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UNITED STATES SPECIAL OPERATIONS COMMAND
21.3 Small Business Innovation Research (SBIR)
Direct to Phase II Proposal Submission Instructions

In addition to the formal announcement period, the USSOCOM SBIR/STTR Program Office will be hosting a virtual USSOCOM Industry Day on 22 September 2021 for Topics Number SOCOM213-D005, D006, D007, and D008 only to further delineate requirements and stimulate small business/research institute partnership-building. Please visit https://events.sofwerx.org/sbir21.3/ for more information.

Introduction:

The United States Special Operations Command (USSOCOM) 21.3 Direct to Phase II proposal submission instructions cover Direct to Phase II proposals only and change/append the Department of Defense (DoD) instructions for Phase II submissions as they apply to USSOCOM Direct to Phase II requirements. The Government will evaluate only responsive proposals.

A thorough reading of the "Department of Defense Small Business Innovation Research (SBIR) Program, SBIR 21.3 Program Broad Agency Announcement (BAA)", located at https://rt.cto.mil/rtl-small-business-resources/sbir-sttr/, prior to reading these USSOCOM instructions is highly recommended. These USSOCOM instructions explain certain unique aspects of the USSOCOM SBIR Program that differ from the DoD Announcement and its instructions. The Offeror is responsible for ensuring that their proposal complies with the requirements in the most current version of these instructions. Prior to submitting your proposal, please review the latest version of these instructions as they are subject to change before the submission deadline.

These USSOCOM instructions explain USSOCOM specific aspects that differ from the DoD Announcement and its instructions.

Table 1: Consolidated SBIR Topic Information

Topic	Technical Volume (Vol 2)	Additional Info. (Vol 5)	Period of Performance	Award Amount
Direct to Phase II SOCOM213-D005	Not to exceed 10 pages not including Feasibility Appendix	15-page PowerPoint	Maximum 12 months	Not to Exceed $1,500,000.00
Direct to Phase II SOCOM213-D006	Not to exceed 10 pages not including Feasibility Appendix	15-page PowerPoint	Maximum 12 months	Not to Exceed $730,000.00
Direct to Phase II SOCOM213-D007	Not to exceed 10 pages not including Feasibility Appendix	15-page PowerPoint	Maximum 12 months	Not to Exceed $1,523,000.00
Direct to Phase II SOCOM213-D008	Not to exceed 10 pages not including Feasibility Appendix	15-page PowerPoint	Maximum 12 months	Not to Exceed $1,280,000.00
Direct to Phase II SOCOM213-D009	Not to exceed 10 pages not including Feasibility Appendix	15-page PowerPoint	Maximum 18 months	Not to Exceed $1,626,000.00

Contract Awards:

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SBIR awards for topic SOCOM213-D005 will be made under the authority of National Defense Authorization Act for Fiscal Year 2020, Section 851, PILOT PROGRAM FOR DEVELOPMENT OF TECHNOLOGY-ENHANCED CAPABILITIES WITH PARTNERSHIP INTERMEDIARIES. USSOCOM may use a partnership intermediary to award SBIR contracts and agreements to small business concerns. SOCOM213-D005 SBIR contract awards will be done through SOFWERX and result in a commercial contract between the firm and DEFENSEWERX. DEFENSEWERX will not conduct the evaluation of SOCOM213-003. The Government will conduct all evaluations for all topics. The Government will award all SBIR contracts for SOCOM213-D006, SOCOM213-D007, SOCOM213-D008, and SOCOM213-D009.

SBIR awards for the Direct to Phase II topics SOCOM213-D006, SOCOM213-D007, SOCOM213-D008, and SOCOM213-D009 will be awarded as a fixed price (level of effort type), Other Transactions Agreements (OTA). Successful completion of the prototype under an OTA may result in a follow-on production OTA or contract. Successful completion of the prototype is defined as meeting one or more threshold requirements. Firms may download the template at https://www.socom.mil/SOF-ATL/Pages/SBIR-21-3.aspx. The terms and conditions as well as the requirements are included in the OTA template provided in this solicitation. The terms and conditions of the Template OTA and the latest version of the OTA may be revised prior to execution. The document deliverables required for the effort are listed in the uploaded Statement of Objectives (SOO) for each topic. The OTA template uploaded is a basic draft and not tailored to the specific topic and is not the final document to be use in the award. Offerors must review these documents to develop their proposal.

The OTA template needs to be completed by only those Offerors selected for award and will be submitted directly to the Agreements Officer identified in the notification. Providing the completed OTA for those invited to present, is desirable but not required. The specific OTA template for each topic will be sent to those selected to present the slide deck.

Those selected for award would be required to enter their company information, expected milestones (Attachment 1), and provide a non-proprietary Statement of Work (SOW) following the format of the Statement of Objectives (SOO) (Attachment 3).

Protest Procedures

Refer to the DoD SBIR Program Announcement for procedures to protest the Announcement.

As further prescribed in FAR 33.106(b), FAR 52.233-3, Protests after Award should be submitted to the Contracting Officer (KO) from which the notice was generated and sent from.

Proposal Submission:

Firms must upload their proposals to the Defense SBIR/STTR Innovation Portal Proposal Submissions at https://www.dodsbirsttr.mil/submissions/login. Additional USSOCOM specific submission requirements for each volume are detailed below.

USSOCOM does not provide Discretionary Technical and Business Assistance for Direct to Phase II awards.

Technical Inquiries:

During the Pre-release Period of the DoD SBIR 21.3 Program BAA, all questions must be submitted in writing either by e-mail to sbir@socom.mil or to the online Defense SBIR/STTR Innovation Portal (DSIP) Topic Q&A. All questions and answers submitted to DSIP Topic Q&A will be released to the general

public. USSOCOM does not allow inquirers to communicate directly in any manner to the topic authors (differs from the DoD SBIR 21.3 Program BAA instructions). **All inquiries must include the topic number in the subject line of the e-mail.**

During the Open Period, no further direct contact between proposers and topic authors is allowed unless the Topic Author is responding to a question submitted during the pre-release period. However, proposers may submit written questions through Topic Q&A at https://www.dodsbirsttr.mil/submissions/login. In Topic Q&A, all questions and answers are posted electronically for general viewing. Identifying information for the questioner and respondent is not posted.

Site visits will not be permitted during the Pre-release and Open Periods of the DoD SBIR 21.3 Program BAA.

Proposal Volumes:
Volume 1: Cover Page is created as part of the DoD Proposal Submissions process.

Volume 2: Technical Volume
The Technical Volume shall not exceed 10 pages and will include all required items under the DoD SBIR 21.3 instructions. Any additional pages will be deleted from the proposal prior to evaluation, only the first 10 pages will be evaluated.

The technical proposal shall include a Statement of Work (SOW) with the planned tasks and descriptions to meet the Statement of Objectives (SOO) goals detailed. Do not upload the whole SOO as your SOW with your proposal. The SOO and CDRL are provided to help the Offerors consider the required goals, scope, and deliverables when developing the proposal, but it is an Offeror's responsibility to provide fully responsive, complete, and clear submissions. Exceptions to the requirements need to be identified/explained. The SOO, with the list of CDRLs are provided and can be downloaded from https://www.socom.mil/SOF-ATL/Pages/SBIR-21-3.aspx.

If an Offeror is selected for award, the Offeror will be required to submit a separate non-proprietary SOW with the planned tasks and descriptions from the proposal and all other applicable sections of the SOO and it shall include no proprietary information, data, or marking. The provided SOW will become Attachment 3 of the resulting OTA, incorporating any agreed upon changes if necessary.

Note: The Phase I feasibility Appendix (Appendix A) is required for the Direct to Phase II proposal and is specified in **Volume 5**.

Volume 3: Cost Volume
Offerors must complete the cost volume using the Phase II OTA Cost Proposal template posted on the USSOCOM Portal at https://www.socom.mil/SOF-ATL/Pages/SBIR-21-3.aspx, and read instructions before completing it. The Cost Proposal information (PDF format) shall be appended to and submitted in Volume 3. Those recommended for award shall submit the original cost proposal in Excel format.

For the Direct to Phase II topic in this announcement, the total price limit to provide a testable prototype is listed in Table 1 titled "Consolidated SBIR Topic Information". **Any proposal submitted with a total price above the provided limit will not be evaluated or considered for award.**

The final negotiated price of a USSOCOM Phase II SBIR contract will result from a determination of price fairness and reasonableness commensurate with the magnitude and complexity of the required research and development effort. The resulting agreement will be a firm priced agreement.

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Proposal information should include the itemized listing (a-h) specified below. The proposal information must include a level of detail that would enable the Government personnel to determine the purpose, necessity, and reasonability of the proposal and show an understanding of the scope of the work. It is requested that a breakdown of labor hours per labor category and other associated costs be provided **by task.** The Agreements Officer may request additional information to support price analysis or understand the approach if needed.

a. Special Tooling and Test Equipment and Material: The inclusion of equipment and materials will be carefully reviewed relative to need and appropriateness of the work proposed. The purchase of special tooling and test equipment must, in the opinion of the Contracting Officer, be advantageous to the Government and relate directly to the specific effort. They may include such items as innovative instrumentation and/or automatic test equipment. The reason for the requirement and the intention of offeror on disposition of the special material / equipment shall be documented in the proposal as well as the reason on why said equipment is charge directly to the effort rather than in the indirect cost of the business.

b. Direct Cost Materials: Justify costs for materials, parts, and supplies with an itemized list that includes item description, part number, quantities, and price.

c. Other Direct Costs: This category of costs includes specialized services such as machining or milling, special testing or analysis, and costs incurred in obtaining temporary use of specialized equipment. Proposals that include leased hardware must provide an adequate lease vs. purchase justification or rationale.

d. Direct Labor: For each individual, include the number of hours, and loaded rate to include all indirect costs. Identify key personnel by name if possible and labor category.

e. Travel: Travel costs must relate to the needs of the project. Proposed travel cost must be in accordance with the Federal Travel Regulation (FTR).

1. Per Diem Rates can be obtained at: http://www.gsa.gov/perdiem
2. The following information is documented –

   (i) Date (estimated), length and place (city, town, or other similar designation) of the trip;

   (ii) Purpose of the trip; and

   (iii) Number of personnel included in the estimate.

f. Cost Sharing: Cost sharing is permitted. However, cost sharing is not required, nor will it be an evaluation factor in the consideration of a proposal. Please note that cost share contracts do not allow fees/profit.

g. Subcontracts: Involvement of university or other consultants in the planning and/or research stages of the project may be appropriate. If the Offeror intends such involvement, describe in detail and include information in the cost proposal. The proposed total of all consultant fees, facility leases or usage fees, and other subcontract or purchase agreements may not exceed one-half of the total contract price or cost, unless otherwise approved in writing by the Agreements Officer.

Support subcontract costs with copies of the subcontract agreements. The supporting agreement documents must adequately describe the work to be performed (i.e., cost proposal) or provide a statement of work with a corresponding detailed proposal for each planned subcontract.

h. Consultants: Provide a separate agreement letter for each consultant. The letter should briefly state what service or assistance will be provided, the number of hours required and hourly rate.

Volume 4: Company Commercialization Report
CCR is required to be submitted with proposals in response to USSOCOM 21.3 SBIR topics. Please refer to the DoD 21.3 SBIR BAA for full details. Information contained in the CCR will not be considered during proposal evaluations.

Volume 5: Supporting Documents
In addition to the documentation outlined in the DoD STTR Program BAA, include the (1) Slide deck, (2) Feasibility Study, and (3) section K in this volume.

(1) Slide Deck: Potential Offerors shall submit a slide deck with the proposed technical solution **not to exceed 15 PowerPoint slides (includes introductory first slide)**. Must be separate and clearly marked. Any additional slides will not be evaluated, only slide 1-15 will be evaluated. It is recommended (but snot required) that more detailed information is included in the technical volume and higher-level information is included in the slide deck suitable for the 30 minutes presenting. Refer to the "Direct to Phase II Evaluations" Section of this instruction for more details.

(2) Feasibility Study: Offerors must provide documentation to satisfy the Phase I feasibility requirement as specified in the Phase I topic write-up. The documentation shall be included as a Feasibility Appendix in this volume. Offerors are required to provide sufficient information to determine, to the extent possible, the scientific, technical, and commercial merit and feasibility of ideas submitted, and that the feasibility assessment was performed by the Offeror and/or the Principal Investigator. **If the Offeror fails to demonstrate the scientific and technical merit, feasibility, and/or the source of the work, USSOCOM will not continue to evaluate the Offeror's proposal.** Refer to the topic's Phase I description under the Direct to Phase II topic to review the minimum requirements needed to demonstrate feasibility. There is no minimum or maximum page limitation for the Feasibility Appendix (Appendix A).

(3) Section K: The proposal must also include a completed Section K which does not count toward the page limit and should be uploaded with this volume. The identification of foreign national involvement in a USSOCOM SBIR topic is required to determine if a firm is ineligible for award on a USSOCOM topic that falls within the parameters of the United States Munitions List, Part 121 of the International Traffic in Arms Regulation (ITAR). A firm employing a foreign national(s) (as defined in paragraph 3.7 entitled "Foreign Nationals" of the DoD SBIR 21.3 Announcement) to work on a USSOCOM ITAR topic must possess an export license to receive a SBIR Phase II contract.

Volume 6: Fraud, Waste and Abuse Training
Fraud, Waste and Abuse (FWA) training is required for Phase I and Direct to Phase II proposals. Please refer to the DoD 21.3 SBIR BAA for full details.

Direct to Phase II Evaluations:
The Government will evaluate only responsive proposals.

USSOCOM evaluates Direct to Phase II proposals using the evaluation criteria specified in DoD 21.3 SBIR Announcement with the following exceptions/clarifications:

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1. Proposals missing technical volume, feasibility appendix, cost volume, or slide deck will not be evaluated or those that exceed the maximum price allowed as per Table 1 of this instructions. Those proposals will be considered non-responsive.

2. Feasibility determination. The Feasibility Appendix to the Phase II proposal will be evaluated first to determine that the Offerors demonstrated they have completed research and development to establish the feasibility of the proposed Phase II effort based on the criteria outlined in the topic description of Phase I**. USSOCOM will not continue evaluating the Offeror's related Phase II proposal if it determines that the Offeror failed to demonstrate that feasibility** has been established **or** the Offeror failed to demonstrate work submitted in the feasibility documentation was substantially performed by the Offeror and/or the Principal Investigator. Refer to the Phase I Topic description included in the Direct to Phase II topic to review the minimum requirements that need to be demonstrated in the feasibility documentation.

3. The technical evaluation will utilize the Evaluation Criteria provided in the DoD SBIR 21.3 BAA instructions. The Technical Volume and slide deck will be reviewed holistically. The technical evaluation is performed in two parts:

   Part I: The evaluation of the Technical Volume will utilize the Evaluation Criteria provided in the DoD SBIR 21.3 BAA instructions. Once the evaluations are completed, all Offerors will be notified as to whether they were selected to present their slide deck portion of their proposal.

   Part II: Selected Offerors will receive an invitation to present their slide deck (30-minute presentation time / 30-minute question and answer) to the USSOCOM technical evaluation team, using a virtual teleconference. This will be a **technical presentation** only of the proposed solution and the key personnel listed in the proposal should be conducting the presentation and responding to the questions of the evaluation team. This presentation is NOT intended for business development people but purely technical exchange. The technical approach and key personnel knowledge involved in the project will be considered. This presentation will complete the panel's evaluation of the proposal against the criteria listed in the DoD SBIR 21.3 BAA instructions. Notifications of selection/non-selection for Phase II award will be completed in a timely manner.

4. The Cost Volume (Volume 3) evaluation:

   For these direct to Phase II efforts, the award amount is set with not to exceed (NTE) amount. Technical evaluation of the proposals costs will be completed to assess the probability of success to obtain a working prototype. Proposals above the set NTE for the effort **will not** be considered for award. The team will assess the probability of success of the technical approach, presented for the efforts. The technical team will assess number of labor hours, labor categories, key personnel expertise and level of involvement, materials, equipment, subcontractors and consultants (scope of work, expertise, participation and proposed effort), travel and other direct cost to successfully complete the effort as proposed.

   The resulting award/s will be a fixed price OTA prototyping agreement and a successful prototype may lead to follow on production. Follow on production awards may be FAR based, Fixed Price or Cost-Plus Fixed Fee contracts. A Defense Contracts Audit Agency approved accounting system will be required to issue a Cost-Plus Fixed Fee contract.

Additionally, input on technical aspects of the proposals may be solicited by USSOCOM from non-Government consultants and advisors who are bound by appropriate non-disclosure requirements. Non-Government personnel will not establish final assessments of risk, rate, or rank Offeror's proposals. These

advisors are expressly prohibited from competing for USSOCOM SBIR awards. All administrative support contractors, consultants, and advisors having access to any proprietary data will certify that they will not disclose any information pertaining to this announcement, including any submission, the identity of any submitters, or any other information relative to this announcement; and shall certify that they have no financial interest in any submission. Submissions and information received in response to this announcement constitutes the Offeror's permission to disclose that information to administrative support contractors and non-Government consultants and advisors.

Selection Notifications:
The USSOCOM Contracting Office will notify the Offeror by e-mail of selection/non-selection for award. The e-mail notification will only be sent to the Corporate Official (Business) identified by the Offeror. The Government will also notify the Offerors if their proposal is considered non-responsive (disqualified).

Informal Feedback:
A non-selected Offeror can make a written request to the Contracting Officer, within 30 calendar days of receipt of notification of non-selection, for informal feedback. The Contracting Officer will provide informal feedback after receipt of an Offeror's written request rather than a debriefing as specified in the DoD SBIR 21.3 Announcement instructions.

USSOCOM SBIR Program Point of Contact:
Inquiries concerning the USSOCOM SBIR Program and these proposal preparation instructions should be addressed to sbir@socom.mil.

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USSOCOM SBIR 21.3 DIRECT TO PHASE II TOPIC INDEX

SOCOM213-D005	Micro Raman Technology
SOCOM213-D006	Squad Aiming Laser - Ultra High Power
SOCOM213-D007	High Performance Lightweight White Phosphor Image Intensification Clip-On
SOCOM213-D008	Remote Sniper Heads Up Display
SOCOM213-D009	Multi-Domain Virtual Innovation

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SOCOM213-D005 TITLE: Micro Raman Technology

RT&L FOCUS AREA(S): Microelectronics; 5G; General Warfighting Requirements (GWR)

TECHNOLOGY AREA(S): Chem/Bio Defense; Electronics; Sensors.

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.

OBJECTIVE: The objective of this topic is to develop applied research toward an innovative micro Raman capability through the creation of an inexpensive, spectroscopic technique which relies upon inelastic scattering of photons to provide the SOF Operators low-visibility scientific grade cellular phone or ATAC based attachment for quick stand-off identification of chemicals; bringing laboratory grade science to the tactical edge.

DESCRIPTION: As a part of this feasibility study, the proposers shall address all viable overall system design options with respective specifications on an orthogonal handheld Raman chemical, automated colorimetric identification system that is embedded on a cellular phone or ATAC platform.

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 micro Raman technology.

PHASE III DUAL USE APPLICATIONS: This system could be used in a broad range of military applications where non-destructive chemical analysis technique are employed to provide detailed information about chemical structure, phase and polymorphy, crystallinity and molecular interactions. Typical examples of commercial employment of Raman technology include:

- Art and archaeology – characterization of pigments, ceramics and gemstones;
- Carbon materials – structure and purity of nano-tubes, defect/disorder characterization.
- Chemistry – structure, purity, and reaction monitoring;
- Geology – mineral identification and distribution, fluid inclusions and phase transitions;
- Life sciences – single cells and tissue, drug interactions, disease diagnosis;
- Pharmaceutics – content uniformity and component distribution;
- Semiconductors – purity, alloy composition, intrinsic stress/strain microscope.

REFERENCES:

1. Jehlicka, Jan, Adam Culka, Lily Mana, and Aharon Oren. 2019. Comparison of Miniaturized Raman Spectrometers for Discrimination of Carotenoids of Halophilic Microorganisms. May 29. Accessed June 30, 2021. https://doi.org/10.3389/fmicb.2019.01155.

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KEYWORDS: raman; ATAC; colorimetric; spectroscopic; inelastic scattering; chemical analysis; microelectronics; forensics; chemistry; sensitive site; sensitive site exploitation; micro raman; raman technology; micro-raman technology

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SOCOM213-D006 TITLE: Squad Aiming Laser - Ultra High Power

RT&L FOCUS AREA(S): General Warfighting Requirements (GWR)

TECHNOLOGY AREA(S): Sensors; Weapons; Human Systems; Battle Space; Lasers

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.

OBJECTIVE: The objective of this topic is to develop applied research toward an innovative capability that will allow operators to illuminate and detect targets from 0-900 meters and beyond when using the PVS-31 or PVS-31A Binocular Night Vision Device (BNVD). The intent of this laser is to provide a compact, high powered aiming and illuminating system that will not interfere with the operation of the weapon platform that it is mounted on, which includes immediate and remedial corrective actions. This capability shall meet the requirements in the description below.

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, aiming, pointing, and illuminating laser is required to allow the operator to detect and engage targets at the effective range at night when using the BNVD. Existing squad weapon mounted lasers do not have the power output required to provide suitable stand-off and engagement ranges in the compact size that is required. This needed capability shall consists of the following characteristics:

This topic is seeking information regarding advanced technology pertaining to advancements in materials, miniaturization, weight reduction, weapon shock and environmental durability, and laser 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 SAL-UHP units 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 Squad Aiming Laser - Ultra High Power could be used for rapid target acquisition of compact rifles (CR’s), assault rifles (AR’s), lightweight medium machine guns (LWMMG) 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.

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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)

KEYWORDS: Optics; Weapon Mounted Lasers; Target Engagement; Laser

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SOCOM213-D007 TITLE: High Performance Lightweight White Phosphor Image Intensification Clip-On (LWPI2C)

RT&L FOCUS AREA(S): General Warfighting Requirements (GWR)

TECHNOLOGY AREA(S): Sensors; Weapons; Human Systems; Battle Space; Night Vision; Clip-On

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.

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 0-1500 meters and beyond in night engagements in the Near Infrared (NIR) spectrum. This capability shall meet the requirements in the description below.

DESCRIPTION: The AN/PVS-26 and AN/PVS-30 Night Vision Clip-On Weapon Sights have been proven systems in the 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. In addition, the transition to white phosphor image intensifier tubes over the past several years, for example, have provided better perceived contrast as well as the lower signal to noise ratio and higher resolution of these newer image intensifier tubes. Also, a significant reduction in weight is desired to reduce the payload of the operator.

This topic is seeking information regarding advanced technology pertaining to advancements in materials, miniaturization, weight reduction, weapon shock and environmental durability, and NIR 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 (“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 up to 12 prototype systems determined to be the most feasible solution during the Phase I feasibility study on a lightweight white phosphorus clip-on units that will allow operators to detect and engage targets for 0-1500 meters and beyond in 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 LWPI2C unit could be used for observation, fire control, and target engagement for various rifles platforms that have a monolithic or extended MIL-STD-1913 mounting rail systems in a broad range of military, law enforcement, and homeland security applications.

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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. JOINT PUB. 1-02, DOD DICTIONARY OF MILITARY AND ASSOCIATED TERMS; https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/dictionary.pdf

KEYWORDS: Optics; Night Vision; Clip-On; Target Engagement; Sniper; Sensors; Target Engagement; Image Intensification

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SOCOM213-D008 TITLE: Remote Sniper Heads Up Display

RT&L FOCUS AREA(S): General Warfighting Requirements (GWR)

TECHNOLOGY AREA(S): Sensors; Electronics; Battle Space; Human Systems; Weapons

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.

OBJECTIVE: The objective of this topic is to develop applied research toward an innovative capability that will allow operators to view critical target data from the LA-24/PEQ Precision Aiming Laser (PAL) while maintaining security and situational awareness. This capability shall meet the requirements in the description below.

DESCRIPTION: The Special Operations Forces (SOF) Sniper is faced with a dynamic battlefield and evolving enemy. SOF has recently began fielding 7-35 power scopes in conjunction with the highly accurate, long range MK22 Advanced Sniper Rifle (ASR) weapon system, as well as the continued fielding of the existing family of sniper rifles and designated marksmen rifles. A light weight, compact, rifle-mounted heads up display (HUD) is needed in order for the SOF Sniper to maintain the lethal advantage. A HUD that puts real-time information from the LA-24/PEQ to the operator's non-shooting eye for rapid engagement of multiple targets is required.

This topic is seeking information regarding advanced technology pertaining to advancements in materials, miniaturization, weight reduction, and weapon shock and environmental durability.

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 OBJECTIVE: Develop, install, and demonstrate up to 12 prototype systems determined to be the most feasible solution during the Phase I feasibility study on a Remote Sniper Heads Up Display (RSHUD) units that will allow operators to rapidly receive live ballistic information from the LA-24/PEQ and engage multiple targets. 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 RSHUD could be used for rapid target acquisition for Sniper weapons and Designated Marksman Rifles as well as potentially machine guns 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.

KEYWORDS: HUD; Display; Micro-display; Sniper; Optics; Direct View Optics; Target Engagement

VERSION 3

SOCOM213-D009 TITLE: Multi-Domain Virtual Innovation

RT&L FOCUS AREA(S): Microelectronics; General Warfighting Requirements (GWR)

TECHNOLOGY AREA(S): Information Systems; Sensors; Electronics

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. Offers' 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.

OBJECTIVE: The objective of this SBIR is to develop a prototype innovative platform that supports and manages ability for Operators to participate in real-world collaboration events and environments.

DESCRIPTION: Operators need the ability to remotely discover and interact with the Internet of Things (IoT) innovation infrastructure of Smart City systems, tools, sensors, components, networks, and controllers. All technology for this platform should use broadly available commercial off the shelf (COTS) Smart City technologies or be assembled primarily from COTS. All software should be based on and/or carry an Open Source license that does not restrict Government Use. All data formats should, to the degree possible, conform to existing and/or emerging Open Standards.

PHASE I: Conduct a feasibility study to assess what is in the art of the possible that satisfies the requirements specified in the above paragraph entitled "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 a Multi-Domain Virtual Innovation.

PHASE III DUAL USE APPLICATIONS: This system could be used in a broad range of military applications where virtual participants need more parity with in-person participants.

REFERENCES:

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2. FIT IoT Lab, 06/25/2021. https://www.iot-lab.info/ ;
3. A Smart Cities Complete View of Big Data, 06/25/2021. https://visco.no/MediaContent/SMART%20CITIES%20Complete%20view%20of%20big%20data....pdf ; 242.
4. Military Implications of Smart Cities, 06/04/2020. https://madsciblog.tradoc.army.mil/242-military-implications-of-smart-cities/ ;
5. MONICA Pilots, 05/15/2020. https://www.cnet.se/news/monica-pilots/;

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12. Penetration Testing for Internet of Things and Its Automation, 2018. https://ieeexplore.ieee.org/document/8622982

KEYWORDS: Internet of Things (IoT); infrastructure; Smart City systems; Open Source; Open Standards