**SMALL BUSINESS INNOVATION RESEARCH**

**phase ii statement of objectives (SOO)**

**for**

**High Performance Lightweight White Phosphor Image Intensification Clip-On**

**SOCOM213-D007**

**21 July 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 AN/PVS-26 and AN/PVS-30 Night Vision Clip-On Weapon Sights have been proven systems in the Special Operations Forces (SOF) and ARMY forces for the past 15 years. They were developed under the Improved Night/Day Fire Control/Observation Device INOD program which was an Evolutionary Acquisition (EA) of which these were Block II. They provide a sniper with the capability to easily and quickly transition from day to night operations by mounting this clip-on directly in front of their existing direct view sniper dayscope. The sniper can then use the same dayscope reticle and adjustments to accomplish his mission during night time operations. Additionally, the transition to white phosphor image intensifier tubes over the past several years have provided better perceived target contrast as well as the lower signal to noise ratio, higher resolution, and improved photo sensitivity of these newer image intensifier tubes. Lastly, a significant reduction in weight is desired to reduce the payload of the operator.

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 night mounted engagements. This will be achieved through a High Performance Lightweight White Phosphor Image Intensification Clip-On (LWPI2C).

IV. **REQUIREMENTS:**

1. **General:** The contractor shall demonstrate and deliver six (6) prototype LWPI2C units that will allow operators to detect and engage targets for 0-1500 meters and beyond in night mounted engagements. This capability shall meet the requirements in the description below.
	1. **Detailed Requirements:** The Contractor shall design, develop, fabricate, test, demonstrate, and deliver the six (6) prototype LWPI2C units the meet the following performance requirements.
		1. Shall be less than 10 inches in length.
		2. Shall weigh no more than 2.25 pounds.
		3. Shall be a High Performance White Phosphorus Image Intensification (I2) Tube with a minimum of 72 line pairs/millimeter (lp/mm) and a Signal to Noise Ratio (SNR) of at least 32. There is a desire for higher performing tubes, i.e. 72 lp/mm and 36 SNR, and 81 lp/mm and 38 SNR. A Cost/Benefit study would be appreciated for this.
		4. The design of the LWPI2C shall allow for depot level replacement of the I2 tube.
		5. Shall interoperate with SOCOM SOF sniper rifles (Mk13, Mk15, and Mk22 Advanced Sniper Rifle (ASR), M107, M2010) and designated marksmen rifles (Mk11, Mk20, and M110) and should interoperate with current SOCOM laser range finders (LRF) and SOCOM day optics (SU-284/PVS, SU-296/PVS).
		6. Shall have 1X magnification and be collimated.
		7. Shall mount to the weapon’s MIL-STD-1913 rail and provide a full field of view to the operator without interfering with the operation of the weapon system and accessories.
		8. Shall be powered with a single CR123 Lithium and/or a single AA battery for at least 24 hours continuous operation.
		9. Shall have a rotary focus knob to control system focus. Sufficient tension shall exist to prevent accidental movement of the focus knob. The focus shall adjust from near focus to past infinity by at least 1/8 turn.
		10. Shall have an optical centerline of 1.53 +/- 0.1 inches or that allows interoperability with existing first focal plane (FFP) sniper dayscopes (e.g. SU-284/PVS, SU-295/PVS, and SU-296/PVS).
		11. Shall not lose more than 0.5 minute of angle (MOA) of accuracy when repeatedly removed from the weapon and reattached.
		12. Shall not have a laser and shall not present a safety risk to the operator.
		13. Shall have an adjustable locking throw lever mount to securely mount to the MIL-STD-1913 weapon rail.
		14. Shall have the following accessories: day lens cover with lanyard, detachable coupler, batteries, lens cleaning kit, and soft carrying case.
		15. 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.
		16. Detection and Recognition Ranges.

a) Starlight conditions: Recognize a standing man at ranges of 400 meters (threshold), 700m (objective). Recognition, according to Joint Pub. 1-02, Department of Defense (DOD) Dictionary of Military and Associated Terms, is defined as “the determination that an object is similar within a category of something already known: e.g., tank, truck, man”.

b) Starlight conditions: Detect a vehicle at ranges of 850m (threshold), 1000m (objective). Detection, according to Joint Pub. 1-02, DOD Dictionary of Military and Associated Terms is defined as “in tactical operations, the perception of an object of possible military interest but unconfirmed by recognition”.

c) In ¼ moonlight conditions: Recognize a standing man at ranges of 700m (threshold), 1000m (objective).

d) In ¼ moonlight conditions: Detect a vehicle at ranges of 1200m (threshold), 1500m (objective).

* + 1. Shall be waterproof to at least 1m depth for 2 hours.
		2. Shall survive all SOCOM SOF environments and be tested per MIL-STD-810H.
		3. Maximum TRL 7. 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 DoD unique item identifications 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 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 LWPI2C 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 LWPI2C 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 twelve (12) 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 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 A004).

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 A009).

C. Critical Design Review (CDR): This teleconference meeting shall be arranged by the Contractor two (2) weeks prior to the end of the contract completion date. 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, FL 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:** If the PDR and CDR are not conducted virtually and travel is required, the Contractor shall comply with the Federal Acquisition Regulation 31.205-46 (http://www.gsa.gov/perdiem) on proposing all travel related costs. If required, the Contractor shall include the costs associated with the following travel requirements in the proposal:

1. Phase II System Testing: Crane, IN; up to two (2) three day overnight trips, no more than three (3) Contractor representatives.
2. Phase II Close-Out Meeting: Tampa, Florida; one (1) overnight, no more than three (3) Contractor representatives.

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.