DPA Title III AN/SSQ-101B Sonobuoys Production Capability Project
Statement of Objectives (SOO)
10 March 2020

1.0 SCOPE

The purpose of this effort is to ensure the availability of qualified AN/SSQ-101B sonobuoys. This Statement of Objectives (SOO) defines the effort required for the following three phases of this Title III project:

Phase 1 – Produce Production Representative Models for performance demonstration and conduct Contractor Demonstration Testing that successfully demonstrates the sonobuoy performance per the Production Sonobuoy Specification (PSS).

Phase 2 – Produce a sufficient number of AN/SSQ-101B units suitable for successful completion of Performance Verification and Validation testing (PV&V).

Phase 3 – Develop and implement a comprehensive plan detailing all necessary engineering, equipment, facility expansion, sub-recipient requirements, materials, labor hours, and processes required to build AN/SSQ-101B sonobuoy production capacity in a cost effective manner.

2.0 BACKGROUND

Title III of the Defense Production Act as amended (the "Act") (Title 50, U.S.C., Section 4533) grants the President the authority to provide appropriate incentives to create, maintain, protect, expand, or restore domestic industrial base capabilities for the AN/SSQ-101B series sonobuoys which are essential to the national defense. The Air Anti-Submarine Warfare Program Office (Program Management Activity-264) has a requirement for the manufacture and delivery of AN/SSQ-101B series sonobuoys. Sonobuoys are air launched expendable, electro-mechanical Anti-Submarine Warfare (ASW) acoustic sensors designed to relay underwater sounds associated with ships and submarines to sophisticated remote processors principally on Navy aircraft such as P-3C, P-8A, and MH-60R.

AN/SSQ Series Production Sonobuoys are the principal sensors used by U.S. Navy air ASW forces in carrying out their primary mission functions of detection, classification and localization

of adversary submarines during peacetime and combat operations. The Naval Munitions Requirements Process (NMRP) establishes the required inventory levels for Navy munitions across the Future Years Defense Plan (FYDP). The AN/SSQ Series Production Sonobuoys are procured to maintain the Total Munitions Requirement (TMR) established by the NMRP and replace expended inventory to ensure ASW mission readiness. With DPA Title III support, the domestic production capacity for up to 18,000 AN/SSQ-101B sonobuoys per year can be established in support of the TMR.

The AN/SSQ Series Production Sonobuoys will be required to meet the Production Sonobuoy Specification (PSS) (see Attachment 1) for performance requirements. To ensure compatibility with existing and future ASW systems, production sonobuoys are required to meet performance parameters specified in the PSS, such as: service conditions, electrical, mechanical, acoustic, safety, environmental, product assurance, packaging, marking and operating/non-operating requirements.

3.0 OBJECTIVES

The objectives identified in Section 3. A. are the specific technical requirements for this project. The Offeror shall propose a technical effort, in a prioritized list, to address as many of the objectives in Section 3. A. as deemed possible with the currently available Defense Production Act (DPA) Title III funding and anticipated company cost share for this effort.

A. Technical

The AN/SSQ-101B sonobuoy requirement is in accordance with the PRODUCTION SONOBUOY SPECIFICATION, Attachment 1, and High Altitude Anti-Submarine Warfare (HAASW) Modification Requirements Specification, Attachment 12.

See Section 6.0 for relevant attachments.

SPECIFICATIONS AND STANDARDS

(a) Definitions

(i) A "zero-tier reference" is a specification, standard, or drawing that is cited in the agreement (including its attachments).

(ii) A "first-tier reference" is either: (1) a specification, standard, or drawing cited in a zero-tier reference, or (2) a specification cited in a first-tier drawing.

(b) Requirements

All zero-tier and first-tier references, as defined above, are mandatory for use. All lower tier references shall be used for guidance only.

1. PHASE 1 OBJECTIVES – AN/SSQ-101B PRODUCTION REPRESENTATIVE MODEL DEVELOPMENT

In order to be considered for Phase 2, the offeror must successfully complete the following items:

- Design Reviews, as appropriate
- Provide Full Sonobuoy Package Design Data and Calculations
- Contractor Demonstration Testing (CDT) to show that the sonobuoy can meet performance parameters specified in the PSS, such as: electrical, mechanical, acoustic, safety, environmental, and operating/non-operating requirements.
- Conduct Post-CDT Technical Interchange Meetings
- Government Demonstration Testing (GDT) or show prior demonstration test for Phase 2. GDT will evaluate sonobuoy performance parameters, such as: electrical, mechanical, acoustic, safety, environmental, and operating/non-operating requirements in lab and open ocean environments.
    - Minimum hardware quantities required for PHASE 1 GDT:
        - 13 AN/SSQ-101B sonobuoys in an LAU-126/A Sonobuoy Launch Container (SLC) (as described in Attachment 2)
- Conduct Post-GDT Technical Interchange Meeting

The offeror shall define the quantity, location of test (restricted to US and Canadian Forces Maritime Experimental and Test Ranges (CFMETR)), and schedule for the CDT. The offeror shall deliver the GDT hardware and provide required support for the testing addressed in Attachment 14. The offeror shall also conduct a Technical Interchange Meeting (TIM) to review the CDT Results and a TIM to review the GDT results. These TIMs shall be in accordance with Attachment 13; i.e. providing traceability from test results to system specifications, risk mitigations, etc. TIMs shall be conducted at the contractor location unless otherwise noted in the proposal.

For deliverables associated with this phase, please see Section 5.0.

2. PHASE 2 OBJECTIVES – Performance Verification & Validation

If this phase is awarded, the offeror shall provide AN/SSQ-101B Sonobuoys as developed and accepted by the government in Phase 1, and in accordance with the applicable specification(s) and appendices addressed in Attachments 1-14. Phase 2 Sonobuoys will be subject to PV&V testing as described in Attachment 14.

Buoy requirements for PV&V Testing: The variety of tests conducted for Performance Verification and Validation require buoys configured appropriately for each test. Not all tests require "Fully Operational" buoys to satisfy the performance criteria, and some tests require specific modifications. Specific PV&V Tests require unique configurations to A) satisfy form, fit, and function requirements for the test and/or B) ensure the safety of the test through the removal or dis-arming of potentially hazardous devices (e.g., Electrically Initiated Devices (EIDs), compressed gas, batteries). As these modifications are unique to each test, please refer to Attachment 14 for specific modifications required and/or allowed. The following definitions apply to the buoy configuration terminology referred to in this document and Attachment 14.

Fully Operational: An operational sonobuoy performing to all specification requirements and manufactured Production-ready. Production-ready is a form, fit, function, and quality equivalent to production units. Production-ready examples:

machined or 3-D printed components in lieu of die cast or injection molded components are permitted.

Fully Functional: A sonobuoy using Production-ready components as specified for the applicable test. Other components may be substituted with non-Production-ready components provided the substituted part(s) meet the form and fit of the final design. Substituted parts shall be reviewed and approved by the Government.

Minimum quantities required for PHASE 2 PV&V, as specified in Attachment 14:

- 68 fully operational AN/SSQ-101B sonobuoys packaged in LAU-126/A
- 113 modified, fully functional AN/SSQ-101B sonobuoys packaged in LAU-126/A (as required)
- Subcomponents of AN/SSQ-101B
    - Four (4) upper electronic subassemblies
    - Six (6) of each type of EIDs used in the sonobuoy

Hardware for testing of bare sonobuoy designs which are equal to or less than 25 pounds are as follows:

- Two (2) complete unit load (pallet assembly) assemblies – Forty-eight (48) unit pallet assembly (no sonobuoys).

OR

Hardware for testing of bare sonobuoy designs which are greater than 25 pounds are as follows:

- Two (2) complete unit load assemblies – Thirty-six (36) unit pallet assembly (no sonobuoys).

Quantities specified represent minimum requirements to support PV&V testing. The offeror shall define the actual quantity and schedule for delivery of PV&V hardware.

The contractor shall successfully complete a Critical Design Review (CDR) prior to delivery of buoys to the Government for PV&V testing.

The Recipient will schedule and conduct a TIM after successful PV&V testing of items 1 – 6 of Attachment 14, or as otherwise authorized by the Government. The purpose of this TIM is to review and evaluate the test results, and perform risk assessment on successful completion of PV&V. Based on a favorable risk assessment at this TIM, initial Phase 3 activities can begin prior to completion of PV&V (Phase 2). TIM will be conducted in accordance with Attachment 13. The Recipient must successfully complete the PV&V test requirements addressed in Attachment 14 in order to complete Phase 2.

For deliverables associated with this phase, please see Section 5.0.

3. PHASE 3 OBJECTIVES – FACILITIZATION AND PRODUCTIONIZATION

The offeror shall create the capacity to produce the sonobuoy with hardware and processes to allow future full scale production up to a maximum of 18,000 AN/SSQ-101B sonobuoys per year. ** NOTE: These are not deliverables on this Title III project.

The offeror shall conduct assessments of manufacturing readiness utilizing the MRL criteria throughout the life of the contract using the Manufacturing Readiness Level Deskbook (available at www.dodmrl.com) as a guide. The offeror shall use the process explained in Sections 4.0 and 5.0 of that document as a filter for identifying high manufacturing risk technologies or components and present appropriate risk analysis and associated maturation plans within the Integrated Master Schedule. The offeror shall specify in a SOW appendix the locations and frequencies of any assessments of manufacturing readiness, along with all the resources to perform or support these assessments. The offeror shall identify its approach for flowing down these requirements as a function of risk. The offeror shall address how assessments of manufacturing readiness will be executed and monitored to ensure achieving the target level in accordance with their Manufacturing Maturity Plans. The recipient will

lead the assessment of manufacturing readiness at both the recipient's location and at supplier locations with Title III IPT participation unless clearly specified differently in the proposal. The recipient shall utilize subject matter experts (SMEs) in the appropriate fields to conduct assessments. The offeror shall address how MRLs will be monitored to ensure achieving the target level in accordance with their Manufacturing Maturity Plans.

The contractor shall complete the Manufacturing Readiness Assessment, a Manufacturing Maturity Plan, and conduct a Production Readiness Review (PRR) as the Phase 3 deliverables.

For deliverables associated with this phase, please see Section 5.0.

B. Program Management, Administration, and Reporting

1. Manage and implement the project. Monitor and control the project's cost, schedule, and performance parameters.
2. Establish a cumulative monthly expenditure profile baseline for the government funds. Track the actual and forecasted monthly expenditures against the baseline and report it to the government quarterly.
3. Participate on the project's Integrated Product Team (IPT) and interface with DPA Title III project managers and agreements personnel.
4. Conduct Quarterly Project Management Reviews (PMRs) and ad hoc Technical Interchange Meetings (TIMs) as required. At least one PMR in any year shall be conducted at the Recipient's facility. Remaining PMRs shall be conducted by conference call, at the Recipient's facility, or at the DPA Title III Program Offices at Wright-Patterson Air Force Base. Key sub-awardees should actively participate in PMRs.
5. Conduct a Technical Project Kickoff Meeting no later than 30 days after Agreement award.
6. Insure, maintain, operate and service all government and non-government owned capital equipment and tooling as required, to produce AN/SSQ-101B sonobuoys.

Update and provide the Government Equipment Property Control List at the time of quarterly PMRs and as required.

7. Prepare for a Continued Business Viability No Cost Monitoring (NCM) Phase at the conclusion of the technical effort to demonstrate and support the long-term goals of this project. This No Cost Monitoring effort shall provide the government with insight into the continuing operations and business viability of the Recipient.
8. Establish and track Key Performance Parameters (KPPs) with DPA Title III IPT concurrence. Threshold (minimum) and Objective (stretch) targets shall be established for at least two KPPs in each of the following four categories: Product Performance, Manufacturing, Financial and Marketing. Report KPP performance at quarterly PMRs and as required.
9. Conduct the following reviews as appropriate: preliminary and critical design reviews, test readiness reviews, manufacturing readiness reviews, post-test reviews, and any anomaly reviews. For the manufacturing readiness reviews, a baseline manufacturing readiness assessment (MRA) shall be conducted at the beginning of the effort and a final MRA shall be conducted near the conclusion of the technical effort to measure progress made on the project.
10. Manage, including flow-down requirements, partnerships or other business arrangements needed to complete productionization and qualification of the tool/equipment to be produced under Section 3. A of this effort.

C. Strategic Business Planning

1. Develop and maintain a strategic business plan to include:
    a. Submit initial plan nine months after initial award; update and resubmit the plan on an annual basis thereafter.
    b. Include in the planning the key issues related to the establishment of a competitive and commercially viable merchant supplier of AN/SSQ-101B sonobuoys.
    c. The comprehensive strategic business planning should cover a minimum outlook of three years, preferably five years, including all financial statements, actual and forecast.

d. Provide performance-to-plan evaluations at regular intervals, with management review comments, to the DPA Title III project manager so long as an Agreement relationship exists.

D. Market Planning and New Business Development

1. Develop and maintain a Marketing Plan to include but not be limited to:
    a. Submit initial plan six months after initial award; update and resubmit the plan on an annual basis thereafter.
    b. Strategic market planning should address current and future customer needs for the AN/SSQ-101B sonobuoy.
    c. Survey, be responsive to, and report to the government on (DoD and commercial) customer needs, requests, and trends for the AN/SSQ-101B sonobuoy.
    d. Provide performance-to-plan updates at regular intervals, including reports on business capture plans (target business awards, actual awards, and missed opportunities), to the DPA Title III project manager so long as an Agreement relationship exists.

E. Business Viability and Manufacturing capability/experience

1. Address the availability of resources to be employed to become, or maintain a position as, a competitive, economically viable, responsive merchant supplier to the government and commercial sectors for AN/SSQ-101B sonobuoys.
2. Provide evidence of technical understanding and institutional knowledge with respect to AN/SSQ-101B sonobuoys for both the US Government and commercial markets. Evidence may include, but is not limited to, intellectual property, documented manufacturing capability and experience, technical specifications for existing devices, and dossiers of key personnel.

4.0 SECURITY REQUIREMENTS

The following statements apply to the objectives and requirements of this SOO. ***The SOW is additionally required to include the following statements:***

4.1 Operations Security (OPSEC) Requirements

All Recipients shall participate in all activities associated with the disciplines of the organization's Industrial Security, Information Security, Personnel Security, Operations Security (OPSEC), Antiterrorism, and Program Protection programs, following appropriate measures in each program as required for this particular agreement. These are required in an effort to reduce program vulnerability from successful adversary collection, exploitation of critical information, and violations of export control requirements. The Recipient will ensure that all sub-awardees, if required, conform to these requirements as required by the Recipient. Air Force Research Laboratory Materials and Manufacturing Directorate (AFRL/RX) Security can provide guidance as needed.

4.2 Program Protection Plan (PPP)

Any potential Critical Program Information (CPI) generated, as part of this effort, will be reviewed to determine the need for a PPP or to be included as part of an existing PPP.

4.3 Foreign Participation: Not at Prime Recipient level.

Foreign Nationals (FNs) (including individuals from countries other than the United States who are working for a company considered a "domestic source" as defined in the Defense Production Act of 1950) can be employed by the Prime Recipient or Sub-awardee; however, FNs will be limited to Public Domain information unless the Recipient has obtained the proper License of Technical Assistance Agreement that authorizes disclosure of Classified Military Information (CMI) and/or Controlled Unclassified Information (CUI) to foreign entities pursuant to the Department of State's ITAR or Department of Commerce's EAR.

Public Domain information is defined as information that is releasable to the general public and sometimes referred to as open source material. Examples include but are not limited to newspapers, magazines and information posted on the internet.

5.0 DELIVERABLES:

The Awardee will have the following required deliverables:

Deliverable Item	Submittal Required	Applicable Phase
Final Report	Draft Final report due 30 days after completion of the TPoP, Final Report due 90 days after completion of TPoP	3
Phase Summary Report	30 days after each Phase completion	1,2
Funds & Man-hour Expenditure Report	Quarterly	1,2,3
Recipient's Progress, Status & Mgt Report	Quarterly	1,2,3
Strategic Business Plan	6 months ARA* and annually thereafter	1,2,3
Property Control List	Quarterly / As Required	1,2,3
Presentation Material	Quarterly / As Required	1,2,3
Marketing Plan	9 months ARA and annually thereafter	1,2,3
Copy of Recipient's Billing Voucher	As Required	1,2,3
Full Sonobuoy Package Design Data and Calculations	14 Days Prior to Design Reviews	1,2,3
Air Safety Certification Data	90 days prior to Air Safety Certification Testing	2
HERO and EMI Design Data	90 days prior to HERO testing	2
ESD Design Data	90 days prior to ESD Testing	2
Lithium Battery Design Data	90 days prior to Lithium Battery Testing	2
Hazardous Materials/Handling/ Disassembly Safety	30 days prior to Verification/Validation submission	2
Test Plan	10 days prior to testing	1,2
Test Report for Engineering Tests	14 days after conduct of Engineering Test	1
Failure Summary and Analysis Report	21 days after Failed Hardware	1,2
Manufacturing Maturity Plan	30 days after MRA completion	3
Sonobuoys as detailed in SOO	Delivered as required to the address defined in SOO Attachment 14	1,2

* After Receipt of Agreement or Award (ARA)

6.0 ATTACHMENTS:

To request the attachments, see the note at the end of paragraph III. 3. of the Call document.

DOCUMENT	DESCRIPTION	DATE
Attachment 1	NAVY PRODUCTION SONOBUOY SPECIFICATION for BATHYTHERMOGRAPH TRANSMITTING SET AN/SSQ-36B and SONOBUOYS AN/SSQ-53F, 62E, 77C, AND 101A REVC CHG1	03/17/16
Attachment 2	NAVY PSS Appendix A LAUNCHER CONTAINER, "A" SIZE SONOBUOY LAU-126/A "A" SIZE SONOBUOY LAUNCHER CONTAINER (SLC) REVA CHG4	06/26/14
Attachment 3	NAVY PSS Appendix B SONOBUOY DECELERATOR EFFECTIVE DRAG AREA, BALLISTIC COEFFICIENT AND PARACHUTE CONSTRUCTION REQUIREMENTS REV- CHG4	06/04/15
Attachment 4	NAVY PSS Appendix C PRODUCTION SONOBUOY PROGRAM MARKING REQUIREMENTS REVC CHG2	11/03/16
Attachment 5	NAVY PSS Appendix D PRODUCT ASSURANCE REQUIREMENTS FOR SONOBUOY PROCUREMENTS REVB CHG4	09/09/16
Attachment 6	NAVY PSS Appendix E REQUIREMENTS FOR THE SONOBUOY COMMAND FUNCTION SELECTION SYSTEM REVA CHG3	01/29/13
Attachment 7	NAVY PSS Appendix F HAZARDS OF ELECTROMAGNETIC RADIATION TO ORDNANCE (HERO) CERTIFICATION REQUIREMENTS FOR PRODUCTION AND DEVELOPMENT SONOBUOYS REV- CHG4	01/27/16
Attachment 8	NAVY PSS Appendix G PALLET LOADING REQUIREMENTS REV- CHG3	01/29/13
Attachment 9	NAVY PSS Appendix H SONOBUOY REQUIREMENTS FOR THE CONTROL OF RADIATED ELECTROMAGNETIC INTERFERENCE (EMI) REVA CHG3	01/29/13
Attachment 10	NAVY Standard Operating Procedure for Laboratory & Ocean Testing of Sonobuoys, SLCs and Associated Packaging (4.5.14-SOP-004 REVH CHG0)	08/15/17
Attachment 11	NAVY Open Ocean Test Defect Criteria (REV E CHG 0)	08/15/17
Attachment 12	NAVY HAASW Modification Requirements Specification REVI	03/03/16
Attachment 13	Technical Interchange Meeting Guidelines	04/10/19
Attachment 14	Testing Description	6/24/19
Attachment 15	NAVAIR DL & Drawing 1458AS202 Container assembly, sonobuoy, unsealed, CNU/239E	7/17/87
Attachment 16	NAVSEA DL & Drawings 7375860 – 7375875 Data List and Drawings for Bayonet Base Pallet Assembly	2/21/18
Attachment 17	NAVAIR Drawing 3065AS100 Rev. A 'A' Size Store Launch Container	6/26/89