**SMALL BUSINESS INNOVATION RESEARCH**

**phase ii statement of objectives**

**for**

**Advanced Precision-Variable Power Scope**

**SOCOM22.1-D004**

**13 OCTOBER 2021**

I. **INTERNATIONAL TRAFFIC AND ARMS REGULATION:** The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), which controls the export and import of defense-related material and services. Offerors must disclose any proposed use of foreign nationals, their country of origin, and what tasks each would accomplish in the statement of work in accordance with section 5.4.c.(8) of the solicitation. Additionally, Offerors will describe compliance mechanisms offerors have in place or will put in place to address any ITAR issues that arise during the course of agreement administration.

II. **BACKGROUND**:

The Standard Precision-Variable Power Scope (P-VPS) was developed to allow operators to detect and engage targets from 50-1500 meters and beyond in mounted sniper rifle engagements. The nomenclature for the P-VPS is the SU-296/PVS and it is a long range 7-35x56mm direct view optic. While it can mount current laser range finders, it is unable to display the data from these devices directly to the operator’s eye in the dayscope field of view which requires the operator to break cheek weld to view data. A micro display integrated into the dayscope will greatly increase the operator’s ability to observe and engage targets.

III. **OVERALL OBJECTIVE:**

The objective of this Statement of Objectives (SOO) is to develop applied research toward an innovative capability to allow operators to detect and engage targets for 0-1500 meters and beyond in day mounted sniper rifle engagements. The Advanced P-VPS (AP-VPS) shall have the same capabilities of the SU-296/PVS but will also incorporate a micro data display to display firing solution, range finding, ballistics offsets, and other engagement data within the optics field of view. These AP-VPS will upgrade the Family of Sniper Weapon Systems (FSWS) family of sniper scopes previously fielded as part of the sniper weapon system.

IV. **REQUIREMENTS:**

1. **General:** The Contractor shall develop, demonstrate, and deliver four (4) prototype AP-VPS units that will allow operators to detect and engage targets for 50-1500 meters (m) and beyond in day mounted sniper rifle engagements.
	1. **Detailed Requirements:** The Contractor shall design, develop, fabricate, test, demonstrate, and deliver four (4) prototype AP-VPS units that meet the following performance requirements:
		1. Shall be no more than 17 inches in length with an optical centerline of 1.535 +/-0.05 inches.
		2. Shall weigh no more than 50 ounces.
		3. Shall have no more than 0.1 milliradian (mrad) (Threshold (T)), no measurable (Objective (O)) point of aim shift when adjusting through the entire magnification range.
		4. Shall have a continuous variable magnification range of no less than a 3X magnification to no greater than 7X on the low range
		5. Shall have a continuous variable magnification range of greater than or equal to 25X magnification on the high range.
		6. Eye relief shall be at least 3.1 inches.
		7. Exit pupil shall be no less than 1.5 millimeter (mm).
		8. Shall have a focus/parallax adjustment that allows the operator to clearly focus the reticle and target from less than 50 meters to infinity at all magnification settings.
		9. Shall include a Tremor3 reticle.
		10. Shall have visible and tactile Windage and Elevation adjustments that are repeatable and able to be zeroed and preferably locked. Elevation and Windage of at least 26 mrad with hard stops at the ends of adjustment range in adjustment increments of 0.1 mrad per click.
		11. Adjustment increments shall have at least 1% accuracy across the full range of travel including dead clicks.
		12. Elevation turret shall have a method to indicate the position of the turret with visible and tactile feel.
		13. Shall interoperate with Special Operations Command (SOCOM) Special Operations Forces (SOF) fielded host sniper weapons (MK13, MK15, MK22, M107, M2010) and current and legacy SOF Visual Augmentation Systems Weapons Accessories (VASWA) to include current SOCOM laser range finders (LRF) (LA-24/PEQ (PAL)), AN/PSQ-23 (STORM)) and clip-on multiband sensors (AN/PVS-30, SU-280/PVS).
		14. Shall conform to the current version of the Interface Control Document (ICD) for Weapon Mounted Ballistic Calculators and Micro-Displays.
		15. Shall mount to the MIL-STD-1913 weapon rail and provide direct view to the operator without interfering with the operation of the weapon and weapons accessories.
		16. Mount shall have at least two (2) machined recoil lugs and attach with a ½ inch wrench to a specific torque.
		17. Shall provide bayonet type mount to accommodate Laser Range Finders (LRF) and provide a stable platform for the Laser Range Finder.
		18. Shall be battery powered and battery(s) shall be easily changed without any tools or dismounting the system. Battery life shall be at least 24 hours in a full-on configuration at highest illumination setting.
		19. Shall incorporate an anti-cant capability within the dayscope field of view.
		20. Digital overlay shall have the ability to receive and display external information via a micro data display wired (T) and wireless (O). Cables should be removable and interchangeable without removing the dayscope. There are four (4) Tiered micro data display requirements:

Tier 1: Display data. Any range finding data shall have the ability to be ported to an external digital display user defined message architecture and encryption to include range, range holds, wind speed, wind hold, level, and elevation in accordance with the ICD. A state of battery charge indicator shall be in the AP-VPS field of view. A state of charge indicator shall display power at start up power and then status updates as battery(s) power changes. Ideally, should always display power status. The AP-VPS shall have a user definable time-out for the display and each individual item.

Tier 2: Disturbed Reticle and Active Ranging. User configurable digital overlay capable of displaying text, a disturbed reticle, and active ranging indicator within the field of view. Disturbed reticle will update the aim point displayed to the operator based on all variables required to accurately engage targets that include but are not limited to: range to target, atmospheric conditions (temperature, wind speed, humidity, and atmospheric pressure), weapon orientation/cant, and ballistics of the weapon/ammunition selected (O).

Tier 3: Display Augmented Reality and Target Reference Points (O). The AP-VPS should have the ability to display augmented reality. The AP-VPS should have the ability to display target reference points (TRP).

Tier 4: Display Video (O). The AP-VPS should be capable of displaying high-definition color full motion video.

* + 1. Shall not have a laser and shall not present a safety risk to the operator.
		2. The materiel developer shall provide system training products to conduct new equipment training during operational and developmental testing. These training products will be used as the basis for institutional training development, unit sustainment training, and rapid training in support of contingency operations. The training package will consider applicable embedded training features, computer and video-based training techniques, and support capabilities.
		3. The target detection range shall be 50-1500m range and as a goal the target recognition range should be 500m beyond the effective range of the weapon.
		4. Shall be waterproof to at least 1m depth for 2 hours.
		5. Shall survive all SOCOM SOF environments and be tested per MIL-STD-810H.
		6. Maximum Technical Readiness Level (TRL) of TRL 7. (System prototype demonstration in an operational environment: Prototype near, or at, planned operational system. Represents a major step up from TRL 6, requiring the demonstration of an actual system prototype in an operational environment such as an aircraft, vehicle, or space.)
	1. **Component Requirements:** N/A
	2. **Unique Item Identification:** The contractor shall include the Department of Defense (DoD) unique item identifications (UID) or a DoD recognized unique identification equivalent for the prototypes delivered. This includes a description and cost breakout as applicable. Information on unique item identifier types is at <http://www.acq.osd.mil/dpap/UID/uid_types.html>. The guide is at <http://www.acq.osd.mil/dpap/UID/guides.htm>. This is in accordance with DFARS 252.211-7003.
	3. **Ship to Address:** The Contractor shall deliver all prototypes systems delivered under this contract to the following address:

Naval Surface Warfare Center Crane Division (DoDAAC: N00164)

Audrey Robinson/David Curry

Bldg 3291, Code JXQR

300 HWY 361

CRANE, IN 47522-5001

(812) 854-4399/(812) 296-2150

* 1. **Shipping Costs:** The Contractor shall pay all the costs to ship all product deliverables to and from the validation testing/demonstration sites and to the final delivery location.
1. **Document Deliverables:** The Contractor shall provide the following documents to the respective specified addresses during the Phase II Period of Performance per the respective contract data requirements list (CDRL):
2. Kick-Off/System Requirements Review: See CDRL A001.
3. Monthly Progress Reports: See CDRL A002.
4. Developmental Test Plan for Performance Validation: See CDRL A003.
5. Developmental Test Report for Performance Validation: See CDRL A004.
6. Business Plans: See CDRL A005.
7. Final Technical Report: See CDRL A006.
8. Preliminary Design Review – Design Review Information Package: See CDRL A007.
9. Critical Design Review - Design Review Information Package: See CDRL A008.

**V. TESTS AND DEMONSTRATIONS:** The Contractor shall conduct tests and demonstrations to validate that the AP-PVS meets or exceeds all the requirements specified in this Statement of Objectives. (See CDRL A003 and CDRL A004).

1. The Contractor shall demonstrate that the AP-VPS meets or exceeds the performance of the detailed requirements above. (See CDRL A003 and CDRL A004).

VI. **ENVIRONMENTAL AND SAFETY:**

 <http://everyspec.com/MIL-STD/MIL-STD-1800-1999/MIL-STD-1913_17705/>

 <http://everyspec.com/MIL-STD/MIL-STD-0800-0899/MIL-STD-810H_55998/>

VII. **GOVERNMENT FURNISHED PROPERTY (GFP)/GOVERNMENT FURNISHED PROPERTY (GFE) /GOVERNMENT FURNISHED INFORMATION (GFI):** The Government does not intend to provide the Contractor any GFP, GFE, or GFI. However, the Contractor shall specify by stock number and nomenclature any GFP/GFE/GFI the Contractor believes is needed to successfully complete the requirements specified in this Statement of Objectives.

VIII. **Period of Performance:** The maximum Period of Performance for this Phase II effort is eighteen (18) months. The Contractor can propose a lessor Period of Performance if a lessor Period of Performance does not jeopardize the Contractor’s successful completion of the requirements specified in this Statement of Objectives.

IX. **MEETINGS AND REVIEWS**: The Contractor shall attend the following meetings and reviews.

A. Phase II Kick-Off meeting shall be conducted at the Contractor’s facility not later than thirty (30) calendar days after contract award. The Contractor shall provide the Government:

1. A Phase II Kick-Off Meeting Read-Ahead no less than seven (7) calendar days prior to the Phase II Kick-Off Meeting / System Requirements Review Meeting (See CDRL A001).

2. An initial Program Management Plan for accomplishing all objectives specified in this Statement of Objectives. (See CDRLs A002).

3. Conceptual Design Drawings no less than ten (10) calendar days prior to the Phase II Kick-Off/System Requirements Review Meeting (See CDRL A001).

B. Preliminary Design Review (PDR) - This meeting shall be conducted by teleconference or at the Contractor’s facility no more than ninety (90) calendar days after Phase II contract award. The Contractor shall provide teleconference capability for those participants. The Contractor shall provide the Government:

1. A Preliminary Design Review and Materials Read-Ahead Briefing no less than ten (10) calendar days prior to the PDR (See CDRL A007).

2. A Detailed Design Report (See CDRL A007).

3. Trade off considerations for the design. (See CDRL A007).

4. Results of any testing to date. (See CDRL A007).

5. Resolution to any Contractor/Government issues or concerns.

6. An assessment of other potential benefits/impacts of the prototypes, including weight savings, cost reduction, prolonged system life, and a recommendation of any changes for consideration/incorporation into the subsequent design that will be provided to the Government at the follow-on Critical Design Review. (See CDRL A008).

C. Critical Design Review (CDR): The CDR meeting shall be arranged by the Contractor two (2) weeks prior to the end of the contract completion date. The CDR shall be conducted either at the Contractor’s facility or by teleconference. The Contractor shall provide the Government:

1. A Critical Design Review and Materials Read-Ahead Briefing no less than ten (10) calendar days prior to the CDR (See CDRL A008).

2. A Detailed Design Report (See CDRL A008).

3. Trade off considerations for the design. (See CDRL A008).

4. Results of any testing to date. (See CDRL A004).

5. Resolution to any Contractor/Government issues or concerns.

D. Phase II Close-Out Meeting: The Phase II Close-Out Meeting shall be conducted in Tampa, Florida no earlier than seven (7) calendar days prior to the conclusion of the Phase II Period of Performance. The Contractor shall provide the Government:

1. A briefing on the test verification (See CDRL A004).

2. An update of the progress to date. (See CDRL A002)

3. Resolution to any Contractor/Government issues or concerns.

X. **NOTIFICATION:** The Contractor shall notify USSOCOM no less than thirty (30) calendar days prior to tests, demonstrations and reviews at the Contractor’s facilities to ensure USSOCOM representatives can attend should they desire to do so.

XI. **TRAVEL REQUIREMENTS:** The Preliminary Design Review and Critical Design Review shall be conducted at the Contractor’s facility or virtually. The Contractor shall comply with the Federal Acquisition Regulation 31.205-46 (http://www.gsa.gov/perdiem) on proposing all travel related costs. The Contractor shall include the costs associated with the following travel requirements in the proposal:

1. Phase II System Testing: Crane, Indiana; up to two (2) three day overnight trips, no more than three (3) Contractor representatives.
2. Phase II Close-Out Meeting: To be conducted in Tampa, Florida; one (1) overnight, no more than three (3) Contractor representatives or virtually. The Contractor shall as part of the Phase II proposal include travel should travel to Tampa be deemed to be feasible.

XII**. DISCLOSURE OF UNCLASSIFIED INFORMATION:**

A. On September 21, 2001, the Department of Defense designated Headquarters US Special Operations Command (USSOCOM) a sensitive unit, as defined by Title 10 United States Code (USC) Section 552 (10 USC 552). In keeping with this designation, unclassified information related to USSOCOM military technology acquisitions managed by USSOCOM or any of its component commands, will be designated Controlled Unclassified Information (CUI). As such, the contractor hereby unequivocally agrees that it shall not release to anyone outside the Contractor’s organization any unclassified information, regardless of medium (e.g., film, tape, document, Contractor’s external website, newspaper, magazine, journal, corporate annual report, etc.), pertaining to any part of this contract or any program related to this contract, unless the Contracting Officer has given prior written approval. Furthermore, any release of information which associates USSOCOM, Special Operation Forces (SOF), or any component command with an acquisition program, contractor, or this contract is prohibited unless specifically authorized by USSOCOM.

B. Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release for approval. No release of any restricted information shall be made without specific written authorization by the Contracting Officer.

C. The Contractor shall include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

D. The Contractor further understands that Title 18 USC Section 701 specifically prohibits the use of the USSOCOM emblem or logo in any medium (e.g., corporate website, marketing brochure, newspaper, magazine, etc.) unless authorized in writing by USSOCOM. Forward any requests to use the USSOCOM emblem or logo through the Contracting Officer.