



25

UNDERSEA WARFARE COMBAT SYSTEMS

Code 25 Industry Day Brief

02 November 2023

- Introduction/Ground Rules
- Disclaimer Statement
- Background Information
- Anticipated Procurement Strategy
- Technical Requirements
- Conclusion/Wrap-Up

- Introduction of participants
 - NUWCDIVNPT Technical Code 25
 - NUWCDIVNPT Contracts Department
- Intent of Industry Day
 - Encourage competition by:
 - Ensuring all potential offerors receive and have access to the same information
- Technical “Q&A” is encouraged
 - Q&A (all questions submitted in writing) will be answered via SeaPort-NxG Portal

- Forms and receptacle are located at the Registration Table
- Please silence cell phones and pagers
- No personal recording
- The attendees list, Q&A and “Distribution Statement A” slides will be posted to the SeaPort-NxG portal and the Contracting & Office of Small Business Outreach page
 - Link: <https://www.navsea.navy.mil/Home/Warfare-Centers/NUWC-Newport/Partnerships/Contracting-and-Small-Business/Outreach-Events/>

- DO NOT directly contact NUWC technical code after today – all further dialogue will be accomplished via the Q&A feature on the SeaPort-NxG portal
- Requirements contained in this briefing are presented as a summary

Full/updated requirements will be provided in the Requests for Proposal (RFP)

Disclaimer Statement

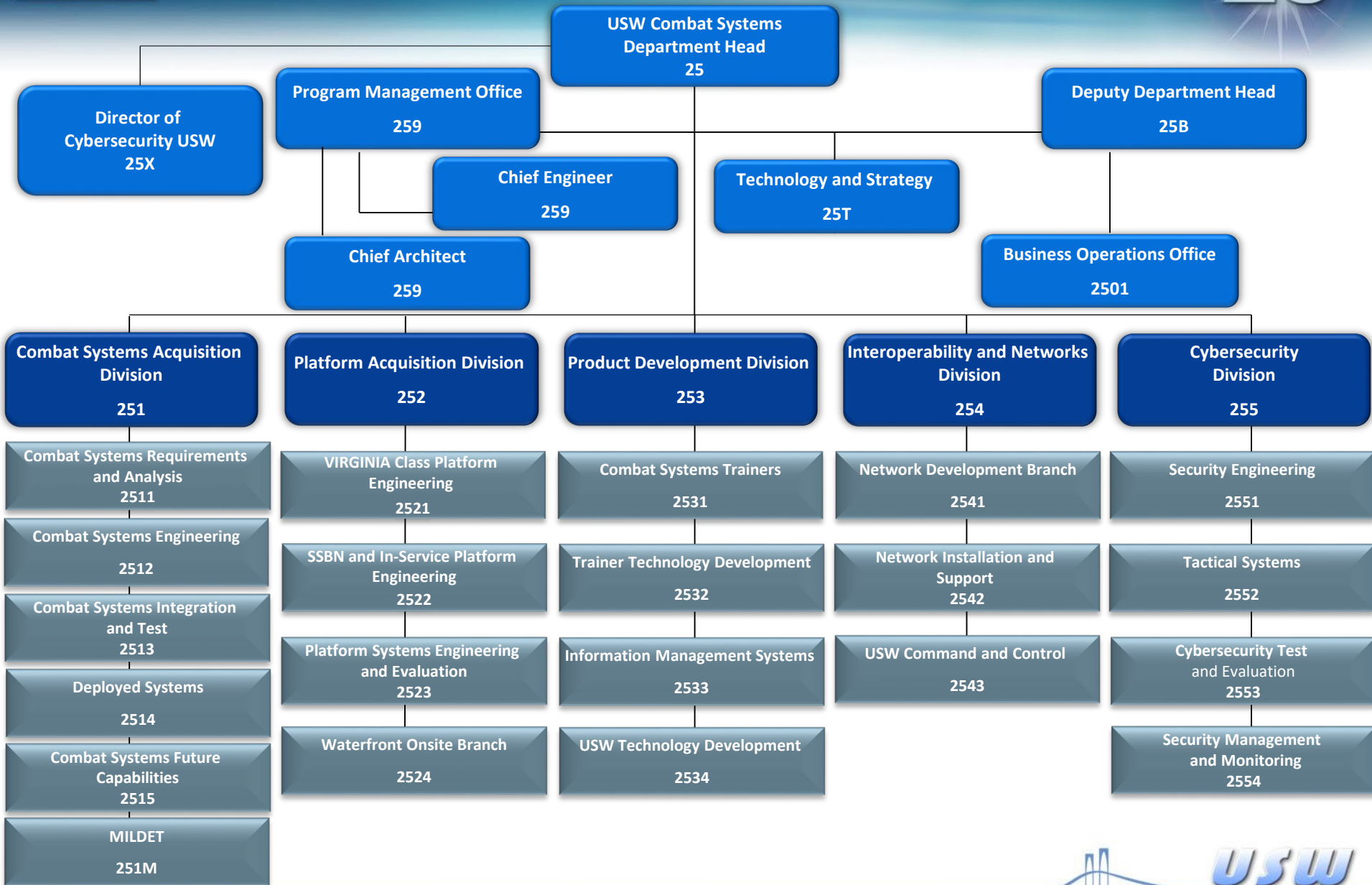
25

- Remarks today by Government officials involved in today's presentations should not be considered a guarantee of the Government's course of action in proceeding with any of the planned acquisitions discussed
- The informational briefing shared today reflects current Government intentions and is subject to change based on a variety of circumstances

The formal solicitation, when issued, is the only document that should be relied upon in determining the Government's requirements

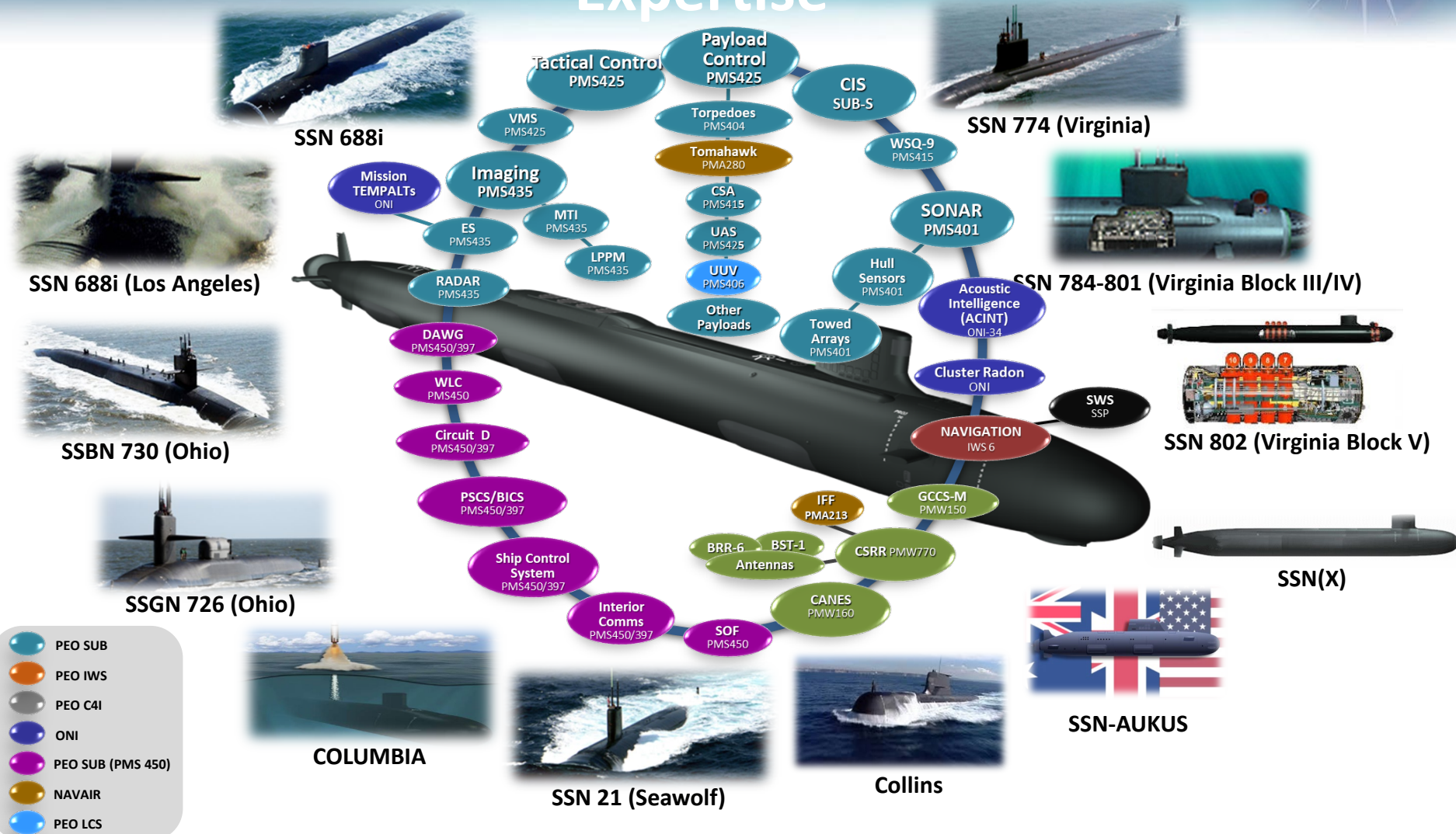
USW Combat Systems Department

25



System of Systems (SoS) Engineering Expertise

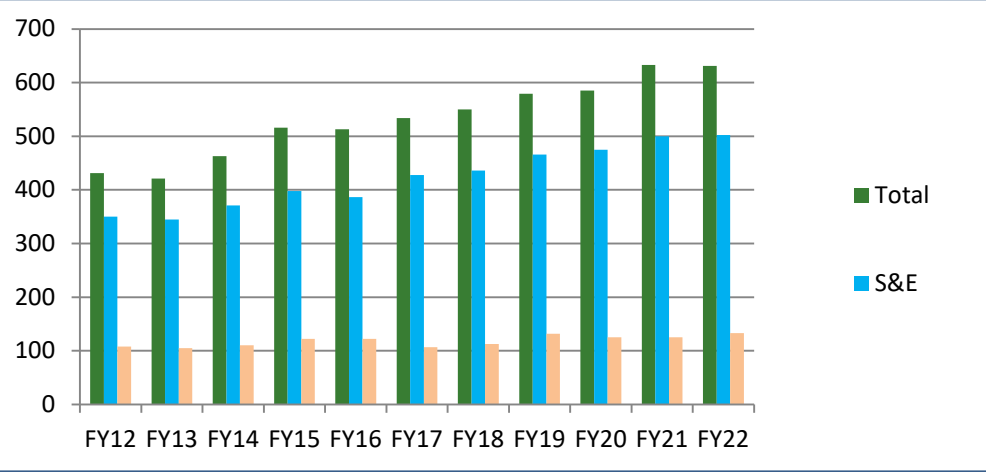
25



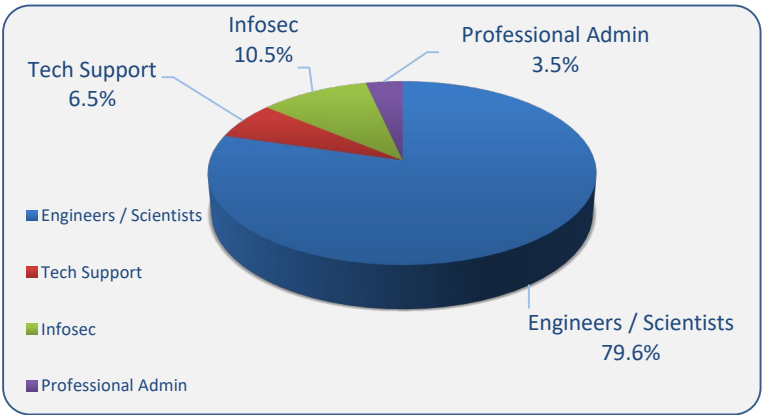
Executing Technical Authority Across Programs, Platforms, and System of Systems

Our People – Skilled Workforce

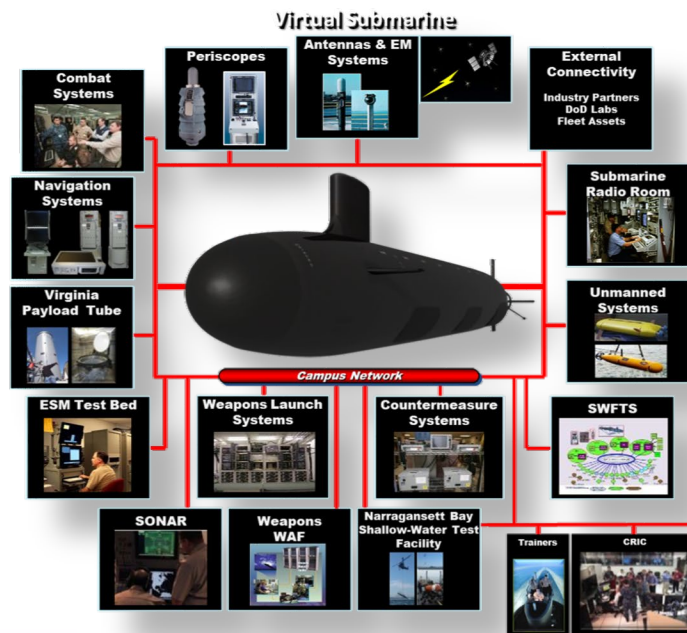
25



- **Maintained end strength in the face of a volatile job market**
- **Continued participation in Part Time Academic Degree Program!**
 - **9 PhD, 124 Masters Degrees**
- **Flexing our contracting portfolio to meet customer demand**
- **Grown by 200 personnel in past 10 years (47% growth)**



- Powerful technical resource enabling prototyping, experimentation, development, integration and test, training, assessment, & certification
- Complement to workforce expertise
- Product lifecycle support for over 20 projects



- External linkages via Wide Area Integration Facility (WAIF) to facilitate industry partnerships and promote efficient development and integration of new capabilities
- Core component of Virtual Submarine – Campus-wide connectivity of Division Newport facilities

USW Combat Systems Programs

Our Value

25

Science & Technology

Development

Acquisition Support

Fleet Support

Diverse Set of Customers Across SYSCOMs, ONR and the Fleet

- SSN(X) Concept Exploration
- Naval Tactical Cloud
- UxV Common Control System
- UxS Experimentation and Integrated Naval Prototypes
- Human Factors Engineering
- Cyber Security (Zero Trust and Multi Level Security)
- Combat Systems Hardware/ Software/Network Architectures

- Virginia Block VI/VII/SSN(X)/AUKUS
- Combat Systems Virtualization
- SWFTS Seamless Re-architecture
- Live/Virtual/Constructive (LVC)
- Future Navy Capabilities
- Unmanned Aerial Systems Family of Vehicles (Small/Medium)
- Undersea Dominance Payload Prototyping
- AN/BYG-1 CI/CD Pipeline
- Cyber Security Systems Engineering

- AN/BYG-1
- TTWCS
- Virginia
- Columbia/Ohio
- Trainers (SMMTT, SBT)
- SWFTS
- Submarine CANES
- USW Strike
- International Programs
- Cybersecurity
- USW DSS
- Project Overmatch
- AUKUS

- Submarine Combat Systems ISEA
- Ohio/Seawolf ISEA
- Tomahawk Logistics and Fleet Support
- SSGN Attack Weapon Control System
- Operational Documentation
- Trainer On Site Agents
- GCCS-M
- NTMPS
- SEAWARE-LMS/SOBT
- Surge Readiness
- Trident Shield

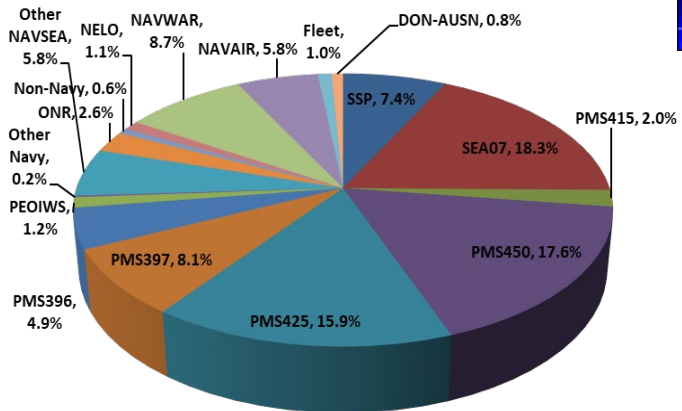
Combat System Funding

25



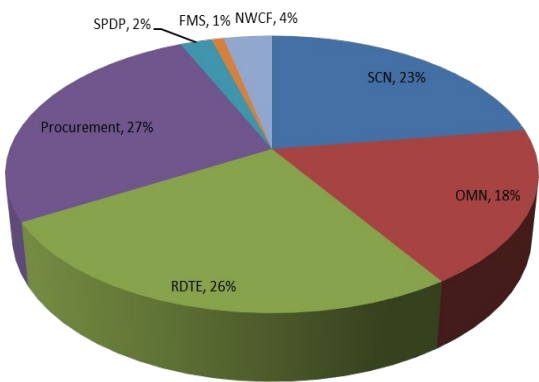
Funding Profile by Customer

- FY22/23 New Customers**
- PMS 4XX
 - Project Overmatch
 - AUKUS



Funding Profile by Appropriation

- Continue to Increase RDTE**
- 50% Benchmark by FY27



\$335M* Plan FY23

*FY23 TCHA data

**Steady demand for our products and services
11% increase over 2022**



Code 25 Undersea Warfare (USW) Strike Systems Contract

RFP N66604-24-R-3000

Undersea Warfare (USW) Strike Systems Contract

Anticipated Procurement Strategy

25

- Summary of Contract Scope:

- Engineering and technical services to NUWCDIVNPT Code 25 for current and future submarine strike systems, weapons, tactical control systems, and payload control systems. This work shall include Systems Engineering, Integration and Test, Installation and Fleet Support, Software Engineering and Development, and Program Planning, Meeting and Working Group Support for all three existing Tomahawk Weapon System (TWS) segments, and additional USW applications referenced above for all new USW payload systems.

- RFP: N66604-24-R-3000
- Contracting Method: SeaPort NxG
- Anticipated Period of Performance: 09/01/2024 – 08/31/2029
- Acquisition Strategy: Unrestricted
- Level of Effort: Estimated 840,010 hours & \$2,785,000 ODCs
- Anticipated Work Location: 60% Government Site, 40% Contractor Site
- Contract Type: CPFF

Undersea Warfare (USW) Strike Systems Contract

Anticipated Procurement Strategy (continued)

25

- Unique Characteristics:
 - Key Personnel requirements: Minimum of 5 Key Personnel (inclusive of STR) to Cover Designated Areas of Expertise
 - Facility Security Clearance: Top Secret
 - Level of Safeguarding Required at Contractor Facility: Secret
 - Required Certifications/Designations: Cybersecurity Workforce (CSWF) tasking
 - If large ODCs provide any details: ODCs primarily for travel with some incidental materials
 - Follow on? Yes, follow-on to N00178-19-D-8623-N66604-20-F-3002, SEACORP, Acquisition Strategy was Unrestricted
 - Does OCOI clause apply? Yes
 - Expected RFP release: FY24 QTR 1

Undersea Warfare (USW) Strike Systems Contract

Technical Requirements

25

- Background:

- The Naval Undersea Warfare Center Division, Newport (NUWCDIVNPT) Undersea Warfare (USW) Combat Systems Department (Code 25) is the U.S. Navy's agent for full-spectrum systems engineering for the development, implementation and sustainment of USW Strike mission capability.
- Current applicable systems include but are not limited to Ship Submersible Nuclear (SSN) Tomahawk Weapon System (TWS) segments (Tactical Tomahawk Weapon Control System (TTWCS), Theater Mission Planning Center (TMPC), and the All Up Round (AUR).
- For USW applications, additional applicable systems include the Submarine Combat system and relevant sub-systems, including the AN/BYG-1 Combat Control System (CCS), Submarine Warfare Federated Tactical System (SWFTS), Submarine Launched Unmanned Aerial System (SLUAS), Non-Propulsion Electronic Systems (NPES) and interfacing Command and Control (C2) and Communications systems and networks. For Ship Submersible Guided Missile-Nuclear (SSGN) submarines, the Attack Weapon System (AWS), which includes the Attack Weapon Control System (AWCS) and its Launch Control System (LCS), are applicable.
- With an emerging Department of Defense (DoD) and submarine force focus on new platforms and payloads, there is an increased demand for new USW Strike payload/platform integration concepts and architectures that include a multitude of systems engineering disciplines with a focus on integration and interoperability across the mission kill chain, coordination of strike payload capability to include third party targeting/cueing (3PT/3PC) operations via onboard/off board sensors, and unmanned system integration.
- This includes trade studies, prototyping, risk reduction, requirements analysis and concept of operations development.

- Scope:

- Provide engineering and technical services to NUWCDIVNPT Code 25 for current and future submarine strike systems, weapons, tactical control systems, and payload control systems. This work shall include Systems Engineering, Integration and Test, Installation and Fleet Support, Software Engineering and Development, and Program Planning, Meeting and Working Group Support for all three existing Tomahawk Weapon System (TWS) segments, and additional USW applications referenced above for all new USW payload systems.

Undersea Warfare (USW) Strike Systems Contract Technical Requirements

25

- High Level SOW Tasking:
 - Strike Systems Engineering
 - Systems engineering services for current and planned strike systems both deployed and ashore. This includes Requirements Development Support, Concept Development, Software and System Architecture Prototyping, Software Engineering and Development, and Cyber Request for Information (RFI).
 - Integration and Test
 - Integration and Test services for current and planned strike systems both deployed and ashore. This includes Test Planning, System Integration, Test Operations, Shipboard Alterations, and System Administration.
 - Installation and Fleet Support
 - Installation and Fleet Support services for current and planned strike systems both deployed and ashore. This includes Operational Documentation, Ship and Facility Checks, Installation and Checkout, In-Service Support Engineering Activity (ISEA), Concept of Employment and Tactical Guidance Development, and Fleet Training: Curriculum Development and Course Conduct.
 - Program Planning, Meeting and Working Group Support
 - Program Planning, Meeting and Working Group Support services for current and planned strike systems both deployed and ashore. This includes Program Planning Support and Meeting and Working Group Support.

Undersea Warfare (USW) Strike Systems Contract

Key Personnel Requirements

Minimum of five (5) Key Personnel inclusive of the STR, covering the below areas of expertise. A person may be designated as key in more than one area below.

PWS Task	Quantity of Key Personnel	Required Qualifications	Desired Qualifications
Payload/ Weapon Control System Requirements and Concept Development	(1) Key Person	<ul style="list-style-type: none"> • Experience with the development of DOD system requirements and specifications • Knowledge of the Systems Engineering Process as it relates to the DoD acquisition process • Experience performing FMS tasking • Experience with the development of system enhancements to DOD fire control or weapon systems • Experience with interface specification development for fire control or weapon systems • Experience with phased requirements approach for prototype development 	<ul style="list-style-type: none"> • Experience with AN/BYG-1 WCS/PCS/SWFTS/CIS software and hardware architecture, interfaces, and related specifications • Experience with the development of AN/BYG-1 system enhancements pertaining to the strike mission • Experience with Tactical Tomahawk Weapon Control System (TTWCS) interface specifications, particularly specifications outlined in JCM-2179/2, JCM-2210/3, and JCM-1832/2 • Experience with Theater Mission Planning Center (TMPC) suite and TWS mission planning • Experience with the Strategic Systems Programs (SSP) Engineering Processes • Experience with Strike system interfaces and related specifications, including Navigation – Ring Laser Gyro Navigation (RLGN), Global Positioning Subsystem (GPS), the Exterior Communication System (ECS), the Global Command and Control System – Maritime (GCCS-M), Submarine Local Area Network/Consolidated Afloat Network Enterprise System (SubLAN/CANES) and the AN/BYG-1 Enclave Guard/Information Assurance system

Undersea Warfare (USW) Strike Systems Contract

Key Personnel Requirements

Minimum of five (5) Key Personnel inclusive of the STR, covering the below areas of expertise. A person may be designated as key in more than one area below.

PWS Task	Quantity of Key Personnel	Required Qualifications	Desired Qualifications
Software/ System Architecture Development and Prototyping	(1) Key Person	<ul style="list-style-type: none"> • Experience developing software and systems in a prototype environment utilizing an iterative development/evaluation cycle • Experience developing software and systems in a tactical environment that require certification from Software Systems Safety Review Panel (SSSTRP), Fuze and Initiation System Technical Review Panel (FISTRP), Weapon System Explosives Safety Review Board (WSESRB) • Experience with Linux operating systems • Experience with ADA, C/C++, object oriented programming, Qt software development kit (SDK) • Experience with Configuration Management • Experience with System network setup and configuration 	<ul style="list-style-type: none"> • Experience with AN/BYG-1 WCS/PCS/SWFTS software and hardware architecture • Experience with virtualization of combat systems components • Experience with DevOps software development methodology and related tools • Experience with Agile software development approach • Knowledge of NAVAIR Software processes • Knowledge and understanding of the TWS System Development Activity (SDA) framework and organizational structure
Cyber Security	(1) Key Person	<ul style="list-style-type: none"> • 4-6 years' experience in Cyber IT or Cybersecurity • Knowledge of SECNAVINST 5239.3C, DoN Cybersecurity Policy • Knowledge of DoD 8570.01M, Information Assurance Workforce Improvement Plan Change 4 • Knowledge of Department of Defense Instruction DoDI NUMBER 8500.01 	<ul style="list-style-type: none"> • Previous DON Cyberspace IT/Cybersecurity Workforce certification • Knowledge and certification in strike system cyber requirements • Knowledge and experience with TWS security and classification guide • Experience performing cyber security analysis on real-time weapon systems

Undersea Warfare (USW) Strike Systems Contract

Key Personnel Requirements

Minimum of five (5) Key Personnel inclusive of the STR, covering the below areas of expertise. A person may be designated as key in more than one area below.

PWS Task	Quantity of Key Personnel	Required Qualifications	Desired Qualifications
Integration and Test of Combat and Weapon Systems	(1) Key Person	<ul style="list-style-type: none"> • Experience with handling requirements traceability • Experience collecting and analyzing test data • Experience with providing regular test event updates and problem reporting/tracking • Experience conducting at-sea experimentation • Experience conducting test events for weapon systems 	<ul style="list-style-type: none"> • Experience with the AN/BYG-1 WCS/PCS, AWS, TWS and overall strike test processes including test plans, procedures, reports, data collection, and analysis • Knowledge of submarine radio room assets, Tactical Tomahawk Guidance Test Set (TTGTS) equipment, and Tomahawk External Data Extraction System (TEDES) • Experience with virtualizing hardware/software components of the TWS and integrating with AN/BYG-1 • Experience with the integration of AN/BYG-1 WCS/PCS and new payload hardware and software • Experience with Strike system sub-component integration and test, including Navigation – Ring Laser Gyro Navigation (RLGN), Global Positioning Subsystem (GPS), the Exterior Communication System (ECS), the Global Command and Control System – Maritime (GCCS-M), Submarine Local Area Network/Consolidated Afloat Network Enterprise System (SubLAN/CANES), Electronic Support Measures (ESM) and imaging systems and the AN/BYG-1 Enclave Guard/Information Assurance system • Experience conducting platform to weapon navigation alignment testing (TWS DSAT/ASAT)

Undersea Warfare (USW) Strike Systems Contract

Key Personnel Requirements

Minimum of five (5) Key Personnel inclusive of the STR, covering the below areas of expertise. A person may be designated as key in more than one area below.

PWS Task	Quantity of Key Personnel	Required Qualifications	Desired Qualifications
Combat and Weapon System Installations and ISEA	(1) Key Person	<ul style="list-style-type: none"> • Experience with installation, test and grooming of submarine combat and weapon systems • Experience developing technical documentation including system operating procedures, user guides, maintenance procedures, and training materials • Experience performing on-board/on-site training events or support services • Experience in installation of SHIPALTS, TEMPALTS, engineering change instructions/packages (ECI/ECP) and software updates • Knowledge of submarine fleet type commander activities, personnel and coordination processes 	<ul style="list-style-type: none"> • Experience with FMS Installation and logistics requirements • Experience with VPT and VPM • Experience with PSES • Experience with CWL • Experience with AWS • Experience with TWS and sub-component implementation on submarine platforms • Experience with SSN 688/688i and 21 class launchers and Launch Control Systems • Submarine Alteration Installation team (AIT) certification
Strike Operations and Tactical Employment	(1) Key Person	<ul style="list-style-type: none"> • Knowledge of US Navy fleet tactics and weapon employment doctrines • Experience in the development of mission area concept of employment (COMEMP) and concept of operations (CONOPS) 	<ul style="list-style-type: none"> • Submarine operational and tactical experience • Experience with submarine weapon systems employment and development of related strike mission guidance • Experience and participation in submarine pre-deployment training and certification phases of the POM cycle for all strike-capable submarines • Experience working with Undersea Warfare Development Center (UWDC) Tactical Analysis Group (TAG)

Conclusion/Wrap-Up

25

- Thank you for your interest in the Code 25 Industry Day for the Code 25 Undersea Warfare (USW) Strike Systems Contract
- The attendees list will be posted to the SeaPort NxG Portal
- This briefing will be posted to the SeaPort NxG Portal
- “Q&A” (today’s and subsequent) will be posted to the SeaPort NxG Portal
- DO NOT contact today’s presenters
 - All further dialogue will be accomplished via the Q&A feature on the SeaPort NxG Portal