receivers
- UUV Sensors
- Information Warfare
- End-to-End Assessments



## ANTENNAS

- Multifunction Mast (OE-538)
- SubHDR (OE-562A)
- Navy Protected (EHF) and Wideband (X & GBS) MILSATCOM
- Navy EHF Satellite Program (NESP)
- Submarine Antennas
- Submarine Antenna Technology
- Comms at Speed & Depth
- Off-Board Sensors





# USW Electromagnetic Systems Department Major Facilities

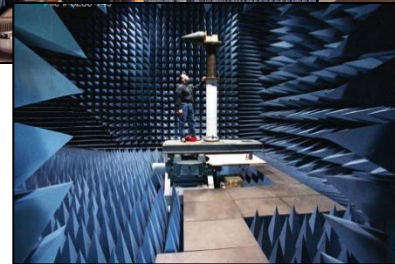
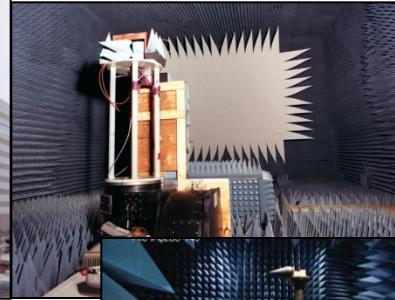
Overwater Arch



Electromagnetic Sensor Facility



Fishers Island



## Department Roles & Major Tasks:

- In-Service Engineering Agent (ISEA)
- Acquisition Engineering Agent (AEA)
- Technical Direction Agent (TDA)
- Software Support Activity
- National Maintenance Center (I-Level/Periscope Repairs)
- Depot Management
- Periscope Upgrades Development, Integration & Test
- Installations
- Procurement of Major Systems
- System Risk Analysis

## Current Contracts (Services/Hardware):

- Engineering Development
- Reliability/Maintainability
- Installations
- Fleet Technical Assists
- Training
- CM/ILS
- Test & Evaluation
- System Integration & Test
- Repair & Restoration
- Program Management Support

## Major Systems Supported:

- All in-service Periscopes
- Photonics, Photonics Mast Variant
- Submarine Imaging System (SUBIS)
- Type 8 Mod 4 IR
- Integrated Submarine Imaging System (ISIS)
- PeriViz
- PATRIOT
- CLUSTER BIGHT
- TOPGATE
- HUD
- Low Profile Photonics Mast (LPPM)



**PERISCOPE REPAIR**



**PERISCOPE R&D & OPERATIONAL TESTING**

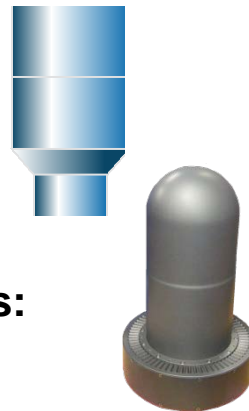






## Major Systems Supported:

- AN/BLQ-10 variants for all Platforms
- Improved Communications Acquisition Direction Finding (ICADF)
- Embedded National Tactical Receiver (ENTR)
- Low Probability of Intercept (LPI) Receiver
- Automated Specific Emitter Identification
- Remote Log-in /Rapid Reprogramming
- Direction Finding Subsystems
- Early Warning Receivers
- RF/Signal Distribution Subsystems
- EW Capability & Technology Insertion
- Photonics ESM Performance Improvements (PEPI)
- Multi-Function Modular Mast (MMM) & Payloads
- Integrated Electronics Mast (IEM)
- Flared Base Group (FBG) Antenna
- PATRIOT Phase B RADAR
- EW Antennas
- Low Radar Cross Section Masts
- Special Support Equipment



## Department Roles & Major Tasks:

- In-Service Engineering (ISEA)
- Acquisition Engineering (AEA)
- Technical Design Agent (TDA)

## Current Contracts (Services/Hardware):

- Program & Risk Management
- Systems Engineering
- Field Engineering
- System Integration
- Test and Evaluation
- Information Assurance/Software Integration Testing
- Reliability & Obsolescence Engineering
- Tactical Software Support Center (TSSC)
- Environmental Qualification Testing (EQT)
- Performance Analysis
- RF Groom & Certification and System Operational Verification Test
- AN/BLQ-10, ICADF, Antenna Installation Support
- New Construction/ Shipyard On-Site Engineering
- Antenna Procurement , Integration & Repairs
- Modernization Planning Support
- EW & RADAR Fleet Support, Hotline, CASREP & Technical Assists
- EMI/EMC testing, Surveys, & improvements
- EW and RADAR Configuration Management
- Foreign Military Sales (FMS) Engineering Support





# Next Generation Architecture

## Major Systems Supported:

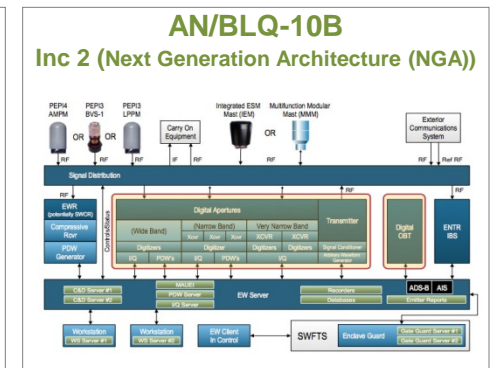
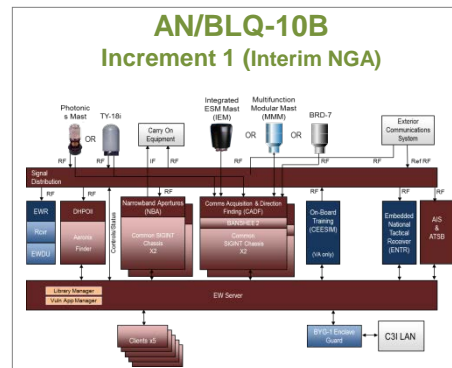
- AN/BLQ-10B Next Generation Architecture (NGA) New Construction (SSN794 and later)
- NGA Technology Insertion 2016 (TI-16) Modernization Systems

## Current Contracts (Services/Hardware):

- EW Design Support Services
- EW Integration Services
- EW Laboratory Support Services
- Engineering, Technical, and Programmatic Services

## Department Roles & Major Tasks:

- Design Agent
- Lead System Integrator



# Submarine Communications Systems

## Major Systems Supported:

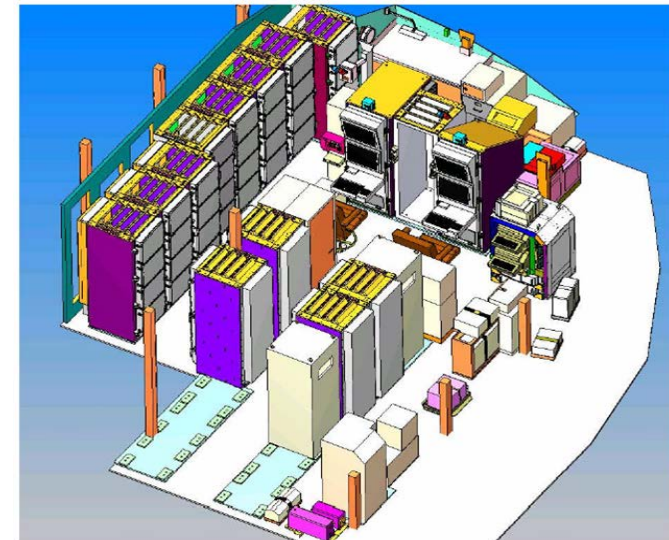
- Common Submarine Radio Room (CSRR)
- Submarine Automated Digital Network System (ADNS)
- CANES Upper (Security) Enclaves

## Department Roles & Major Tasks:

- Common Submarine Radio Room (CSRR)
  - Design, Integration and Test Agent
  - Technical Design Agent (TDA)
- USW Communications & Networking
  - Automated Digital Network System (ADNS) Design & Test
  - CANES Upper (Security) Enclaves Design, Test, and Install Support
  - Undersea Communications & Networks R&D and prototype

## Current Contract (Services/Material):

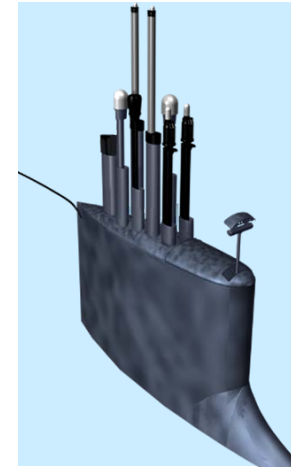
- Systems Engineering, Integration, Testing, Lab Facility, Cyber, Logistic Engineering & Program Support
- Mechanical Design, Fabrication, Drawings, and EQT



# Submarine Communications Antennas

## Department Roles & Major Tasks:

- In-Service Engineering Agent/Support (ISEA)
- Acquisition Engineering Agent/Support (AEA)
- Technical Design Agent/Support (TDA)
- Procurement of Major Systems
- Prototyping/Research & Development
- Development of Upgrades
- National Maintenance



## Major Systems Supported:

- Multi-function mast antennas
- High Data Rate (HDR) mast
- RF Distribution and Control System (RFDACS)
- Towed Communications Buoy Antenna Systems
- Expendable communications & emergency buoys

## Current Contracts (Services/Hardware):

- RFDACS Systems
- Engineering
- System Integration & Test
- Test & Evaluation
- Reliability/Maintainability
- CM/ILS
- Fleet Technical Assists
- Repair & Restoration
- Program Management Support



# Satellite Communications (SATCOM) Systems



Periscope



HPA



CG



Mast

## Current Contracts (Services/Hardware):

- Navy SATCOM Design, Engineering, and Program Support (Systems Engineering and Communications Management Training)
- Engineering Support for the SESIF, SubHDR NMC, and Navy MILSATCOM Systems (OJT, PM Support, ILS, Fleet Support, & HW Repair)
- Various SubHDR Mast Line Replaceable Unit (LRU) Repair and Procurement Contracts

## Major Systems Supported:

- Navy Multiband Terminal (NMT)
- Legacy Extremely High Frequency (EHF) SATCOM Systems
- TDMA Interface Processor (TIP) and Advanced TIP (ATIP)
- Submarine High Data Rate (SubHDR) Mast
- Submarine Global Broadcast System (GBS) Receive Suites
- Future MILSATCOM Programs

## Department Roles & Major Tasks:

- NMT Technical Director & Lead Engineer (LE)
- ATIP and Submarine GBS LE
- Submarine EHF SATCOM Integration Facility (SESIF) for NMT Pre-installation Test and Checkout (PITCO) & Software Regression Tests
- SubHDR National Maintenance Center (NMC) for Mast Troubleshooting, Repair, & Restoration
- On-the-job training (OJT) & Communications Management Training (CMT) for Protected (EHF) and Wideband (X, Ka, & GBS) Submarine, Ship, and Shore Navy MILSATCOM
- System Design, Production, and Test & Evaluation oversight



# Special Projects

## Major Systems Supported:

- Mission-Specific Sensors
- Contacts of mission interest management
- Intelligence Community networks and mission data recording
- Intelligence, Surveillance & Reconnaissance (ISR) Sensors
  - Electro-Optical/Infrared (EOIR), EW Antennas, Sonar, Environmental
- Covert Communications
- Submarine Counter Measures
- Mission Planning
- Electromagnetic Vulnerability Management

## Department Roles & Major Tasks:

- Electromagnetic Special Projects\*
- Maritime Sensors Special Projects\*

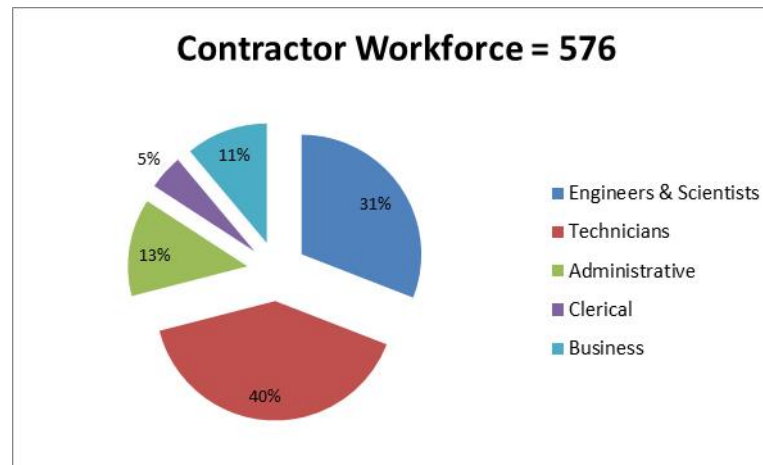
\* Perform Acquisition Engineering (AEA), In-Service Engineering (ISEA), and Technical Design Agent (TDA) tasks

## Current Contracts (Services/Hardware):

- Performance Analysis and Tradeoff Studies
- Hardware and Software engineering
- System Integration and Testing
- Temporary Alteration (TEMPALT) and Ship Alteration (SHIPALT) data package creation
- TEMPALT & SHIPALT installation and removals
- Program Management
- Equipment repair and refurbishment, modernization planning
- Fleet Technical Assists

## *What We Buy*

- **Contractor Labor Demand is projected to increase across FY17/FY18/FY19**
  - **Approximate 576 Contractors onsite/offsite support Code 34**
  - **31% are Engineering Support**
  - **40% are Technician Support**
  - **13% are Administrative Support**
  - **5% are Clerical Support**
  - **11% are Business Support**
- **Funding is also projected to increase**
  - **\$129 M of Direct Cite planned in FY16 (i.e., Contracting \$)**





# Projected Contracts

Contract #	Title	Current Contract Value (w options)	Incumbent	Seaport	Follow-On	Current Contract Type	Expected RFP Release	Strategy
NEW	COMMS Engineering, Testing, Lab Services	n/a	various	Y	Y/Partial	CPFF	July 2016	SBSA
NEW	COMMS Mechanical Eng., Fabrication, & EQT Services	n/a	various	Y	Y/Partial	CPFF	July/Aug 2016	SBSA
NEW	Antenna Engineering and RFDACS Engineering Services	n/a	various	Y	Y/Partial	CPFF	July/Aug 2016	SBSA



# Projected Contracts (Con't)

Contract #	Title	Current Contract Value (w options)	Incumbent	Seaport	Follow-On	Current Contract Type	Expected RFP Release	Strategy
04-D-4032 N403	Accelerated Support Program Engineering Services	\$21M	DDL Omni	Y	Y	CPFF	Sept/Oct 2016	TBD (Sources Sought)
04-D-4109 N414	Acoustic Accelerated Support Program Technical Services	\$39.5M	Purvis	Y	Y	CPFF	Aug 2016	TBD (Sources Sought)
04-D-4122 N433	SIGINT, ACINT ENG Support	\$10.8M	Seacorp	Y	Y	CPFF	Sept/Oct 2016	TBD (Sources Sought)
04-D-4032 N404	Accelerated Support Program Engineering Services	\$21M	DDL Omni	Y	Y	CPFF	July 2016	TBD (Sources Sought)



# Projected Contracts (Con't)

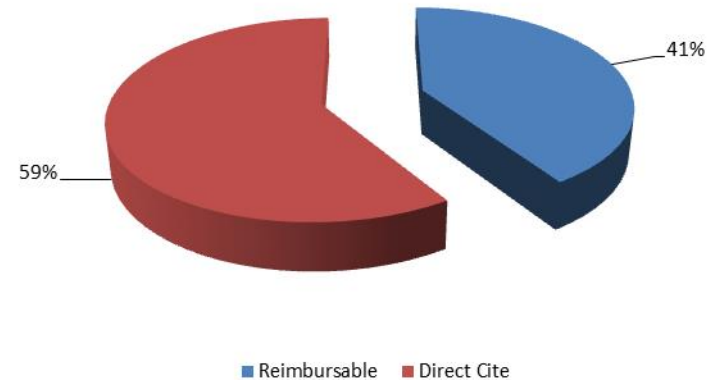
Contract #	Title	Current Contract Value (w options)	Incumbent	Seaport	Follow-On	Current Contract Type	Expected RFP Release	Strategy
NEW	Program and Financial Spt	TBD	Various	Y	N	Will be CPFF	Nov 2016	SBSA
10-D-003A	TEMPALT	\$8.4M	DDL Omni	Y	Y (combines both)	CPFF	July 2016	TBD (Sources Sought)
10-D-003B	SHIPALT ENG Support	\$7.7M	GDIT	Y				
NEW	Acquisition Support Services	n/a	n/a	Y	N	CPFF	Nov 2016	SBSA
04-D-4012 N439	SUBSAFE and Non-SUBSAFE Support for Operator and Intermediate Level Maint	\$10.8M	GDIT	Y	Y	CPFF	Nov/Dec 2016	TBD (Sources Sought)
04-D-4065 N406	CM/ILS Support	\$10.7M	ICI	Y	Y	CPFF	March 2017	TBD (Sources Sought)
04-D-4122 N435	EW Design	\$30.5M	Seacorp	Y	Y	CPFF/FFP	Nov/Dec 2016	TBD



# USW Electromagnetic Systems Department Summary

- Based on Annual Business Plan data & direct program tasking, there IS an opportunity/need for contracting in support of Code 34
- Code 34's Business Model shows approximately 59% of total Code 34 direct program funding is outsourced annually (this continues to increase as we look to the future)

FY16 Planned	
\$89 M	Reimbursable
\$129 M	Direct Cite
\$218 M	Total



*Code 34 maintains a strong business partnership with industry*