

SOCOM244-006: Digital Projection Close Quarters Sight (DP-CQS)

ADDITIONAL INFORMATION

N/A

TECHNOLOGY AREAS:

Electronics

MODERNIZATION PRIORITIES:

Human-Machine Interfaces | Microelectronics

KEYWORDS:

Red Dot; Weapon Optic; Digital Projection; HUD; Close Quarters; Reflex Sight

OBJECTIVE:

The objective of this topic is to develop applied research toward an innovative solution that will provide a compact, close-quarters sight that has multiple user-selectable and user-configurable ballistic reticles, while eliminating mechanical adjusters to improve system stability under thermal and mechanical shock by utilizing a digital screen projected onto a transparent surface for the user to look/aim through.

IMPORTANT: For SOCOM instructions: please visit: <https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/>. Go to the bottom of the page and click "DoD SBIR 24.4 Annual". Once there, go to the SOCOM SBIR 24.4

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:

As a part of this feasibility study, the proposers shall address all viable overall system design options with respective specifications to innovatively design a 1x (non-magnified) direct view optic that projects a digital screen/reticle onto a transparent surface for the operator to look/aim through. The DP-CQS shall allow the user to configure and store at least 3 different digital reticle configurations with different types of ballistic features and shall include the ability for the center dot/aim point to be brighter than other displayed features. The DP-CQS shall have no mechanical boresight adjusters and shall be designed as a sealed optical system with low Size Weight and Power (SWaP) with a 72-hour continuous battery run time, utilizing no more than 1x CR123 or L91 battery. The DP-CQS shall communicate with external devices to receive range/ballistic data, and user configured/updated reticles. The feasibility study should consider technologies to eliminate scattering of light to provide a sharp edge to all reticle features, while also minimizing unwanted color shift of the direct-view scene. The DP-CQS shall mount to a MIL-STD 1913 Rail.

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 ("Technology Readiness Level 3") 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 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 a prototype system determined to be the most feasible solution during the Phase I feasibility study on the DP-CQS.

PHASE III DUAL USE APPLICATIONS:

This system could be used in a broad range of military applications where multiple user-configurable aimpoints are needed – for the military market, this includes weapon systems that can utilize both super-sonic and sub-sonic ammunition or users that want ballistic drops for longer range engagements. Commercially this has similar applications for the competitive shooting market.

REFERENCES:

1. 1. “Types of Reticles Explained – Visual Guide”, Optics Planet, https://www.opticsplanet.com/howto/how-to-advanced-reticle-guide.html#BDC_Ballistic_Drop_Compensating_Reticles
2. 2. ”MIL-STD 1913 CHG 2: MILITARY STANDARD: DIMENSIONING OF ACCESSORY MOUNTING RAIL FOR SMALL ARMS WEAPONS (10 JUN 1999)” EverySpec, http://everyspec.com/MIL-STD/MIL-STD-1800-1999/MIL-STD-1913_CHG_NOTICE-1_17706/

TOPIC POINT OF CONTACT (TPOC):

TPOC-1: SOCOM SBIR
PHONE: N/A
EMAIL: sbir@socom.mil