NAVSEA
WARFARE CENTERS
NEWPORT

Sensors and SONAR Systems Department, Code 15

Industry Day Conference
23 October 2018

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Sensors and SONAR Systems Department

We Advance Timely, Innovative, Integrated, Next Generation Solutions to Maintain FLEET UNDERSEA SUPERIORITY

PEOPLE

ISEA
In-service Engineering

PRODUCTS AND CAPABILITIES

PEOPLE PRODUCTS

We Provide Sound Solutions for the Warfighter

SPONSORS

S&T
Science and Technology

PEO-SUBS

DARPA

PEO-AIR

OSD

ACADAMIA

NAVY WARFARE CENTERS

The FLEET

INDUSTRY

SPONSORS, STAKEHOLDERS, AND PARTNERS

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Sensors & SONAR Systems Department

15 ***Department Head***

15A ***Deputy Department Head***

1501 *Director, Business Operations*

15T *Director, Undersea Sensors*

159 *Director, Programs & Contracts*

Department Contract Manager (DCM)

15E *Director, Engineering*

Chief Systems Analyst

15A Customer Advocacy

Surface Ship USW

Towed Systems, Sensors and Acoustics

Maritime Surveillance

151 *Science and Technology Division*

- ***1511 Automation Algorithm Development***
- ***1512 Devices, Sensors and Materials R&D***
- ***1513 Signal Processing Algorithm Development***

152 *Advanced Concepts Division*

- ***1521 Developmental Systems Engineering***
- ***1522 Prototype Development***
- ***1523 Technology Integration***
- ***1524 Concepts and Experimentation***

153 *Sensors and Arrays Division*

- ***1531 Underwater Sound Reference***
- ***1532 Towed and Deployed Arrays Engineering***
- ***1533 Hull Arrays and Distributed Sensors Engineering***
- ***1534 Handling Systems Engineering***
- ***1535 Fleet Sensors and Cables Engineering***

154 *Submarine and Surveillance Systems Division*

- ***1541 Submarine and Surveillance Systems Engineering***
- ***1542 Systems Analysis and Passive Systems Engineering***
- ***1543 Submarine and Surveillance Systems Integration***
- ***1544 Submarine and Surveillance Test, Evaluation and Analysis***
- ***1545 Submarine and Surveillance Training, Logistics and Fleet Support***

155 *Surface Ship and Aviation Systems Division*

- ***1551 Surface and Aviation Systems Engineering***
- ***1552 Active Systems Engineering***
- ***1553 Surface and Aviation Systems Integration***
- ***1554 Surface and Aviation Test, Evaluation and Analysis***
- ***1555 Surface and Aviation Training, Logistics and Fleet Support***

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Science and Technology Enterprise
Code 151

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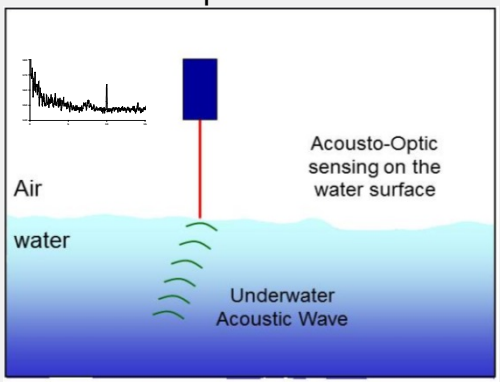
Acoustic-Optic Transduction



Transduction Materials

Technical Capabilities

Research and Development in:

- Automated Algorithms
- Devices, Sensors and Materials
- Signal Processing

Technology Development to:

- Reduce Total Ownership Costs
- Enable New Warfighting Capabilities
- Fill Existing Capability Gaps

Key Programs

- Vector Sensor Arrays
- Fiber Optic Sensors
- Transduction Materials
- Detection, Classification, Localization and Tracking
- SONAR Automation
- Deployable Force Protection

Sponsors & Stakeholders

DARPA

Department of Defense

Office of Naval Intelligence

Department of the Navy ONR Science & Technology

Industry and Academia

Integrated Warfare Systems 5 — NAVSEA Undersea Systems

National Leader in Naval Undersea Science & Technology

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Advanced Concepts Enterprise Code 152

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Technical Capabilities

- Acoustic Performance Prediction
- Undersea Warfare Prototyping & Integration
- At-Sea Experimentation
- Undersea Infrastructure Protection
- Systems Engineering
- Test and Evaluation
- Augmentation
- Rapid Prototyping
- Traditional and Non-Traditional Antisubmarine Warfare
- Advanced Sensing
- Distributed Systems
- Unmanned Systems
- Advanced Control Algorithm Development
- TEMPALT – Advanced Capabilities

Key Programs

- Surface Ship and Submarine SONAR Advance Development
- Undersea Distributed Network Systems
- LCS Mission Modules
- Low Power Telemetry
- Precision Heading Sensors
- Engineering Measurement Programs
- Littoral Combat Ship
- Airborne Mine Neutralization System
- Advanced Processing Build
- Advanced Capability Build

Sponsors & Stakeholders

PEO USC
DEPARTMENT OF THE NAVY ONR Science & Technology
TEAM SUBMARINE
PMS403
PMS401 SUBMARINE ACOUSTIC SYSTEMS
PMS 495 MINE WARFARE
PMS 406
TEAM SHIPS
INDUSTRY and ACADEMIA
PMS 397 OHIO REPLACEMENT PROGRAM

Addressing FLEET Needs through Technology and Analysis

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Sensors and Arrays Enterprise
Code 153

Technical Capabilities

- Undersea Acoustic Metrology
- Full Spectrum Systems Engineering
- In Service Engineering Agent
- Technical Direction Agent
- Physics Based Modeling
- Acoustic Augmentation
- Handling Systems Engineering
- Towed Array Design and Engineering
- Hull Sensor Systems
- Fleet Support
- Acoustic Sensor Design and Engineering
- System/Sensor Acquisition
- Sensor Lifecycle Planning and Support

Key Programs

- Undersea Acoustic Metrology & Acoustic Testing
- Surface and Submarine Towed Systems (Handlers and Arrays)
- Surface and Submarine Hull Sensors (Sphere, CAVES Technologies, WAA, LWWAA, LCCA, Chin, etc.)
- Surface and Submarine Transducers, Hydrophones and Acoustic Windows

Sponsors & Stakeholders

INDUSTRY and ACADEMIA

We provide full spectrum Lifecycle Support for USW Sensors

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Submarine and Surveillance Systems Enterprise Code 154

NAVSEA WARFARE CENTERS NEWPORT

Technical Capabilities

- Acoustic Analysis and Reconstruction
- Systems Engineering
- Environmental Qualification
- Test and Integration
- At-Sea Test Planning and Execution
- Logistics Support
- Trainers and Training Material
- Passive Systems

Key Programs

- Submarine SONAR System Development & Modernization
- Forward Fit – Virginia & Columbia Class
- Backfit – 688/688i, SEAWOLF Class, SSGN, SSBN
- Test Planning, Execution and Analysis
- Communication Systems
- Sensor Integration
- TEMPALT/OPALT Development

Sponsors & Stakeholders

PMS401 SUBMARINE ACOUSTIC SYSTEMS

INTEGRATED WARFARE ASW UNDERSEA SYSTEMS IWS 5

THE FUTURE OF STRATEGIC DETERRENCE COLUMBIA CLASS

TEAM SUBMARINE ASST SECNAV (RD&A) - NAVAL SEA SYSTEMS COMMAND

MARITIME SURVEILLANCE SYSTEMS PMS 485

We build and sustain the Navy's best Submarine & Surveillance Undersea Warfare Systems

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Surface Ship and Aviation Systems Enterprise Code 155

NAVSEA WARFARE CENTERS NEWPORT

Technical Capabilities

- Systems Engineering
- Software Engineering
- Systems Integration
- Active Systems
- Test & Evaluation
- Analysis
- Logistics Support
- Training and Training Modules
- Fleet Support
- Foreign Military Sales (FMS)
- Torpedo Defense
- Displays

Key Programs

- AN/SQQ-89(V) Undersea Warfare/ Anti-Submarine Warfare Combat System (USW/ASWCS)
- FMS Japan
- Fleet SONAR Self-Noise
- Surface Ship Engineering Development
- Torpedo Warning System (TWS)
- DDG 1000

Sponsors & Stakeholders

PEO USC

PEO IWS

Naval Air Systems Command

Zumwalt Class DDG 1000 Destroyer Program

Team Ships

Integrated Warfare Systems 5 ASW Undersea Systems

We build and sustain the Navy's best Surface Ship and Aviation-based Undersea Warfare Systems

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Code 15 Facilities

Naval Array Technical Support Center (NATSC)

Towed Array Handler & Equipment Facility

Towed Array Handling Systems Training Facility

Transducer Standards Facility

Towed Systems Development Facility

Land Based Integration Test Site (LBITS)

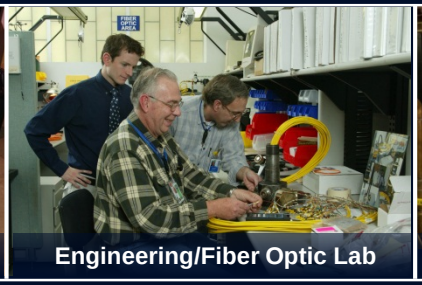
Submarine SONAR Development & Evaluation Complex (SSDEC)

Unmanned Mission Module Test & Integration Facility

Advanced Development Laboratory

Unmanned Mission Module Test & Integration Facility

Water Tunnel


Engineering/Fiber Optic Lab

Low Frequency Facility

Acoustic Pressure Tank Facility

STATE-OF-THE-ART FACILITIES

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Service Cost Centers

Towed Array Handler Equipment (TAHE) Facility

- Center of Excellence for Overhaul of Towed Array Handler Equipment
- Registered to ISO 9001-2000 and Aligned with the Towed Systems ISEA Organization

Naval Array Technical Support Center (NATSC)

- Established as a Result of a NAVSEA Initiative to Integrate all Towed Array and Tow Cable Repair Level Activity into a Consolidated Facility
- Responsible for the Repair and Refurbishment of Surveillance Towed Array (SURTASS) A180R, AN/SQR-19 Surface Ship Towed Array, TB-16 Submarine Towed Array, TB-29A Submarine Towed Array, and SURTASS TL-29A
- Responsible for the Manufacturing of TB-16, AN/SQR-19, and SURTASS Tow Cables

Underwater Sound Reference DIVNPT (USRD)

- Rapid Array Calibration Response Center to Accommodate Emergency Fleet Requirements - NIST Certified
- Navy's Principal Activity for Traceable Calibration of Tactical Towed Arrays including Developmental Towed Arrays for Both Submarine and Surface Ships
- Towed Array Calibrations include Platforms: TB-16, TB-23, TB-29, 29A and New Fiber Optic Arrays; All New and Re-worked Towed Arrays are Cycled for a Primary Quantitative Complex Receive Sensitivity Calibration

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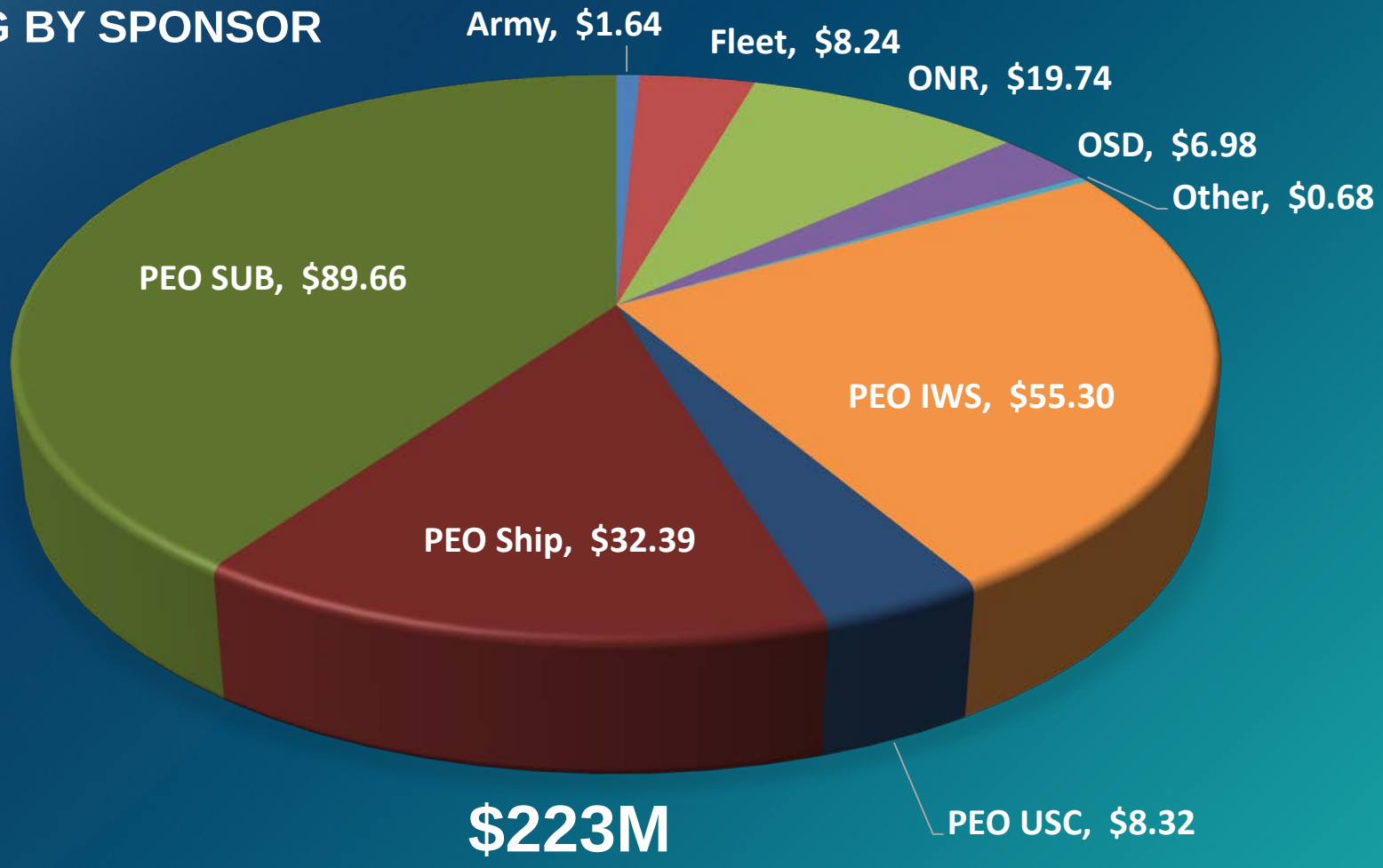
FY 18 Funding Profile

FUNDING BY SPONSOR



$223M

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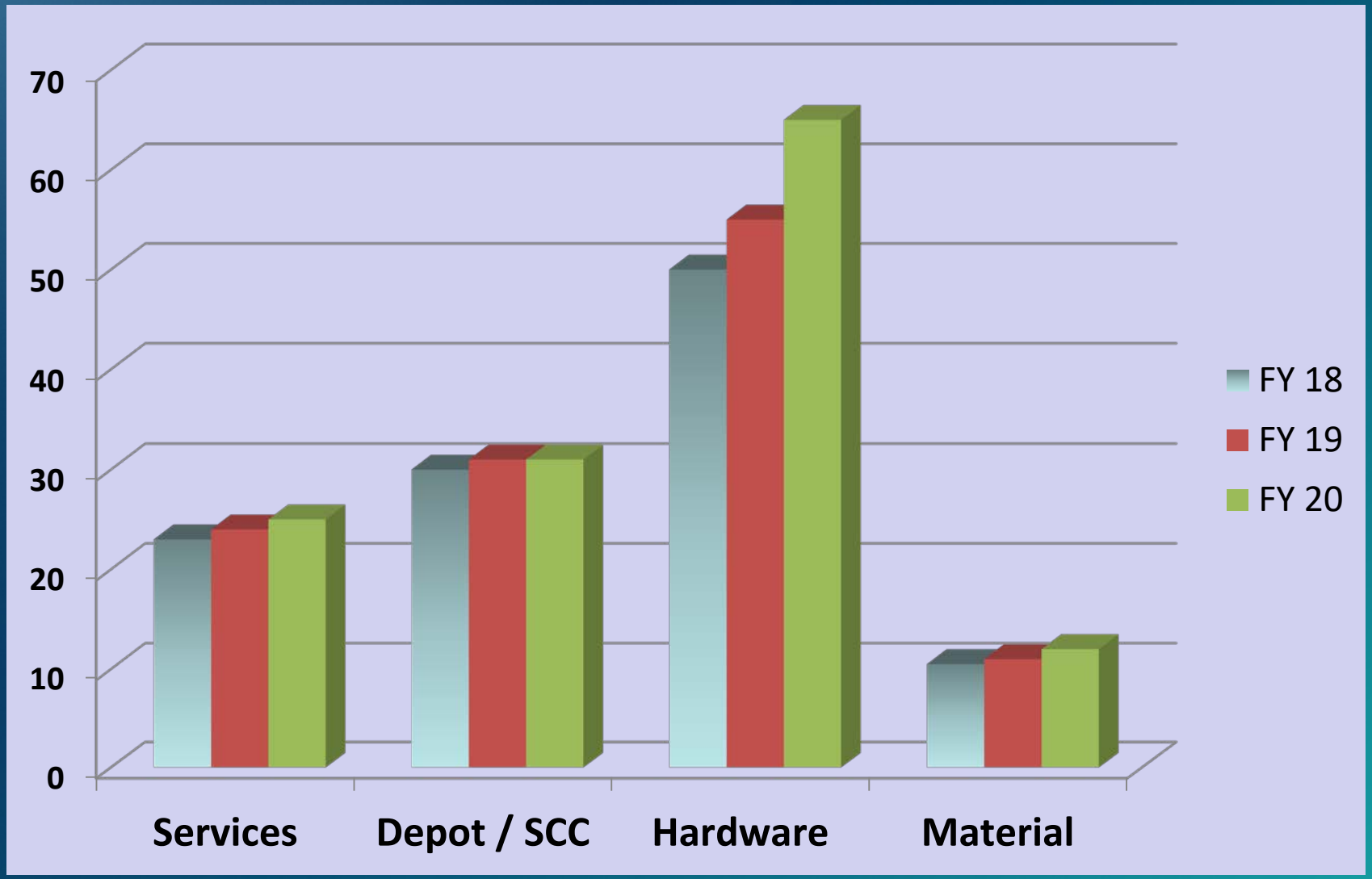
Projected Contracting $M's



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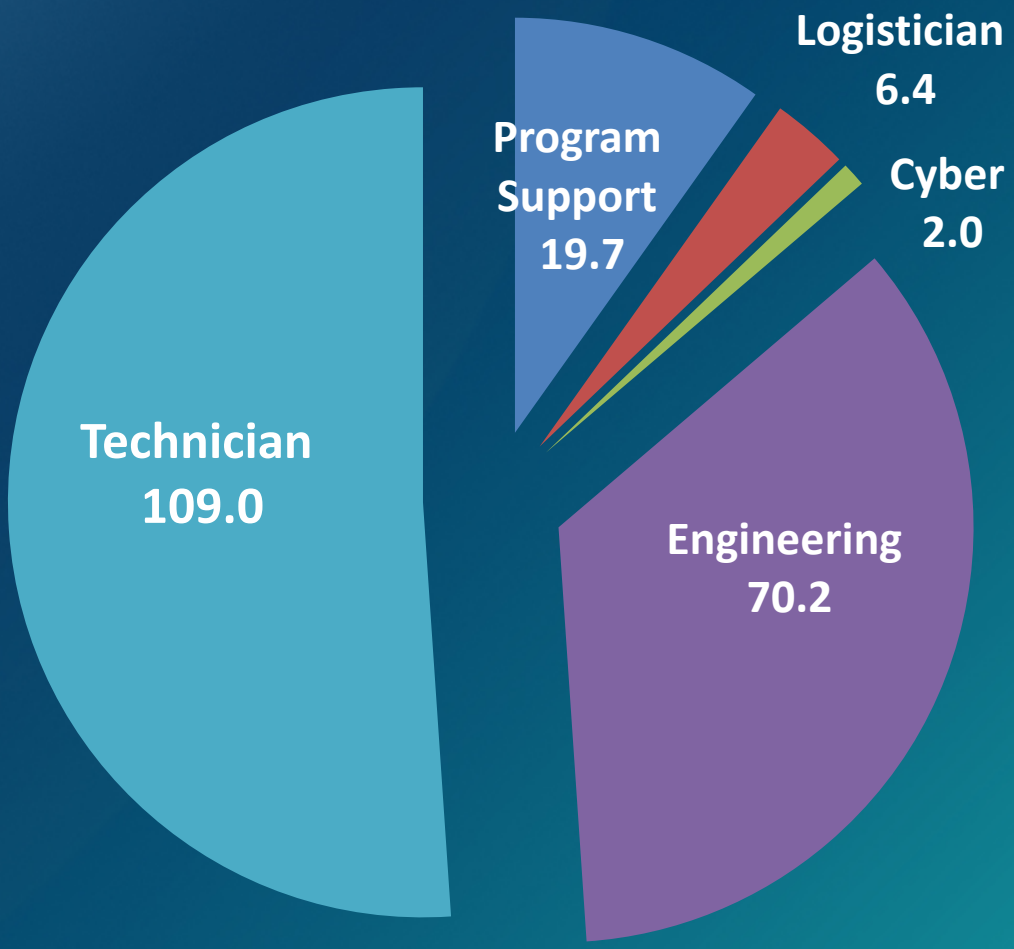
Code 15 Outsourced By Skill FY18



213 FTEs

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Major Code 15 Contractors

CONTRACTOR	SCOPE
BAE Systems	Towed Array Handler Equipment Facility (TAHEF) Maintenance, Repair & Overhaul
Leidos	Naval Array Technical Support Center (NATSC)
Hydroacoustics Inc.	HLF-1 Services & Refurb
L-3 Ocean Systems	TB-23/BQ Towed Systems Repair & Support
Leidos	Towed Array Intermediate Maintenance Activity (IMA)
MASSA	Hydrophone Production & Restoration
GVI Inc.	Wet End Engineering, Test & Evaluation
MIKEL	Dry End System Eng., Test & Evaluation
THOR Solutions	Business Operations Support
SEACORP	Trainers, Training & Human Factor Eng.

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Code 15 Projected Contracts – Services

Contract #	Title	Current Contract Value	Incumbent	Seaport	Follow-On	Current Contract Type	Expected RFP Release	Strategy
N66604-13-D-1222	HLF-1 Services and Hardware	$8.9M	Hydro-acoustics	N	Y	Will be CPFF	2019 QTR 1	Sole Source
N00178-04-D-4018 N414	TAHEF - Handler	$16.4M	BAE	Y	Y	Will Be FFP	2019 QTR 1	SBSA
NEW	Rapid Prototype Development	N/A	N/A	N	N	Will be CPFF	2019 QTR 2	Multi-Award
N66604-16-D-0845 N6660417F7435	Towed Array IPT (TAIPT) Telemetry	$26,75M	L3 CSC	Y	Y	Will Be FFP H/W with CPFF Services	2019 QTR 3	Sole Source
N00178-14-D-7578	NATSC SCC	$158M	Leidos	N	Y	Will be CPFF	2019 QTR 4	Unrestricted

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Code 15 Projected Contracts – Hardware

Contract #	Title	Current Contract Value	Incumbent	Seaport	Follow-On	Current Contract Type	Expected RFP Release	Strategy
NEW	LWLCCA H/W Kits	N/A	N/A	N	N	Will be FFP	2019 QTR 2	TBD
NEW	DT-574 Production	N/A	N/A	N	N	Will be FFP	2019 QTR 1	Unrestricted
NEW	TR-341A Transducer	N/A	N/A	N	N	Will be FFP	2019 QTR 2	TBD
NEW	DT-100 Housings	N/A	N/A	N	N	Will be FFP	2019 QTR 2	TBD
NEW	HFSA Mounting Kits	N/A	N/A	N	N	Will be FFP	2019 QTR 3	TBD
NEW	WAA & LSA OBE Bottles	N/A	N/A	N	N	Will be FFP	2019 QTR 3	TBD
NEW	DT-100 Mech. Parts	N/A	N/A	N	N	Will be FFP	2019 QTR 3	TBD
NEW	DT-513 Hydrophone	N/A	N/A	N	N	Will be FFP	2019 QTR 4	TBD
NEW	TR-317 and TR-353	N/A	N/A	N	N	Will be FFP	2019 QTR 4	TBD

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Opportunities

- Performance Analysis
- Distributed Sensors
- Cyber Security
- Hull Mounted Arrays
- Human Systems Integration
- Fiber Optics
- In Service Engineering
- Advanced Sensor Development
- Signal Processing
- Simulation/Stimulation
- Operator, Team and Proficiency Trainers & Training
- Towed Systems
- Transducer / Hydrophone Technology

Keys to Contracting Success:

- **Increased Competition**
- **Reduced Total Ownership Cost**
- **Advanced Planning**
- **Sources Sought**

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Summary

- **Contracting Continues to be an Important Function for the Success of Sensors & SONAR Systems Programs**
  - Major Service Cost Centers, Maintenance and Repair Work
  - Critical Systems Engineering, Installations, Test & Evaluation
  - Unique Hardware: Arrays, Transducers, Handlers, Windows, etc
- **Department Level Contract Approach is *COMPLETE***
  - System Eng, Test & Evaluation and Software Support **AWARDED**
  - Sensors & Towed Systems Technical / Eng. Spt **AWARDED**
  - Business Operations (Data Center, IT, Fin and Admin) **AWARDED**
  - Trainers, Training & Human Factors Engineer **AWARDED**
- **Innovative Contracting Approaches**
  - PEO LCS Rapid Technology Insertion (RTI) **AWARDED**
  - Rapid Prototyping Development **In Process**

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QUESTIONS ?

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Working with Industry, Academia and Navy Labs to Deliver Solutions to the Warfighter Where and When They are Needed