

Attachment 1

STATEMENT OF WORK
FOR
THE SYSTEM ACCEPTANCE AND
OPERATIONAL READINESS DEPARTMENT
Development, Engineering and Technical Services

DEPARTMENT OF THE NAVY
NAVAL UNDERSEA WARFARE CENTER, DIVISION KEYPORT
610 DOWELL ST.
KEYPORT, WA 98345

13 SEPTEMBER 2010

TABLE OF CONTENTS

1.0	SCOPE	1
1.1	Purpose.....	1
1.2	Background.....	1
1.2.1	System Acceptance and Operational Readiness Department, Code 20.....	1
1.2.2	Pacific Northwest Range Management and Operations Division, Code 21	1
1.2.3	USW Weapons and Product Acceptance Division	1
1.2.4	USW Systems Test and Operational Assessment Division	2
1.2.5	Hawaii Fleet Operational Assessment Division	2
1.2.6	Southern California Fleet Operational Readiness Division.....	2
1.2.7	SAOR Department Project Office	3
1.3	Collaborative Development Environment	3
1.4	Open Systems Architecture Approach.....	3
1.5	Summary	3
2.0	REFERENCE DOCUMENTS.....	4
2.1	Government Documents	4
2.2	Industry Based Standards Documents.....	6
3.0	SERVICES.....	7
3.1	Technical Analysis, Studies and Reports.....	7
3.2	Emerging Technology Studies	7
3.2.1	EA/EIS	7
3.3	Systems/Software Development and Documentation.....	7
3.4	Technology Demonstrations, Developmental and Operational Test, Fleet Readiness Test Support.....	7
3.5	System Assembly/Disassembly, Testing, Modification and Installation.....	7
3.6	Design/Prototype Development	8
3.7	Information Assurance.....	8
3.8	Field Engineering Support	8
3.9	T&E Design and Planning Support.....	9
3.10	Analysis and Reporting Support	9
3.11	Non Traditional Acquisition Program Transition Support	9
3.12	Non-Traditional Assessment (NTA).....	9
4.0	GENERAL REQUIREMENTS	10
4.1	Integrated Program Management.....	10
4.1.1	Progress, Status and Management Report	10
4.1.2	Task Order Work Breakdown Structure (TOWBS).....	10
4.1.3	Integrated Master Schedule.....	10
4.1.4	Subcontract Management and Control.....	11
4.1.5	Reviews.....	11
4.1.5.1	Program Reviews	11
4.1.6	Government-Furnished Information/Property/Equipment/Material	11
4.1.7	Risk Assessment and Management.....	12
4.1.8	Formal Proposals	12
4.2	Quality Assurance.....	12
4.3	Information Assurance.....	12
4.4	Government Furnished Property and Material	12

4.5	Contractor Employees.....	12
4.6	Environmental Compliance Requirements	13
4.6.1	Environmental Law and Regulations.....	13
4.6.2	Hazardous Waste and Material Control/Handling.....	13
4.6.3	Safety	13
4.6.4	Quality.....	13
4.6.5	Required Certification.....	13
4.7	Location	13
4.8	Security Requirements	13
4.8.1	Security Classification of Equipment, Components, Spaces and Documents	13
4.8.2	Security Level Requirement	13
4.8.3	Spaces Security Requirements	14
4.8.4	Equipment Security Requirements	14
4.8.5	Document Security Requirements	14
4.8.6	Security Education:.....	14
4.8.7	Information Assurance:.....	14
4.8.8	Contractor personnel requiring privileged access to DoD systems	14
4.8.9	Passes and Badges.....	14
4.9	Travel Requirements.....	14
4.10	Mandatory Training	14
4.11	Regulations.	15
5.0	PERSONNEL QUALIFICATIONS	16
5.1	Personnel Qualifications	16
5.2	Required Labor Categories	16
5.2.1	Program Manager (Key Personnel)	16
5.2.2	Project Manager (Key Personnel).....	16
5.2.3	Senior Engineer (Key Personnel).....	17
5.2.4	Engineer	17
5.2.5	Senior Scientist	17
5.2.6	Scientist.....	17
5.2.7	Senior Computer Scientist	17
5.2.8	Computer Scientist.....	17
5.2.9	Program Analyst	18
5.2.10	Computer Specialist.....	18
5.2.11	Information Technology Specialist.....	18
5.2.12	Technical Writer/Editor	19
5.2.13	Configuration Control Specialist	19
5.2.14	Senior Engineering Technician.....	19
5.2.15	Engineering Technician	19
5.2.16	Senior Draftsman	19
5.2.17	Draftsman.....	20

1.0 SCOPE

1.1 Purpose

This Statement of Work (SOW) defines the efforts required for the program management, engineering, design, development, logistics, configuration management, test, evaluation, and installation support of systems associated with the System Acceptance & Operational Readiness Department projects.

The contractor shall provide development, engineering, and technical services which include the principal task areas as set forth below in Section 3. In support of the following services, the contractor may be required to participate in Integrated Product Teams (IPTs), attend conferences, and support the preparation of briefing material and presentations. Note that not all potential tasking in an area, or combination of areas, will be included in a single task order, or combination of task orders, since performing the entire spectrum of work could create an Organizational Conflict of Interest (OCI). The COR will ensure that individual task orders will be limited in scope to prevent an OCI, and subsequent task orders may include OCI language specifically marked for that tasking.

1.2 Background

The description of technical and engineering services to be performed under this SOW are primarily in support of the Systems Acceptance and Operational Readiness (SAOR) Department of the Naval Undersea Warfare Center Division Keyport. The SAOR department is comprised of six (6) Divisions. The functions of the Department and Divisions are described as follows:

1.2.1 System Acceptance and Operational Readiness Department, Code 20

General Statement of Functions (20): Plans, organizes, directs and controls NUWC Division Keyport's Test, Training and Evaluation of USW Systems and Operational Readiness Assessment support for Acquisition and Fleet customers. The Department conducts system evaluation activities throughout all phases of the acquisition life cycle including technology development, system design, development, production, and in-service readiness assessment. In performance of Test and Evaluation, the Department plans and executes test programs; provides test environments that closely approximate war-fighting environments; provides methods for measuring system performance in those environments; and conducts performance analysis and evaluation of the system. The Department provides the TT&E leadership for NUWC Division Keyport and provides T&E planning, operation, and analytical support independently as "Trusted Agent" directly to COMOPTEVFOR and other T&E activities requiring independent technical assessment. The Department serves as the T&E and readiness assessment agent for all USW Systems assigned to NUWCDIVKPT. The Department Operates, Manages and Controls the Pacific Northwest Range and other readiness test and assessment facilities in the Pacific. The Department supports Analysis and Assessment, Fleet Material Readiness, Signatures and Susceptibility and other Product Areas.

1.2.2 Pacific Northwest Range Management and Operations Division, Code 21

General Statement of Functions (21): The Pacific Northwest (PNW) Range Management and Operations Division operates, maintains, and repairs ocean-based environment, measurement and support systems. Oversees test, training, and measurement facilities, equipment, operations and maintenance processes. The Division satisfies customer exercise and measurement requirements through the operation of ocean based test and measurement systems and assures the readiness of assigned systems through the implementation of calibration, maintenance, repair and life cycle processes. Acts as the Customer's Agent for exercise planning, exercise interpretation and development of surrogate environments, measurement and support systems; assists in the design, fabrication and testing of systems for USW warfare environment simulation and performance measurement; oversees the manning and maintenance of all NUWC Division Keyport range craft and range craft systems; acts as the NUWC Division Keyport POC for international agreements and Fleet platform scheduling for both U.S. and foreign Navies; serves as the Technical Project Manager (TPM) for the Major Range and Test Facility Base (MRTFB) Maintenance & Operations (M&O) Project.

1.2.3 USW Weapons and Product Acceptance Division

General Statement of Functions (22): The USW Weapons and Product Acceptance Division is responsible for conducting production acceptance for USW weapons and material resulting in improved system reliability and system confidence for the Fleet. These efforts include specifying the components of war fighting environment, determining methods of evaluation, setting overall test objectives based upon end user requirements, and relating evaluated results to those requirements. The Division provides technical leadership and competency in the application of reliability and

environmental test technologies to support USW TT&E capabilities and systems; provides technical expertise in the application of transducer, pinger, magnetic and electronic T&E systems to fulfill the Department's mission of performing readiness assessment of operational USW Ships, Ship systems, and Weapons; evaluates system response relative to the real, approximated and synthetic environments and required performance; directs the contractual production acceptance process at Keyport for both the Heavyweight and Lightweight Torpedo weapon systems; performs TT&E data processing, which includes developing requirements for and specifying data systems and analysis tools to satisfy systems confidence needs.

1.2.4 USW Systems Test and Operational Assessment Division

General Statement of Functions (23): In support of NAVSEA Keyport's Test, Training, Experimentation, and Evaluation (T2E2) mission The Division is responsible for identifying, acquiring, modernizing and sustaining T2E2 systems, methods and capabilities for current and emerging USW/ASW Weapons, Vehicles, UUV, UAV and other Systems. This includes fixed and portable tracking and measurement systems, modeling and analysis systems, fixed and mobile targets, R&D Test Vehicles, methods, and a Joint interoperability capability to support full-spectrum acquisition, SEA Trial and experimentation requirements. The Division provides highly specialized test engineering support to design, architecture, management, and control of test and experimentation of USW/ASW experimental, applied research, developmental, and operational systems; provides Department "T&E Champion" to adjudicate Customer range conflicts and resolve scheduling and schedule change conflicts, and test execution requirements; responsible to de-conflict MRTFB Range, Range Craft, and T&E Mission Systems maintenance and modernization schedules with Customer test events. The Division maintains a strong partnership with Commander, Operational Test and Evaluation Force (COTF) in support of both traditional and non-traditional acquisition programs in order to leverage resources, processes, and technical innovations for the cost effective conduct and rapid assessment of T&E events.

1.2.5 Hawaii Fleet Operational Assessment Division

General Statement of Functions (24): The Hawaii Fleet Operational Assessment Division, Code 24, provides a broad spectrum of Test and Evaluation (T&E), Readiness and Training Assessment for U.S. Navy, Joint Forces and Allies in accordance with NAVSEA technical authority in Hawaii, Guam, WESTPAC, Pacific Rim, East Coast, and as required worldwide. The Division allows efficient and effective delivery of services, functioning as an extension of the Department and overall Division Keyport core capabilities enabled by the Division's co-location with Middle Pacific (MIDPAC) Fleet Operating elements including Fleet Command Headquarters staff, Type Commanders, Operational Commanders, Regional Commanders, Squadrons and Units. The Division operates the NAVSEA calibration and testing Fleet Operational Readiness and Check Site (FORACS), Shipboard Electronics Systems Evaluation Facility (SESEF) range, and the Magnetic Silencing Facility (MSF) DEGAUSS and DEPERM facilities. The Division also provides products and services to Forward Deployed Naval Forces in the Western Pacific (WESTPAC) and Guam used to maintain anti-submarine warfare (ASW) and undersea warfare (USW) readiness. Conducts shipboard test and evaluation for surface ships and submarines. Provides USW T&E, exercise reconstruction, analysis and performance assessment support services for the Fleet, NAVSEA, acquisition and allied customers. As Trusted Agents, provides planning, coordination, conduct, analysis and reporting for USW operational test evolutions for COMOPTEVFOR; provides range support services including underwater tracking instrumentation, ASW mobile targets, and USW and ASW weapon training vehicles for Fleet and NAVSEA operations on PACMISRANFAC, other instrumented underwater ranges and in open ocean operating areas including Guam and WESTPAC; performs Technical Project Management (TPM) project leadership and financial management functions as assigned within the Department and provides business functions, EKMS, logistics and supply support.

1.2.6 Southern California Fleet Operational Readiness Division

General Statement of Functions (25): The Southern California (SOCAL) Fleet Operational Readiness Division manages the air, surface, submarine, and combat system test, and analysis, weapon evaluation, mobile target, tactical exercise analysis, magnetic signature reduction and range support programs assigned to the Department's Southern California and Washington (Ediz Hook) operations. The Division prepares, operates, maintains, and repairs underwater acoustic tracking instrumentation, mobile ASW targets MK 30, unmanned underwater vehicles and other ASW targets; Provides and conducts direct liaison with SCORE and Fleet range users on matters dealing with underwater range scheduling, underwater tracking instrumentation, and technical support services for range/off-range operations; performs aircraft, surface ship and submarine shipboard electronic systems evaluation and radiated noise measurements, analysis, and reporting; supports the Department's ship test and analysis functions in Southern California; operates and maintains the SCIUR, USWREF, FORACS 1, MSF, SSRNM, and SESEF ship test ranges in the Southern California area and functions as the San Diego Site Manager.

1.2.7 SAOR Department Project Office

General Statement of Functions (26): The Project Office focuses on planning and execution of projects, continually interfacing with NUWC Customer Agents for one or more programs to establish project requirements, deliverables, costs, and schedules to meet sponsor requirements. Project Office personnel represent specific Value Streams such as: Range and Test Facility Maintenance Operations; Experimental Test Support; Weapons Production Quality Test & Evaluation; Weapons Research, Development, Test, & Evaluation; Fleet Operational Assessment; Fleet Readiness Monitoring Assessment; Fleet Material Readiness Support; Future Naval Capabilities Experimentation; T&E Resources and Capabilities. The Office's Technical Project managers interface with appropriate line organization management across the Department to determine the most effective execution framework and strategy and to establish project plans for technical execution of tasking. The Project Office directs distribution of funding to line organizations for technical execution as established in Project plans or equivalent and is responsible for overall cost, schedule and performance metrics to senior management. The Project Office Head is dual hatted as the Department Chief Engineer providing technical direction, design and integration oversight for technical refresh, product development and improvement, and providing expert guidance and mentoring in systems engineering, project management and integrated logistics support. The Department Chief Engineer is an expert in the design, development, deployment and life cycle support of integrated warfare systems and Fleet training systems. He/she provides oversight to department technical staff assuring alignment with Navy FORCEnet, Open Architecture (OA), and Human Systems Integration (HSI) directives. Responsible for assuring standardization across organizational units in the implementation of technical standards, and best practices for hardware and software engineering. He/she also facilitates interpretation and implementation of NAVSEA, Navy, and DoD technical and engineering policies and vectors. Additional responsibilities of the Project Office include management of the Department's Lean program, identifying Lean opportunities IAW the Department's strategic plan, coordinating and tracking Lean events, planning, execution and closeout and maintenance of metrics of Lean 6, sigma events IAW Keyport's and Navsea's Lean policies. The Project Office is also responsible for coordinating Keyport's Test Engineers in Charge (EIC), Code 20s executing Divisions, and Keyport's sponsor such as NAVSEA, ONR, DARPA, etc., for the deconfliction of resources and schedules, along with defining alternatives, strategies and options to accommodate multi- sponsor test objects and associated risk management to maximize the Navy's systems development success.

1.3 Collaborative Development Environment

It is essential that the contractor work in a collaborative environment with a consortium of Navy, Navy Laboratories, Academia, other Government & industry partners.

1.4 Open Systems Architecture Approach

The Government intends to procure system(s) that have an Open System Architecture in applicable task orders. As part of this contract, the Contractor shall define, document, and follow an open systems approach for using modular design, standards-based interfaces, and widely-supported consensus-based standards. The Contractor shall demonstrate compliance with open systems architecture during all design reviews.

As part of an open system architecture approach, the Contractor shall identify to the Government all Commercial-Off-the-Shelf/Non-Developmental Item (COTS/NDI) equipment, their functionality and proposed use in the system, and provide copies of license agreements related to the use of the equipment for Government approval prior to use.

1.5 Summary

The work shall be performed as specified in Cost Reimbursable Task Orders (TO) to include the following as tasked:

- Technical Analysis, Studies and Reports
- Emerging Technology Studies
- Systems/Software Development and Documentation
- Technology Demonstrations, Developmental and Operational Test, Fleet Readiness Test Support
- System Assembly/Disassembly, Testing, Modification, and Installation
- Design/Prototype Development
- Information Assurance
- Field Engineering Support
- T&E Design and Planning Support

- Analysis and Reporting Support
- Non Traditional Acquisition Program Transition Support
- Non-Traditional Assessment (NTA)

2.0 REFERENCE DOCUMENTS

2.1 Government Documents

The following documents form a part of this SOW, but are not provided as attachments to this SOW. It is the Government's intent to adopt best commercial practices in completing system development and acquisition objectives. These documents are for reference only. Applicable references will be specified at the task order level.

(U) MIL-HDBK-61A	Configuration Management Guidance 07 Feb 2001
NAVSEAINST 4130.12	Configuration Management (CM) Policy and Guidance 21 Jul 2004
TMIN-SL130-AB-GYD-010/CMP	Configuration Management Guidance Manual Jul 2004
(U) MIL-HDBK-881A	Work Breakdown Structure for Defense Materiel Items 30 Jul 2005
(U) MIL-STD-130N	Identification Marking of U.S. Military Property 17 Dec 2007
(U) MIL-STD-196	Joint Electronics Type Designation System 17 Feb 1998
(U) MIL-STD-740-1	Airborne Sound Measurements and Acceptance Criteria of Shipboard Equipment 30 Dec 1986
(U) MIL-STD-740-2	Structureborne Vibratory Acceleration Measurements and Acceptance Criteria of Shipboard Equipment 30 Dec 1986
(U) MIL-STD-810F w/ Change Notices 1 – 3	Environmental Engineering Considerations and Laboratory Tests 5 May 2003
(U) MIL-STD-882D	System Safety Program Requirements 10 Feb 2000
(U) MIL-STD-973	Configuration Management 17 Apr 1992 (For guidance only)
(U) MIL-STD-1310G	Department of Defense Standard Practice for Shipboard Bonding, Grounding, and Other Techniques for Electromagnetic Compatibility and Safety 28 Jun 1996
(U) MIL-STD-1399-300B	Department of Defense Interface Standard Electric Power, Alternating Current 24 Apr 2008
(U) MIL-STD 1472F(1)	Human Engineering 05 Dec 2003
(U) MIL-STD-1474D Requirement 5	Department Of Defense Design Criteria Standard 12 Feb 1997
(U) MIL-STD-1686C	Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices) 25 Oct 1995
(U) MIL-STD-2073	DOD Materiel, Procedures for Development and Application of Packaging Requirements 23 May 2008
(U) MIL-S-901C, Mod 9400-1 SSBN	Shock Tests, H.I. (High Impact) Shipboard Machinery, Equipment, and

726	Systems, Requirements for, As modified by the SSBN 726 Ship Specifications (NAVSEA 0902-LP-027-7010, Section 9400-1) 15 Jan 1963
(U) MIL-S-901C, Mod 9400-1 SSGN 726	Shock Tests, H.I. (High Impact) Shipboard Machinery, Equipment, and Systems, Requirements for, As modified by the SSGN Conversion Ship Specification Addendum 15 Jan 1963
(U) MIL-S-901D	Shock Tests, H. I. (High-Impact) Shipboard Machinery, Equipment, and Systems, Requirements For 17 Mar 1989
(U) MIL-P-24534A	Planned Maintenance System: Development Of Maintenance Requirement Cards, Maintenance Index Pages, and Associated Documentation 7 May 1985
(U) MIL-PRF-29612B	Training Data Products 31 Aug 2001
(U) MIL-PRF-49506	Performance Specification Logistics Management Information 18 Jan 2005
(U) MIL-DTL-31000C	Technical Data Packages 09 Jan 2001
(U) NAVSEA-ST00-AA- IDX-010-TEI Rev 17	Test Equipment Index
(U) NAVSEAINST 4790.8	Ships' Maintenance And Material Management(3-M) Manual 13 Nov 2003
(U) DoDI 8500.2	Information Assurance (IA) Implementation 6 Feb 2003
(U) DoD 4715.4	Pollution Prevention 18 Jun 1996
(U) Provisioning, Allowance and Fitting Out Support (PAFOS) Manual	Provisioning Technical Documentation(PTD) Requirements for NAVSEA Government Furnished and Contractor Furnished Commodities http://www.nclc.navsea.navy.mil/TechLog/PolicyProc.htm
(U) NAS411 thru Rev 2.	Hazardous Materials Management 29 Apr 1994
(U) CINCPACFLT/CINCLANTFLTINST 4790.3	Joint Fleet Maintenance Manual
(U) OPNAVINST 4790-4E	Ship's Maintenance And Material Management (3-M) System Policy
(U) KPT 4130-03	Configuration Status Accounting (CSA)
(U) KPT- 4130	Configuration Management Policy And Guidance
(U) NUWCKPTINST 8590.1B	Range Operating Policies and Procedures
(U) TTEDINST 5520.4C	Test Procedure Preparation, Review, Certification, and Control
(U) KPT 8020.3-01,	Preparation and Control of Standard Operating Procedures for Explosives Ordnance Operations, Processing, and RDT&E
(U) DOD 5230.24	Distribution Statements on Technical Drawings
(U) OPNAVINST 5510.1H	Department of Navy Information and Personal Security Programs and Regulations
(U) NUWCDIVKPT 5510	Information and Personnel Security Programs
(U) NAVSEAINST 9085.2	NAVSEASYSCOM Engineering Drawing Management Program
(U) NAVSEAINST 9070-AA-MME-010/SSN/SSBN	Guidance Manual for Temporary Submarine Alterations
(U) DoD 8510.1	DoD Information Assurance Certification and Accreditation Process (DIACAP)
NAVSEA 0924-062-0010	Submarine Safety (SUBSAFE) Requirement Manual

2.2 Industry Based Standards Documents.

(U) ANSI/ASME Y14.100	Engineering Drawing Practices
(U) ASME Y14.38M	Abbreviations and Acronyms
(U) ANSI/ASME Y14.5-2009	Dimensioning and Tolerancing
(U) ANSI/AIAA-R-100A2001e	Recommended Practice for Parts Management
(U) ANSI/EIA-632	Processes for Engineering a System 1999
(U) ANSI/EIA-649-A	National Consensus Standard for Configuration Management 2004
(U) ANSI/ASQC Q9001	Quality Management Systems – Requirements 2008
(U) EIA 973	Configuration Management
(U) IPC/J-STD-001D	Requirements for Soldered Electrical and Electronic Assemblies 2005
(U) IEEE/EIA 12207.0/1/2	Software life cycle processes; life cycle data; implementation considerations March 1998 and April 1998
(U) ISO 9001	Quality Program Requirements

DRAFT

3.0 SERVICES

To support the range of potential tasks under this contract, Section 3.0 of the SOW supports conducting analysis, studies, reports; design, development, and test, engineering services; field engineering services; system support, and non-traditional assessment support. The services identified in this section of the SOW will be as tasked under specific Delivery/task Orders executed during performance of this contract as required. The SOW requirements specified in section 4.0 apply to all delivery/task orders executed under this contract.

3.1 Technical Analysis, Studies and Reports

Conduct studies, perform research or analysis, and provide reports, recommendations, and/or related documentation in support of the Code 20 Mission. Assist in concept development in support of test system development and RDT&E activities related to technology experimentation and testing, risk assessments, plans, methods, layouts, flow charts, proposals, or procedures. Assess potential solutions to satisfy capabilities. Compile and summarize findings and assessment of results.

3.2 Emerging Technology Studies

Research the scientific and technology disciplines, develop concepts, and provide reports on state-of-the-art, emerging or new technology. Develop concepts, conduct systems analysis, prepare implementation plans, and propose technology applications. Assess the technology evolution, level of maturity and potential issues and risks.

3.2.1 EA/EIS

Assist in the development of Environmental Assessments and Environmental Impact Statements IAW National Environmental Protection Act (NEPA) requirements.

3.3 Systems/Software Development and Documentation

Design, develop, test, integrate, modify, document, or implement technical, tactical, management or logistics systems, software or databases. Develop and prepare plans, system decision papers, system or hardware specifications, requirements documents, functional descriptions, Plan of Action & Milestones (POA&Ms), user documentation, and operational procedures. Perform computer programming; web page development; software modeling, simulation, and testing; system architecture design and analysis; computer system assessment; algorithm, utility, or diagnostics development.

3.4 Technology Demonstrations, Developmental and Operational Test, Fleet Readiness Test Support

Provide assistance with developmental and operational tests, supporting fleet exercises, systems command test programs, Non-Traditional acquisition, rapid capability development programs, other USW tests or operations, and/or shop, range, or underwater tests. Pre-System Operational Verification Test (SOVT) and SOVT. Develop plans, prepare related procedures, provide site surveys, and pre-deployment instrumentation checkouts; prepare and operate test support systems or data gathering systems; support tests; provide data packages; collect, organize, process, analyze, validate, and/or summarize test data and provide results or reports for any tests supported under this SOW. Provide test scheduling and coordination with other activities associated with the test. Facilitate reviews with government oversight to assure readiness to deploy, execute assessments or tests, and conduct recovery operations.

3.5 System Assembly/Disassembly, Testing, Modification and Installation

Prepare, stage, assemble/set-up, modify, install, and test equipment/facilities, components, assemblies, subassemblies or kits, including any integral software. Perform installation of hardware in the ocean environment. Assemble system components, material, or equipment to support design development efforts prior to finalizing configuration. Provide minor material and consumables in support of assembly and test activities. Schedule, plan, and perform installation or modification and any related tests. Conduct tests, evaluate results, and prepare or revise related procedures, plans or drawings involving pre-production, periodic, acceptance, certification, quality assurance, failure analysis, and similar test requirements. Perform measurements and prepare, coordinate and operate equipment related to the tests, modification or installation.

3.6 Design/Prototype Development

Design, develop, fabricate, document, and/or assess prototypes against requirements (i.e. hardware, software, firmware) to include COTS integration. Develop design concepts; provide design analysis; review existing designs; develop design improvements; make modifications to existing systems; provide the prototype to support proof of concept; test and evaluate (including actual use demonstration) to proof the prototype. Note: Formal design reviews and independent assessments shall be conducted by the government.

Design development technology areas include, but are not limited to:

- Underwater tracking technology
- Underwater acoustic target technology
- Underwater acoustic acquisition technology
- Underwater vehicles launch and fire control systems
- Underwater vehicles recovery systems
- Pressure vessel design
- Weight handling equipment design
- Ocean engineering technology
- Communications and telemetry systems
- Naval architecture

Design development activities will include, but are not limited to:

- Project Management for design development activities
- Requirements and specification development, update and control
- Concept development and reviews
- Preliminary design and reviews
- Final design and Critical design reviews prior to fabrication
- System configuration management and documentation
- Fabricate
- System integration and assembly
- System test and evaluation
- Prototype acceptance testing
- Life-cycle support documentation and planning including training, sparing, and maintenance support plans
- Configuration Management, Documentation Development and Drafting

3.7 Information Assurance

Provide information assurance support by developing or updating accreditation documentation. Perform Certification and Accreditation in support of DoD Information Assurance Certification and Accreditation Process (DIACAP) certifications for T&E instrumentation and developmental systems. Transition existing DoD Information Technology Security Certification & Accreditation Process (DITSCAP) certifications to the new DIACAP certification. Perform corrective action, patching, encryption implementation, and maintenance functions for T&E IT systems. Perform Information Assurance Vulnerability Management (IAVM) and security scans and mitigation of vulnerabilities. Provide wireless communication security implementation. Provide IA Test and Evaluation support for developmental systems to include Blue and Green team penetration testing, assist with certification and accreditation in accordance with DIACAP standards.

3.8 Field Engineering Support

Provide Field Engineering support for Code 20 systems which include, but are not limited to: Surface Ship Radiated Noise Measurement (SSRNM), Fleet Operational Readiness Accuracy Check Site (FORACS), MK 28 Target, Range Pinger Systems, and the Pacific Northwest (PNW) Range Systems. Support will require system expertise to evaluate system problems, identify opportunities for improvement, review regulatory requirements for compliance, and assess system risks. Support will include expertise in Life Cycle Management techniques including but not limited to; Reliability, Availability & Maintainability (RAM), Life-Cycle Control Management techniques, Total Ownership Costs (TOC), fault tree and failure analysis, and recommendations for corrective techniques.

3.9 T&E Design and Planning Support

Provide T&E design and planning support. Support shall include preparing T&E strategies; planning and execution of tests; review, analysis, and reporting of T&E results. The contractor shall support the development of T&E execution documents and data management and analysis plans, definition and operation of hardware and software test instrumentation, conduct data reduction and reporting, prepare assessment summaries and reports, and activities in support of formal program of record transition. Participate in IPT meetings and other planning and coordination events associated with T&E.

3.10 Analysis and Reporting Support

Conduct post-test analyses for preparation of analytical products including answering test objectives. Perform analysis of test data, assessing whether data acquisition objectives were adequately met, integrating the data for use in higher-level or more comprehensive tests, relating the data to achievement of test objectives, and evaluating the assessment issues based on test results. Provide support in producing quick-look reports, lessons learned reports, and final reports from evaluation activities.

3.11 Non-Traditional Acquisition Program Transition Support

Support the development of Transition Plans and documents, for those technologies that are approved by the Government, for transition to operational units and for transition to formal acquisition programs. Support development of an Operational Unit Transition Package to include equipment, software and all associated documentation and materials necessary for a fielding certification.

Support development of an Acquisition Transition Package to include data and documentation associated with the insertion of the technology in the formal program of record acquisition phase (i.e. MS A, MS B or MS C). Documentation may include updates to Capabilities Documents, Draft or Final Test & Evaluation Master Plan (TEMP) and other associated acquisition milestone requirements. Support detailed planning, conducting, and report development of operational evaluations for acquiring data required by the Transition Packages.

3.12 Non-Traditional Assessment (NTA)

Provide support for NTA which includes Program Management, Engineering, Assessment Design & Planning, Execution Support, Analysis and Reporting Support on a quick-response basis with respect to all aspects of NTA including: technology evaluations, military utility assessments (MUA), Advanced Concept/Joint Capabilities Technology Demonstrations (ACTD/JCTD), Information Assurance and Interoperability (IA&I) evaluations, joint exercises, joint experimentation, and technology assessment initiatives for Combatant Commands (COCOM), Military Services, Defense Agencies and non-DoD agencies. Efforts performed include: development of test strategies and plans; development of data management plans; defining requirements for and providing test infrastructure for remote off-range locations; coordinate range time for conduct of assigned assessments; providing special instrumentation and data transfer capabilities between locations; developing, modifying or integrating hardware and software for prototype demonstration systems using commercial off-the-shelf (COTS), Government off-the-shelf (GOTS) and foreign off-the-shelf (FOTS) technologies; operating and maintaining test support workstations, communications, instrumentation and other test support equipment; quick-look and post assessment analysis, data reduction, and reporting. Provide operator level training for specific technology products and support activities.

4.0 GENERAL REQUIREMENTS

4.1 Integrated Program Management

The Contractor shall designate a Program Manager who shall have responsibility for all aspects of this contract and the authority to commit the Contractor to specific courses of action. The Contractor shall organize, coordinate, control and report the status of all contract activities related to this contract, and be responsible for those activities assigned to subcontractors, to ensure the delivery of all supplies and services specified in this contract.

The Contractor shall establish and perform business management functions to ensure contracting related actions, such as development and submission of proposals, negotiation of proposals, and responses to requests for cost estimates and ensure that task order(s) meet established need dates of the Government.

The Contractor shall provide management, including technical direction, risk management, administration and planning for all activities within this contract. The contractor shall provide program planning, budget allocations, cost control, cost estimates, proposal support and status reporting for tasks associated with this contract. The contractor shall be responsible for coordination with the Contracting Officer, NUWC Keyport and other agencies in the execution of this contract.

4.1.1 Progress, Status and Management Report

The Contractor shall develop and propose program appropriate management metrics. Metrics shall accurately reflect cost, schedule, and performance. These proposed program management metrics shall be initially presented at a post award review. The Contractor shall report these metrics in the Progress, Status and Management Report and at each design review and periodic program review.

The Contractor shall maintain technical and financial status and generate Progress, Status and Management Reports (CDRL A005 - Contractor's Progress, Status and Management Report). The financial status shall include the Estimate at Completion (EAC), Actuals to Date (ATD), Estimate to Complete (ETC), amount funded and outlooks for when additional funding is required, as necessary, for tasks as identified in delivery/task orders. Status should contain the current status of all orders including required, estimated and actual delivery dates.

The contractor shall support Program Management Reviews and Milestones as needed.

4.1.2 Task Order Work Breakdown Structure (TOWBS)

The Contractor shall develop, deliver, and maintain a TOWBS and TOWBS dictionary using MIL-HDBK-881 as guidance. The TOWBS provides the basis for further extension by the Contractor to lower levels during the performance of the contract. The Contractor shall extend the TOWBS down to the appropriate level required to provide adequate internal management, surveillance, and performance measurement, regardless of the reporting level stipulated in the contract for Government visibility. The Contractor shall use the TOWBS as the primary framework for Task Order planning, budgeting, and reporting of the cost, schedule, and technical performance status to the Government. The Contractor shall analyze the requirements specified in the SOW and translate them into a structure representing the products and services that comprise the entire work effort under the Task Order. The Contractor's team or organizational entity responsible for the Task Order shall prepare the technical elements of the extended Task Order WBS. The Contractor, if necessary, shall update the TOWBS during the execution of the contract. Changes to the TOWBS or associated definitions, at any reporting level, require approval of the Government (CDRL A003 - Task Order Work Breakdown Structure).

4.1.3 Integrated Master Schedule

The Contractor shall develop, maintain, and deliver original and revisions of an IMS for all contract efforts, planned events, milestones and activities related to each task order. Proposed changes to the program schedule must be approved by the Government prior to their implementation by the Contractor. The Contractor shall quantify risk in hours, days, or weeks of delay and provide optimistic, pessimistic, and the most likely duration for each IMS activity and event. (CDRL A004 - Integrated Master Schedule)

4.1.4 Subcontract Management and Control

The Contractor shall identify and monitor subcontractor technical, quality, schedule, and milestone achievement on a continuing basis, according to the Contractor's own established subcontract management techniques. The Prime contractor shall:

- a. Establish, document, and maintain a purchasing system and develop a self-assessment program to ensure adequate controls;
- b. Acquire quality products at fair and reasonable prices, using best in class commercial purchasing practices and procedures and ensure fair and open competition;
- c. Audit subcontracts as needed;
- d. Conduct review and periodic appraisal of the subcontractor's purchasing system and its self-assessment reports.

4.1.5 Reviews

The Contractor shall coordinate, schedule, make preparations for, conduct, facilitate, participate and host (as required) reviews, and meetings specified herein. The Contractor shall propose date(s) for the reviews to be approved by the Government. The Contractor shall provide agendas (CDRL A014 - Agenda), presentation materials, action items, action item status and minutes (CDRL A015 - Minutes). The agendas shall be reviewed jointly between the Government and Contractor and distributed electronically by the Contractor. Minutes of the meetings shall be kept by the Contractor unless otherwise directed by the Government. Minutes shall include a summary of discussions, copies of handouts or graphics, and a listing of action items, and distributed electronically.

The Contractor shall develop and maintain an action item status and tracking system for all reviews to ensure actions are assigned to specific individuals, due dates are established, and accurate status is provided to the Government.

4.1.5.1 Program Reviews

The Contractor shall conduct program reviews with Department managers every six (6) months, or as tasked, for a period not to exceed one (1) day. The Contractor shall conduct management meetings regarding delivery, and task orders status on a regular basis (to be mutually agreed upon between the Government and Contractor) between the program reviews. These reviews will be used to assess the Contractor's progress and status. During these reviews, the Contractor shall provide, at a minimum, overall comprehensive status of:

- a. cost and schedule performance;
- b. design and technical issues;
- c. hardware and computer software engineering;
- d. risk analysis activities;
- e. reliability and maintainability;
- f. quality program;
- g. test and evaluation activities;
- h. logistics development and support efforts;
- i. safety program status;
- j. configuration management activities;
- k. Government Furnished Property/Information (GFP/I) status;
- l. efforts authorized under delivery and task orders.
- m. manpower utilization projection/actual;
- n. data items delivery schedule; and
- o. hazardous material management efforts.

4.1.6 Government-Furnished Information/Property/Equipment/Material

The Contractor shall manage and control Government Furnished Information/Property/Equipment/Material (GFI/P/E/M) identified in accordance with the provisions of this contract. The Contractor shall report to the Government any GFI/P/E/M found unsuitable for use. (CDRL A013 - Government Furnished Information Deficiency Report; CDRL A012- Quality Deficiency Report).

4.1.7 Risk Assessment and Management

The Contractor shall perform a continuing analysis of program, technical, cost and schedule risks associated with this contract. The analysis shall identify the risks associated with each area, identify the impact of each risk on the overall program, and proposed approaches for reducing identified risks. Risk analysis status shall be reported in the Contractor's Progress, Status and Management Report (CDRL A005) and presented during Program and Technical Reviews.

4.1.8 Formal Proposals

All formal proposals and budgetary estimates shall be prepared and submitted only in response to a Request for Proposal (RFP) received from the Contracting Officer or duly authorized representative. Contractor proposals shall include all costs, including material costs, technical costs, labor mix and man-hour estimates, required to complete tasking provided via task order.

Unless otherwise mutually agreed to by the parties, formal cost reimbursable proposals shall be submitted within 10 calendar days after request. A change in the Government's requirements will reset the delivery schedule for proposals and budgetary estimates. Incomplete or unknown information shall be identified within three (3) business days and concurrence obtained from the Contracting Officer or duly authorized representative, to preclude delays.

4.2 Quality Assurance

The Contractor shall implement and maintain a Quality Assurance (QA) program that meets program objectives during the performance of the contract. At a minimum, the quality management process should include the following key QA activities:

- a. Establishment of capable processes;
- b. Monitoring and control of critical processes and product variation;
- c. Establishment of mechanisms for feedback of product performance;
- d. Implementation of an effective root cause analysis and corrective action system; and
- e. Continuous process improvement.

4.3 Information Assurance

The Contractor shall implement and apply safeguards such that information and resources maintain the appropriate level of confidentiality, integrity, availability, authentication, and non-repudiation based upon mission criticality, level of required information assurance and classification or sensitivity level of information entered, processed, stored, or transmitted for Submarine Systems. The Contractor shall safeguard information and information systems through the use of multi-disciplined defensive layers, as well as sound administrative and operational practices.

4.4 Government Furnished Property and Material

When it is determined to be cost effective for the government, the government may provide the contractor access to government workspaces, workstations, equipment/vehicles, documentation and information necessary for work item performance.

When government furnished equipment/material (GFE/M) is determined to be advantageous to the government to transfer for contractor use, the GFE/M will be transferred to the contractor and returned to the Government via a DD1149. A government signature is required on the DD1149 upon return, and a copy shall be provided to the Government Property Administrator (GPA).

Contractor procured and furnished material shall be transferred using a DD1149.

It is not the government's responsibility to develop private contractor employees. In the event that a one-time training event is required, or that training specific to the government that cannot be obtained commercially is required, a Technical Instruction Letter (TIL) will be issued to the contractor.

4.5 Contractor Employees

The contractor shall provide necessary personnel to accomplish all contract work and services within government specified timeframes as identified in specific Task Orders. The contractor shall provide personnel with qualifications,

necessary licenses, certifications, training, experience levels and security clearances that are required, including and in accordance with Federal, State and local laws and regulations.

4.6 Environmental Compliance Requirements

4.6.1 Environmental Law and Regulations

The contractor shall comply, and ensure that all subcontractors comply, with all applicable environmental federal, state, and local laws and regulations and Navy policies, instructions and ISO 140000.

4.6.2 Hazardous Waste and Material Control/Handling

In addition to the above, the contractor shall comply with all applicable Navy instructions for handling and control of hazardous waste.

4.6.3 Safety

The contractor shall comply with the latest applicable federal and state laws, regulations and management plans and requirements regarding occupational safety and health.

4.6.4 Quality

The contractor shall establish, plan, develop, document, implement and maintain a quality system that ensures product or services conform to the specified contract technical requirements or ISO 9001 or latest.

4.6.5 Required Certification

Required certifications will be identified in individual Task Orders if required, but may include:

- Forklift license
- Solder certification
- Class B Drivers license
- DOT hazardous waste authorization shipping certification
- Explosive Certification

4.7 Location

Work to be performed under this contract will primarily take place for the Naval Undersea Warfare Center Division Keyport WA and detachments at San Diego CA, and Hawaii. Work will primarily be performed at the contractor's facility as specified in each individual task order. For specific task orders, travel may be required both within and outside the United States. Travel will generally be short term duration but could last as long as 12 weeks.

4.8 Security Requirements

4.8.1 Security Classification of Equipment, Components, Spaces and Documents

Equipment, Space or Document may be classified and subject to the applicable provisions of DOD 5220.22M, Industrial Security Manual; DoDD 8100.02, Use of Commercial Wireless Devices, Services, and Technologies in the DoD Global Information Grid; SECNAV M-5510.36, DoN Information Security Program Manual; SECNAV M-5510.30, DoN Personnel Security Program Manual; NUWCDIVKPT 5510, Information and Personnel Security Programs; KPT Physical Security Program Manual 5530.1; and NUWCDIVKPT 5239, Information Assurance Program. Contractor personnel supporting this task order who require access to classified Spaces, Equipment, or Documents will require a security clearance equivalent to the level of access required to complete assigned duties.

4.8.2 Security Level Requirement

Contractor personnel supporting this SOW on-site at Keyport or detachments require a security clearance level of Secret.

Support of specific activities identified in this SOW may require a clearance level of Top Secret and/or SCI and will be identified in the specific task order.

4.8.3 Spaces Security Requirements

Up to Top Secret

4.8.4 Equipment Security Requirements

Up to Top Secret

4.8.5 Document Security Requirements

Up to Top Secret

4.8.6 Security Education:

Cleared contractor personnel supporting this task order who are embedded in government work spaces are required to participate in the command's security education program, as required by SECNAV M-5510.36.

4.8.7 Information Assurance:

Contractor personnel supporting this task order who require access to DoD Information Systems are required to receive and complete initial IA orientation awareness training before being granted access to the system(s), and annual IA awareness training to retain access, as required IAW DoD 8570.01-M and DoDI 8500.2 E3.3.7. Access requests to DoD IT systems will utilize OPNAV 5239/14(July 2008) SAAR-N form.

4.8.8 Contractor personnel requiring privileged access to DoD systems

(Ex: System Administrators) are required to meet the following additional Information Assurance performance requirements. In accordance with SECNAV M-5510.30 Paragraph 5-3, subparagraphs b(6)(a), b(6)(e), b(6)(f), b(6)(g), and Exhibit 5A, Performance requirements are at the IT-1 Critical Sensitive position. The IT-1 positions require full positive adjudication of a Single Scope Background investigation. Additionally, per DOD Manual 8570-1M Tables C3.T4, C3.T5, Paragraphs C7.3.4 and AP3.1.5, performance requirements will be set at the Information Assurance Technical level (IAT) II and all training and certification specification are required to be met within six (6) months of any currently contracted employee and must be met within six (6) months of any newly reporting personnel being assigned.

When utilizing unclassified network infrastructure, e.g., Internet, etc., to communication with the government involving any information which is not been approved for public release, the Department of Defense (DoD) Public Key Infrastructure (PKI) will be utilized to encrypt all communications, e.g., E-mail. External Certificate Authorities (ECA) are available for use by government contractors which are interoperable with DOD PKI.

Data At Rest (DAR) procedures that meet DoD guidance will be utilized on unclassified network infrastructure to encrypt all government information on all storage media to include but not limited to, Hard Drives, CD or DVD optical disk, Floppy diskettes, and Flash Media etc.

4.8.9 Passes and Badges.

All on site contractor employees shall obtain the required employee badges and vehicle passes which will be issued without charge. Each employee shall wear the Government-issued badge in full view while on Station. It is the contractor's responsibility to assure that the employee's vehicle pass(es) and identification badge are returned to the Security Office when the contractor employee is no longer employed under this contract.

4.9 Travel Requirements

Travel may be required to meet the requirements of individual Task Orders. Travel must be authorized in advance by the COR using a Technical Instruction Letter.

4.10 Mandatory Training

The government requires on board contractors to participate in certain mandatory training requirements. It is the responsibility of the contractor to ensure that these training requirements are met and properly reported to the COR. Examples of mandatory training may include, but are not limited to, Personally Identifiable Information (PII),

Information Assurance, Antiterrorism briefing, OPSEC, and Trafficking in Persons basic awareness training. These mandatory training requirements will be identified at the task order level.

4.11 Regulations.

On site contractors shall comply with applicable DOD regulations and NUWC Keyport Directives (i.e. smoking, cell phone use).

5100_2-09 Smoking Rules And Regulations

5239-16 Personal Electronic Devices (PED), Wireless, Removable Media, And Data At Rest (DAR) Policy

DRAFT

PERSONNEL QUALIFICATIONS

The contractor is responsible to provide personnel with proper education, training, and hands-on technical experience to meet the accepted industry standards for the category specified below as required by tasks assigned under this contract. The experience must be sufficient to perform the types of work specified in Section C. Personnel assigned to these tasks will need the tact and diplomacy to effectively work with civilian and military personnel to maintain the professionalism of NUWC Division Keyport.

4.12 Personnel Qualifications

At the time of award, the personnel qualifications described in the resumes of key personnel submitted for each labor category listed in Section L will supersede the qualification requirements defined in this section. **Those qualifications will then become the minimum standards for all personnel hired or relocated during the course of this contract.**

The contractor agrees that if one or more of these personnel for whatever reason becomes, or is expected to become, unavailable for work under this contract for a continuous period exceeding 30 workdays, or is expected to devote substantially less effort to the work than indicated in the proposal or initially anticipated, the contractor shall promptly replace such personnel with personnel of at least substantially equal ability and qualifications.

The Contracting Officer and Contracting Officer's Representative (COR) must be notified in writing within FIFTEEN (15) days after any personnel replacement action. If during the performance of the contract, the Contracting Officer or COR questions the adequacy of the qualifications of personnel occupying any position defined below, the contractor shall provide resumes as required by the Contracting Officer or COR.

If the Contracting Officer, in conjunction with the COR, determines that suitable and timely replacement of personnel who have been reassigned, terminated, or have otherwise become unavailable for the contract work was not reasonably forthcoming or that the resultant reduction of productive effort was so substantial as to impair the successful completion of the contract or the delivery order, or that replacement personnel do not have the required qualifications, the contract may be terminated by the Contracting Officer for default or for the convenience of the Government, as appropriate. Or, at the discretion of the Contracting Officer, if he/she finds the contractor at fault for the condition, the contract price or fixed fee may be equitably adjusted downward to compensate the Government for any resultant delay, loss, or damage.

4.13 Required Labor Categories

The following labor categories and the respective technical education, experience, and background have been identified as desirable for successful contract performance (experience identified below for each category may have been acquired concurrently). NOTE: If an offeror does not identify the labor categories listed below by the same specific title, then the offeror shall provide a cross reference which lists its applicable labor category designation which corresponds to that identified below and identify any substantive differences.

Contractor personnel shall be assigned to contract efforts in a manner that will maximize productivity and efficiency. Normally, this means utilizing the lowest category of labor that is fully capable of performing a function. The contractor must utilize these categories when estimating tasks and reporting labor expenditures.

The qualifications to be demonstrated for the positions listed are shown below:

4.13.1 Program Manager (Key Personnel)

Education: A bachelor's degree from an accredited college or university is required in engineering, engineering management or business administration. A master's degree from an accredited college or university is desired in engineering, engineering management or business administration

Qualifications: This position requires a minimum of 10 years recent managerial experience on related to Test and Evaluation with an emphasis in USN Undersea Warfare related technical engineering projects.

4.13.2 Project Manager (Key Personnel)

Education: A bachelor's degree from an accredited college or university is required in engineering or engineering management.

Qualifications: With a bachelor's degree, this position requires a minimum of 10 years recent experience in project management on USN undersea related technical engineering projects. With a masters degree, eight (8) years of recent experience in project management on USN undersea related technical engineering projects is required.

4.13.3 Senior Engineer (Key Personnel)

Education: A Bachelor of Science degree from an accredited college or university is required in Electrical Engineering, Electronics Engineering, Mechanical Engineering, Computer Engineering or Industrial Engineering.

Qualifications: With a bachelor's degree in appropriate field, this position requires at least seven (7) years recent specialized experience; or a master's degree in appropriate field and at least five (5) years recent specialized experience. Specialized experience shall be in one or more of the areas listed below.

4.13.4 Engineer

Education: A Bachelor of Science degree from an accredited college or university is required in the appropriate Engineering field such as Electrical Engineering, Electronics Engineering, Mechanical Engineering, Computer Engineering or Industrial Engineering.

Qualifications: With a bachelor's degree in appropriate field, this position requires at least three (3) years recent specialized experience in one or more of the areas listed below.

4.13.5 Senior Scientist

Education: A Bachelor of Science degree from an accredited college or university is required in appropriate field (e.g., physics, oceanography, mathematics, biology).

Qualifications: With Bachelor of Science degree in appropriate field, this position requires at least seven (7) years recent specialized experience; or a master's degree in appropriate field and at least five (5) years recent specialized experience. Specialized experience shall be in one or more of the areas listed below.

4.13.6 Scientist

Education: A Bachelor of Science degree from an accredited college or university is required in appropriate field (e.g., physics, oceanography, mathematics, biology).

Qualifications: With a Bachelor of Science degree in appropriate field, this position requires at least three (3) years recent specialized experience in one or more of the areas listed below.

4.13.7 Senior Computer Scientist

Education: A Bachelor of Science degree from an accredited college or university is required in computer science or a related field.

Qualifications: With a Bachelor of Science degree, this position requires at least seven (7) years recent specialized experience; or a master's degree in Computer Science and at least five (5) years recent specialized experience; or a bachelor's degree in a related field and at least 10 years recent specialized experience. Specialized experience shall be in one or more of the areas listed below.

4.13.8 Computer Scientist

Education: A Bachelor of Science degree from an accredited college or university is required in computer science or a related field.

Qualifications: With a Bachelor of Science degree, this position requires at least three (3) years recent specialized experience; or a bachelor's degree in a related field and at least five (5) years recent specialized experience. Specialized experience shall be in one or more of the areas listed below.

AREAS OF SPECIALIZED EXPERIENCE

(For Labor Categories Listed Above (5.2.1 - 5.2.8))

Desired Experience applicable for the work to be performed.

- Electrical or electronics experience in design or related work associated with instrumentation, electronic test set design and interfacing, torpedoes, underwater targets, submarines, sonar equipment, acoustics, digital signal processing, underwater tracking ranges, or radio communications systems.

- Mechanical experience in design or related work associated with mechanical test set design, gyroscope design or repair, precision electromechanical devices, torpedoes, underwater targets, undersea equipment, or submarines, weight handling equipment, pressure vessel systems, and complex hydraulic systems. Acoustical or sonar experience with submarine and surface ship sonars, (including state-of-the-art digital sonar systems), torpedo sonars, transducer design, underwater sound analysis, or acoustic test facilities.
- USW systems testing and analysis experience relevant but not limited to such operations or exercises as FORACS, CART, Surface Ship Radiated Noise Measurement (SSRNM), Post Analysis Critique and Exercise Review (PACER), and torpedo test.
- Experience associated with industrial operations as related to undersea warfare in the areas of manufacturing or production processes, functional layouts, methods improvement, shop efficiency, facilities, equipment, material handling, transportation, storage.
- Fire control/sensor or launcher experience with systems such as submarine fire control systems, CCS MK 1, AN/BSY-1, AN/SQQ-89, MK 101, MK 111-114, and MK 116-118 Fire Controls for submarines and surface ships; or USW torpedo or missile launchers.
- Experience in local area networks, interfacing computer systems, data gathering systems, underwater weapons programming, fire control system software, sonar signal processing, underwater weapons development, or technical information systems design.
- Experience in the development or administration of quality assurance programs or reliability and maintainability engineering.

4.13.9 Program Analyst

Education: A bachelors degree from an accredited college or university is required in business administration, commerce, economics, or other appropriate field.

Qualifications: With a bachelors degree, this position requires at least three (3) years recent and relevant general experience; or at least seven (7) years equivalent recent and relevant experience. Experience shall be in such areas as program analysis, design and development of management information systems, work breakdown structures, work simplification techniques, logistics studies, or life cycle provisioning.

4.13.10 Computer Specialist

Qualifications: This position requires at a minimum a Bachelor of Science degree in the appropriate field (e.g., computer science, mathematics, physics, engineering), or equivalent recent and relevant experience of at least five (5) years in computer programming, computer systems analysis, or software development.

4.13.11 Information Technology Specialist

Education: Bachelor's degree (BS-Computer Science, Information Systems, Mathematics, Operations Research, Statistics, Engineering, or a related field from an accredited college or university) and four (4)+ years general experience in the above areas or a High School Diploma and eight (8) years of general experience in the above areas).

Qualifications: Graduation from high school, plus two (2) years of advanced training in personal computer technology and applications provided through college, trade school or professionally sponsored programs and two (2) years of progressively responsible experience performing above and related duties; specific experience in program evaluation, technical writing, personal computer systems and software is preferred or an equivalent combination of education and experience.

Certifications:

- Certification to IA (Information Assurance) level II per DOD instruction 8570.1-M.
- Certified Information Systems Security Professional (CISSP) Certification

And any of the following:

- Vulnerability Scanning Knowledge and Expertise
- DIACAP Knowledge and Expertise
- Certified Ethical Hacker
- Security+
- Systems Administrator/Network Manager

- Global Information Assurance Certification (GIAC)
- Cisco Certified Network Engineer (CCNE)
- A+Core
- CSSLP – Certified Secure Software Lifecycle Professional

4.13.12 Technical Writer/Editor

Education: A bachelor's degree from an accredited college or university is required in Technical and Professional Communications, English, journalism, or other appropriate field.

Qualifications: With a bachelor's degree, this position requires a minimum of four (4) years recent experience in writing, editing, and preparation for publication of technical material which includes engineering analyses and reports, technical proposals, specifications, or related documents.

4.13.13 Configuration Control Specialist

Education: An associate's degree or equivalent from an accredited college or university is required in an appropriate field.

Qualifications: Associate's degree and five (5) years recent industry or Government experience directly related to configuration control of complex mechanical and electrical systems and their associated engineering data and technical documentation. Experience shall include the preparation, implementation, and tracking of engineering changes, waivers, deviations, and other documentation change vehicles, which impact overall system configuration control. A peripheral experience in database management, status accounting, and control of data integrity is also required.

4.13.14 Senior Engineering Technician

Qualifications: At least seven (7) years recent specialized experience; specialized experience shall be in one or more of the areas listed below.

4.13.15 Engineering Technician

Qualifications: At least three (3) years recent specialized experience; specialized experience shall be in one or more of the areas listed below.

AREAS OF SPECIALIZED EXPERIENCE

(For Labor Categories Listed Above (5.2.14 & 5.2.15))

- Electronic equipment or systems operation, maintenance, or repair.
- Mechanical equipment or systems operation, maintenance, or repair.
- Computer operation, programming, control, or administration.
- ASW testing, fire control systems, launchers, sensors, sonar, radar, or other USW systems technical specialties.
- Underwater weapons development, sonar signal processing, underwater weapons programming, fire control systems software, data gathering systems, computer systems interfacing, local area networks, or technical information system design.
- Calibration, maintenance, and repair of test, measurement, and diagnostic equipment.
- Interpreting, analyzing, reducing, or restructuring technical data.
- Theory, operation, and maintenance of silver, zinc, silver cadmium, nickel cadmium, carbon, magnesium, lead acid, alkaline, or mercury batteries.

4.13.16 Senior Draftsman

Education: Formal training in technical drawings and in appropriate drawing specialty (e.g., Solid Edge, OrCAD, AutoCAD).

Qualifications: At least seven (7) years recent experience working with design engineers in documenting mechanical and electronic designs. Must have experience in Government drawing requirements and be able to produce Solid Edge Computer Aided Design (CAD) models and drawings, OrCAD generated drawings, as well as AutoCAD.

4.13.17 Draftsman

Education: Formal training in technical drawings and in appropriate drawing specialty (e.g., Solid Edge, OrCAD, AutoCAD).

Qualifications: At least one (1) year recent experience producing electrical or mechanical drawings. Must have formal training or six months recent experience in appropriate documentation specialty (e.g., Solid Edge, OrCAD, AutoCAD).

DRAFT

APPENDIX A: Acronym List.

ACN	Advance Change Notice
ACSN	Advanced Change Study Notice
ADM	Acquisition Decision Memorandum
AEL	Allowance Equipment List
ANSI	American National standards Institute
API	Application Programming Interfaces
APU	Advance Production Unit
ARO	After Receipt of Order
ASME	American Society of Mechanical Engineers
ASW	Anti-Submarine Warfare
ATD	Actuals To Date
AUV	Autonomous Undersea Vehicle
BCA	Business Case Analysis
BIIL	Background Inventions--Identification and Licensing
BOM	Bill Of Materials
CAD	Computer Aided Design
CASREP	Casualty Report
CCB	Configuration Control Board
CCN	Contractor Control Number
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CI	Configuration Item
CIS	Configuration Item Specification
CLIN	Contract Line Item Number
CM	Configuration Management
CMMi	Capability Maturity Model Integration
COMOPTEVFOR	Commander, Operational Test and Evaluation Force
COR	Contracting Officer's Representative
COTS	Commercial-Off-The-Shelf
CPARS	Contractor Performance Assessment Reports
CSA	Configuration Status Accounting
CSCI	Computer Software Configuration Item
CSD	Computer Software Documentation
CUI	Controlled Unclassified Information

CWBS	Contract Work Breakdown Structure
DAB	Defense Acquisition Board
DARPA	Defense Advanced Research Projects Agency
DCAA	Defense Contract Audit Agency
DCMA	Defense Contract Management Agency
DED	Demonstration Execution Documentation
DETS	Development and Engineering Test Services
D-Level	Depot-Level
DMS/MS	Diminishing Manufacturing Sources/Material Shortages
DO	Delivery Order
DoD	Department of Defense
DMEA	Defense Micro Electronics Agency
DR	Discrepancy Report
DT	Developmental Testing
EAC	Estimate at Completion
E-mail	Electronic Mail
ECP	Engineering Change Proposal
EDFP	Engineering Data for Provisioning
EDM	Engineering Development Model
EIA	Electronic Industries Alliance
EIC	Engineer-In-Charge
EOL	End of Life
EQT	Environmental Qualification Test
ESOH	Environmental, Safety, and Occupational Health
ETC	Estimate to Complete
EVMS	Earned Value Management System
FAT	Factory Acceptance Testing
FCA	Functional Configuration Audit
FORACS	Fleet Operational Readiness Accuracy Check Site
FOTS	Foreign Off-The-Shelf
FTEC	Fleet Test and Evaluation Center
FWCI	Firmware Configuration Item
GFI/P/E/M	Government Furnished Information/Property/Equipment/Material
GIDEP	Government Industry Data Exchange Program
GPETE	General Purpose Electronic Test Equipment

HFE	Human Factor Engineering
HSI	Human Systems Integration
HWCI	Hardware Configuration Item
IA	Information Assurance
IAP	Integrated Assessment Planning
IAW	In Accordance With
IBR	Integrated Baseline Review
ICAPS	Interactive Computer Aided Provisioning System
IDIQ	Indefinite Delivery, Indefinite Quantity
IETM	Interactive Electronic Technical Manual
I-Level	Intermediate-Level
ILS	Integrated Logistics Support
ILSMT	Integrated Logistics Support Management Team
ILSWG	Integrated Logistics Support Working Group
IMS	Integrated Master Schedule
I/O	Input/Output
IPR	In-Progress Review
IPT	Integrated Product Team
IRS	Interface Requirements Specification
ISO	International Organization for Standardization
JCTD	Joint Capability Technology Demonstration
JETDS	Joint Electronics Type Designation System
JTG	Joint Test Group
KO	Contracting Officer (Government)
LMUA	Limited Military Utility Assessment
LRU	Lowest Replaceable Unit
MIP	Maintenance Index Pages
MOSA	Modular Open Systems Approach
MSDS	Material Safety Data Sheets
MSF	Magnetic Silencing Facility
MUA	Military Utility Assessment

NAVSEA	Naval Sea Systems Command
NDI	Non-Developmental Item
NHA	Next Higher Assembly
NLT	No Later Than
NOR	Notice of Revision
NTA	Non-Traditional Assessment
NUWC	Naval Undersea Warfare Center
NUWCDIVKPT	Naval Undersea Warfare Center Division Keyport
OA	Open Architecture
OACE	Open Architecture Computing Environment
ODC	Other Direct Costs
OE	Operating Environment
OEM	Original Equipment Manufacturer
O-Level	Organizational-Level
ONR	Office of Naval Research
ORDALT	Ordnance Alteration
OT	Operational Testing
PCO	Procuring Contracting Officer
P/CR	Problem/Change Report/Request
PBL	Performance Based Logistics
PCA	Physical Configuration Audit
PDR	Preliminary Design Review
PECP	Preliminary Engineering Change Proposal
PHS&T	Packaging, Handling, Storage & Transportation
PM	Project Manager
PMRF	Pacific Missile Range Facility (Kauai, Hawaii)
PMS	Planned Maintenance System
POA&M	Plan of Action and Milestones
POC	Point of Contact
PPIRS	Past Performance Information Retrieval System
PPL	Provisioning Parts List
PQT	Power Qualification Test
PR	Problem Report
PRR	Production Readiness Review
PTD	Provisioning Technical Documentation
PVT	Performance Verification Testing

QA	Quality Assurance
QDR	Quality Deficiency Report
RDD	Required Delivery Date
RFD	Request For Deviation
RFID	Radio Frequency Identification
RFP	Request For Proposal
ROM	Rough Order of Magnitude
RTOC	Reduction in Total Ownership Cost
S&TE	Support and Test Equipment
SA	Supportability Analysis
SAOR	System Acceptance and Operational Readiness
SB	Small Business
SCD	Source Control Drawings
SCIUR	San Clemente Island Underwater Range
SCN	Specification Change Notices
SCORE	Southern California Off-Shore Range Extension
SDP	Software Development Plan
SDR	System Design Review
SEMP	System Engineering Management Plan
SESEF	Shipboard Electronics Systems Evaluation Facility
SFR	System Functional Review
SLIN	Sub-Contract Line Item Number
SHIPALT	Ship Alteration
SOCAL	Southern California
SOW	Statement Of Work
SPETE	Special Purpose Electronic Test Equipment
SRD	Systems Requirements Document
SRR	System Requirements Review
SRVM	Specification Requirements Verification Matrix
SSRNM	Surface Ship Radiated Noise Measurement
SVD	Software Version Description
SWFTS	Submarine Warfare Federation Tactical System
T2E2	Test, Training, Experimentation and Evaluation
T&E	Test and Evaluation
TD	Technical Data
TDA	Technical Design Agent

TDP	Technical Data Package
TEMPALT	Temporary Alteration
TEPP	Test and Evaluation Program Plan
TI	Technical Instructions
TM	Technical Manuals
TMIS	Torpedo Management Information System
TRL	Technology Readiness Level
TRR	Test Readiness Review
TT&E	Test, Training and Evaluation
UID	Unique Identification
USW	Undersea Warfare
UUV	Unmanned Underwater Vehicle
XML	Extensible Mark-up Language

DRAFT