



Naval Undersea Warfare Center
Division Newport

Small Business Product Vendor Industry Day

21 October 2014

Presented by:

CDR Peter Rogers

Chief Staff Officer

NUWC Division Newport



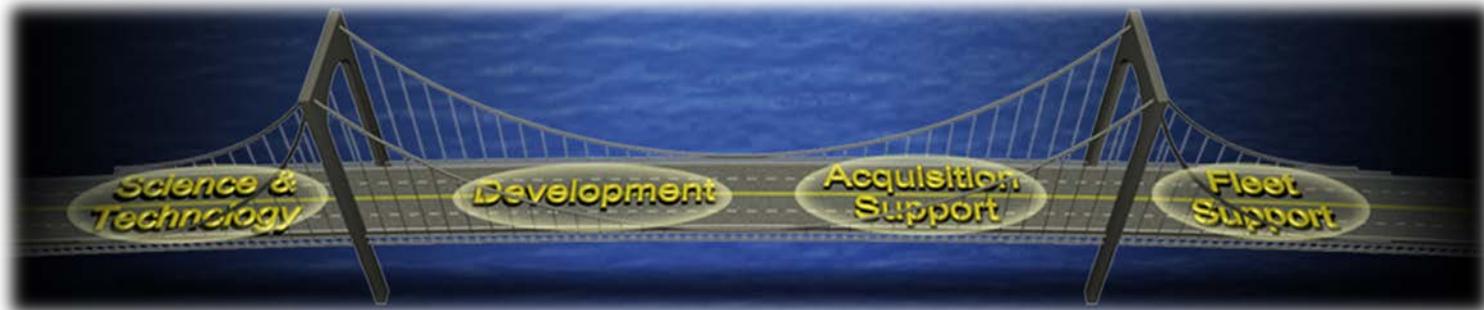
Mission and Vision

Mission

The Naval Undersea Warfare Center Division Newport provides research, development, test and evaluation, engineering, analysis and assessment, as well as Fleet support capabilities for submarines, autonomous underwater systems, and offensive and defensive undersea weapon systems, and stewards existing and emerging technologies in support of undersea warfare.

Main Thing

Working together to deliver the best solutions to the warfighter



At Division Newport, we depict our “main thing” as a bridge spanning Undersea Warfare from Science & Technology to Fleet Support

Vision

Fleet undersea superiority – today and tomorrow

NAVSEA Warfare Centers



DETACHMENTS

NUWC NEWPORT DIVISION

ATLANTIC UNDERWATER
TEST & EVALUATION CENTER
ANDROS ISLAND – BAHAMAS

ATLANTIC UNDERWATER
TEST & EVALUATION CENTER
WEST PALM BEACH – FLORIDA

NUWC KEYPORT DIVISION

PACIFIC DETACHMENT
PEARL HARBOR – HAWAII

SAN DIEGO DETACHMENT
SAN DIEGO – CALIFORNIA

NSWC CARDEROCK DIVISION

ACOUSTIC RESEARCH DETACHMENT
BAYVIEW – IDAHO

COMBATANT CRAFT DIVISION
NORFOLK – VIRGINIA

LARGE CAVITATION CHANNEL
MEMPHIS – TENNESSEE

NAVAL SUBMARINE TRAINING
CENTER, PACIFIC
PEARL HARBOR – HAWAII

NSWC CORONA DIVISION

NAVAL WEAPONS STATION SEAL
BEACH, DETACHMENT NORCO
SEAL BEACH – CALIFORNIA

PUGET SOUND DETACHMENT

SILVERDALE – WASHINGTON

SPECIAL TRIALS FACILITY
PATUXENT RIVER – MARYLAND

SOUTH FLORIDA TESTING FACILITY
DANIA – FLORIDA

NSWC CRANE DIVISION

FALLBROOK DETACHMENT
MARINE CORPS PROGRAMS
FALLBROOK – CALIFORNIA

NSWC INDIAN HEAD EODTECH DIVISION

EOD TECHNICAL SUPPORT DETACHMENT
INDIAN HEAD – MARYLAND

PICATINNY DETACHMENT
PICATINNY – NEW JERSEY

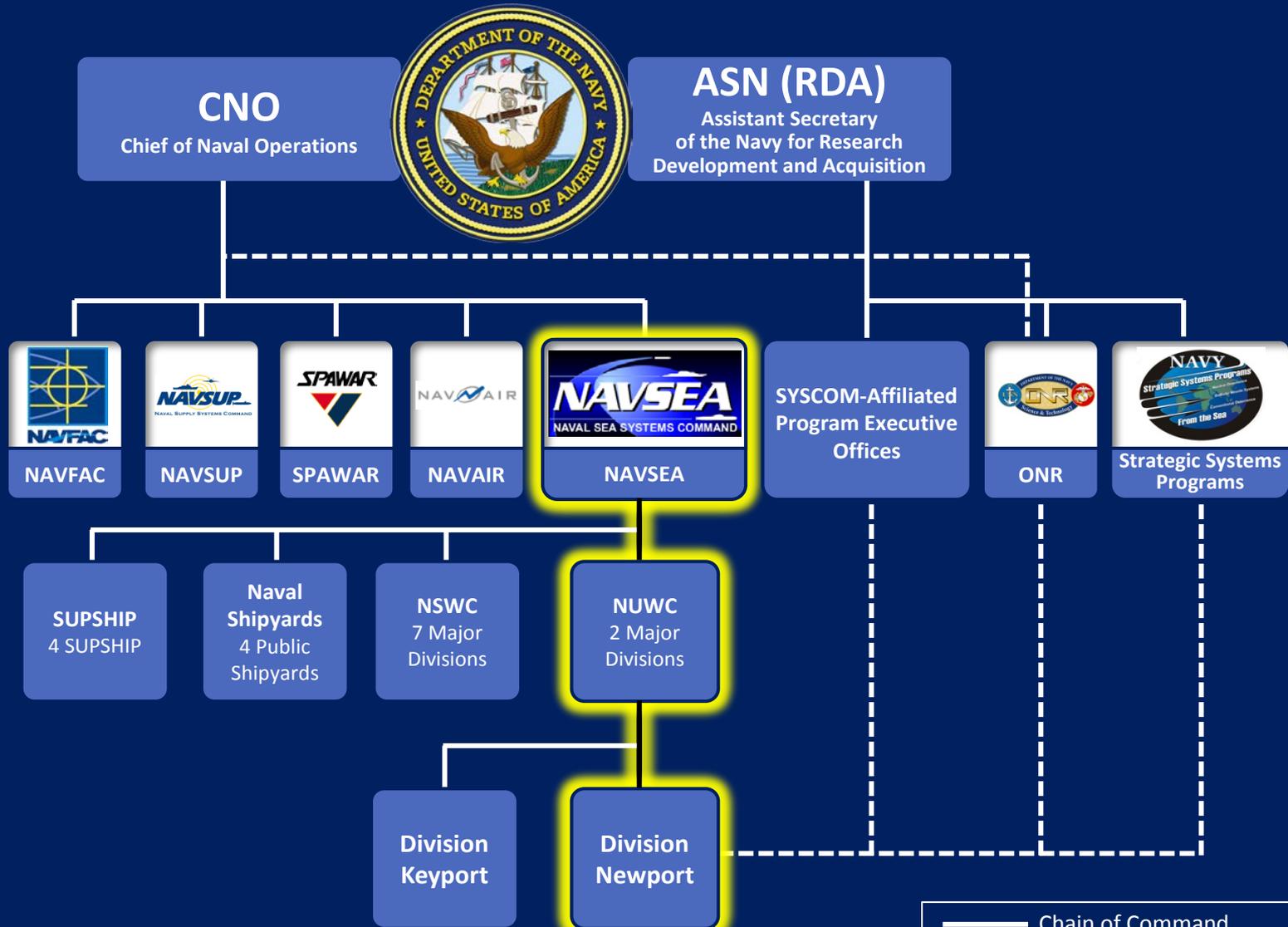
SPECIAL WEAPONS DEPARTMENT
MCALESTER – OKLAHOMA

NSWC PORT HUENEME DIVISION

WHITE SANDS DETACHMENT
WHITE SANDS – NEW MEXICO

VIRGINIA BEACH DETACHMENT
VIRGINIA BEACH – VIRGINIA

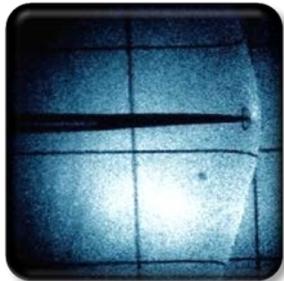
Division Newport in the Department of the Navy*



* Framework represents a subset of organizations within the Department of the Navy

— Chain of Command
- - - Requirements/Programs

A Bridge from Concept to Capability



Research



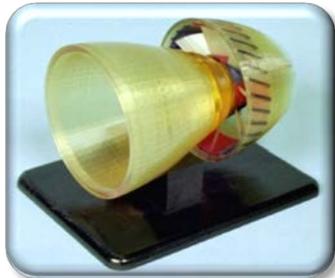
Development



Acquisition



Life-cycle Support



Prototyping



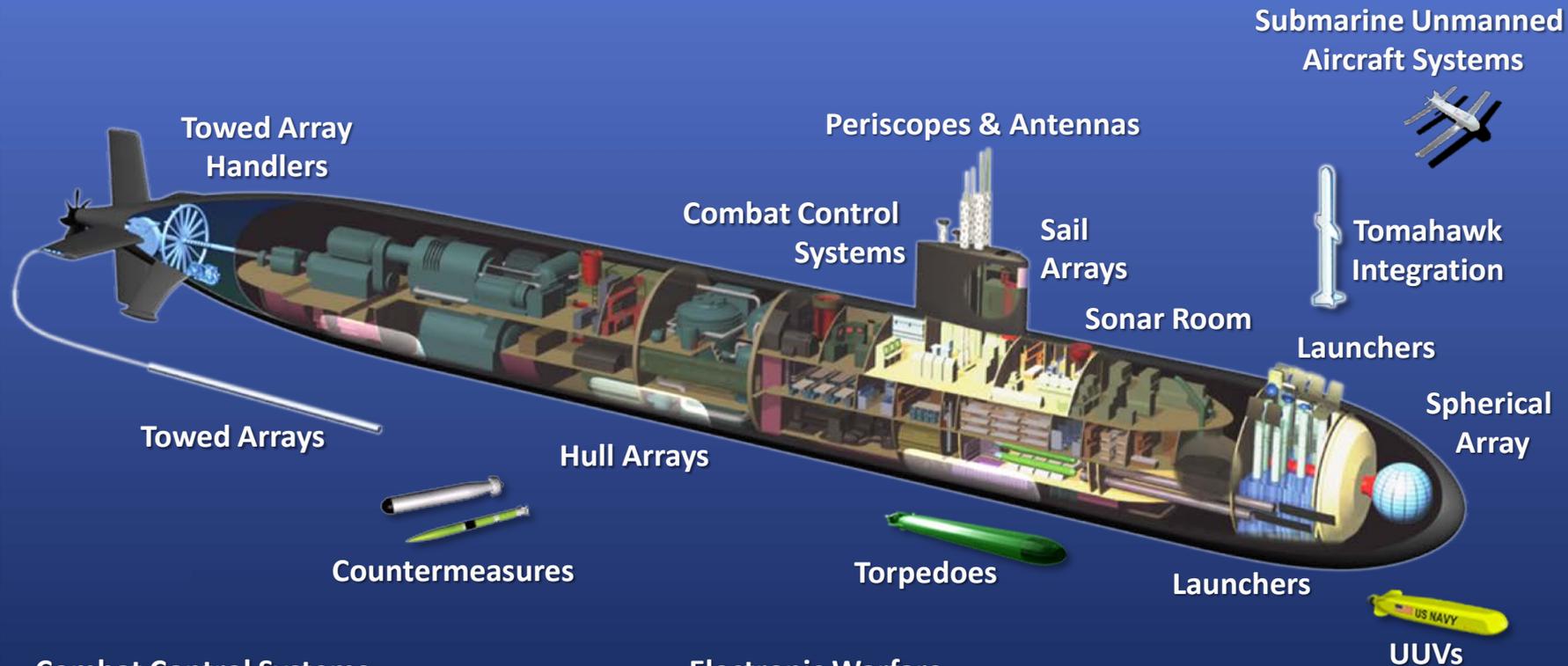
Undersea Warfare Analysis



Test & Evaluation

Partnering with Industry and Academia to Deliver Systems from Concept to Capability

Division Newport Areas of Expertise Submarine Technology



Combat Control Systems
 Active and Passive Acoustic Sonar Systems
 Fire Control Systems
 Hull-Mounted, Fixed and Towed Arrays
 Towed Array Handling Systems
 Acoustic Transducers & Windows
 Antennas
 Exterior Comms

Electronic Warfare
 Periscopes & Imaging Systems
 Missiles
 Launchers
 Torpedo System, Including Propulsion, Payloads, and Software
 Unmanned Undersea Vehicles
 Countermeasures

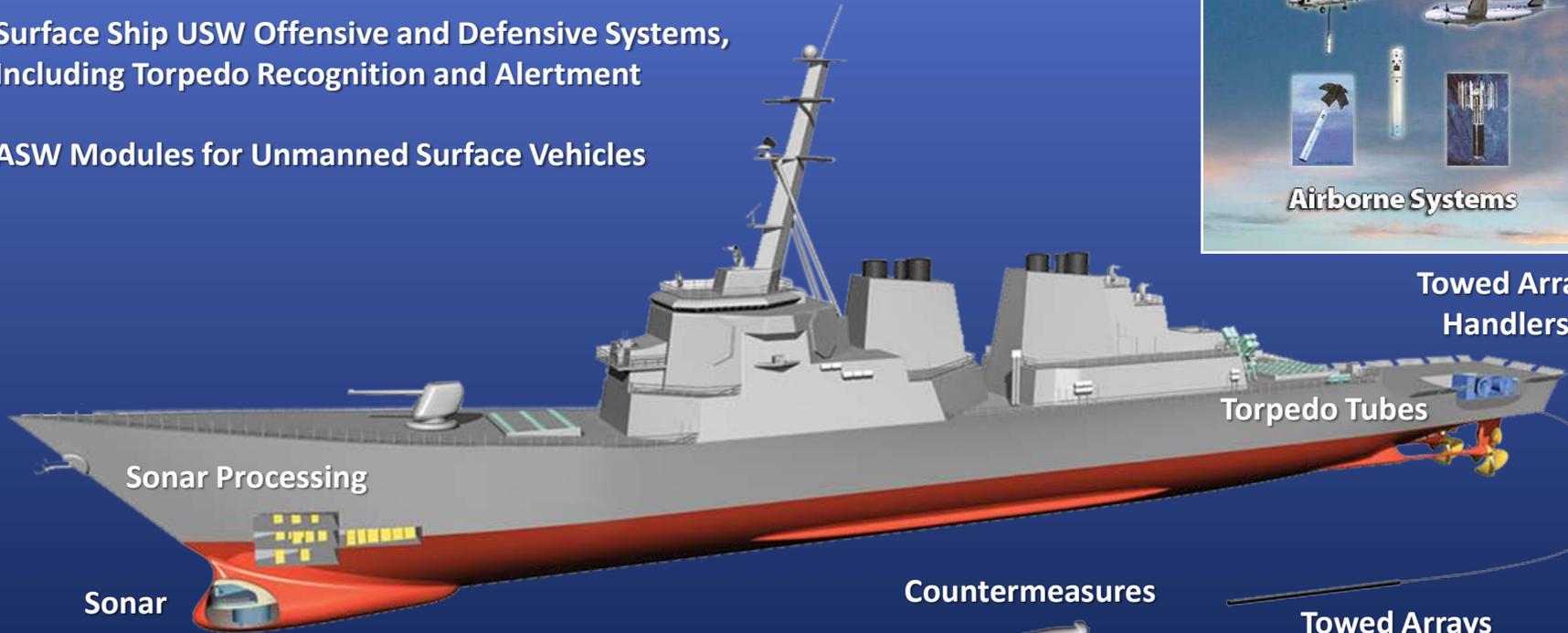
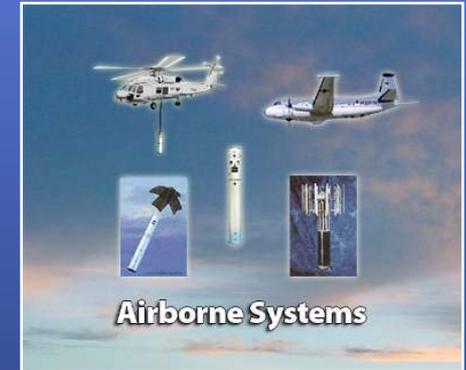
Division Newport Areas of Expertise

Surface Ship Technology

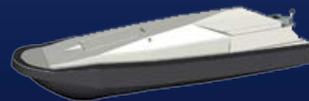
Surface Ship Sonar

Surface Ship USW Offensive and Defensive Systems,
Including Torpedo Recognition and Alertment

ASW Modules for Unmanned Surface Vehicles



Remote Vehicles



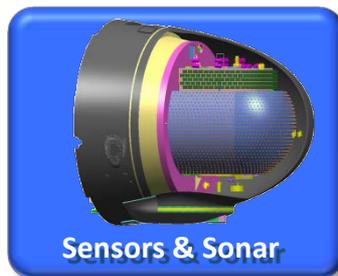
Torpedoes





Division Newport Areas of Expertise

The Navy After Next



Sensors & Sonar

- Transducer Technology
- Signal Processing
- Hull & Towed Arrays
- Fiber Optic & Laser Sensor



Launchers

- External Launchers
- Undersea Launch & Recovery
- Implosion



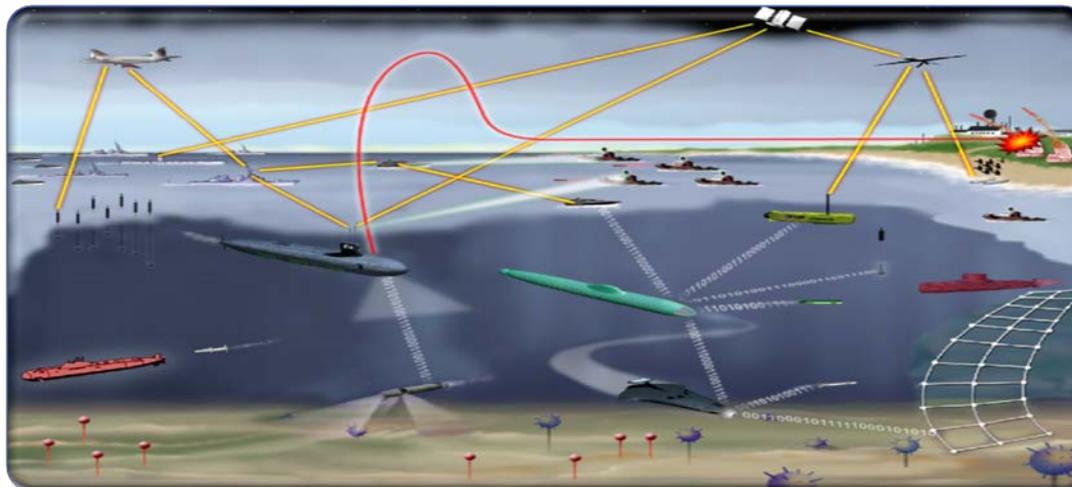
Communications

- Underwater Communications
- Adaptive & Novel Antennas
- Comms at Speed & Depth
- Info Assurance



USW Combat Systems

- Cognition & Decision Support
- Interoperability
- Warfighter Performance



Imaging & Electronic Warfare

- Signatures & Wake Reduction
- High Res. Imaging
- EW Sensing



USW Weapons

- Littoral Targeting
- Exploitation
- G&C
- Design & Analysis
- Propulsion



UUVs & USVs

- Autonomy
- Long Endurance Power Sys.
- Multi-Vehicle Collaboration
- Biomimetic Vehicles



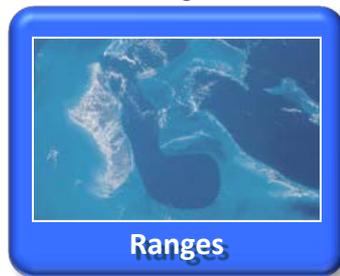
Platform Defense

- Decoy & Deception
- Soft Kill technologies
- Countermeasures
- Performance Analysis



Undersea Distributed Networked Systems

- Operations Analysis and Research
- Multi-Phenomenology Sensor Field
- Coatings: Biofouling & Anti-Corrosion

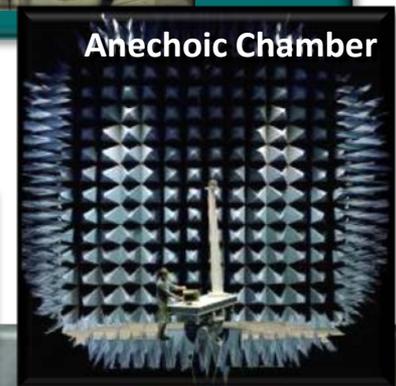
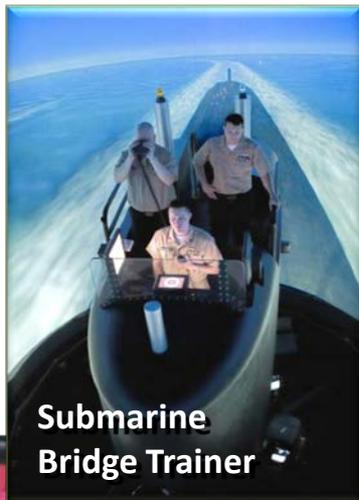


Ranges

- Marine Mammal Behavior
- Automated Reconstruction & Analysis
- Portable Ranges

Unique USW Facilities and Ranges

- State-of-the-art simulations and networking
- Reduce cost, risk, and development time
- Highly specialized for USW
- Full life cycle application



Precisely Controlled, Instrumented Environments Enable the Most Cost-Effective Method of Bringing Systems from Conceptualization to In-Service

Virtual Submarine

Antennas & EM Sensors

Roof Top Antennas:

- OE-538
- BRA-34
- HDR
- GBS
- Periscopes
- IEM

B1319

ESM

ESM Test Bed

- AN/BLQ-10
- ICADF
- COTS ADF
- CESS

B1319

Radio Room

- Land Based Submarine Radio Room (LBSRR) B 1319
- Platform Integration & Test Lab B1319
- EHF Integration & Test Lab B68

B1319

Combat Control

Combat Control System Laboratory (CCSL)

- CCS MK1 / MK2
- AN/BSY1
- Navigation

Sonar

Advanced Processing & Display Labs

AN/BQQ-5
AN/BQQ-6

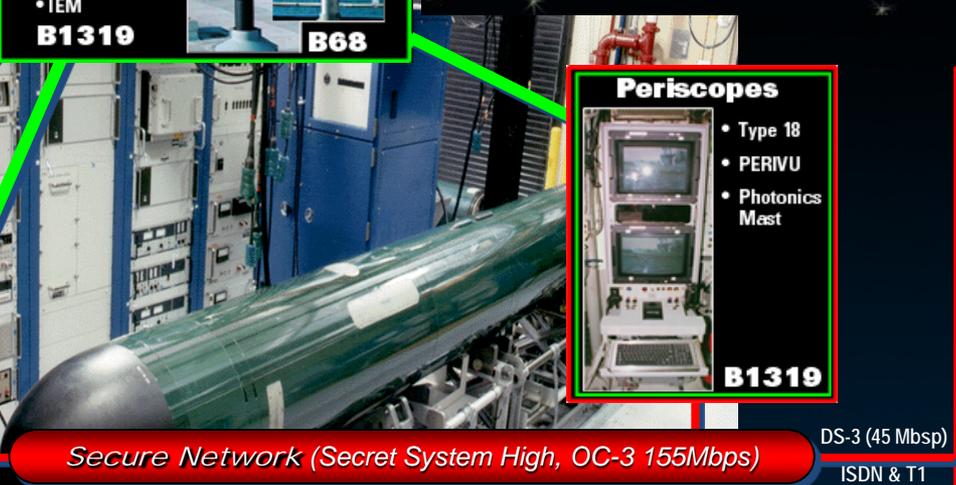
B1258

B1320

Periscopes

- Type 18
- PERIVU
- Photonics Mast

B1319



Ships, Ranges, and other Land-Based Facilities

External Connectivity

- DREN
- SIPRNET
- ISDN
- WAIF
- DEP (Future)

Coalition

- Australia
- UK
- Canada

Industry

- EB
- Raytheon
- Lockheed/Martin
- Northrop Grumman

Groton

Underwater Tracking Ranges

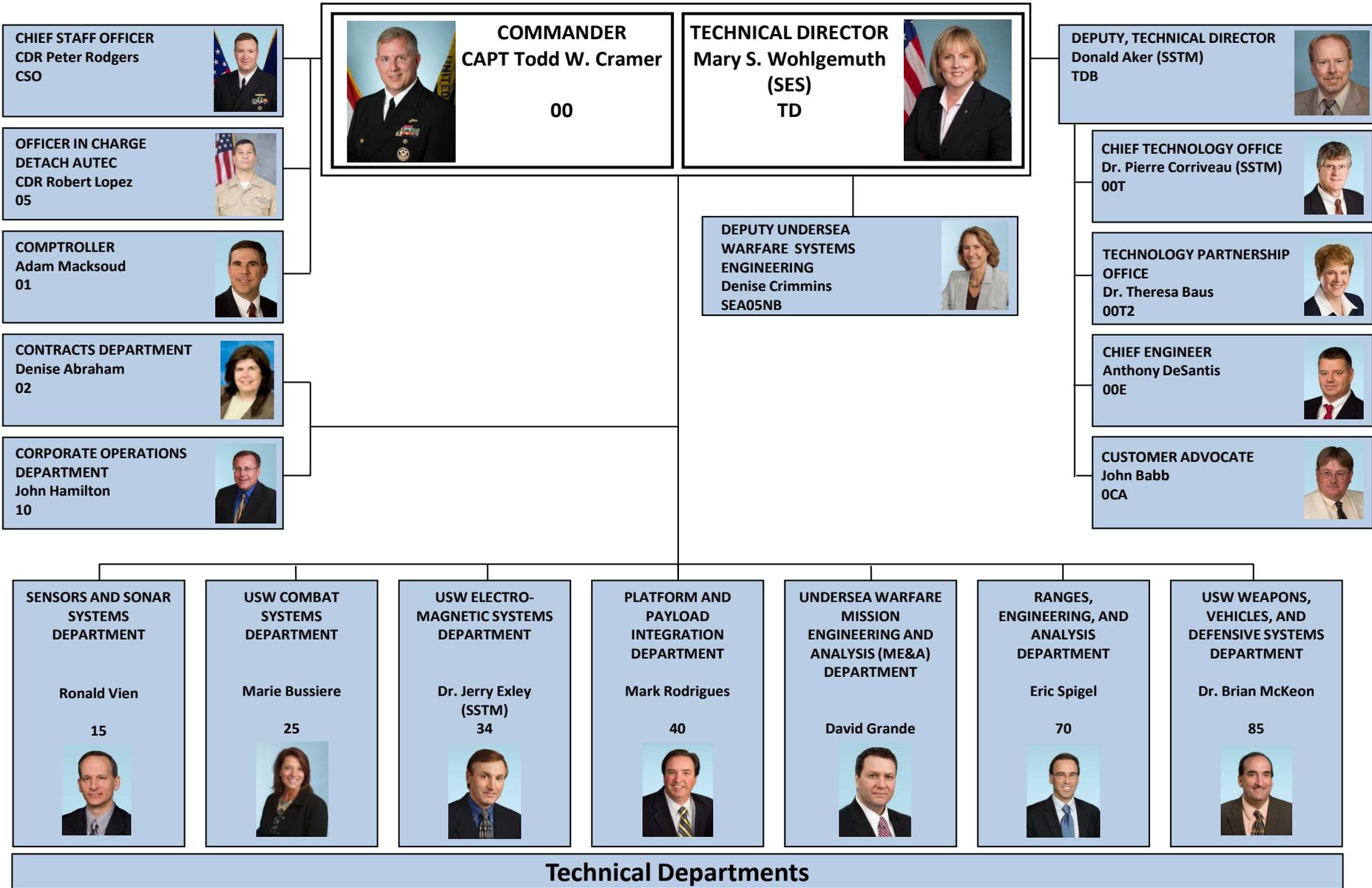
- AUTC
- SCORE

Weapons

- Weapons Analysis Facility
 - MK48
 - ADCAP
 - Tomahawk
- Weapons
 - CM's
 - Storm

B1346

NUWC Division, Newport



Technical Authority



Technical Warrant Holder Duties and Responsibilities

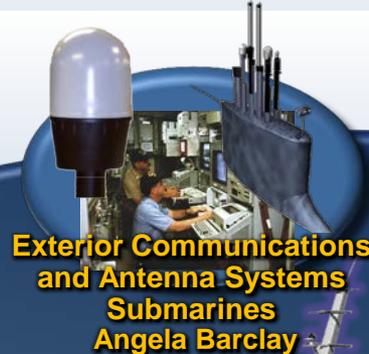
- Setting Technical Standards
- Technical Area Expertise
- Ensuring Safe and Reliable Operations
- Ensuring Effective and Efficient Systems Engineering
- Judgement in Making Unbiased Technical Decisions
- Stewardship of Engineering and Technical Capabilities
- Accountability and Technical Integrity

Foremost Technical Authority for USW

Undersea Warfare Systems Engineering Technical Warrants



**Distributed Undersea
Sensor Systems**
John A. Oliveira

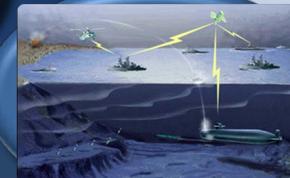


**Exterior Communications
and Antenna Systems**
Submarines
Angela Barclay



**Sonar Systems
Surface Ships**
Steven Harrison

**Sonar Systems
Submarines**
Kenneth Silveria



**USW Combat and
C2 Systems Integration**
Jaime DeGala



USW Defensive Systems
Bradford Wheeler



**Imaging, EM,
EO, and EW Systems**
Submarines
Dr. Robert LaFreniere



**Combat and Weapons Control
Systems Submarines**
Tejal Patel



**Unmanned Underwater
Vehicles**
James Spreser



**Waterfront CHENG –
Keyport Torpedo Depot**
Bruce Cherry

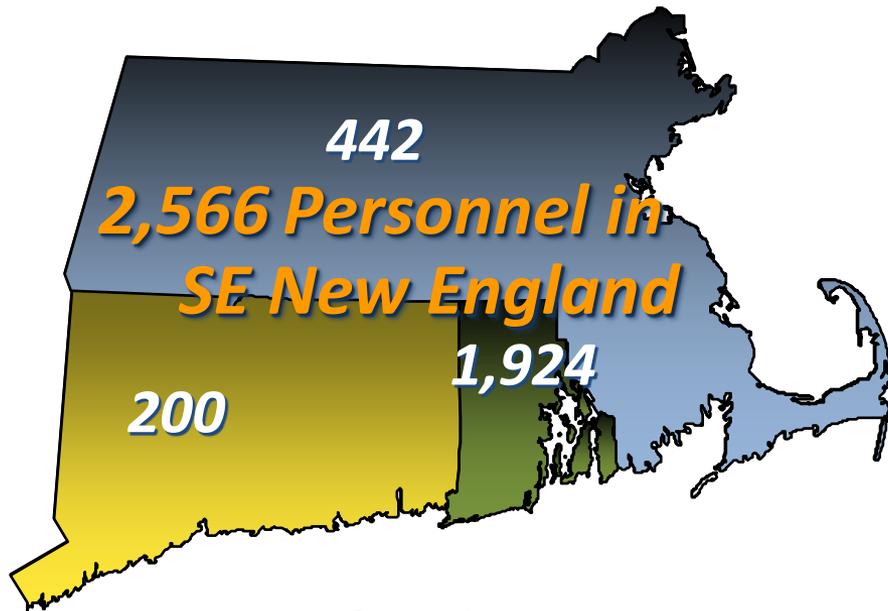


Undersea Range Tracking Systems
Neal Prater



Torpedoes
Robert Tompkins

NUWC Impact On Southern New England



- 4,882 Total Work Years, (Gov't and Contracted)
- \$874M Total Funding
- \$603M to local economy for payroll, contracts, construction, and services purchased

Types of Employment	Civil Service	Contract	Est Overall
Engineering / Science	1,984	618	2,602
Professional Administrative	494	623	1,117
Technical Support	202	570	772
Administrative / Clerical	48	286	334
Wage Grade	2	55	57
TOTAL	2,730*	2,152	4,882

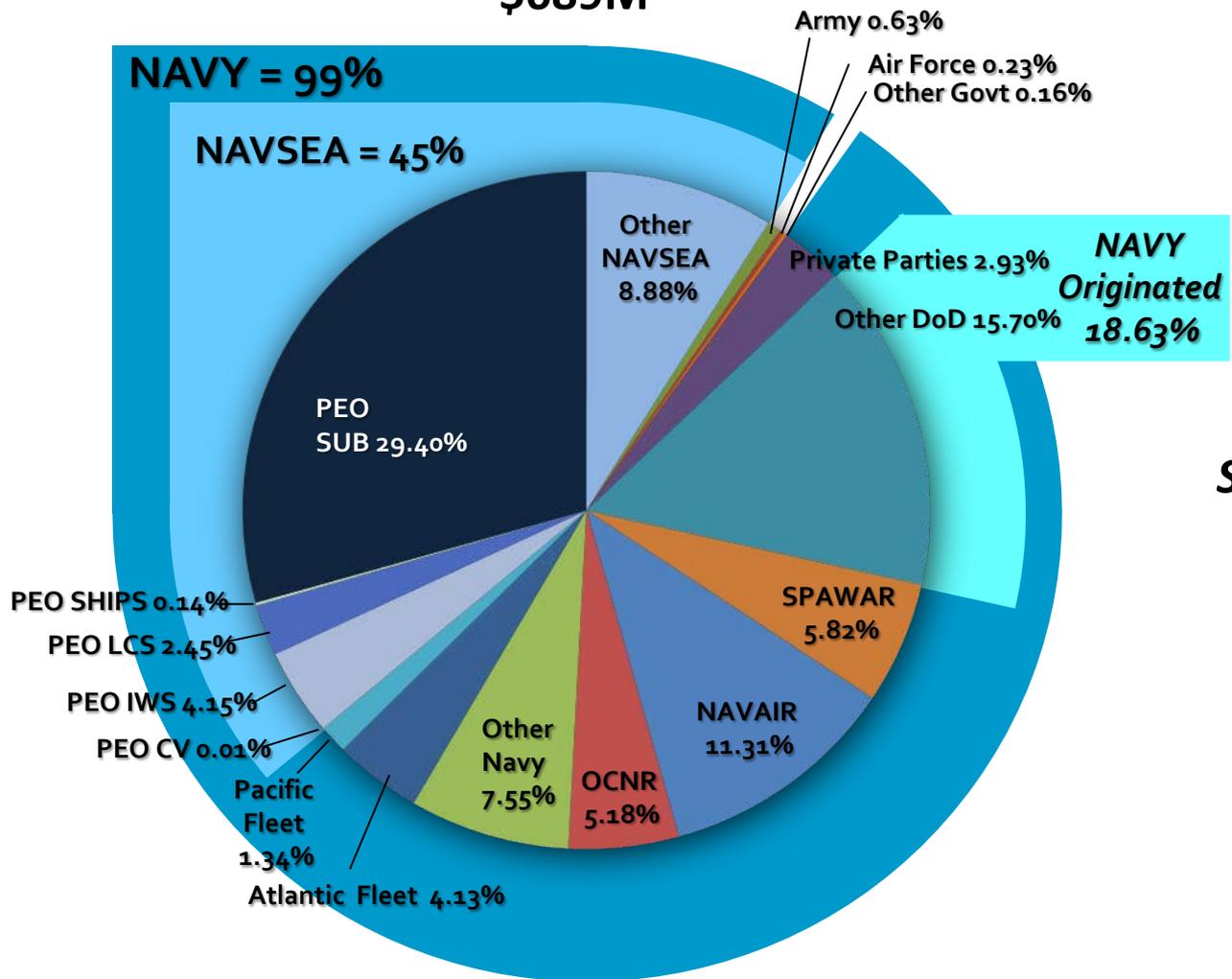
* Figure includes detachments
1 OCT 2013

**73% Of Our Workforce are Engineers and Scientists
Advanced Degrees - 161 PhDs (6%) and 829 Masters (30%)**



NUWCDIVNPT Customers- Reimbursable

Our FY13 Customers
\$689M



We are a NWCF Activity

- We're not a congressional line item
- Customers decide whether to bring work to the Warfare Centers
- NUWC is accountable for efficient delivery of products and services

Spectrum of Customers

- Fleet
- Program and resource sponsors
- Scientific sponsors
- Intelligence community
- Defense industry
- Non-defense industry
- Foreign Navies

Provide Best Value to Our Customers

Collaboration on a Global Basis

DoD Partners

- Stable, Long Term Investments
 - Stewardships
- High Risk, High Payoff R&D



INNOVATION



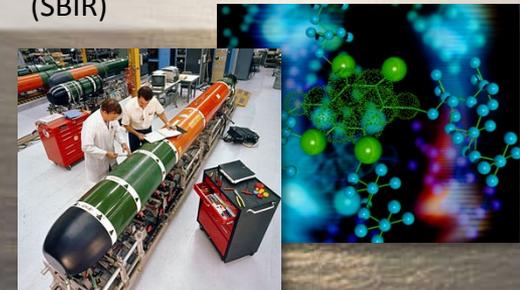
Academia

- Basic Research, Fundamental Ideas, Scientific Talent Pool
 - 21 Educational Partnership Agreements
 - 56 Cooperative R&D Agreements



Industry

- Demo/Validation, Production
 - Cooperative Research & Development Agreements (CRADA)
 - Small Business Innovation Research (SBIR)



Foreign Military Sales
Armament Cooperation Programs

Data Exchange Agreements
Technical Cooperation Programs

Cooperative Research and Development Agreements

International Components

