

SOCOM221-D002: Ultra-Compact Long Range Machine Gun Optic

MODERNIZATION PRIORITIES:

General Warfighting Requirements (GWR)

TECHNOLOGY AREA(S):

Battlespace, Human Systems, Sensors, Weapons

OBJECTIVE:

The objective of this topic is to develop applied research toward an innovative capability that will allow operators to detect and engage targets for 0-2000 meters and beyond in day-night mounted and dismounted machine gun engagements. The intent of this optic is to provide a compact direct view optic to the operator that will not interfere with the operation of the machinegun, which includes immediate and remedial corrective actions. This 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:

With the advent of highly accurate and long range lightweight medium machine guns (LWMMG) weapon systems as well as the existing family of machine guns, a direct view sighting system is required to allow the operator to detect and engage targets at the effective range of those weapons. Existing direct view MGOs, while compact, provide limited overmatch as they do not have adequate magnification to detect and engage targets at the standoff distances of all enemy weapons. Due to the limited mounting space, a very specific and ultra-compact direct view MGO is required that is very short to properly mount and interface with these LWMMG weapons without interfering with machinegun operation. This topic is seeking information regarding advanced technology pertaining to advancements in materials, miniaturization, weight reduction, weapon shock and environmental durability, and direct view detect/recognize/identify 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 Ultra-Compact Long Range Machine Gun Optic (UCLR-MGO) unit that will allow operators to detect and engage targets for 0-2000 meters and beyond in day-night mounted and dismounted machine gun engagements. This capability shall meet the requirements in the description above. The testing and demonstration will contain scenarios, environments, and test objectives to demonstrate program and operational objectives.

PHASE III DUAL USE APPLICATIONS:

This UCLR-MGO could be used for fire control for lightweight medium and heavy machine guns as well as potentially squad and designated marksman rifles in a broad range of military, law enforcement, and homeland security applications

REFERENCES:

1) TC 3-22.249 LIGHT MACHINE GUN M249 Series May 2017 (<https://atiam.train.army.mil/catalog/dashboard>);

2) MIL-STD-810H DEPARTMENT OF DEFENSE TEST METHOD STANDARD ENVIRONMENTAL ENGINEERING CONSIDERATIONS AND LABORATORY TESTS (<https://quicksearch.dla.mil/ImageRedirector.aspx?token=5755401.35978>);

3) 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)

KEYWORDS:

Optics; Direct View Optics; Machine Gun Optics; Target Engagement

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