

SOCOM221-D003: Miniature Aiming Ranging Laser

MODERNIZATION PRIORITIES:

General Warfighting Requirements (GWR)

TECHNOLOGY AREA(S):

Battlespace, Electronics, Human Systems, Sensors, Weapons

OBJECTIVE:

The objective of this topic is to develop applied research toward an innovative capability that will allow operators to illuminate, and detect human targets from 0-900 meters, vehicle targets from 0-3,000 meters and beyond when using the PVS-31 or PVS-31A Binocular Night Vision Device (BNVD). The system shall allow operators to successfully range a man size target from 0-900 meters. The system capability shall meet the requirements in the description below.

ITAR:

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with section 3.5 of the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

DESCRIPTION:

The Special Operations Forces (SOF) Operator is faced with a dynamic battlefield and evolving enemy. In order to maintain the advantage and increase the survivability and lethality of the operator on the battlefield, a compact, lightweight, ranging, aiming, pointing, and illuminating laser is required to allow the operator to range, detect, and engage targets at the effective range at night when using the Binocular Night Vision Device (BNVD). Existing squad weapon mounted lasers do not have the power output nor ranging capabilities required to provide suitable stand-off and engagement ranges in the compact size that is required. This topic is seeking information regarding advanced technology pertaining to advancements in materials, miniaturization, weight reduction, weapon shock and environmental durability, and laser ranging/aiming/illuminating performance.

PHASE I:

Conduct a feasibility study to assess what is in the art of the possible that satisfies the requirements specified in the above paragraphs entitled "Objective" and "Description". The objective of this USSOCOM Phase I SBIR effort is to conduct and document the results of a thorough feasibility study to investigate what is in the art of the possible within the given trade space that will satisfy a needed technology. The feasibility study should investigate all known options that meet or exceed the minimum performance parameters specified in this write up. It should also address the risks and potential payoffs of the innovative technology options that are investigated and recommend the option that best achieves the objective of this technology pursuit. The funds obligated on the resulting Phase I SBIR contracts are to be used for the sole purpose of conducting a thorough feasibility study using scientific experiments and laboratory studies as necessary. Operational prototypes will not be developed with USSOCOM SBIR funds during Phase I feasibility studies. Operational prototypes developed with other than SBIR funds that are provided at the end of Phase I feasibility studies will not be considered in deciding what firm(s) will be selected for Phase II.

PHASE II:

Develop, install, and demonstrate up to 12 prototype systems determined to be the most feasible solution during the Phase I feasibility study on a Miniature Aiming Ranging Laser (MARL) unit that will allow operators to illuminate and detect targets when using the PVS-31 or PVS-31A Binocular Night Vision Device (BNVD). This capability shall meet the requirements in the description above. The testing and demonstration will contain scenarios, environments, and test objectives to demonstrate program operational objectives.

PHASE III DUAL USE APPLICATIONS:

The MARL could be used for rapid target acquisition of compact rifles (CR's), assault rifles (AR's), lightweight medium

machine guns (LWMMG), Designated Marksmen Rifles (DMR's) along with pulse features utilized for signaling in both day and night environments in a broad range of military, law enforcement, and homeland security applications.

REFERENCES:

1) MIL-STD-810H DEPARTMENT OF DEFENSE TEST METHOD STANDARD ENVIRONMENTAL ENGINEERING CONSIDERATIONS AND LABORATORY TESTS

(<https://quicksearch.dla.mil/ImageRedirector.aspx?token=5755401.35978>);

2) MIL-STD-1913 NOTICE 1 MILITARY STANDARD DIMENSIONING OF ACCESSORY MOUNTING RAIL FOR SMALL ARMS WEAPONS (https://quicksearch.dla.mil/qsDocDetails.aspx?ident_number=115317);

3) Interface Control Document (ICD) for Weapon Mounted Ballistic Calculators and Micro-Displays Revision D or current. (Requests for this document shall be referred to U.S. Army ARDEC, ATTN: RDAR-WSF-N, Picatinny Arsenal, NJ 07806.)

KEYWORDS:

Optics; Laser; Target Engagement; Ranging; Ballistics

TPOC USERS:

TPOC-1: SOCOM SBIR

PHONE: N/A

EMAIL: sbir@socom.mil