March 27, 2023

IRREGULAR WARFARE TECHNICAL SUPPORT DIRECTORATE (IWTSD)

BROAD AGENCY ANNOUNCEMENT (BAA) 23S4432
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Due Date for Receipt of Phase 1 Submissions:

No Later Than April 27, 2023
All submissions are due by 3:00 p.m. Eastern Daylight Time (EDT) on the above date

Advanced Analytics (AA)
Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE)
Explosive Ordnance Disposal and Explosive Operations (EOD-EXO)
Human Performance and Training (HPT)
Indirect Influence and Competition (I2C)
Protection, Survivability, and Recovery (PSR)
Surveillance, Collection, and Operations Support (SCOS)
Tactical Offensive Support (TOS)

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The Broad Agency Announcement Information Delivery System (BIDS) is the system in which all submissions and communications will flow. Communications outside of BIDS may result in expulsion from the competition.

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1. INTRODUCTION.

This is an Irregular Warfare Technical Support Directorate (IWTSD) Broad Agency Announcement (BAA) issued under the provisions of paragraph 6.102(d)(2)(i) of the Federal Acquisition Regulation (FAR) to provide for the competitive selection of research proposals. Contracts based on responses to this BAA are considered to be the result of full and open competition and in full compliance with the provisions of Public Law (PL) 98-369 Section 2701, "The Competition in Contracting Act." Awards for submissions under this BAA are planned for Fiscal Year (FY) 2024. No contract awards will be made until appropriated funds are available from which payment for contract purposes can be made.

[NOTE: Persons submitting proposals are advised that only the Contracting Officer can obligate the Government to any agreement involving expenditure of Government funds.]

1.1. Approach.

A three-phased proposal selection process will be used for this BAA to minimize cost and effort for prospective offerors:

- Phase 1 will consist of the solicitation, receipt, and evaluation of a one-page Quad Chart and a one-page addendum.

- Phase 2 will consist of the solicitation, receipt, and evaluation of a White Paper and applies to only those submissions that have been accepted in Phase 1.

- Phase 3 will consist of the solicitation, receipt, and evaluation of a Full Proposal and applies to only those submissions that have been accepted in Phase 2. Based on the priority of critical requirements and the availability of funding, Phase 1 submissions can be selected for Phase 3 without a Phase 2 submission.

Clarifications to White Papers and Full Proposals may be requested.

1.1.1 Type of Proposals.

Firm-fixed-price proposals are preferred for all requirements published in this BAA.

1.1.2. Cost Type Contracts

Offerors interested in cost type contracts (to include Cost Plus Fixed Fee options) must have an accounting system determined adequate by Defense Contract Auditing Agency/ Defense Contract Management Agency (reference FAR 16.301-3(a)(3)). If no determination has been made, please contact BIDSHelp@iwtsd.gov for further guidance.

1.2. Small Business Set Aside.

The Government encourages nonprofit organizations, educational institutions, small businesses, small disadvantaged business (SDB) concerns, Historically Black Colleges and Universities (HBCU), Minority Institutions (MI), women-owned businesses, and Historically Underutilized Business zone enterprises as well as large businesses and Government laboratories to submit research proposals for consideration and/or to join others in submitting proposals; however, no

portion of the BAA will be set aside for these special entities because of the impracticality of reserving discrete or severable areas of research and development (R&D) in any specific requirement area.

1.3. Limitation of Funds.
The Government intends to incrementally fund Cost Reimbursement contracts awarded from this BAA as provided by FAR 52.232-22, "Limitation of Funds." Most contracts awarded are anticipated to be 12 to 24 months in duration and at times may include additional 6 to12 month option(s). To facilitate incremental funding, submissions shall include the cost and schedule by a task-phased structure with clear exit criteria, and shall be inclusive of all work to complete the effort including any options. It is anticipated that the entire effort will be negotiated with the initial contract award.

[NOTE: Based upon the availability of funding, the Government may have to partially fund Fixed Price contracts in accordance with DFARS 252.232-7007, "Limitation of Government's Obligation." In such cases, milestone payments will need to be a part of the full proposal. Applicability of this issue will be stated in the email asking for a Phase 3 proposal.]

1.4. Technical Evaluation Support.
It is the intent of this office to use contractor support personnel in the review, evaluation, and administration of all submissions for this BAA. All contractor support personnel will have access to proprietary data and shall certify that they: (1) will not disclose any information pertaining to this solicitation including any submissions, the identity of any submitters, or any other information relative to this BAA; and (2) have no financial interest in any submissions evaluated, reviewed, and administered. Submissions and information received in response to this BAA constitutes permission to disclose that proposal data to certified evaluators under these conditions.

1.5. BAA Package Download.
This BAA Package can be downloaded electronically in its entirety from IWTSD BAA Information Delivery System (BIDS), https://bids.iwtsd.gov/, under Resources. Registration is not required to download the BAA package; however, BIDS registration is required to upload a response to the BAA.

1.6. BAA Contractual and Technical Questions.
All contractual and technical questions regarding this BAA, including the published requirements and instructions, must be posted via either the BAA and Requirement Questions feature, accessible from the BIDS homepage via Have a Question?, or emailed to BIDSHelp@iwtsd.gov. No other office personnel will acknowledge, forward, or respond to any inquiries received in any manner concerning the BAA. All questions must be received no later than 14 days after the release of the final BAA. Contractual questions and answers will be posted periodically under BAA Questions. Offerors are encouraged to periodically review BAA Questions, accessible from the BIDS homepage via Have a Question?.

1.7. BIDS Website Help Requests.
For technical help using BIDS, submit questions to BIDSHelp@iwtsd.gov or by using the button

located under Have a Question?. Include a valid email address, your BIDS username, and a detailed description of the question or concern in the comments block. BIDS provides other valuable resources, such as Doing Business with the Government. Reference documents noted in this BAA, such as the Quad Chart Sample and IWTSD Cost Proposal Template, are available for download under Resources on the homepage menu bar.

A list of BIDS FAQs can be found in the Have a Question? section of BIDS.

2. GENERAL INFORMATION.

This section includes information applicable to all awards under this BAA.

2.1. Eligibility.

To be eligible for contract award, a responsible offeror must meet certain minimum standards pertaining to financial solvency and resources, ability to comply with the performance schedule, prior record of satisfactory performance, integrity, organization, experience, operational controls, technical skills, facilities, and equipment. See FAR 9.104.

- All offerors must be registered in the System for Award Management (SAM) database prior to award at https://sam.gov/.

Other helpful information is provided under Doing Business with the Government on the BIDS homepage.

2.1.1. Who is eligible?

All private companies, educational institutions, non-profit organizations both large and small are able and encouraged to submit to the IWTSD BAA.

2.1.2. Federally Funded Research and Development Centers.

Only DoD-Sponsored Federally Funded Research and Development Centers (FFRDCs) can compete with commercial sector Vendor submissions and will be evaluated using the normal BAA process. For further information, reference DFARS 235.017-1.

2.1.3. Research Development and Engineering Centers (RDECs).

DoD Research Development and Engineering Centers (RDEC)s)/Labs, e.g., Naval Research Lab (NRL) may submit to the IWTSD BAA. Submissions from RDECs/DoD Labs will be evaluated only after all commercial sector Vendor and DoD-Sponsored FFRDC submissions have been evaluated and determined that such submissions did not meet the BAA requirement.

IWTSD will inform the RDECs through a BIDS notification at time of submitter registration that RDEC submissions will be reviewed last in the process, i.e., after all commercial sector Vendor and DoD Sponsored FFRDC submissions are reviewed and determined that none meet the BAA requirement. RDECs/DoD Labs will also be informed of this condition during registration in the BIDS system.

If an RDEC's/DoD Lab's submission meets the BAA requirement and all other commercial sector Vendor/DoD-Sponsored FFRDC submissions have been exhausted (i.e., post non-select), correspondence with the RDEC will occur directly (Government to Government) to establish a SOW, deliverables, and MIPR/Work Order to commence the project.

2.2. Procurement Integrity, Standards of Conduct, Ethical Considerations.

Certain post-employment restrictions on former federal officers and employees exist including special Government employees (Section 207 of Title 18, United States Code (U.S.C.)). If a prospective offeror believes that a conflict of interest exists, the offeror should make this known to the Contracting Officer for resolution before time and effort are expended in preparing a proposal.

2.3. Representation Regarding Certain Telecommunications and Video Surveillance Services or Equipment.

FAR provision 52.204-24 applies to all BAA requirements. The full text of FAR provision 52.204-24 is below.

52.204-24 Representation Regarding Certain Telecommunications and Video Surveillance Services or Equipment (Nov 2021)

The Offeror shall not complete the representation at paragraph (d)(1) of this provision if the Offeror has represented that it "does not provide covered telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument" in paragraph (c)(1) in the provision at 52.204-26, Covered Telecommunications Equipment or Services—Representation, or in paragraph (v)(2)(i) of the provision at 52.212-3, Offeror Representations and Certifications-Commercial Products or Commercial Services. The Offeror shall not complete the representation in paragraph (d)(2) of this provision if the Offeror has represented that it "does not use covered telecommunications equipment or services, or any equipment, system, or service that uses covered telecommunications equipment or services" in paragraph (c)(2) of the provision at 52.204-26, or in paragraph (v)(2)(ii) of the provision at 52.212-3.

(a) *Definitions.* As used in this provision—

Backhaul, covered telecommunications equipment or services, critical technology, interconnection arrangements, reasonable inquiry, roaming, and substantial or essential component have the meanings provided in the clause 52.204-25, Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

(b) *Prohibition.* (1) Section 889(a)(1)(A) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2019, from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service that uses covered

telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. Nothing in the prohibition shall be construed to—

(i) Prohibit the head of an executive agency from procuring with an entity to provide a service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(ii) Cover telecommunications equipment that cannot route or redirect user data traffic or cannot permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(2) Section 889(a)(1)(B) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2020, from entering into a contract or extending or renewing a contract with an entity that uses any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. This prohibition applies to the use of covered telecommunications equipment or services, regardless of whether that use is in performance of work under a Federal contract. Nothing in the prohibition shall be construed to—

(i) Prohibit the head of an executive agency from procuring with an entity to provide a service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(ii) Cover telecommunications equipment that cannot route or redirect user data traffic or cannot permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(c) *Procedures*. The Offeror shall review the list of excluded parties in the System for Award Management (SAM) (https://www.sam.gov) for entities excluded from receiving federal awards for "covered telecommunications equipment or services".

(d) *Representation.* The Offeror represents that—

(1) It □ will, □ will not provide covered telecommunications equipment or services to the Government in the performance of any contract, subcontract or other contractual instrument resulting from this solicitation. The Offeror shall provide the additional disclosure information required at paragraph (e)(1) of this section if the Offeror responds "will" in paragraph (d)(1) of this section; and

(2) After conducting a reasonable inquiry, for purposes of this representation, the Offeror represents that—

It □ does, □ does not use covered telecommunications equipment or services, or use any equipment, system, or service that uses covered telecommunications equipment or services.

The Offeror shall provide the additional disclosure information required at paragraph (e)(2) of this section if the Offeror responds "does" in paragraph (d)(2) of this section.

(e) *Disclosures.* (1) Disclosure for the representation in paragraph (d)(1) of this provision. If the Offeror has responded "will" in the representation in paragraph (d)(1) of this provision, the Offeror shall provide the following information as part of the offer:

(i) For covered equipment—

(A) The entity that produced the covered telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the original equipment manufacturer (OEM) or a distributor, if known);

(B) A description of all covered telecommunications equipment offered (include brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); and

(C) Explanation of the proposed use of covered telecommunications equipment and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(1) of this provision.

(ii) For covered services—

(A) If the service is related to item maintenance: A description of all covered telecommunications services offered (include on the item being maintained: Brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); or

(B) If not associated with maintenance, the Product Service Code (PSC) of the service being provided; and explanation of the proposed use of covered telecommunications services and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(1) of this provision.

(2) Disclosure for the representation in paragraph (d)(2) of this provision. If the Offeror has responded "does" in the representation in paragraph (d)(2) of this provision, the Offeror shall provide the following information as part of the offer:

(i) For covered equipment—

(A) The entity that produced the covered telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the OEM or a distributor, if known);

(B) A description of all covered telecommunications equipment offered (include brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); and

(C) Explanation of the proposed use of covered telecommunications equipment and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(2) of this provision.
(ii) For covered services—

(A) If the service is related to item maintenance: A description of all covered telecommunications services offered (include on the item being maintained: Brand; model number, such as OEM number, manufacturer part number, or wholesaler number; and item description, as applicable); or

(B) If not associated with maintenance, the PSC of the service being provided; and explanation of the proposed use of covered telecommunications services and any factors relevant to determining if such use would be permissible under the prohibition in paragraph (b)(2) of this provision.

(End of provision)

2.4. Restrictive Markings on Proposals.

All proposals should clearly indicate content disclosure limitations. Submissions can be marked as "Proprietary" or words to that effect; however, markings such as "Company Confidential" or other phrases that could be confused with national security classifications shall not be used. All paragraphs that contain proprietary information must be clearly marked. The Contracting Officer may challenge proprietary markings if they are not substantiated.

2.5. Submission Handling/Rights in Technical Data and Computer Software/Patent Rights.

2.5.1. Procurement Integrity.

The Government shall comply with FAR 3.104 in its treatment of information submitted in response to this BAA solicitation and marked with the individual's or company's legend.

2.5.2. Submission Information and FOIA.

Records or data bearing a restrictive legend can be included in the proposal. However, the offeror is cautioned that portions of the proposal are subject to release under the terms of the Freedom of Information Act (FOIA), 5 U.S.C. § 552, as amended. In accordance with FOIA regulations, the offeror will be afforded the opportunity to comment on, or object to, the release of proposal information.

2.5.3. Rights in Technical Data and Computer Software.

Rights in technical data and computer software and software documentation provided in the proposal are treated in accordance with the Department of Defense Federal Acquisition Regulation Supplement (DFARS) 252.227-7016, "Rights in Bid and Proposal Information." Rights in technical data, and computer software and computer software documentation in the resultant contract shall be in accordance with DFARS 252.227-7013 (regarding technical data) and DFARS Section 252.227-7014 (regarding

computer software and software documentation). Both clauses (DFARS sections 252.227-7013 and 252.227-7014) will be included in any noncommercial contract exceeding the simplified acquisition threshold. Table 1 contains these and related clauses that may be included in the contract.

Table 1. Contract Clauses	
DFARS	**Title**
252.227-7013	Rights in Technical Data – Noncommercial Items
252.227-7014	Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation
252.227-7016	Rights in Bid and Proposal Information
252.227-7017	Identification and Assertion of Use, Release, or Disclosure Restrictions
252.227-7019	Validation of Asserted Restrictions - Computer Software
252.227-7025	Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive
252.227-7027	Deferred Ordering of Technical Data or Computer
252.227-7028	Technical Data or Computer Software Previously Delivered to the Government
252.227-7030	Technical Data - Withholding of Payment
252.227-7037	Validation of Restrictive Markings on Technical Data

2.5.4. Patents.
Patents in existence and patent applications pending at the time of the proposal, which relate to the proposed effort, shall be identified in the White Paper and Full Proposal in accordance with the clauses above.

2.6. Product and Deliverable Requirements.

All proposal phases shall include the costs for products and data deliverable requirements. Minimum data (report) requirements include Monthly Status Reports (MSRs), meeting minutes and a Final Technical Report even if the research is to be continued under a follow-on contract or contract option. MSRs document program, technical, and financial status. The Final Technical Report summarizes the project and associated tasks at the conclusion of each contract. Include MSRs, the Final Technical Report, and any products and deliverables specific to the performance of the proposed effort (e.g., system specification). The Government will provide the offeror with a full listing of data deliverables (i.e., Contract Data Requirements List) in the request for Phase 3 Full Proposal. Additional products and deliverables could include prototype hardware, software, or systems; test plans; test and technical reports; technical data; specifications; requirements documents; computer programs or software; user manuals; drawings; or other products and data. The number, types, and preparation instructions for products and deliverables will be specified in the contract.

2.7. Distribution/Release Limitations.

The offeror should be aware that all resulting contracts or other awards will contain release limitations for all data resulting from the effort in accordance with DFARS 252.204-7000. This includes products, data, information, and services to be performed. The contractor shall protect all data and information from disclosure, and shall not release any data or information by any

method of dissemination without prior Government approval.

2.8. Subcontracting.
Pursuant to Section 8(d) of the Small Business Act (15 U.S.C. § 637(d)), it is the policy of the Government to enable small business and small disadvantaged business concerns to be considered fairly as subcontractors to contractors performing work or rendering services as prime contractors or subcontractors under Government contracts, and to assure that prime contractors and subcontractors carry out this policy.

2.9. Animal or Human Testing Compliance.
The contractor shall comply with all laws and regulations governing the use of animals or human subjects in research projects. Information regarding compliance requirements for using humans and animals in testing is also available on BIDS under Resources.

2.9.1. Animal Testing.
Any contract resulting from this BAA that potentially involves the testing of animals shall include the following language:

> Any contractor performing research on warm blooded vertebrate animals shall comply with the Laboratory Animal Welfare Act of 1966, as amended, 7 U.S.C. §§ 2131 - 2159, and the regulations promulgated thereunder by the Secretary of Agriculture in 9 C.F.R. Parts 1 through 4, pertaining to the care, handling, and treatment of vertebrate animals held or used for research, teaching, or other activities supported by Federal contract awards. In addition, the contractor shall comply with the provisions of Department of Defense Instruction (DoDI) 3216.01, as implemented by SECNAVINST 3900.38C, and DFARS 252.235-7002, "Animal Welfare," which is incorporated into this contract.

2.9.2. Human Subjects Testing.
Any contract resulting from this BAA that potentially involves the use of human subjects in the research or study shall include the following language:

The contractor shall comply with all regulations promulgated by the Office of the Secretary of Defense in 32 C.F.R. Part 219, pertaining to the protection of human subjects. In addition, the contractor shall comply with the provisions of DoDI 3216.02 and DFARS clause 252.235-7004. If human subjects are to be used at any time during the project, the contractor shall have a Federal assurance that is acceptable to IWTSD before involving human subjects. Additionally, the protocol shall be approved by a Federally-assured Institutional Review Board (IRB) office named in the institution's assurance. The contractor shall prepare these documents and shall ensure that they are on file with IWTSD prior to the start of research involving human subjects. Collaborators with the contractor, to include IRBs, shall also comply with regulations to protect human subjects for both classified and unclassified research. The contractor shall report all changes in the protocol or consent form to the IWTSD Contracting Officer's Representative as they occur. Release of initial and follow-up funding will be contingent upon initial and continuing reviews, and to other IRB and component requirements.

2.10. Submission Document Language.

All submission documents must be in English.

2.11. Risk Management Framework.

The DoD requires all solutions that use information technology to follow current best practices for maintaining cybersecurity. Standards and compliance apply even if the solution is a component of a larger system. Information technology systems must be compliant with the DoD Risk Management Framework as described in DoD Instruction 8500.01. Compliance with this instruction ensures all projects account for information security from requirements gathering to implementation, maintenance and continuous monitoring.

3. PROPOSAL PREPARATION.

This section provides information and instructions for the preparation and submission of all phases under this BAA. All submissions must meet these requirements including format, content, and structure, and must include all specified information to avoid disqualification, submission rejection, or delays in evaluation.

3.1. BAA Information Delivery System (BIDS).

BIDS at https://bids.iwtsd.gov/ is used: (1) to provide public access to the BAA package; (2) to collect all unclassified submissions; and (3) to collect placeholder records for all classified submissions. BIDS also provides submission progress tracking, evaluation comment collection, and results notification back to the submitter.

3.1.1. Submitter Registration.

A BIDS submitter registration is required to respond to this BAA. A new BIDS system was activated on February 15, 2020. All vendors who had registered before this date, must re-register in the system. Registrations should reflect the offeror's contracting or business authority. The username, created by the offeror, must be unique and is used for BIDS log in and submission tracking. Registration acceptance for submitters is automatic, but takes several seconds to be recognized by BIDS. A success email will be sent to indicate that the username and account are accepted. BIDS is email dependent and uses the registration email as the single point of contact (POC) for all notifications associated with the BAA. This email address should be monitored frequently during the BAA process for the notices. Submitters should periodically check status in their account, not receiving a notification email does not constitute grounds to appeal an evaluation decision. Spam blockers and other email security software may cause a notification email to be rejected; check your account. Email addresses included in the submissions or any other data field in BIDS will not be used for contact and notification purposes.

3.1.2. User Accounts and Password Resets.

Registration account information such as the POC, email, and password can be updated after log in. The Forgot your Password? link on the BIDS login page allows registered users with a valid username to automatically reset a password. The system will verify the account username and email and then send a new password to that email.

3.1.3. Registration and Account Help.
BIDS help requests can be emailed to BIDS administrators at BIDSHelp@iwtsd.gov or submitted via the button located on the Have a Question? page.

3.1.4. Document Identifier.
The offeror shall include the document identifier in the header of each submission. Document identifiers must match the BIDS submission record and should be constructed before upload to BIDS.

3.1.4.1. Constructing Document Identifiers.
Document identifiers, auto-generated in part by BIDS, are based on Subgroup, the requirement number, the username, and a Vendor Internal Tracking (VIT) number. The underlined portion of the sample shown in Table 2 depicts the segment automatically formed by BIDS.

Table 2. Sample Document Identifier and Components Definition

CBRNE-1112-ABCCORP-10703JT-QC	
From Sample	Document Identifier Component
CBRNE	subgroup designation - from BAA
1112	requirement number - from BAA
ABCCORP	username - from BIDS registration
10703JT-QC	VIT number - any alphanumeric combination (with no special characters or spaces) created by the submitter for (submitter) tracking purposes along with the **document type suffix**

3.1.4.2. Creating Vendor Internal Tracking (VIT) Numbers.
VIT numbers are unique identifiers created by submitters and entered in the submission record during the upload process. VIT numbers can be any alphanumeric combination (no special characters or spaces) chosen by the submitter plus a suffix indicating the document type. BIDS enforces unique VIT numbers and will not allow the submission record to be saved if the VIT number has already been used. Table 3 provides sample VIT numbering formats for each document type.

Table 3. Sample VIT Numbers for an Accepted Submission

Document Type	Auto-generated by BIDS	VIT#
Quad Chart +1-page addendum	CBRNE-1112-ABCORP	10703JT-QC
White Paper	CBRNE-1112-ABCORP	10703JT-WP
Full Proposal	CBRNE-1112-ABCORP	10703JT-FP

Offerors uploading more than one submission to the same requirement shall create unique identifiers by adding a numbered sequence to the document type suffix. Table 4 offers sample VIT number formats for multiple submissions to the

same requirement.

Table 4. Sample VIT Numbers for Multiple Submissions to the Same Requirement

Submission #	Auto-generated by BIDS	VIT# Sample 1	VIT# Sample 2*
Submission 1	CBRNE-1112-	10703JT-QC1	QC1
Submission 2	CBRNE-1112-	10703JT-QC2	QC2
Submission 3	CBRNE-1112-	10703JT-QC3	QC3
* NOTE: If the submitter does not require an internal tracking number, use the document type designation.			

3.2. BIDS Security and Access Control.

All data uploaded to BIDS is secure from public view and download. All submissions will be considered proprietary/source selection sensitive and protected accordingly. The documents can only be reviewed by the registrant and authorized Government and contractor representatives with no conflict of interest.

3.3. Submission Changes.

Changes to uploaded submissions are permitted up to the closing date and time. If a modification is required, update the original file in the source application and save. Convert to an acceptable format (detailed below) if applicable. In BIDS, open the submission record under **Previously Uploaded Proposals**. Only submissions with the **Update Proposal** status can be modified. Changes can be made after clicking on the submission link. Click on the trash icon to delete the old file. Use **Choose File** to select the revised document. Click **Save Proposal** to save the changes. Documents cannot be edited online through the BIDS interface. File names must contain no spaces or special characters. Ensure the file size does not exceed the prescribed limits. To completely remove a submission from consideration, select **Delete Proposal**. Changes after the submission due date and time are not permitted.

3.4. Special Handling Procedures for Classified Information.

If a submission contains classified information, the offeror must first create a placeholder record in BIDS with an unclassified cover page attachment. Identify in the placeholder document that the submission cannot be uploaded due to classification and include the method of delivery (hand-carried, secure fax, secure mail, etc.) as well as the tracking number, if applicable. The BIDS Document Identifier must be clearly identified on the mailed document(s). Classified responses (up to SECRET) must be appropriately and clearly marked (including all paragraphs and pages containing the subject data), packaged, and shipped in accordance with classified material handling procedures and security regulations pertaining to the level of classification for that document. To obtain mailing instructions for classified submissions, email: BIDSHelp@iwtsd.gov.

Classified submissions must be received by the applicable due date and time. Classification in no way eliminates the offeror's requirement to comply with all BAA instructions.

3.5. Phase 1 Submissions.

Offerors shall prepare and upload a one-page Quad Chart and a one-page addendum in response to Phase 1 of this BAA. All pages shall be 8 ½ by 11 inches. Use Times New Roman font size 10 point or greater. Single spacing is preferred for the addendum. If more than two pages (i.e., the Quad Chart plus the addendum) are submitted, only the first two pages will be evaluated. Phase 1 submissions do not require a cover page.

3.5.1. Phase 1 Due Date and Time.
All unclassified Quad Charts must be received electronically through BIDS no later than 1500 (3:00 p.m.) Eastern Daylight Time (EDT) on the date specified on the cover of this document. Likewise, classified submissions must be received by the same due date and time. Offerors must create a placeholder record in BIDS with an unclassified cover page attachment. Refer to section 3.4 of this BAA for instructions on classified submissions. BIDS does not allow proposals to be uploaded or classified placeholders to be created after the closing date and time. Any proposal, regardless of classification, submitted by any other means, or that is late, will not be considered by the Government. Avoid the last minute rush; submit early.

3.5.2. Electronic File Format.
The Quad Chart and addendum shall be submitted in a single file. This file must be in Portable Document Format (.pdf). Adobe Acrobat and MS Word can generate such files. The document must be print-capable, without password, and no larger than 1024 KB. File names cannot contain spaces or special characters. Apple users must ensure the entire file name and path are free of spaces and special characters. Submissions that cannot be opened, viewed, or printed will not be considered.

[NOTE: ZIP files and other application formats, such as Microsoft Office (.docx or .pptx) are NOT acceptable.]

3.5.3. Quad Chart and Addendum Content.
A Quad Chart conveys the essence of the proposed solution for a single requirement. When preparing a submission, the offeror shall ensure that the specific criteria of the requirement are addressed, the solution is clear, and can be accomplished with the proposed technology, cost, and schedule. The Quad Chart includes a document header and four quadrants. The Quad Chart format and sample are provided on BIDS under Resources.

3.5.3.1. Header Information.
Header information shall include the BAA number, the Document Identifier, and the Proposal Title. The date and company name should be included along with the appropriate document markings.

3.5.3.2. Top Left Quadrant, Graphical Depiction.
The top left quadrant is a graphical depiction, photograph, or artist's concept of the proposed solution or prototype. Include labels or brief descriptive text as needed for clarification. Ideally, this will convey the prototype concept, use, capability, and any relevant size or weight relationships based on the published

requirement.

3.5.3.3. Top Right Quadrant, Operational and Performance Capabilities.
The top right quadrant contains the operational and performance capabilities summary. Describe any basic, new, or enhanced capabilities the system will provide to meet the published requirement. In bullet form, list key aspects of performance, capability, operational use, relevant software or hardware specifications, and planned interface and/or compatibility.

3.5.3.4. Bottom Left Quadrant, Technical Approach.
The bottom left quadrant contains the proposed technical approach. Specifically, describe the technology involved, how it will be used to solve the problem, actions done to date, and any related ongoing efforts. Briefly describe the tasks to be performed for each phase. A bulleted list is acceptable.

3.5.3.5. Bottom Right Quadrant, Cost and Schedule.
The bottom right quadrant contains the Rough Order of Magnitude (ROM) and Schedule, Products and Deliverables, and Corporate Contact Information. ROM and Schedule shall be proposed by phase and include the cost, period of performance (POP), and exit criteria for each phase. A total cost and POP that combines all phases, all applicable data requirements and minimum data report requirements (e.g., MSR, meeting minutes, Final Technical Report, etc.) shall also be included. Products and Deliverables shall include, by phase, a list of all prototype hardware and software along with the required data as described in "Product and Deliverable Requirements" in section 2.6. of this document. Corporate contact information shall include the submitter's company name, POC, phone number, and email address. Include any significant teaming partner (contact information) relevant to the evaluation.
[NOTE: The contact information in the BIDS registration is used for all notices and contact purposes.]

3.5.3.6. Addendum
The offeror shall use the addendum to describe the technical solution in greater detail.

3.5.4. Phase 1 Notification to Offeror.
The Government will notify the offeror when a submission has been accepted or rejected. Notification of acceptance with a request to submit the next phase document will be emailed to the offeror's contracting authority as entered in the BIDS registration and will indicate the next submission type, clarification requests, and due date and time. Likewise, rejection notifications will be emailed to the address provided in the BIDS registration. Debriefings for Phase 1 submissions will not be conducted due to the nature of BAAs.

In general, submissions are not considered for further review when they do not meet the basic requirement, are too costly, or do not fit the mission. All Phase 1 submissions are evaluated in accordance with Section 4, Proposal Evaluation, of this BAA.

3.5.5. Phase 1 Status and Inquiries.

Phase 1 is complete when all submissions have been accepted or rejected in accordance with this BAA. Inquiries outside of the BIDS system (e.g., phone, email, etc.) concerning the status of Phase 1 submissions will not be accepted. After BIDS log on, submitters are able to check the status of their submission(s) under **Previously Uploaded Proposals.**

3.6. Phase 2 White Paper Submissions.

Offerors shall prepare and upload a White Paper with no more than twelve (12) pages plus a cover page in response to Phase 2 of this BAA. The cover page template is provided at the BIDS website under Resources. The cover page is excluded from the White Paper page count. All submission pages shall be 8 ½ by 11 inches, double-spaced with Times New Roman font no smaller than 10 point; all margins shall be one inch. Each page of the submission shall contain the document identifier in the document header. If the White Paper contains more than 12 pages including tables, charts, and figures, only the first 12 pages will be evaluated.

3.6.1. Phase 2 Due Date and Time.

All unclassified White Papers must be received electronically through BIDS no later than the due date and time specified in the Phase 1 Quad Chart acceptance email. Likewise, classified submissions must be received by the same due date and time; offerors must create a placeholder record in BIDS with an unclassified cover page attachment. Refer to section 3.4 of this BAA for instructions on classified submissions. BIDS does not allow proposals to be uploaded or for classified submissions to be created after the due date and time. Any proposal, regardless of classification, submitted by any other means, **or that is late**, will not be considered by the Government.

3.6.2. Electronic File Format.

The White Paper shall be submitted in a single file. This file must be in Portable Document Format (.pdf). Adobe Acrobat and MS Word can generate such files. The document must be print-capable, without password, and no larger than 2048 KB. File names cannot contain spaces or special characters. Apple users must ensure the entire file name and path are free of spaces and special characters. Submissions that cannot be opened, viewed, or printed will not be considered.

[NOTE: ZIP files and other application formats, such as Microsoft Office (.docx or .pptx) are NOT acceptable.]

3.6.3. Phase 2 Document Upload.

To upload a next phase document, use the link back to BIDS provided in the acceptance email, or log in to BIDS and navigate to Requested Proposals to open the accepted record. Review the checklist then click Create Proposal and follow the instructions.

3.6.4. White Paper Content.

White Papers shall provide a description of the technical approach, the specific tasks and deliverables by phase, schedule and cost estimate by phase, intellectual property and government rights, transition planning for production, and a capability statement. The

offeror shall incorporate all clarification data requests from the acceptance email into the submission. Indicate clarification entries by footnote and reference the requested item(s) in the footer area. The following White Paper sections and details are required.

3.6.4.1. Cover Page.
A cover page template is provided BIDS under Resources. The cover page includes necessary contractual information including the offeror's contracting POC (name, telephone number, email address, facsimile number, mailing address) and business information (Data Universal Numbering System (DUNS) number, Commercial and Government Entity (CAGE) code, business type). Include the proposed contract type, total cost, and the duration of all phases/tasks. The cover page is excluded from the page count.

3.6.4.2. Technical Approach.
Describe the proposed solution relative to the requirement. Focus content on operational capabilities required to address the problem, the underlying theory that supports the operational capability, and suggested concept of operations. Identify end users that could be interested in the proposed solution and describe how the solution will be a benefit. Include drawings, diagrams, charts, and tables needed to explain the effort. Describe if, and where, the proposed technology/solution has been, or is being used. Identify sponsoring agency and funding resources; or if none, so state.

3.6.4.3. Tasks and Deliverables.
Identify the proposed tasks by phase in the order of occurrence. A phase must have clear exit criteria to serve as a "go" or "no-go" decision point to proceed to the next phase. Identify work that will be performed by other organizations or agencies. Identify anticipated technical risks along with planned mitigation efforts. Indicate any Government furnished material (GFM), equipment (GFE), or information (GFI) that will be required with the task and need date; or state if none. For each phase include the exit criteria and all products and deliverables as defined in section 2.6 of this BAA. State if a phase is proposed as an option.

3.6.4.4. Schedule.
Develop a master project schedule preferably in Gantt chart format. The schedule shall indicate the planned start and stop point for each phase with top level subordinate tasks, estimated delivery dates, and completion dates. Indicate the total project POP in months using January 30th as a notional start date through the completion date. Please address plan to ensure timely delivery of supplies in a restrictive global supply chain environment.

3.6.4.5. Cost.
Provide the proposed, task-phased budgetary estimate inclusive of any proposed options. At a minimum, this estimate shall detail estimated labor hours and costs, anticipated material costs, product and deliverable costs (see section 2.6. of this BAA), and other costs (e.g., subcontracts, indirect rates, profit or fee rate) for

each phase/task. Costs allocated to other organizations (e.g., Government testing) shall be clearly shown; or state if none. Changes in cost from those proposed in the prior submission shall be explained. Address any concerns regarding material that will be needed that may be associated with global supply chain delays and cost control measures to ensure contract remains within negotiated material costs.

3.6.4.6. Intellectual Property, Technical Data, and Software.
Disclose/discuss all intellectual property, technical data, and/or software rights that are intended to be used in connection with this submission. See section 2.5 of this BAA for additional information.

3.6.4.6.1. Patents and Patent Applications.
Identify any existing, applied for, or pending patents that will be used in the conduct of this effort. Provide patent number with date of issue and title or patent application number with filing date and title. Any patent or patent application that resulted from prior government funding should be identified. If no patents or patent applications are relevant, so state. See section 2.5 of this BAA for additional information.

3.6.4.6.2. Rights in Technical Data and Software.
Identify any technical data and/or computer software that will be delivered with less than unlimited rights as prescribed in DFARS 252.227-7013 and DFARS 252.227-7014. State if unlimited rights in technical data are proposed. See section 2.5 of this BAA for additional information.

3.6.4.7. Transition from Prototype to Production.
Describe the overall strategy to transition the results of this development effort to production once the funded effort is concluded. Briefly describe the overall strategy for transition, potential partners, transition issues to include any obvious regulatory, liability, interoperability, or financing issues. Discuss the interaction with representative users and the concept for test and evaluation by those users and follow on support of a product resulting from this effort.

3.6.4.8. Organizational Capability Statement.
Describe the offeror's capability and/or experience in doing this type of work. Identify technical team members or principal investigators and associated expertise. If applicable, include a description of co-participants' capabilities and/or experience. State whether an agreement has been reached (or not) with the co- participants. The offeror is only required to submit past performance information in response to a request for Full Proposal.

3.6.5. Phase 2 Status and Inquiries.
Phase 2 is complete when all submissions have been accepted or rejected in accordance with this BAA. Inquiries outside of the BIDS system (e.g., phone, email, etc.) concerning the status of White Papers will not be accepted. After login to the BIDS website, submitters are able to check the status of their submission(s) under Previously Uploaded

Proposals.

3.6.6. Phase 2 Notifications to Offeror.

The Government will notify the offeror when a submission has been accepted or rejected. Notification of acceptance with a request to submit the next phase document will be emailed to the offeror's contracting authority as entered in the BIDS registration and will indicate the next submission type, clarification requests, and due date and time. Likewise, rejection notifications will be emailed to the address provided in the BIDS registration. **Debriefings for White Papers will not be conducted due to the nature of BAAs**. In general, submissions are not considered for further review when they do not meet the basic requirement, are too costly, do not fit the mission, or funding is not expected. All White Papers are evaluated in accordance with section 4. Proposal Evaluation, of this BAA.

3.7. Phase 3 Full Proposal Submissions.

Offerors shall prepare and upload a Full Proposal, consisting of a Technical Proposal in Portable Document Format (.pdf), a completed IWTSD Cost Proposal template (using the Microsoft Excel format provided by IWTSD) along with a supporting Cost Narrative pdf, plus a cover page, in response to Phase 3 of this BAA. All pages shall be 8 ½ by 11 inches, double-spaced with Times New Roman font no smaller than 10 point; all margins shall be one inch. Each page of the submission shall contain the document identifier in the document header. The Technical Proposal must be no more than 50 pages including tables, charts, and figures. If the document contains more than 50 pages, only the first 50 pages will be evaluated. All paragraphs containing proprietary information must be clearly marked. The Cost Proposal has no page limit; however, unnecessarily elaborate or information beyond those sufficient to present a complete and effective response is not desired.

Disclaimer - To minimize the cost and effort for submitters, Phase 3, Full Proposals, will only be requested for qualifying solutions that have a high probability of award; however, the Government reserves the right to cancel requirements, or any request for proposals for this solicitation, at any time prior to award and shall not be liable for any cost of proposal preparation or submission.

3.7.1. Phase 3 Due Date and Time.

All unclassified Full Proposals must be received electronically through BIDS no later than the due date and time specified in the acceptance email. Likewise, classified submissions must be received by the IWTSD Security Office by the due date and time; offerors must create a placeholder record in BIDS with an unclassified cover page attachment. Refer to section 3.4 of this BAA for instructions on classified submissions. BIDS does not allow proposals to be uploaded or classified placeholders to be created after the due date and time. Any proposal, regardless of classification, submitted by any other means, **or that is late, will not be considered** by the Government.

3.7.2. Electronic File Format.

The technical proposal must be submitted in **Portable Document Format (.pdf).** The IWTSD Cost Proposal Template (MS Excel) must be completed and submitted with

formulas visible and the document unlocked. A supporting cost narrative must be submitted in **Portable Document Format (.pdf).**

The document must be print-capable, without password, and no larger than 2048 KB. File names cannot contain spaces or special characters. Apple users must ensure the entire file name and path are free of spaces and special characters. Submissions that cannot be opened, viewed, or printed will not be considered.

3.7.3. Phase 3 Document Upload.

To upload a next phase document, locate and open the accepted record under Requested Proposals. Review any available files (e.g., SOW, CDRLS) and the checklist, then click Create Proposal and follow the instructions.

3.7.4. Full Proposal Components.

Full Proposal shall consist of three major sections (Technical Proposal and Cost Proposal with a supporting Cost Narrative) described in this document, and can be uploaded to BIDS as three separate files each limited to 2048 KB.

- The first section is the technical proposal and shall include all information related to the proposal as specified in this BAA including figures, charts, and tables plus the cover page.

- The second section is the cost proposal, which will show a breakdown of costs by CLIN as well as phase using the Cost Proposal template. **This template is available on the Resources page of BIDS.**

    - Part of the cost proposal is a cost narrative that includes all cost data as well as an explanation of changes in cost from those proposed in the prior submission. Additionally, the offeror will include a cover page as follows:

      A cover page template is provided at the BIDS website under Reference Materials. The cover page includes necessary contractual information including the offeror's contracting POC (name, telephone number, email address, facsimile number, mailing address) and business information (DUNS number, CAGE code, business type). Include the proposed contract type, total cost, and the duration of all phases/tasks.

3.7.5. Technical Proposal Content.

The Technical Proposal shall provide a technically detailed solution of the problem addressed in the requirement and fully expand the technology proposed in the prior submissions. The following sections and associated data are required. The offeror shall incorporate all clarification data requests in the Phase 2 acceptance email. Indicate clarification entries by footnote and reference the requested item(s) in the footer area.

3.7.5.1. Table of Contents.

The technical proposal shall include a table of contents noting the page number of

each section detailed below. The table of contents is excluded from page count.

3.7.5.2. Abstract.
The abstract is a one-page (or less) synopsis of the proposal that includes the title and the basic approach to satisfy the requirement. Describe the overall scope of work to be performed for the entire period of performance, inclusive of options. The abstract shall stand alone and be suitable for release under the Freedom of Information Act, 5 U.S.C. § 552, as amended.

3.7.5.3. Executive Summary.
An executive summary is a concise description of the technology and solution being proposed. Include key information that demonstrates how the proposed solution meets the published requirement. The executive summary should not introduce any new information not covered in the subsequent content.

3.7.5.4. Technical Approach.
Describe the technical approach for the proposed solution to meet the requirement. Include technical details of the solution and fully expand the technology proposed in the prior phase submission. Include the methodology, underlying theory, system components, and operational scenario for the intended users. Include drawings, diagrams, charts, and tables needed to explain the effort. Describe relevant prior application of the proposed technology and/or solution, how it is being used, and by whom. Identify sponsoring agency and funding resources; or if none, so state. If subcontractors are proposed, include a detailed description of the effort that they will be performing in support of or in addition to the prime.

3.7.5.5. Project Plan.
The project plan shall be organized by phase and describe the work to be performed along with all associated requirements to successfully complete the proposed effort. Include a summary of the individual phases to follow.

3.7.5.5.1. Phases.
Phases shall be defined by the subset of tasks to be performed, phase objectives to be accomplished, and the required POP to completion. Phases shall be listed in order of occurrence. Identify phases that are optional. Each phase must contain clear exit criteria that is measurable evidence of completion and serves as a “go” or “no-go” decision point. Each phase shall include a total cost.

3.7.5.5.2. Tasks Within a Phase.
For each task, provide a detailed description of the work to be performed. Identify any work that will be performed by other organizations or agencies; or if none, so state. Indicate if an agreement is in place for the resources.

3.7.5.5.3. Products and Deliverables.
Identify all deliverables - products as well as documentation and reports - for each Task/Phase. Refer to section 2.6 of this BAA for minimum reporting requirements, and additional products and deliverables in performance of the effort proposed.

3.7.5.6. Master Schedule.
Develop a master project schedule that includes phase start and stop dates as well as major milestones, critical tasks, and report and product delivery dates. Assume a start date immediately upon execution of contract. This may range between December and March. Indicate any optional phases.

3.7.5.7. Government Furnished Equipment.
Reasonably identify all Government furnished equipment (GFE), materials, facilities, or information with the need date and suggested source at the time of proposal submission. GFE includes, but is not limited to: Government email accounts, SIPRNET access, Common Access Cards (CACs), and/or space at an IWTSD or other Government facility (e.g., permanent residence, temporary residence, or testing). Upon identifying GFE, if an offeror's proposal is selected for contract award, the proposed GFE will be identified in the resulting contract. Failure to adequately identify necessary GFE may result in contract termination due to the offeror's inability to perform under this competitive source selection. State if Government equipment, materials, facilities, or information are not required.

3.7.5.8. Project Risks and Mitigation.
Identify anticipated technical and management risks along with planned mitigation efforts. Indicate the risk assessment as high, medium, or low.

3.7.5.9. Organizational Capability Statement.
Include a brief description of the offeror's organization. Describe the offeror's capability and/or experience in doing the type of work being proposed. If applicable, include a description of co-participants' capabilities and/or experience. State whether an agreement has been reached with the co-participants. Provide at least three references, to include points of contact, for like or similar work.

3.7.5.10. Organizational Resources.
Identify key technical personnel and principal investigator(s) including alternates and co-participants, if applicable. Include a brief biography, relevant expertise, and a list of recent publications for each. Identify any team members with potential conflicts of interest. Possible conflicts of interest include personnel formerly employed by the federal Government within the past two years from the date of proposal submission. Provide name, duties, employing agency, and dates of employment; or state if none.

3.7.5.11. Intellectual Property, Technical Data, and Software.

All anticipated intellectual property, technical data or software rights shall be disclosed. See section 2.5 of this BAA for additional information.

3.7.5.11.1. Patents and Patent Applications.
Identify any existing, applied for, or pending patents that will be used in the conduct of this effort. Provide patent number or application number and title. Any patent that resulted from prior Government funding should be identified. State if no patents or patent applications are relevant.

3.7.5.11.2. Rights in Technical Data.
State if unlimited rights in technical data are proposed. If not, identify any technical data and/or computer software that will be delivered with less than unlimited rights as prescribed in DFARS 252.227-7013 and DFARS 252.227- 7014. When less than unlimited rights are proposed, a data rights assertion table shall be provided as prescribed in DFARS 252.227-7017.

3.7.5.12. Transition from Prototype to Production.
Describe the approach and issues related to transition or commercialization of the results of this effort to an operationally suitable and affordable product for the intended users to include the following. The cost to prepare the Transition Plan should be included in the proposed costs. The cost to prepare the Transition Plan should be detailed in the cost proposal. Additional information regarding the Transition Plan can be found in the IWTSD Technology Transition Handbook located on BIDS under Resources.

[NOTE: If the specific requirement will not reasonably result in a prototype (e.g., study, service requirement), state "Not Applicable to this Requirement" and justify why.]

3.7.5.12.1. Transition Strategy.
Provide the overall strategy for transition to production (licensing, partnering, or venturing) along with the associated timelines for actions associated with the transition. Describe the roles of current development partners, subcontractors, or other organizations that will be leveraged. If the offeror is not a commercial entity, indicate if a commercial partner has been identified. Discuss barriers to commercialization, such as anticipated regulatory issues (such as environmental, safety, health, and transportation), liability issues, interoperability, and financing, and planned steps to address these barriers.

3.7.5.12.2. Transition Approach.
Describe the type and level of effort envisioned to take the technology from its state at the end of the development effort to a production ready, affordable, operationally suitable product (such as size and/or weight reduction, packaging, environmental hardening, integration, additional test and certification). Provide an estimate of any costs to transition the

prototype to low rate initial production. Provide the estimated production unit price for the end users.

3.7.5.12.3. Test and Evaluation.
Describe the plan to involve representative users during the design and development process and the general plan for test and evaluation by representative end users. If the phases of performance include representative user test and evaluation: (1) ensure coordination of user participation is thoroughly discussed in the technical approach; and (2) state "Representative User Participation will occur during contract performance."

3.7.5.12.4. Operational Support.
Describe the estimated level of training needed to prepare users to utilize the product in an operational environment. Discuss the anticipated support concept such as level(s) of repair, spare parts, warranties, operation and maintenance technical manuals, simulators, and other logistics considerations.

3.7.5.13. Human Subjects and Animal Testing.
The proposal shall provide a statement regarding the anticipated use of human subjects or animals in testing, or state if none. If yes, procedures for complying with all laws and regulations governing the use of animals or human subjects in research projects shall be included in the technical proposal. See section 2.9, "Animal or Human Testing Compliance" in this document for details.

3.7.5.14. Environmental Impact.
The proposal shall provide a statement regarding the impact of the work proposed on the environment. State if no impact exists.

3.7.5.15. Classification and Security.
If the offeror is proposing to perform research in a classified area, indicate the level of classification of the research and the level of clearance of the potential principal investigator and all proposed personnel. The contractor shall include facility clearance information. Also, the contractor shall indicate the Government agency that issued the clearances. State if the proposed effort is unclassified.

3.7.5.16. Subcontracting Plan.
If the total amount of the proposal exceeds $750,000 and the offeror is not a small business, the offeror shall submit a subcontracting plan for small business and small socially and economically disadvantaged business concerns. A mutually agreeable plan will be included in and made a part of the resultant contract. The contract cannot be executed unless the contracting officer determines that the plan provides the maximum practicable opportunity for small business and small disadvantaged business concerns to participate in the performance of the contract. The Subcontracting Plan/information is excluded from page count.

3.7.6. Cost Proposal.

The offeror and each significant subcontractor, if any, shall fill out the IWTSD Cost Proposal Template (available on BIDS under Resources) and submit all supporting cost or pricing data along with any other supporting attachments. All prepared spreadsheet formulas must be accessible. As soon as practicable after agreement on price, but before contract award, the offeror shall submit a Certificate of Current Cost or Pricing Data for contracts exceeding $2,000,000 as prescribed by FAR 15.406-2.

[NOTE: To determine the reasonableness of the cost proposal, the Government may request additional supporting documentation for proposed costs.]

3.7.6.1. Cost Narrative.

Provide a narrative discussing/substantiating elements of the cost proposal. Provide a separate summary of the total cost for each phase and for the total of the entire effort proposed. Indicate optional phases. Explain changes in cost from those proposed in the previous submission. The Cost Narrative must be submitted in PDF (.pdf) format with Times New Roman font no smaller than 10 point.

3.7.6.1.1. Table of Contents.

The cost narrative shall include a table of contents noting the page number of each section detailed below.

3.7.6.1.2. Direct Labor Costs.

Detail the direct labor cost estimate by showing the breakdown of labor hours, rates, cost for each category, and furnish the basis for the estimates.

- *Labor Category*. Include a detailed description of the category.
- *Labor Hours*. Include a Basis of Estimate for the proposed hours. Detail hours to be worked by each labor category proposed per each task, per each fiscal year and cumulatively.
- *Labor Rates*. Rates shall be in accordance with established rate agreements. If no rate agreement exists, use payroll data with actual rates to substantiate the proposed rates. If fully loaded rates are proposed, the offeror shall identify the base rate and build up.
- *Escalation*. Identify the escalation rate, how the rate is applied, and provide justification for the rate used.

3.7.6.1.3. Indirect Costs.

Indicate how the offeror has computed and applied offeror's indirect costs (e.g., overhead, G&A, material burden). Indicate the rates used and provide an appropriate explanation.

3.7.6.1.4. Other Direct Costs.

Identify all other costs directly attributable to the effort and not included in other sections (e.g., special tooling, travel, computer and consultant services, preservation, packaging and packing, spoilage and rework) and

provide the basis for pricing.

- *Travel.* The basis for travel estimates will include trip purpose, departure site and destination, number of persons traveling, number of days, ground transportation requirements, and detailed costs for airfare, hotel, rental cars, and per diem allowances per Federal Travel Regulations (FTR).
- *Materials.* Submit a detailed Bill of Materials identifying each discrete material component. Backup documentation must be submitted to explain the basis of estimate for at least 80 percent of the total material cost proposed. Backup documentation may include actual production costs, catalog listings, supplier quotes, actual invoices, or other documentation from a third-party source which verifies the proposed price.
- *Consultants.* If any consultants are to be used, the offeror shall submit consultant quotes for hourly rates, estimated number of hours required, and justification.
- *Subcontractors.* If any subcontractors are to be used, the offeror shall submit complete subcontractor quotes or proposals as part of the proposal. Subcontractor proposals will be evaluated along with the prime's proposal, and they are expected to contain the same level of detail as a prime proposal. Subcontractors providing commercial items may submit a commercial quote instead of a detailed proposal.

  [NOTE: In order to protect proprietary data, subcontractors may submit their detailed cost proposals directly to the Contracting Officer instead of submitting to the prime contractor. If this occurs, the prime is responsible for ensuring subcontractor's submission is timely and is completed in accordance with these instructions.]

3.7.6.1.5. Government Furnished or Contractor Acquired Equipment.
Identify the external property or materials required to perform the task in the summary. Separate items to be acquired with contract funds and those to be furnished by the Government. Reasonably provide the description or title and estimated unit and total costs of each item (i.e., manufacturer, catalog price, or previous purchase price). When such information on individual items is not available, the items should be grouped by class and estimated values indicated. In addition, the offeror shall include a statement of the extent to which the offeror is willing to acquire the items.

[NOTE: The FAR generally prohibits providing an industrial contractor with facilities (including plant equipment and real property) with a unit acquisition cost of less than $10,000.]

3.7.6.1.6. Profit or Fee.
Include the profit or fee proposed for this effort. State if no profit or fee is proposed. Include a discussion, in the summary, of risk, technical

difficulty, need for management/oversight, exceptional circumstances, etc.

3.7.6.1.7. Competitive Methods.
For those acquisitions (e.g., subcontract, purchase orders, material orders) over $250,000 priced on a competitive basis, also provide data showing degree of competition and the basis for establishing the source and reasonableness of price. For inter-organizational transfers priced at other than cost of the comparable competitive commercial work of the division, subsidiary, or affiliate of the contractor, explain the pricing method (See FAR 31.205-26(e)).

3.7.6.1.8. Established Catalog or Market Prices/Prices Set by Law or Regulation.
When an exemption from the requirement to submit cost or pricing data is claimed, whether the item was produced by others or by the offeror, provide justification for the exemption.

3.7.6.1.9. Royalties.
If more than $250, provide the following information on a separate page for each separate royalty or license fee:

- Name and Address of Licensor.
- Date of the License Agreement.
  [NOTE: A copy of the current license agreement and identification of applicable claims of specific patents shall be provided upon request by the contracting officer. See FAR 27.204 and FAR 31.205.37.]
- Patent numbers, patent application serial numbers, or other basis on which the royalty is payable.
- Brief description (including any part or model numbers of each contract item or component on which the royalty is payable).
- Percentage or dollar rate of royalty per unit.
- Unit price of contract item.
- Number of units.
- Total dollar amount of royalties.

3.7.6.2. Facilities Capital Cost of Money.
When the offeror elects to claim facilities capital cost of money as an allowable cost, the offeror must submit Form CASB-CMF and show the calculation of the proposed amount. See FAR 31.205-10.

3.7.6.3. Other Funding Sources.
The proposal shall provide the names of other federal, state, or local agencies, or other parties receiving the proposal and/or funding or potentially funding the proposed effort. State if no other funding sources or parties are involved.

3.7.6.4. Additional Information/Documents.

Additional information/documents to be included in the Cost Narrative:

- *Business/Cost Checklist*. The offeror shall complete and include a copy of the Business/Cost Checklist found at the BIDS website under Resources. Information and documents required in the Business/Cost Checklist shall be included in this proposal.
- *Terms & Conditions*. The offeror shall identify any anticipated/proposed contract terms and conditions in the proposal summary.
- *Proposal Validity*. The proposal shall remain valid for a period of no less than 180 days from submission.
- *Forward Pricing Rate Agreement*. If the offeror has an applicable rate agreement with DCAA (or another Federal Agency, e.g., HHS), please include a copy of the agreement and provide a point of contact to your cognizant DCAA office. If the offeror has not previously been audited by DCAA, the procuring office may request an audit to verify the proposal labor direct and indirect rates. This applies to both prime contractors and subcontractors.
- *ACH Form*. The offeror will submit a completed ACH Form. (Found on BIDS under Resources).
- *VETS-4212*. The offeror will submit the most recent VETS-4212 filing confirmation.
- *Subcontracting Plan*. If the offeror is a large business and work will be performed in the United States, a Small Business Subcontracting Plan shall be submitted if the contract is expected to exceed $750,000.
- *Past Performance*. The offeror shall provide information on previous Federal Government prime or subcontracts featuring endeavors relevant (i.e., within the past three years and of similar size and complexity) to the specific requirement.

3.7.7. Phase 3 Notifications to Offerors.
Notification of acceptance or rejection of a Phase 3 submission will be sent via email to the offeror's principal contact as entered in the BIDS registration. Acceptance of a Full Proposal does not guarantee a contract will be awarded. If the Government does not accept the Phase 3 proposal, the offeror may request a formal pre-award debriefing.

3.7.8. Phase 3 Protests.
Offerors are encouraged to see resolution within the agency before filing a protest. Offerors who choose to submit any protest, must do so directly to the IWTSD Contracting Officer. All such protests will be processed under procedures that depend on whether the protest is directed to the agency, or to the Government Accountability Office (GAO) or to the Court of Federal Claims. Should the offeror choose to submit a protest, the Offeror must clearly label whether such protest is to the agency, GAO or the Court of Federal Claims. The Government will deem receipt of the protest by the Contracting Officer as constituting receipt or purposes of determining timeliness. Addresses for receipt confirmation can be requested via the BIDS Help function.

3.7.9. Phase 3 Status and Inquiries.

Phase 3 is complete when the Government concludes technical evaluations of all submissions and awards any contracts considered under this BAA. Inquiries by phone concerning the status of Full Proposals will not be accepted. After log in to the BIDS website, submitters are able to check the status of any submission under **Previously Uploaded Proposals.**

3.8. Clarification Requests.

Should the offeror be asked to submit clarifications to a Phase 2 White Paper or a Phase 3 Full Proposal, the BIDS email from the Contracting Officer will contain instructions on the specific request and associated requirements. BIDS will use CL (Clarification) instead of WP (White Paper), or FP (Full Proposal) as the Document Identifier designation (e.g., CL CBRNE-1112-ABCORP–xxxx-CL; where xxxx-CL is the VIT entered by the submitter). The request will contain the due date and time and can be less than the standard 30-day response time depending on the nature of the request.

3.9. Instructions for Offeror "No-bid" and Submission Withdrawal.

From time to time, an offeror decides not to submit a subsequent Phase 2 or Phase 3 submission. If this is the case, the offeror shall indicate in BIDS that they are not providing the subsequent submission. The offeror shall follow the steps identified in BIDS to upload a submission and attach a document to indicate the withdrawal of the previous submission(s) and the intent to not participate in further submissions. If possible, the Document Identifier should reflect the submission status (e.g., CBRNE-1112-ABCORP–xxxx-WD or xxxx-NoBid). To withdraw a submission after the due date and time, notify the contracting officer at BIDSHelp@iwtsd.gov.

4. PROPOSAL EVALUATION.

This section describes the criteria that will be used to evaluate each submission. The phase of the submission will determine the extent that each criterion applies based on the information requirements described in Section 3. Criteria are not weighted, and submissions are not ranked.

4.1. Evaluation Criteria.

The criteria used to evaluate and select proposals for projects are described as follows. Each proposal will be evaluated on its own merit and relevance to the program requirements rather than against other proposals in the same general research area.

4.1.1. Basic Requirement.

The proposed solution must meet the letter and intent of the stated requirement; all elements within the proposal must exhibit a comprehensive understanding of the problem and the requirements of intended end users. The proposed solution must meet multiple user (U.S. Government or commercial) needs and be fully compliant with all elements of the solicitation including format, content, and structure as well as all BAA instructions.

4.1.2. Technical Performance.

The proposed technical approach must be feasible, achievable, complete, and supported by a proposed technical team that has the expertise and experience to accomplish the

proposed tasks. Task descriptions and associated technical elements are to be complete and in a logical sequence. All proposed deliverables must clearly define a final product that meets the requirement and can be expected as a result of the award. The proposal must identify and clearly define technical risks and planned mitigation efforts. Those risks and the associated mitigation must be defined, feasible, and reasonable. The roles of the prime and other participants required must be clearly distinguished and pre-coordination with all participants (including Government facilities) fully documented.

The requirement for and the anticipated use or integration of Government Furnished Equipment/Information/Property (GFE/GFI/GFP) including all equipment, facilities, and information, must be fully described including dates when such GFE/GFI/GFP will be required. Intellectual property ownership and the planned transition to production must be adequately addressed, including a support concept for the product described. Similar efforts completed by the offeror in this area must be fully described including identification of other Government sponsors.

4.1.3. Cost.
The proposed costs must be both reasonable for the work proposed and achievable. The proposal must document all anticipated costs including those of associate, participating organizations. The proposal must demonstrate that the offeror has fully analyzed budget requirements and addressed resulting cost risks. The proposal must indicate all cost-sharing and leveraging opportunities explored and identified and the intellectual property expectations associated with that cost-sharing. Other sponsors who have funded or are funding this offeror for the same or similar efforts must be identified by agency, program manager name, phone number and email address.

4.1.4. Schedule.
The proposed schedule must be reasonable, achievable, and complete. The proposal must indicate that the offeror has fully analyzed the project's critical path and has addressed the resulting schedule risks.

4.1.5. Contractor Past Performance.
Past performance is a confidence assessment based upon the probability of successfully performing the requirement. The offeror's past performance in similar efforts must clearly demonstrate an ability to deliver products that meet the proposed technical performance requirements within the proposed budget and schedule. The proposed project team must have demonstrated expertise to manage the cost, schedule, and technical aspects of the project.

[NOTE: Past performance information may be used in the technical evaluation if the vendor has relevant past performance with the Government. However, having no relevant past performance with the Government will not be held against a vendor.]

5. TECHNOLOGY DEVELOPMENT REQUIREMENTS AND OBJECTIVES.

This section provides the requirement descriptions and overall technical objectives. The intent of this BAA is to identify technologies and approaches that provide solutions that enhance the capabilities for DoD to conduct Irregular Warfare (which includes missions of unconventional warfare (UW), stabilization, foreign internal defense (FID), counterterrorism (CT), and counterinsurgency (COIN)) against all adversaries and to deliver those capabilities to DoD components and interagency partners through rapid research and development, advanced studies, and technical innovation.

Where noted, T = Threshold and O = Objective.

5.1. Advanced Analytics (AA)

R4887 Influence Correlation of Forces and Means
The Joint Force requires an Influence Correlation of Forces and Means to understand and communicate operational impacts of non-linear and non-kinetic influence activities and missions. Develop and deploy for operational testing and evaluation (OT&E) a modeling software to understand non-linear and non-kinetic impacts of irregular warfare activities following the Correlation of Forces and Means (COFM) framework for kinetic effects and attrition of enemy forces. This Influence COFM shall establish a model or a system of models to understand and communicate non-lethal effects of operations in the information environment (OIE), civil infrastructure development, the presence of military assistance trainers, and the physical occupation of terrain by U.S. aligned military/police forces and militia. The Influence COFM shall provide Psychological Operations (PSYOP), Civil Affairs (CA), Special Forces (SF) a predictive model for effects in the cognitive domain. The COFM model shall predict effects on the decision calculus of adversary leaders and line units, their capacity to concentrate forces and fires, their capacity to maneuver, their capacity to control terrain, their will to fight/resist, and overall morale. The model shall also include measures of amplification or degradation of the effects of kinetic operations, as well as psychological, cognitive, and behavioral effects in order to provide a holistic but quantitative wargame analysis for Red, Blue, and Green elements in the operational environment. The delivered software capability shall output replicable, statistically significant experimental analysis based on an agent-based model using end user defined geographic, military, economic, social, information, and infrastructure-based criteria. The modeling software and tools shall also account for interactive effects over time (e.g., SOF conducting an irregular warfare campaign).

Competitive proposals shall use an iterative or agile approach to development that allows DoD end users to test/sample milestone software releases (alpha, beta, etc.) and offer guidance on software performance and alignment with the desired end-state. Phase one of the project shall deliver an empirically-based quantitative correlation of forces and means for Joint Force Psychological Operations (PSYOP), Civil Affairs (CA), Special Forces (SF) as well as partner and orchestrated proxy forces' activities and missions, based on historical measures of effectiveness in relevant DIME/PMESII (Diplomacy, Information, Military, Economics/ Political, Military, Economic, Social, Informational, and Infrastructure) domains in the operational environment. Phase two shall integrate the Influence COFM framework into an agent-based model or system of models for predictive analysis of effects of irregular warfare

campaigns.

Deliverables Base Contract:

- Phase 1 - Deliver a COFM table with social science supporting documentation.
- Phase 2 - Deliver a production prototype software.

Contract Options:

- Support additional three (3) months of operational test and evaluation with U.S. Army Special Operations Command (USASOC) or other selected DoD end users, to support enhancement of underperforming features, resolve software stability issues, and issue software patches.
- Deploy production prototype software with Authority to Operate on an Impact Level (IL)-4 DoD end user selected enclave (e.g., Government network, cloud, or enterprise server).
- Deploy production prototype software with Authority to Operate on an IL-6 DoD end user selected enclave (e.g., Government network, cloud, or enterprise server).

Developers will be required to provide end user training on all systems delivered. The Government requests Government Purpose Rights to all deliverables and unlimited rights to technical data and training data.

A firm-fixed-price proposal with a base contract period of performance of less than eighteen (18) months is preferred.

R4879 Three-Dimensional (3-D) Additive Manufacturing on the Tactical Edge (Operational 3-D Printing)

Joint Forces have encountered environments that are unsuitable for traditional logistics for technically complex tools (e.g., sUAS, UGVs, etc.). They require a capability to generate replacement components in remote environments to return equipment to a serviceable state. Providing the ability to manufacture small critical parts on-site at the unit level will enhance readiness and overall mission effectiveness.

U.S. Army Special Forces have identified the need for an enterprise analytics system to support a deployable 3-D printing capability. The system will enable replication of select parts and special tools that might be required to sustain operations while deployed in forward environments. The enterprise platform shall include a library/catalog of replacement components, a foundry environment to render new objects, a mobile app to scan and render new objects to the foundry from the field, a category-indexed data lake (e.g., “data lake house”), and associated data pipelines. The system shall also include a web-based mission support site with an administrator’s workstation. This workstation will allow the mission support site and the operational forces to visualize analytics which will inform time to strength to failure to available power decision making (e.g., given *x Power, Time to manufacture = y Hours, resulting in z Predictability of duration to failure (hours/days)*). Operations users will be enabled to conduct trade-off decision-making based on predictive analytics.

Machine learning assisted object scanning/detection/rendering shall prioritize replacement components for aerial platforms (e.g., sUAS) and other than U.S. weapons systems. The

system's data pipelines shall leverage existing secure means of communication through the U.S. Army Special Operations Command (USASOC) Modular Mission Environment and Software Defined Network (SDN) to transfer software or program materials as specific components are required in forward areas.

The analytics enterprise platform shall also provide the back-end connectivity to the cloud and CONUS technical support for additional information on failure rates and auto-cues that trigger logistic replacement pipelines and mechanisms for preemptive/stock-on-hand replenishment of routinely depleted items.

Deliverables Base Contract:

- Deliver a production prototype enterprise analytics platform ready for operational testing and evaluation (OT&E) with an existing GOTS/COTS 3-D printing capability.

Contract Option(s):

- Support an additional three (3) months of OT&E with USASOC or other selected DoD end users, to support enhancement of under-performing features, resolve software stability issues, and issue software patches.
- Deploy production prototype software with Authority to Operate on an Impact Level (IL)-4 DoD end user selected enclave (e.g., Government network, cloud, or enterprise server).
- Deploy production prototype software with Authority to Operate on an IL-6 DoD end user selected enclave (e.g., Government network, cloud, or enterprise server).

Developers will be required to provide end user training on all systems delivered. The Government requests Government Purpose Rights to all deliverables and unlimited rights to technical data and training data.

A firm-fixed-price proposal with a base contract period of performance of less than eighteen (18) months is preferred.

R4888 Synthetic Image Library Maturation on Various Screening Platforms
Department of Defense and interagency end users seek a unified software tool that is capable of generating unique and varied synthetic datasets for platforms that use Advanced Imaging Technology (AIT) (e.g., Millimeter Wave data) for screening passengers and X-ray (Computed Tomography (CT)) for screening baggage.

This tool would be used to generate diverse data to train detection algorithms with machine learning components and augment testing. This tool should be able to generate data based on physics that produces images that, when combined with existing real training data, improve and validate the performance of detection algorithms. In addition, the tool should be able to generate images that can be used to estimate detection probabilities for threat targets of interest (e.g., guns, explosives, and other prohibited items). Equally important, this tool should be able to generate synthetic data whose quality (fidelity) is commensurate with that of the AIT/CT screening technology platforms to preclude the introduction of artifacts due the generation of synthetic images, which might be used as invalid features by a machine learning algorithm. Of

equal interest will be the methodology and auxiliary capability to verify and/or validate the quality of the synthetic data against images produced by the AIT/CT screening technology platforms.

This tool is envisioned to have a user-friendly graphical user interface (GUI) that allows for input of the essential performance of components and geometries that are required to produce images of the system being copied that will be generated against screening algorithms used in AIT/CT using the resulting synthetic image library. Configurable parameters of synthetic datasets for AIT should include: variation of passenger body mass indexes, passenger height, seasonal clothing (e.g., summer, fall, winter), location of threat targets, rotation of threat items, male and female genders, and threat masses (or volumes). Configurable parameters of synthetic datasets for X-ray baggage systems should include: insertion of threat targets into bags, both bare and concealed varying levels of clutter, insertion of small electronics, assembled/dissembled prohibited items, and assembled/dissembled improvised explosive devices. A physics-based approach to generating imagery is preferred using industry recognized approaches, for example: data augmentation, generative adversarial networks (GANs), and/or simulation-based (e.g., 3-D modeling).

If the selected contractor is not an original equipment manufacturer (OEM), the Government will assist with introductions to AIT and CT OEMs to enable use of proprietary data formats. This tool must use only technology that can be releasable to United Kingdom and Israel.

Deliverables Base Contract:

- A unified synthetic image generation software tool that leverages Government designated image file formats for Transportation Security Administration certified CT or AIT screening technology platforms that should operate on an available high performance computer center that can generate a synthetic image in less than 1 hour with a goal of less than 1 minute.
- A protocol and/or auxiliary tool for validating the performance of algorithms trained with synthetic data in comparison to algorithms trained with real-world data.

Contract Options:

- Support three (3) months of additional OT&E with DoD end users and international partners (requires 2 weeks of travel to OCONUS location), to support enhancement of under-performing features, resolve software stability issues, and issue software patches.
- Deploy production prototype software with Authority to Operate on a designated TSA or Impact Level (IL)-5 DoD end user selected enclave (e.g., Government network, cloud, or enterprise server).
- Deploy production prototype software with Authority to Operate on a designated TSA or IL-6 DoD end user selected enclave (e.g., Government network, cloud, or enterprise server).

Developers will be required to provide end user training on all systems delivered. Government will provide up to 5,000 CT images and up to 5,000 AIT images as Government Furnished Information (GFI). Quarterly CONUS travel in support of testing and development at specified facilities must be included in cost estimates. The Government requests Government Purpose

Rights to all deliverables and unlimited rights to technical data and training data.

A firm-fixed-price proposal with a base contract period of performance of less than twelve (12) months is preferred.

5.2. Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE)

R4750 Deployable Low SWaP Sensor
Develop disposable, low SWaPC (Size, Weight, Power, and Cost) vapor (threshold) and liquid aerosol (Objective) chemical hazard sensors capable of being broadly distributed ahead of the Warfighter to generate an array of mesh networked sensors. Technologies should have a low training/technical burden to enable generalist use of the technology. The sensor should not exceed 2 inches × 2 inches, with a maximum of 0.5 inches in thickness to enable 3 to 4 sensors to fit in an ammunition pouch or cargo pocket. Sensors should be ruggedized such that they are survivable after multiple methods of emplacement, including dropped from an unmanned aerial vehicle at heights up to 25 feet, man-tossed, or launched. Possible concepts of operation include:

- UAV(unmanned aerial vehicle)-dropped sensors along intended maneuver route to provide situational awareness and threat mapping capability.
- Man-tossed or launched into buildings and confined spaces to assess hazard levels prior to entry.

The sensor must rapidly distinguish and provide a wireless alert on classes of chemical warfare agents and toxic industrial chemicals (TICs); lower explosive limit (LEL) hazards; and enriched or deficient oxygen levels from background, automatically without human interaction. For each target chemical, it shall detect concentrations down to at least immediately dangerous to life and health (IDLH) (threshold) and it is desirable to detect down to acute exposure guideline levels (AEGL)-1 (objective). The system shall automatically detect and identify by chemical class of nerve, blister, or TIC for the target vapors (threshold) and it is desirable to also detect liquid aerosols (objective). The sensor shall be able to distinguish between chemical warfare agents (CWAs) and TICs at lower exposure limits (AEGL-1), and the response time shall be less than 2 minutes (threshold), with 30 seconds being the objective. The system shall be able to detect the target analytes with a background that contains up to 85% relative humidity and temperatures ranging from –10°F to 120°F.

Continuous operation for at least 8 hours on a single battery charge along with the incorporation of power conservation mechanisms to allow for intermittent response or wake on demand to enable operation over several days (48 hours) is required. The sensor components shall have at least six months of shelf life and the total system (including batteries) shall weigh less than 400 grams (threshold), with 150 grams as the objective. The system should include an intuitive capability for multiple deployment mechanisms (tossed, launched, or dropped).

The sensors should possess the ability to wirelessly communicate between emplaced sensors via secure communications (non-Bluetooth) and the capacity for data integration into a military Android Team Awareness Kit (ATAK) through conformance with Integrated Sensor Architecture (ISA). The ISA framework includes standards for sensor data and communication protocols, allowing different sensors to interoperate and share information. ISA is maintained

and configuration managed by the U.S. Army Program Executive Office Intelligence Electronic Warfare & Sensors (PEO IEW&S) and is releasable upon request by contacting the help desk at usarmy.apg.peo-iews.mbx.hq-sensor-ce-support@army.mil.

A firm-fixed-price proposal with a base contract period of performance of less than 24 months is preferred.

Deliverables Base Contract:

- Vendors shall propose a quantity of sensors based on how many sensors are necessary to form the above described interconnected network (hereinafter referred to as "sensor package") when the sensor package is deployed over the target area.

Contract Options:

- Additional delivery of sensor package prototypes to facilitate additional operational test and evaluation.

R000-CBRNE-FY24 Unspecified Requirement

Develop new or improved technologies or emerging technological capabilities pertaining to CBRNE that may be of interest to IWTSD, but were not specifically requested in the BAA and are not commercially available. Proposed projects shall be timely, relevant, and support the warfighter, first responders, and other front-line users. Areas of particular interest include tools and technologies that protect operators and their assets, minimize exposure to CBRN materials and mitigate the threat of working in a CBRN contaminated environment. This includes next generation materials for personal protective clothing, improved respiratory protection, and decontamination materials for personnel, equipment, and other critical assets. All submissions shall identify the anticipated U.S. DoD end user and/or endorsing organization.

This requirement excludes any medical applications (vaccines, pharmaceuticals, clinical diagnostics, and syndromic surveillance systems), medical countermeasures, and any proposals related to COVID-19. These areas do not directly relate to the CBRNE subgroup. Any submissions for these excluded capabilities will be rejected without consideration or comment.

This unspecified requirement is for proposing unique innovations that have not yet been identified by IWTSD. Submissions against an unspecified requirement shall be responsive to the focus areas and topics noted. In addition, proposed technologies must not be a fully-developed, commercially-available product. Proposed technologies from unspecified requirements will be competing against proposed technologies for identified and prioritized specified requirements. Because IWTSD does not budget for unspecified requirements, awards may not be made against them.

A firm-fixed-price proposal with a base contract period of performance of less than 24 months is preferred.

Note: Quad charts submitted in response to a Subgroup's R000 may be shared with other IWTSD Subgroups if the submission demonstrates relevance to that Subgroup's Focus Areas.

5.3. Explosive Ordnance Disposal and Explosive Operations (EOD-EXO)

R4919 Portable IED Electronics Exploitation and Analysis Kit
Develop a rapidly deployable, hand-carried electronic device exploitation capability to conduct technical intelligence worldwide. This kit should have a small footprint, approximately 22″ × 14″ × 9″, with a target weight of no more than 15 pounds, allowing for rapid deployment when required. This kit should emulate the current electronics exploitation capabilities found in full-scale exploitation laboratories like those found at the Terrorist Explosive Device Analytical Center (TEDAC). Exploitation tools included in the kit should include electronics and radio frequency analysis, and an electronic data recovery replication system. Analysis capabilities can be combined as long as individual capabilities are not degraded. Key capabilities should include the following:

- 2-channel oscilloscope with 1 GHz bandwidth.
- 8+ channel logic analyzer with serial bus decoding for common protocols (e.g., SPI, I2C, UART, etc.).
- Spectrum analyzer - preferred range from 10 MHz to 10 GHz (10 MHz to 6 GHz minimum), with data demodulation and pattern search for common protocols.
- Basic multimeter.
- Universal programmer for reading memories and microcontrollers, as well as programming clones.
- Smartphone/small Unmanned Aerial System (sUAS) data extraction and parsing tool (e.g., Universal Forensics Extraction Device).
- Signal generator (6 GHz preferred, 3 GHz minimum) with spec-a tracking, and basic/external modulation.
- Arbitrary waveform generator for modulation of input for signal generation.
- Dual Power supply: 0 volts to 20 volts, 0 amps to 5 amps.
- S11 network analysis tool (6 GHz).
- Full network analyzer tool (6 GHz).

A firm-fixed-price proposal with a base contract period of performance of twelve (12) months is preferred.

Deliverables Base Contract:

- Deliver twelve (12) kits for operational test and evaluation.
- Developers will be required to provide end user training on all kits delivered.

Contract Options:

- Option 1: Deliver eight (8) kits.
- Option 2: Deliver eight (8) kits.

R4921 Heads-Up Display (HUD) for Bomb Suit
Develop a system capable of displaying situational awareness and technical information on or through the blast visor of current bomb-suit helmets. No internal or external attachments for image projection will be allowed, and the image display should be laminated into, or affixed onto the blast visor itself. Use of the HUD should not limit the wearer’s field-of-view, and brightness

and opacity of the display should be adjustable, so as not to affect the user's situational awareness, or limit their ability to perform reconnaissance or render safe operations. Data input and output (I/O) ports are required to pass standard system-health information, on-scene information, and biometrics to external sources for analysis, and receive data inputs, such as video, X-rays, and still images, from external sources. Blast protection provided by any new or modified helmet-and-visor combination incorporating the HUD must meet or exceed current blast protection standards. Developers must conduct testing and provide test data demonstrating that equal levels of blast protection have been achieved.

A firm-fixed-price proposal with a base contract period of performance of twenty-four (24) months is preferred.

Deliverables Base Contract:

- Deliver two (2) HUDs for operational test and evaluation.
- Developers will be required to provide end user training on all systems delivered.

Contract Options:

- This requirement requests two options for an additional two (2) kits per option.

R000-EOD-EXO-FY24-DS Unspecified Requirement

Develop new technology solutions to enhance decision support and diagnostic capabilities through the use of Artificial Intelligence (AI). IWTSD is interested in innovative technologies or capabilities that will provide the EOD operator with the knowledge, skills, and abilities to identify new and emerging threats, whether through visual inspection, X-ray imaging, or other diagnostic capability. The technologies proposed for this unspecified requirement must be of interest to the EOD/EXO end user community and Subgroup, and must not be any technology that has been specifically requested as a technology requirement elsewhere in this BAA by IWTSD end users. In addition, proposed technologies must not be a fully-developed commercially-available product. All submissions shall identify the anticipated U.S. DoD end user and/or endorsing organization.

This unspecified requirement is for proposing unique innovations that have not yet been identified by IWTSD. Submissions against an unspecified requirement shall be responsive to the focus areas and topics noted. Proposed technologies from the unspecified requirements will be competing against proposed technologies for identified and prioritized specified requirements. Because IWTSD does not budget for unspecified requirements, awards may not be made against them.

A firm-fixed-price proposal is preferred, with a twelve (12) to twenty-four (24) month period of performance for any base contracts. If appropriate for the technology being proposed, providers will be required to conduct end user training on all systems delivered.

Note: Quad charts submitted in response to a Subgroup's R000 may be shared with other IWTSD Subgroups if the submission demonstrates relevance to that Subgroup's Focus Areas.

5.4. Human Performance and Training (HPT)

R4913 Long-Range Jungle Patrol Reconnaissance Course
SOF activities currently have relatively limited experience and training in the conduct of long-range/long-duration (excess of 7 days) light reconnaissance patrols in a jungle environment. Current baseline training is limited to Small Unit Tactics taught in the SF Q-Course, as well as the experience brought by U.S. Army/Foreign Jungle school graduates. Part of the mission is building credibility and rapport with our partner forces, but often, the partner forces have vastly more experience in jungle environments than those tasked to train with them.

This effort is to design, develop, deliver, evaluate and refine a course that uses the Vietnam "One Zero" course as a model. Operators will require a common-core, advanced level course that will provide a modernized program of instruction (POI) to include the best practices and lessons learned from real-world long-range reconnaissance patrols in a jungle environment. This course will teach operators the skills necessary to survive against a peer threat in a jungle environment. The offeror shall be responsible for designing, developing, and delivering a POI, then refining the POIs in accordance with Government and end user feedback. The POIs shall be developed using the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) or equivalent instructional systems design framework.

Jungle Patrol Course
Design and develop a POI to teach basic jungle tactics and provide a common-core institutional knowledge base regarding the type of warfare encountered against a peer threat in the SOUTHCOM and INDOPACOM AOR. This course should be no longer than 35 days to include location and support infrastructure. Coursework shall include, but not be limited to, the following:

1. Long-range reconnaissance tactics.
2. Long-duration jungle operation practices.
3. Extended patrol packing/planning.
4. Operations supported by non-standard logistics/infrequent resupply.
5. Tactical focus (mission) of long-range patrols.
6. Leadership of long-range patrols.
7. Skill sets specific to long-range patrols (prolonged field care, evacuation under fire, operating in denied areas, High Frequency (HF) communications) and/or other methods of communication.
8. Survival and Evasion Tactics – to include tracking and counter-tracking.

Courses and culminating exercise (CULEX) shall take place at a location identified by the offeror that is fully representative of the jungle environment and approved by the Government. The first course will require a class size of up to five (5) students with a minimum of 2 instructors. All additional courses and CULEX shall include up to 15 students with a 5:1 student to instructor ratio.

Curriculum shall be prepared and delivered to the Government for review and approval. The offeror shall deliver up to six (6) iterations of the course for evaluation. After gathering student, subject matter expert, instructor, and other U.S. Government feedback, the offeror shall refine and make improvements to the POI, training aids, equipment list, training environment, and

evaluation methods. Each course shall include an evaluation of individual student capabilities using assessment measures both prior to (i.e., baseline) and after training. These student evaluations shall be compiled and included in an evaluation report.

This contract may include options for additional courses conducted at various CONUS and OCONUS locations. Options may be included for development of POI variants.

The Government will provide students, operational subject matter experts, and necessary Government Furnished Information/Government Furnished Equipment throughout the effort to guide development and transition of the courses to an established Government training activity. At the conclusion of the contract, the POI, all equipment, training materials, and training aids required to plan, run, support, implement, and further develop the courses shall be transitioned to the Government.

A firm-fixed-price proposal with a base contract period of performance of six (6) to eighteen (18) months is preferred.

R4914 SOF Space Training Courses
Currently SOF operators have limited access to training for the Space Domain. These courses are restricted to individuals in a specific coded role and is not available to all SOF personnel supporting this domain. Also, there is no course to recertify/refresh current qualified SOF personnel supporting this domain. A new set of courses outside of the current pipeline is needed to train SOF operators. The set of courses developed under this effort will provide a method for SOF specific space activities without over-reliance on external services with different space missions and a greater focus on strategic level information.

This effort is to design, develop, deliver, evaluate, and refine three (3) courses focused on SOF operational and tactical core activities in space. Two of the courses shall be designed as online classes that can be adapted as new information becomes available. Of the online courses, one will be CUI and the other SECRET//NOFORN. The third course will be taught in person at the TS/SCI level with a possible add-on block of instruction that will include special technical operation (STO) material. The offeror will need to possess a TS/SCI clearance.

The offeror shall be responsible for designing, developing, and delivering a program of instruction (POI) for each course, then refining the POIs in accordance with Government and end user feedback. The POIs shall be developed using the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) or equivalent instructional systems design framework.

Courses and CULEX shall take place at a location identified by the offeror and approved by the Government. Curriculum shall be prepared and delivered to the Government for review and approval. The offeror shall deliver up to three (3) iterations of each course for evaluation. After gathering student, subject matter expert, instructor, and other U.S. Government customer feedback, the offeror shall refine and make improvements to the POI, training aids, equipment list, training environment, and evaluation methods. Each course shall include an evaluation of individual student capabilities using assessment measures both prior to (i.e., baseline) and after training. These student evaluations shall be compiled and included in an evaluation report.

Please provide information on current experience in POI development, training in the space domain, and experience developing under the ADDIE framework.

If awarded, the Government will provide students, operational subject matter experts, and necessary Government Furnished Information/Government Furnished Equipment throughout the effort to guide development and transition of the courses to an established Government training activity. At the conclusion of the contract, the POI, all equipment, training materials, and training aids required to plan, run, support, implement, and further develop the courses shall be transitioned to the Government.

A firm-fixed-price proposal with a base contract period of performance of six (6) to eighteen (18) months is preferred.

R4915 Special Operations Robotics Capability Courses (SORCC)
Special Operations Forces (SOF) activities require the ability to dynamically redesign, manufacture, build, test, and operate customized Group 1 small unmanned aerial systems (sUAS). Since SOF operates in numerous geographic locations, often by, with, and through partner forces (PF), the readily available equipment is low-cost, commercial-off-the-shelf (COTS) hardware sourced and procured from local, regional, or international suppliers. Additionally, these systems utilize open source software for onboard autopilot and ground control systems obtained through publicly available online databases.

This effort is to design, develop, deliver, evaluate, and refine two courses that builds on RUSIC and the IWTSD Human Performance and Training Subgroup's Organically Designed and Built Small UAS (ODB sUAS) Courses to provide SOF with the knowledge and skills to, not only design, assemble, and modify their own small unmanned system (sUxS) using commercially available components, but actually fabricate some of the components themselves using manufacturing equipment organic to the Group (e.g., CNC (computer numerical control) machines, metal machining, and lathing, 3-D printers, electronics fabrication equipment). The two courses to be developed are the Initial Qualification Training Course and Master Trainer Course. The offeror shall be responsible for designing, developing, and delivering a program of instruction (POI) for each, then refining the POIs in accordance with Government and end user feedback. The POIs shall be developed using the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) or equivalent instructional systems design framework. Areas of instruction must cover computer-aided design (CAD) using available CAD software (e.g., SolidWorks, Autodesk Fusion 360), CNC fundamentals leading to computer-aided manufacturing (CAM), toolpath and G-Code, materials selection and development (CNC of carbon fiber, aluminum, steel, etc.). The offeror shall provide SOF with relevant operational expertise, platform mission integration, and CUAS peer/near-peer protection of custom designed systems.

Initial Qualification Training (IQT)
Design and develop a POI that meets standards to safely certify students and standardize how to manufacture Group 1 sUAS (Rotary Wing and Fixed Wing) tailored for specific mission needs. Coursework shall include, but not be limited to, the following:

1. Sourcing, procurement, and maintenance methods for attaining manufacturing hardware

and software to complete mission objectives. Proprietary methods, tools, and information should be minimized. Incorporate unattributable sUxS methodology where necessary in support of appropriate SOF requirements.

2. How to analyze and make design decisions based on sUxS technical and operational requirements for a given mission. For example, understanding and thinking critically through trade-offs between vehicle shape, size, overall vehicle and system weight, useful payload capacity, operational endurance, sensor and radio control frequency transceivers, mesh network integration, power requirement analysis with battery selection, design, and development to support platform specifications.
3. Once designed, students shall have the ability to develop, modify, and assemble components from available fabrication equipment, desired materials that meet design specifications, initial ground testing, and flight testing prior to operational use.
4. How to design, modify, and build sUxS with the ability to carry either COTS payloads (e.g., HDI camera, drop/delivery mechanism), as well as existing U.S. Government sUxS payloads.
5. IQT should not exceed 4 weeks in duration.
6. Up to 15 students per course with a 5:1 student to instructor ratio. First iteration of the course will require a smaller class size of up to 5 students with a minimum of 2 instructors.
7. Courses and culminating exercise (CULEX) shall take place at a location identified by the offeror and approved by the Government. Location should allow for flight operations in compliance with FAA Part 107.

Master Trainer Course (MTC)

Design and develop a POI that meets standards for providing instructor certification for the IQT. Coursework shall include, but not be limited to, the following:

1. Certify students to provide IQT instruction on designing, modifying, assembling, fabricating, and operating sUxS, to include ground control systems, mission planning, simulations, orientation flights, and proficiency evaluations.
2. At the conclusion of the Master Trainer Course, students will have the skills and knowledge necessary to conduct IQT. This shall be assessed on their ability to implement and manage a unit level training program, provide sUxS operational instruction, employ sUxS accident prevention strategies, and coordinate ongoing sustainment training.
3. Master Trainer Course duration sufficient to certify student as a Master Trainer for the IQT Course.
4. Up to 10 students per course with a 5:1 student to instructor ratio.

Courses and culminating exercise (CULEX) shall take place at a location identified by the offeror and approved by the Government. Location should allow for flight operations in compliance with FAA Part 107.

Curriculum shall be prepared and delivered to the Government for review and approval. The offeror shall deliver up to three (3) iterations of each course for evaluation. After gathering student, subject matter expert, instructor, and other U.S. Government customer feedback, the offeror shall refine and make improvements to the POI, training aids, equipment list, training environment, and evaluation methods. Each course shall include an evaluation of individual

student capabilities using assessment measures both prior to (i.e., baseline) and after training. These student evaluations shall be compiled and included in an evaluation report.

If awarded, this contract may include options for additional courses conducted at various CONUS and OCONUS locations. Options may be included for development of POI variants. Please break out cost between IQT and MTC.

The Government will provide students, operational subject matter experts, and necessary Government Furnished Information/Government Furnished Equipment throughout the effort to guide development and transition of the courses to an established Government training activity. At the conclusion of the contract, the POI, all equipment, training materials, and training aids required to plan, run, support, implement, and further develop the courses shall be transitioned to the Government.

A firm-fixed-price proposal with a base contract period of performance of six (6) to eighteen (18) months is preferred.

R4916 Extended Reality Training for Subterranean and Subway Environments
Military and law enforcement agencies have the responsibility of protecting the safety and security of people, critical assets and capabilities, transportation, infrastructure, and strategic or tactical operations in subterranean environments, both nationally and abroad. Therefore, soldiers and operators require training that delivers real-world environments and scenarios in order to be prepared and effective in countering threats.

This effort is to design, develop, evaluate, and deliver an augmented reality (AR) system that provides for increased training realism of high-risk, high-stress scenarios through the mixing of real-world environments and properly scaled virtual objects/elements and props (e.g., simulated sounds, people, environment effects, etc.). The AR system shall be designed to support diverse virtual avatars (victims and threat actors), visual effects (e.g., smoke, fire, haze, and explosions), training weapons, training locations and conditions, and have the ability to modulate the intensity with real-time instructor-controlled inputs and stress of the training environments. The system shall permit interaction between real-world players and virtual avatars and register these interactions (i.e., misses and on-target hits) for all players. The AR system shall integrate multimodal biometric sensors (e.g., heart rate, breathing rate) for real-time stress detection and monitoring. The system shall be able to detect, collect, and export the biometric data for further analysis and creation of stress management techniques. The AR system shall include a library of customizable, instructor-led training scenarios specific to Government use cases. The AR system shall be ruggedized, portable, and operable on a standalone or remote networked system without reliance on internet connectivity.

The AR system shall meet the following general capabilities:

1. The total weight of the AR system shall not exceed 3.4 lbs.
2. System components shall be designed with modular hardware to eliminate interference with regularly worn equipment.
3. The biometric sensors shall be designed for wear over a uniform, on the wrist, or

incorporated into the Head-Mounted Display (HMD).

4. The AR system shall integrate with other AR training weapons systems (e.g., handguns, rifles, grenades, pepper spray, and TASER) and provide haptic feedback to simulate hits/injuries.
5. The AR system shall be designed to protect against sand, dust, water, drop, vibration, shock, and low and high operating temperatures. The AR system shall meet an IP50 rating (threshold); IP65 and MIL-STD-810H rating (objective). Third party certification to these standards is not required.
6. The AR system shall allow for manual adjustment by an operator wearing gloves or protective gear and consider relevant human factors in the engineering design.
7. The AR system shall include instructor interface to place /move AR event triggers, avatars and objects anywhere within the training environment.
8. The AR system shall allow for scenario creation and editing. All scenarios must be fully customizable and be saved as new files by instructor. Each avatar must have multiple pre-programmed actions they can adopt (e.g., shooter, civilian, injured victim sitting, laying, running) following a mappable path within the real world environment. Avatars must be controlled in real time by an instructor. The avatar injury library shall include injuries and fatalities as a result of gunshot(s), stabbing wound(s), explosion, fire, radiation, and chemical warfare.
9. Operate on a standalone system utilizing Windows, MacOS, or Linux platform.
10. Possess an expandable battery capacity to achieve a continuous 8-hour run time.

The HMD shall:

1. Not exceed 2.4 lbs.
2. Be worn directly on the head and compatible with an Ops-Core FAST helmet, Wilcox mount, gas mask, and a Level A hazmat suit.
3. System components shall not be mounted on the wearer's back.
4. Possess a 50-degree (threshold) up to 80-degree (objective) field of view, a 1440 × 1760 (threshold) up to 2048 × 1080 (objective) resolution, simulated (threshold); actual (objective) night vision mode with infrared (IR) laser, eye and hand tracking, picture-in-picture, and built-in voice commands.
5. Be able to display 30 (combination of static and moving) unique avatars at a time without slowing system performance.
6. Provide 64 GB of memory to support all necessary software and graphics to run scenarios without internet connectivity.
7. Allow for data downloads and operating system updates via USB ports.
8. Be compatible with MS Windows.

The final prototype AR training system shall include:

1. Four HMDs containing required graphics software.
2. One HMD integrated with the computer tablet containing the scenario library.

This contract may include options for additional AR systems. Please break out cost estimate for additional units in increments of five.

The Government will provide students, operational subject matter experts, and necessary

Government Furnished Information/Government Furnished Equipment (GFI/GFE) throughout the effort to guide development and transition of the AR system and training courses to an established Government training activity. At the conclusion of the contract, all GFI/GFE provided during the course of the project shall be transitioned to the Government.

The U.S. Government must receive unlimited intellectual property rights to all technical data developed during this course of this project.

A firm-fixed-price proposal with a base contract period of performance of six (6) to eighteen (18) months is preferred.

R000-HPT-FY24 Unspecified Requirement
The Human Performance and Training (HPT) subgroup focus is on addressing the most challenging problem sets associated with developing knowledge, skills, and abilities to deter, defeat, prevent, protect against, mitigate, and respond to irregular warfare, combating terrorism, and national security threats. This unspecified requirement (R000) seeks solutions to enhance the operational capabilities of our U.S. military, federal law enforcement, and interagency customers involved in combating U.S. adversaries by optimizing performance for significantly improved readiness and mission execution. All submissions shall identify the anticipated U.S. DoD end user and/or endorsing organization.

Key overarching areas of interest based on HPT's focus areas are: Technology that allows a learner to seamlessly interact with, and become immersed in a learning environment. Tools, technologies, and techniques for improving the design and validation of interactive and immersive learning technology. The full range of performance gaps and interventions to improve and sustain human performance. Methods, technologies, and programs based on cognitive and physiological principles that will optimize operator training, enhance mental and physical skills, and improve mission performance. Training and educational programs that employ novel instructional design, delivery methods, and concepts to accelerate and enhance learning.

More specific areas of interest include:

- Monitoring and exploiting human performance data (e.g., physiological state) within a training environment.
- Human performance data analytics.
- Wearable technology for operator state assessment.
- Measuring and mitigating stress and mental workload.
- Novel applications of immersive technology including extended reality, virtual reality, augmented reality, and mixed reality.
- Natural language processing (e.g., conversational interaction) within immersive, simulation based training technology.
- Cognitive skills development and assessment for those encountering complex problems and making high-risk decisions.
- Human factors/usability for operational systems.
- Human-machine teaming.
- Subterranean detection and operations training, especially leveraging virtual, augmented, and/or mixed reality.

- Just-in-time learning software for biometric collection.
- Fully immersive sand tables.

This unspecified requirement is for proposing unique innovations that have not yet been identified by IWTSD. Submissions against an unspecified requirement shall be responsive to the focus areas and topics noted. Proposed technologies from the unspecified requirements will be competing against proposed technologies for identified and prioritized specified requirements. Because IWTSD does not budget for unspecified requirements, awards may not be made against them.

Note: Quad charts submitted in response to a Subgroup's R000 may be shared with other IWTSD Subgroups if the submission demonstrates relevance to that Subgroup's Focus Areas.

A firm-fixed-price proposal with a base contract period of performance of six (6) to eighteen (18) months is preferred.

5.5. Indirect Influence and Competition (I2C)

R4894 PSYOP in IW
Psychological Operations are undertaken across the competition continuum to influence the perceptions, emotions, logic and behavior of selected foreign target audiences in a manner conducive to friendly force objectives. They provide one of the Department of Defense's core Irregular Warfare and Influence activities. Current PSYOP doctrine and training at both the baseline and advanced levels is lagging the current era's digital revolution and emergent competition. One of the largest gaps in training, as identified by the new PSYOP critical task review board, is in applying technological solutions to the PSYOP process. Both doctrine and supporting material must be developed and validated to keep pace with new Joint, Service, and commercial trends, and cultivate the subsequent technical expertise required to operate in an increasingly complex environment.

IWTSD is seeking academic and industry subject matter expertise from a variety of technical or specialized fields to develop and validate lesson plans, application frameworks, instructional content, and practical exercises for the training of PSYOP Soldiers and leaders. Selected performer shall produce a series of technical manuals and integrate the requisite knowledge and skills therein into course materials that support Proponent Training Development Division's (TDD) objectives of a PSYOP force educated and trained for operations in a post-digital revolution era of strategic competition. These conceptual and material advancements will be integrated into doctrine, training publications, and educational curricula taught at the John F. Kennedy Special Warfare Center & School (SWCS) at Fort Bragg, NC. This effort, implemented through the PSYOP Proponent TDD, will strengthen the integration of Influence as a key activity and objective in Irregular Warfare.

Skillsets and qualifications of successful performers may include but are not limited to: sociology and anthropology; statistics, survey and research methodologies; cognitive behavioral psychology including cognitive heuristics, marketing psychology and theories of behavior

change; organizational management; executive leadership skills such as negotiation and executive level communication; multi-media competencies in audio and visual storytelling and social media influence techniques. This expertise should be verified by academic achievement (i.e., published research and advanced degrees) and/or demonstrated in private sector and operational success in relevant industries or operations.

Performers will be required to provide end user training on all material delivered.

Upon contract award, performers will be provided with the following as Government Furnished Information:

1. Graduated Risk Assessment MISO Approval Program (GRAMAP)—CENTCOM. (Contingent on being cleared)
2. Regulation 525-20, SOCCENT Instruction 525-20 (Contingent on being cleared)
3. Copy of BEND Framework
4. PSYOP Critical Task Review outputs.
5. Copies of relevant historic PSYOP doctrine and training publications.
6. Copies of exampled academic research.

Note: Firm Fixed Price contract preferred, but will also accept Cost Plus Fixed Fee.

R4938 SOF Cyber Enablement

Problem

Currently, US Army Special Operations Operators do not receive consistent, deliberate training on defensive cyber operations or network security outside of Department of Defense Information Networks (DODIN). SOF increasingly utilizes non-DODIN infrastructure to interact with foreign partner forces during Unconventional Warfare (UW) or Foreign Internal Defense (FID) operations. USSOF may be required to assess both counterintelligence (CI) risks and unilaterally defend or advise partner force in defense of their infrastructure. As secure but unclassified networks, apps, or systems proliferate, the forward-most, most-at-risk element is ill-prepared to positively detect threats and initiate counter-actions.

Additionally, USSOF Operators are trained to employ simple, single-board computers and open source software in the assembly of electronic devices. USSOF require the ability to create compelling military effects by, with, and through partners, utilizing available components, which are frequently commercial off the shelf (COTS). However, many such projects require programming or technical engineering skills beyond tactical-level unit knowledge and training. Devices and expertise used to complete such projects must be shareable with foreign partners, while also safeguarding blue force digital attack surfaces as part of our strategic competition posture.

Due to regional variations in types of available equipment, an operator may not be capable of the necessary modifications needed to secure his footprint in the field and will need expert reach-back support. To that end, a suite of validated digital force protection measures, COTS hardware/software recipes, and virtual machine ISOs that SOF operators can securely access from the edge is required.

Solution Requirements - Overview

Ultimately, the solution may provide USSOCOM-wide infrastructure for testing, validating, and deploying recipes and instructions for fabricating systems using materials in their local operating environment, with reach-back support for technical guidance. This would provide the blueprints, known standards, and format for fabrication necessary to be complaint with regulations and DOD/IC systems for targeting and intelligence, while also enabling construction in denied environments or via local economy procurement.

The solution shall be comprised of two primary functions: The test environment and the operational virtual private server (VPS) creator. Operators need access to a "cookbook" of Commercial-Off-the-Shelf (COTS) equipment they can build, a "test kitchen" to which they can submit new projects beyond their technical skill, and a "chef" that can rapidly prototype or adjust approved recipes to locally procured materials in a denied environment while staying within compliance. Examples of devices range from direction finding leave-behinds, to passive radar, to remote radio listening stations, all using designs commonly available on the internet. Additionally, the test kitchen shall allow operators to test and validate digital force protection procedures for off-DODIN operations.

The second component is an operational VPS generator which utilizes the validated scripts, virtual machines (VMs), configurations, and recipes from the test environment to stand up a compostable VPSs for mission execution. Utilizing this capability will help secure SOF members during travel and provide higher quality operational security, and will enable going in "slick" to specific mission contexts while maintaining capability for partner-enabled, non-DODIN infrastructure to meet CI and Digital Force Protection requirements. Logs from the VPS can be exported to feed the test environment and deploy new measures.

I. **Mission Requirements**

a. **Total System Requirements**

i. System shall be accessible via IL-2 infrastructure and COTS hardware.

ii. System shall include a compostable workspace and managed attribution solution.

1. COTS solutions for consideration:

a. Dispel.io

iii. The solution should be accessible to all SOCOM operators with automated validation either via intelink passport, SOCOM email, or other solution.

iv. Must have the ability to manage organizational sub-components, projects, and operations.

v. Must have the ability to manage access control

vi. Must contain a GitLab or GitHub-like deployment that is common to both the test kitchen and the operational deployment but that restricts use of non-validated code to the test kitchen.

vii. Must contain a wiki on current application, network, hardware, and software pen tests with a report generation function which returns most known vulnerabilities in a combination of hardware and software.

b. **Test Kitchen Environment**

i. Accessibility

1. Test Environment shall be segregated from all operational environments.
2. Users should be organizationally aligned by default, with the ability to create groups to collaborate on a project.

ii. Function

1. Test Environment must be able to simulate any operating system or small-scale network via combination of Virtual Private Server (VPS) and Virtual Machine (VM).
2. Test Environment should be able to properly simulate hardware.
3. Test Environment must push "recipes" to a classified system for review and testing on appropriate CYBERCOM or NSA infrastructure.
4. "Recipes" must be validated at the higher level and pushed down with an ATO as available in the "mission environment construction" section. Examples of hardware/software recipes that could be hardened and validated located below.
    a. A KrakenSDR Passive Coherent Radar or equivalent.
    b. RasHAWK – VHF/UHF/802.11 DF array <$1000
    c. Wi-Spy/Wi-Peep – ESP32 based wifi precision geo-location addition for COTS sUAS
    d. DensePose from Wifi – mapping human bodies inside buildings based on wifi signals
    e. Skybot.cam – AI/ML image recognition on the backend, and/or in conjunction with the Kraken for cueing and tracking
    f. Travel router firmware for GliRouters. Known safe images. Also, with ForcePro additions like Cover My Tail or Kismet.

c. **Compostable Mission Environments.**

i. Accessibility

1. Operational components should be able to be stood up in a non-attributable, compostable VPS environment which may be destroyed once mission is complete.
2. Must be accessible from mobile devices.
3. Must be accessible from desktop applications.

ii. Function

1. Must be able to create a compostable 'mission' VPS that contains applicable applications, VMs, "recipes" for localized builds.
2. Must include reach-back support component to pass requests for advice, validation, and additional capabilities.

3. Contain mission logs for actions taken on network that will be exported to classified system once VPS is composted on mission end.

II. Enablement

a. Solution will require acquisition of Authority to Operate (ATO). ATO must be crafted with ingest to higher classification databases and systems in mind.
b. Solution should be integrated with existing training courses for SOF operators.

III. Interoperability

System should be designed to communicate with existing Secure but Unclassified Systems.

a. **System Interoperability**
    i. ShadowNet
    ii. DragonNet
    iii. CutNet
    iv. MME
    v. ATAK
    vi. RAAVAK

Note: Firm Fixed Price contract preferred, but will also accept Cost Plus Fixed Fee.

R4955 Manifesto Detection

Foreign perpetrators of mass shootings and other violence often post so-called “manifestos” or screeds before their attacks, offering authorities a small window of opportunity for detection and preemption. Manifestos offer propagandistic justification for violence and sometimes detail an attacker's tactical intentions. While foreign terrorist manifesto detection has been the subject of some analysis, and the Counterterrorism (CT) and Countering Violent Extremism (CVE) community has a need for improved Indications & Warning capabilities, the concept has defied implementation due to its technical complexity.

To advance the development of a reliable terrorism manifesto detection capability, the Department of State’s Global Engagement Center (GEC), with interagency support, proposes implementation of a one-year phased approach to researching, developing and testing an effective capability, as consistent with relevant authorities and any applicable legal restrictions or limitations.

Phase I - Systematic Literature and Technology Review:
Performer(s) will select and critically appraise relevant primary research into the common characteristics and indicators of recent historical terrorist manifestos, as well as manifesto publication trends that could indicate likely geographic areas or demographic conditions for near-future manifesto publication, and extract and analyze useful data from existing studies that are included in the review. Examples of existing research may include RAND's Mapping Racially and Ethnically Motivated Violent Extremism (funded by the Department of State’s CT Bureau). Performer(s) will further select and assess existing technological detection systems with direct applications to the problem of terrorist manifesto detection. This phase will be limited to 90 days.

Phase II - Indications & Warning System Development:
Performer(s) will research and develop a system that collects indicators of the publication of violent manifestos online and provides timely pre-attack warning of their existence/publication. The performer(s) may use historical terrorist manifesto publication qualities for regression analysis to determine predictive detection parameters. The system will employ the most inclusive possible data resources, including obscure social media platform data, integrated into user-friendly data analytics ("social listening") platform, with an intuitive analytic dashboard for use by non-expert analysts. This capability will be directed at foreign origin (non-US person) online activity. This phase will be limited to 150 days.

Phase III - Field Tests and Refinement:
Performer(s) will conduct iterative blind tests of the system's ability to detect mock terrorist manifestos that have been staged in a realistic simulated online data environment by a third party. The performer(s) will retest to refine detection and warning capabilities as needed. This phase will be limited to 60 days.

Phase IV - Training and Transfer:
The performer(s) will provide three training sessions to U.S. interagency and foreign government representatives, selected in accordance with relevant USG funding, policy, and legal requirements. The performer(s) will provide system set-up and additional training to three key users and/or long-term technology integrators, and other U.S. agencies may provide input on potential participants in such training, in line with their respective legal authorities. This phase will be limited to 60 days.

Note: Firm Fixed Price contract preferred, but will also accept Cost Plus Fixed Fee.

R000-I2C-FY24 Unspecified Requirement
The Irregular Warfare Technical Support Directorate's (IWTSD) Indirect Influence and Competition (I2C) Subgroup seeks proposals for the research and demonstration of technically and operationally viable capabilities, methodologies and approaches to more effectively compete and achieve influence advantage across the informational, physical and cognitive domains. Global adversaries of the United States and its partner nations employ a variety of tactics and strategies to wield power and exert influence over target populations. These activities may threaten the interests of the United States and its strategic advantage, requiring innovation to more effectively and efficiently shape and prevail in the competitive landscape.

Develop new or improved technologies, concepts or emerging technological capabilities pertaining to information and influence related capabilities that may be of interest to IWTSD, but are not commercially available. Proposed projects shall be timely, relevant, and further irregular warfare efforts and influence operations. These projects shall advance high-technology readiness level (> TRL 6) prototypes, demonstrate new concepts and solutions that reduce risk to the U.S. and partner forces while eroding adversary motivation and influence and disrupting their sanctuaries, organizations, and enterprises. A firm-fixed-price proposal with a 12 to 18 month base contract period of performance is preferred.

Proposals shall include solutions that:

1) Develop, test and deploy new tools, capabilities and concepts for understanding target motivation, morale and behavioral effects in order to deliver precise and rapid influence at scale to relevant populations in the informational and physical domains
2) Apply AI/ML technologies to expedite analysis and/or execution of influence, information, or military deception operations
3) Proactive measures to undermine Great Power competitors' mis- and dis-information, deception and other (e.g., financial) coercion activities
4) Bolster the proactive mindset shift required to succeed through unified action in Irregular Warfare missions to compete more effectively against all adversaries in IW

5.6. Protection, Survivability, and Recovery (PSR)

R4906 Improved Blunt Impact Helmet Liner

Helmet blunt impact protection systems are a key component for protection from traumatic brain injuries (TBI).

Develop a helmet liner for use in the Ops-Core Family of Tactical Headborne Systems (FTHS) Ballistic or Ops-Core FAST® SF helmet systems that improves impact protection by at least 40%. Performance shall be maintained in environments ranging between 14°F to 130°F. Impact protection shall be determined in accordance with CO/PD 05-04, Purchase Description, Helmet, Advanced Combat dated 30 Oct 2007 with orientation angles as specified in ATC-MMTB-IOP 029 Rev E with the following changes:

The peak acceleration of the head shall be kept below 150*g* for the following impacts:

- Two impacts at 10 ft/s with the second impact occurring within 60 s to 120 s of the first impact (T).
- One impact at 14 ft/s (T).
- One impact at 17 ft/s (O).

Testing shall be conducted by an accredited third-party lab documenting that the candidate helmet liner meets the requirements when used in conjunction with the Ops-Core FTHS Ballistic or Ops-Core FAST® SF helmet systems. No helmets will be provided as Government Furnished Equipment.

Deliverables Base Contract:

- Deliver 20 prototypes for operational test and evaluation (OT&E).

Contract Options:

- Deliver up to 100 prototypes for OT&E.

A firm-fixed-price proposal with a base contract period of performance of less than eighteen (18) months is preferred.

R4907 Small Surgical Suction Unit
Current surgical suction systems are not small and compact for when Surgical Resuscitation Teams (SRT) are operating out of rucksacks or aid bags. These large systems also lose capability when not in the upright position, which is not always feasible when operating in an aircraft or other cramped spaces.

Develop a small surgical suction system that can be carried in rucksack or aid bag. The system shall:

- Provide continuous suction for secretions in the airway (e.g., blood, mucous, saliva), suction on a chest tube, and rapid suction surgery to remove blood for surgical wound visualization.
- Vacuum pressure range 0 mmHg to 600 mmHg measured at catheter.
- Vomit flow rate/removal of 3 L/min.
- Maintain full range of 0 mmHg to 600 mmHg suction with a flow rate/removal of 3 L/min in any orientation.
- Weigh ≤ 1.0 kg (T), ≤ 0.50 kg (O).
- Fit within 30 cm × 10 cm × 10 cm, including the canister.
- Have a canister capacity of 1000 ml with an option of 500 ml for manpack operations with volume markings on canister.
- Have a suction tube material that is flexible in hot and cold environments, lightweight, coilable, packable, not collapsible, and interoperable.
- Have a suction tube length of at least 3 ft.
- Have a suction tube diameter of 0.5 inches to 0.75 inches.
- Meet current MIL-STD-810H specifications for device durability, operational atmospheric pressure range, operational temperature range, humidity range, moisture exposure range.
- Have a noise level of < 69 dBA.
- Be designed for ease of disinfection.
- Be AC/DC compatible with 110/240 VAC/12-24 VDC.
- Operate with rechargeable and/or disposable batteries.
- Operate for four (4) hours of cumulative use at maximum power draw.
- Be airworthy and safe to use during flight.
- Have a low battery indicator.
- Have a variable vacuum pressure controller.

Deliverables Base Contract:
- Deliver 8 prototypes for operational test and evaluation (OT&E).

Contract Options:
- Deliver up to 20 prototypes for OT&E.

A firm-fixed-price proposal with a base contract period of performance of less than eighteen (18) months is preferred.

R4908 Rough Terrain Face Shield
Currently, the 57th Sapper Company use a U.S. Forestry Service smokejumper helmet, which is a modified Bell motorcycle helmet with a metal visor. The metal visor is secured to the helmet by screws along the forehead and snap fasteners near the ears. The modified Bell motorcycle helmet is not suitable for military combat operations after airborne insertion. The helmet does not provide ballistic protection, is not capable of mounting night vision goggles, and reduces the user's ability to hear due to the shell and padding covering the ears.

Develop a face shield that can attach to the Integrated Head Protection System (IHPS) or Ops-Core FAST® SF helmet without any modification to the helmet. The face shield shall protect the operator's face from items such as tree branches when jumping into rough terrain.

The face shield shall:

- Be quickly removed for follow-on combat operations in less than 5 seconds.
- Be interoperable with the Maneuverable Canopy 6 (MC-6) parachute system.
- Be tested in accordance with drop procedures within Soldier Protection System (SPS) IHPS Mandible AR/PD 17-04 Amendment 1, and with the below modifications.
    - Two direct impacts at a velocity of:
        - 21 ft/s (T)
        - 28 ft/s (O)
    - The direct impacts will be tested using a hemispherical anvil.
    - Peak acceleration of the head shall not exceed 150*g* for any impact for any bracket (O).
    - Not contact the operator's face or chin during impact and deflect more than 1 inch.
- Not interfere with the jumper's ability to see or operate during jump events.
- Be collapsible once removed from helmet (O).

Interface control documents will be provided for the IHPS. However, no other Government Furnished Equipment (GFE)/Government Furnished Information (GFI) will be provided.

Deliverables Base Contract:

- Deliver 20 prototypes for operational test and evaluation (OT&E).

Contract Options:

- Deliver up to 20 prototypes for OT&E.

A firm-fixed-price proposal with a base contract period of performance of less than twelve (12) months is preferred.

R000-PSR-FY24-BP Unspecified Requirement – Ballistic Protection
Significant technical progress has been made in the areas of research and development (R&D) for ballistic protection materials and manufacturing techniques. Many times, these advancements are unknown due to the specific nature of ballistic material acquisition. This unspecified requirement is meant to bridge the gap between end user knowledge and vendor capability. All

submissions shall identify the anticipated U.S. DoD end user and/or endorsing organization.

Develop novel solutions to enhance the survivability of personnel to include both military and civilian communities involved in Irregular Warfare. IWTSD is interested in any innovative technologies or capabilities that will enhance individual protection and survivability, which a vendor believes would be of interest to the Protection, Survivability, and Recovery (PSR) Subgroup. Specific areas of interest for the PSR Subgroup are listed below but not limited to:

- New ballistic 3-D printing materials and or other manufacturing techniques to improve ballistic and blast protection.
- Either improving protection at a set areal density, or maintaining the same level of protection at a lower areal density.
- Innovating the form factor of armor to improve fit or comfort while maintaining current protection levels and areal densities.
- Achieving equivalent protection and similar areal density to currently fielded armor systems with a unique material that may offer the Government strategic benefits such as cost reduction, raw material availability, or improved life and durability.
- Enhancing mechanical properties of materials for defensive applications.

This unspecified requirement is for proposing unique innovations that have not yet been identified by IWTSD. Submissions against an unspecified requirement shall be responsive to the focus areas and topics noted. In addition, proposed technologies must not be a fully-developed, commercially-available product. Proposed technologies from unspecified requirements will be competing against proposed technologies for identified and prioritized specified requirements. Because IWTSD does not budget for unspecified requirements, awards may not be made against them.

Note: Quad charts submitted in response to a Subgroup's R000 may be shared with other IWTSD Subgroups if the submission demonstrates relevance to that Subgroup's Focus Areas.

FY24 Counter UAS Unspecified Requirements

Unmanned Aerial Systems (UASs) or "drones" have entered the commercial marketspace and are readily available for consumers to purchase at affordable prices. The ease of use and accessibility to this powerful technology has drawn attention to the potential harmful uses of UASs against U.S. and Israeli interests. Technologies have been successfully developed to detect, identify, and mitigate these commercially available, DoD Group 1 UAS threats at large facilities and man-portable technologies to protect temporary/dismounted operations. As drones with greater sophistication, speed, and size become more prevalent, it is imperative to stay ahead of the threat by developing new detection and mitigation technologies and delivering new capabilities to U.S. and Israeli warfighters.

Develop novel solutions to enhance Counter-UAS (CUAS) systems to improve detection, identification, tracking, and mitigation. Specifically, increase capability in urban areas and against DoD Group 1 to Group 3 UAS, while minimizing collateral damage to citizens, property, or commercial electronic spectrum in the immediate area of the mitigation of the threat UAS.

Solutions to address Group 3 UAS are a priority. All submissions shall identify the anticipated U.S. DoD end user and/or endorsing organization. Specific areas of interest for the PSR Subgroup are listed below, but are not limited to:

R000-PSR-FY24-DET Unspecified Requirement - CUAS Detection

- Acoustic Detection of UAS
    - Adversary UAS operations are a present and ongoing threat to U.S. forces around the world. Acoustic signatures are the one detectable signature created by all UAS devices. Develop an open architecture, UAS acoustic signature detection system capable of being integrated in current DoD RF/optical detection systems. The system shall provide 360 degree coverage and greater range than is currently available.

- Unintended Emissions Detection of UAS
    - Small UAS operating without control links pose challenges to traditional CUAS detection technologies. Develop a system capable of detecting and tracking unintended emissions inherent to UAS operation. Unintended emission sources may include electrical components and wiring. The system shall provide detection capability at a tactically relevant range.

- Passive Radar Detection
    - The ability to detect and track Group 1-3 UAS with Radar like accuracy without emitting RF signatures. The system shall offer 360 degree coverage and provide enough track fidelity to successfully slew and target a detected UAS with a narrow field of view camera without operator involvement.

R000-PSR-FY24-MT Unspecified Requirement - CUAS Mitigation

- Mitigation of Inertia navigation / Way point dependent UAS
    - Adversary use of inertia-based systems and pre-programed way points for operations of DoD Group 1 to Group 3 UAS is near impossible to defeat (non-kinetic). Although detection by other means (RADAR / acoustic / optical) may identify the threat, non-kinetic countermeasures have been unsuccessful in defeating this threat.

- UAS Cyber Mitigation
    - As UAS technologies progress and become more sophisticated, the methods to protect against potential threats need to become more sophisticated. The more surgically threats can be addressed, the lower potential for collateral damage. Develop a system that can defeat individual UAS threats with minimal/no effect on the surrounding environment.

- Payload Detection and Mitigation
    - As UAS technology progresses, so does their ability to carry kinetic and non-kinetic (cyber or other) payloads or to disperse agents. The ability to identify, assess threat level, and prevent employment of nefarious payloads in addition to, or in lieu of, mitigation of the UAS should be considered. Where possible,

mitigation should result in the threat UAS, or significant parts of the threat UAS, be recoverable by US defenders. Mitigation options should not be limited to kinetic actions against threat UAS or controller signal interruption.

- Group 2-3 UAS Mitigation
    - Ability to mitigate or defeat Group 2-3 UAS in a Special Operations Forces (SOF) Size, Weight, and Power (SWaP) form factor that can be employed by small teams in austere and sensitive environments. The system shall provide greater range than solutions currently available. Kinetic or directed energy defeat solutions in a dismounted form factor (can be carried and operated by a single operator), that offer superior range and accuracy than current solutions, are also of interest.

- Electronic Mitigation
    - Ability to mitigate or defeat Group 1-3 UAS through use of RF signals. Technology that aims to neutralize, mitigate, or take control of a threat UAS by disrupting the RF link (C2 and/or telemetry) between the GCS and UAV. UAS frequencies are emitted from an RF jamming antenna at greater power levels, flooding that frequency bandwidth and preventing actual UAS signals from being received.

R000-PSR-FY24-OT Unspecified Requirement - CUAS Other Technologies

- Operations in GPS Disadvantaged/Denied Areas
    - Many CUAS systems require GPS signals for proper system operations. Various methods exist to spoof and/or deny GPS signals. Develop a system/methodology to reduce the reliance on GPS signals for proper CUAS system function. Scalable or target specific technology to reduce the fratricide on friendly or allied GPS units.

- UAS Swarms
    - The use of multiple UAS working in coordination (swarms) has been demonstrated at events such as the opening ceremony at the Tokyo Olympics. The nefarious use of swarms can cause significant disruption. Develop a solution that can identify, track, prioritize, and address multiple UAS threats simultaneously at different altitudes and greater distances.

- Identification Friend or Foe (IFF) Capability
    - Ability to identify friendly, hostile, and neutral unmanned systems with accuracy in order to prevent fratricide and expedite the initiation of mitigation techniques. The system shall offer 360-degree coverage with an emphasis on accuracy and range. Ideal solutions will be ground based IFF systems. IFF options should be logistically feasible to distribute and have a low probability of intercept by enemy forces.

- Radar Discrimination Techniques
    - Novel techniques that effectively reduce Radar clutter and discriminates UAS

and non UAS (i.e., birds). Techniques shall offer greater accuracy and/or require less time to discriminate a target than current solutions while adding little to no additional computing hardware.

- System Integration Techniques
    - The capability that enables all of sensor and operator systems to work together as one. Software that shall offer greater ease of use to the operator while maintaining target integrity. Techniques should include technology that assist human capabilities forming a seamless integrated sensor network.

Unspecified requirements (R000s) are for proposing unique innovations that have not yet been identified by IWTSD. Submissions against an unspecified requirement shall be responsive to the focus areas and topics noted. Proposed technologies from the unspecified requirements will be competing against proposed technologies for identified and prioritized specified requirements. Because IWTSD does not budget for unspecified requirements, awards may not be made against them.

Note: Quad charts submitted in response to a Subgroup's R000 may be shared with other IWTSD Subgroups if the submission demonstrates relevance to that Subgroup's Focus Areas.

R000-PSR-FY24-MISR-TTL Mobile Intelligence Surveillance Reconnaissance (ISR), Tagging Tracking Locating (TTL), and Recovery

Develop new or improved technologies or capabilities that may be of interest to the PSR Subgroup, but were not specifically requested in this BAA and are not commercially available. Proposed projects shall be timely, relevant, and further worldwide irregular warfare efforts. All submissions shall identify the anticipated U.S. DoD end user and/or endorsing organization. Areas of particular interest include the following PSR focus areas:

1. Mobile ISR
    - Develop intelligence, surveillance, and reconnaissance (ISR) capabilities to detect and identify threat indicators, conduct risk assessments, and provides situational awareness and non-kinetic mitigation systems to protect critical personnel.

2. Tagging, Tracking, Locating, and Recovery
    - Develop systems to geolocate and track high-risk personnel and critical equipment, send and receive signals of duress, and facilitate recovery of missing or captured personnel.

Unspecified requirements (R000s) are for proposing unique innovations that have not yet been identified by IWTSD. Submissions against an unspecified requirement shall be responsive to the focus areas and topics noted. Proposed technologies from this unspecified requirement will be competing against proposed technologies for identified and prioritized specified requirements. Because IWTSD does not budget for unspecified requirements, awards may not be made against them.

Note: Quad charts submitted in response to a Subgroup's R000 may be shared with other IWTSD Subgroups if the submission demonstrates relevance to that Subgroup's Focus Areas.

5.7. Surveillance, Collection, and Operations Support (SCOS)

R4871 Off-Grid Group Communications
The DoD and intelligence community (IC) are seeking technology enabling small group communications independent of existing wireless communications infrastructure. Non-radiofrequency (RF) solutions are preferred. Self-organizing mesh network must demonstrate information security and network resiliency.

Key objectives of this effort will enable a unique set of operational scenarios by meeting the following specifications:

1. Mobile bi-directional voice and data no less than 25 km^2 (T) with a goal of 100 km^2 (O).
2. Power-on push-to-talk (PTT) operation.
3. Data throughput of at least 100 kbps (T) with a goal of 1 Mbps (O).
4. Mobile unit form factor of less than 4″ × 6″ × 1″ including rechargeable power for at least 4 hours of operation (T=O).
5. Optional base station with a form factor of 10″ × 10″ × 5″ permissible, including rechargeable power for at least 4 hours operation (T=O).

Proposed Deliverables:

1. Kickoff Meeting and associated design documentation.
2. System Requirements Review (SRR) and associated design documentation.
3. Preliminary Design Review (PDR) and associated design documentation.
4. Critical Design Review (CDR) and associated design documentation.
5. Test Readiness Review (TRR) and associated documentation.
6. Prototype and demonstration acceptance testing.
7. Training, operator, and technical manuals to operate, update, and maintain the system.
8. Delivery of three (3) prototypes with options for additional prototypes.

The developer shall thoroughly and comprehensively test the prototype in realistic scenarios. Additionally, the prototype shall be provided to end users for at least a minimum 60-day testing period before final delivery. The developer shall use its own as well as the end users' test data, feedback, evaluations, and test results to make modifications to improve the prototype's performance and to ensure conformance to all standards, features, and capabilities in the SOW before final delivery.

The Irregular Warfare Technical Support Directorate (IWTSD) expects this to be a phased effort with meaningful gates. The final deliverable is a minimum of three (3) prototype transceivers with options for additional prototypes. All information and prototypes will transition to the IC for further technical evaluation.

Intellectual Property Rights, Limitations and Licensing: Concerning most requirements, the Government will seek licensing for the Intellectual Property (IP) developed under awarded contracts in accordance with DFARS 252.227-7013 and 252.227-7014. On a limited number of requirements, instead of obtaining a license, the Government may seek to purchase the IP.

A firm-fixed-price proposal with a base contract period of performance of six (6) to eighteen

(18) months is preferred.

R4872 Next Generation Software-Defined Radio (SDR)
Today's radiofrequency (RF) capabilities are constrained by current software-defined radio limitations, which typically have an upper frequency of 3 GHz and bandwidths up to 50 MHz. The DoD and IC are seeking high performance RF transceivers with higher frequency ranges, greater instantaneous bandwidths and lower size, weight, power, and cost (SWaPC).

Key objectives of this effort will enable a unique set of operational scenarios by meeting the following specifications:

1. Frequency range from 1 GHz to 7 GHz (T), with a goal of 9 GHZ (O).
2. Instantaneous bandwidth of 200 MHz (T), with a goal of 400 MHz (O).
3. Spurious Free Dynamic Range (SFDR) > 30 dBc (T=O).
4. Ample processing resources for wideband modem hosting.
5. Ample input/output (I/O) bandwidth to support full duplex, high data rate streaming applications.
6. Compensation for power amplifier non-linearity.
7. Low SWaPC.

Proposed Deliverables:

1. Kickoff Meeting and associated design documentation.
2. System Requirements Review (SRR) and associated design documentation.
3. Preliminary Design Review (PDR) and associated design documentation.
4. Critical Design Review (CDR) and associated design documentation.
5. Test Readiness Review (TRR) and associated documentation.
6. Prototype and demonstration acceptance testing.
7. Training, operator, and technical manuals to operate, update, and maintain the system.
8. Delivery of three (3) prototypes with options for additional prototypes.

The developer shall thoroughly and comprehensively test the prototype in realistic scenarios. Additionally, the prototype shall be provided to end users for at least a minimum 60-day testing period before final delivery. The developer shall use its own as well as the end users' test data, feedback, evaluations, and test results to make modifications to improve the prototype's performance and to ensure conformance to all standards, features, and capabilities in the SOW before final delivery.

The Irregular Warfare Technical Support Directorate (IWTSD) expects this to be a phased effort with meaningful gates. The final deliverable is a minimum of three (3) prototype transceivers with options for additional prototypes. All information and prototypes will transition to the IC for further technical evaluation.

Intellectual Property Rights, Limitations and Licensing: Concerning most requirements, the Government will seek licensing for the IP developed under awarded contracts in accordance with DFARS 252.227-7013 and 252.227-7014. On a limited number of requirements, instead of obtaining a license, the Government may seek to purchase the IP.

A firm-fixed-price proposal with a base contract period of performance of six (6) to eighteen (18) months is preferred.

R4874 Technical Collection of Ubiquitous Selectors
Near-peer threats whose skill and knowledge allows them to evade traditional means of detection has created a capability gap for the detection of ubiquitous selectors found in everyday necessities (cars, clothing, handheld devices) and capture them into selector catalogues assigned to personas. IWTSD seeks the ability to develop and maintain force protection activities as well as target foreign adversaries through both an active and passive emittance posture. Developing the ability to ingest selector personas and display them in geo-temporal layers against collateral telemetry data (CTD) in products like 4DV will yield significant capability against evolving threats.

The system will isolate multiple signals and demodulate specific signature characteristics that allow a system to fingerprint RF signals from equipment and vehicles and then assign those signals to digital persona in support of digital force protection. The defense, intelligence, and law enforcement agencies across the U.S. Government require a system to support surveillance, counter surveillance, search and rescue, force protection, network defense, passive and active entry, target tracking, signature defense, and unique targeting. The required system must facilitate detection, isolation, and exploitation of the following protocols: cellular, Wi-Fi, Bluetooth, TPMS, Wireless OBD2, medical devices, ADS-B, AIS, MURs, key fobs, RFID, Iridium, and other non-traditional indicators. The system must operate in a Debian based Linux environment and may include or at least be completely compatible with the following software: 4DV Scout, 3dB Labs SCEPTRE, and Strike Solutions AIRTIGHT and GOAT.

Key objectives of this effort will enable a unique set of operational scenarios by meeting the following specifications:

1. System must be less than 2,200 cubic inches (T) with a goal of less than 2,000 cubic inches (O). System should fit within a small backpack or carry-on luggage type case.
2. System must weigh less than 25 lbs. (T) with a goal of less than 20 lbs. (O)
3. System must use 110VAC 60Hz /12VDC (T) with a goal of 110VAC 400 Hz/220VAC 50Hz/24DC (O).
4. System must use multi-core x86 architecture with at least 64GB of RAM and at least 2TB of NVMe storage (T) with a goal of 128 GB of RAM and 4TB of NVMe storage (O)
5. System must have On/Off switch with the ability to start a pre-determined collection on boot (no multistep startup or shutdown procedures) (T=O).
6. System must capture and demodulate the following protocols - cellular, Wi-Fi, Bluetooth, vehicle key fobs, TPMS, RFID at a minimum (T) with ADS-B, AIS, MURS, Nordic, Iridium as the overall goal (O).
7. System must use Open Source (OS)/Open Standards Firmware (T=O).

Proposed Deliverables:
1. Kickoff Meeting and associated design documentation.
2. System Requirements Review (SRR) and associated design documentation.
3. Preliminary Design Review (PDR) and associated design documentation.

4. Critical Design Review (CDR) and associated design documentation.
5. Test Readiness Review (TRR) and associated documentation.
6. Prototype and demonstration acceptance testing.
7. Training, operator and technical manuals to operate, update, and maintain the system.

The developer shall thoroughly and comprehensively test the prototype in realistic scenarios. Additionally, the prototype shall be provided to end users for at least a minimum 60-day testing period before final delivery. The developer shall use its own as well as the end users' test data, feedback, evaluations, and test results to make modifications to improve the prototype's performance and to ensure conformance to all standards, features, and capabilities in the SOW before final delivery

Project shall be a phased effort with meaningful gates. The final deliverable of the project is a minimum of 10 internal radios (inclusive of both Wi-Fi/BT and SDRs) (T) with a goal of at least 14 (O) meeting the above specifications, along with external antenna options as well as internal antennas which provide the ability to collect, covertly, certain protocols as appropriate (T=O). The target per system cost is $150,000 (T), with a goal of $100,000 (O). All information and prototypes will transition to the U.S. Government for internal operational testing and evaluation.

Intellectual Property Rights, Limitations and Licensing: Concerning most requirements, the Government will seek licensing for the IP developed under awarded contracts in accordance with DFARS 252.227-7013 and 252.227-7014. On a limited number of requirements, instead of obtaining a license, the Government may seek to purchase the IP.

A firm-fixed-price proposal with a base contract period of performance of six (6) to eighteen (18) months is preferred.

5.8. Tactical Offensive Support (TOS)

R5001 Next Generation Offensive sUAS (NGOS)
A New Generation of Offensive sUAS (NGOS) with state-of-the-art hybrid technologies integrated into a single, small tactical team organic system, must be developed to provide U.S. and Allied Forces overmatch against evolving small Unmanned Aerial Systems (sUAS) and CUAS threats being developed and employed by Great Power Competitors.

Small Tactical Team Operators require a next generation, NDAA compliant, cyber hardened offensive sUAS that can fly, identify, and destroy enemy personnel and targets unhindered by Great Power Competitor's current and evolving CUAS defenses. Advanced system attributes shall include assured navigation and network communications, integrated AI, scalable, operator-controlled autonomy, and be payload re-loadable/platform re-usable. Lethality payload effects include troops in the open, static and/or moving vehicles, material, and light armor. Gross take-off weight shall not exceed 55 lbs., with a minimum 5 km range. NGOS shall be modular, include reconnaissance surveillance, miniature laser target designation, weaponized modes, and be easily configured by a trained operator in the field.

NGOS will provide the Small Tactical Team Operator an advanced modular kit capability to remotely detect, confirm, and destroy a greater variety of targets using sUAS Vertical Take-Off

and Landing (VTOL), multi-rotor platform, and munitions technologies. With the ability to be launched from confined spaces, NGOS will search, identify, track, and destroy elusive targets hiding behind cover, in defilade, surrounded by vertical obstacles, and threats maneuvering in channelized areas that are common in complex urban terrain.

NGOS shall be designed and purpose built for re-use. Its multi-role methods of lethal attack incorporate sUAS VTOL air engagement with a primary accurate drop of multi-option fused munitions featuring proximity, near-surface burst, impact, and delay detonation options; shall include an on-board miniature gimbal Laser Target Designator (LTD) payload capability. NGOS versatile methods of lethal attack will be rapidly selected and remotely configured by a trained Tactical Operator in the field based on threats encountered.

Important Note: The Government is seeking solutions provided by self-formed ***INDUSTRY PARTNER TEAMS*** capable of working together to completely and comprehensively design, develop, integrate, test, optimize, train, and rapidly deliver the Next Generation Offensive sUAS with the following key performance parameters:

Advanced System Attributes - Performance Parameters:

1. NGOS must be vertical take-off and landing (VTOL) capable, compact, lightweight, and portable in order to be transported by a maximum of two personnel during a foot movement. It shall be capable of being launched and flight and fire controlled by 1 to 2 operators. NGOS shall be modular, include reconnaissance surveillance, and weaponized modes, and easily configured by a trained operator in the field. Weaponized mode shall include a lethal payload to effectively destroy targets with minimal collateral damage. Upon engagement, the system shall perform battle damage assessment (BDA) before returning to the operator for reloading and battery swap for the next mission. It shall be developed with rugged materials that would prevent damage during tactical operations (T=O).

2. NGOS gross take-off weight should not exceed DoD Group 2 UAS (T=O).

3. NGOS shall have a minimum continuous flight time (with payload) of twenty-five (25) minutes (T); sixty (60) minutes (O).

4. NGOS shall be battery operated and use rechargeable lithium batteries and battery chargers that are commercial-off-the-shelf (COTS) available and Department of Defense (DoD) qualified/compliant (T=O). Further evolving mature, approved, and available for military use (such as alternative fuel or hybrid) power sources may be proposed for government review and consideration.

5. NGOS shall have an operating speed, with payload, of fifty (50) miles per hour (mph) (T); one hundred (100) mph (O).

6. NGOS shall be capable of operating in wind speeds up to eighteen (18) miles per hour (T); forty-five (45) miles per hour (O).

7. NGOS Cyber hardening; must pass DoD Cyber Vulnerability Assessment (CVA) (T=O). Able to accurately fly to designated target area, obtain and send still images, full motion video from designated target area back to controller, and receive from controller executable commands on designated targets (to include attack, abort, and ditch) unhindered by Great Power Competitors current and evolving CUAS defenses (T=O).

8. NGOS shall be capable of flight and accurate navigation in automated flight mode semi-autonomous flight capabilities in GPS denied environments (T=O).

9. NGOS shall utilize GPS, INS, and Visual for flight navigation (T=O).

10. NGOS shall possess the capability to operate in day/night conditions within a temperature range of 14°F to 104°F (T); –40°F to 130°F (O).

11. NGOS shall utilize EO/IR optics (T); shall include an on-board miniature laser target designation payload capability shall include on board laser-guided targeting with laser-guided munition organic capability (O).

12. NGOS shall possess an Ingress Protection Rating (IP rating) of IP57 (T) IP67 (O).

13. NGOS shall integrate AI for enhanced flight maneuver and control, automatic target recognition, and operator-controlled autonomous target engagement (T=O).

14. NGOS shall have a long-range C5ISR camera (T=O).

15. NGOS shall possess integrated Day/Night capable Reconnaissance and Surveillance systems that meet the following:

a. Image Processing: 1080p (T) 4k (O): 5° to 50° horizontal FOV; Elec. Zoom x 4 (T=O); Night: 640x512 (T=O)
b. Video Outputs: NTSC or PAL, RS-170 or CCIR (T=O)
c. Export Video: To ATAK (T=O); to separate End User Device (EUD) display (T=O); to a separate controller (T=O)

16. NGOS radio shall be capable of frequency hopping and mesh-networking with the following sUAS communications capabilities:

a. Number of channels: 3 x 3 MIMO (T=O)
b. Encryption: AES-256 (T=O)
c. IP Rating: IP67 (T=O)
d. Remote communication (T=O)

17. NGOS software shall be compatible with existing C5ISR software and integrated into existing communication suites. It should also be compatible with other United States Special Operations Command (USSOCOM) C5ISR systems and existing electronic countermeasures systems used by Naval Special Warfare (NSW) in maritime operating environments (T=O).

18. NGOS shall be ATAK compatible for use across multiple domains and operational units

(T=O).

19. NGOS Weapon / Lethality shall:
    a. Effects: Troops in the open, static and/or moving light skinned vehicles, material (T); Light Armored Vehicles (O).
    b. NGOS shall include Height of Burst (HOB) sensor (T=O).
    c. NGOS shall include a Safe and Arm Device (SAD) (T=O).
    d. Type: DoD approved 40mm High Explosive Dual Purpose (HEDP) like effects; Guided and Loitering munitions capable (O).
    e. Lethal payload capacity: two (2) munition rounds (T); three (3) to six (6) munition rounds (O).
    f. Lethal payload rate of release: individual, combination-including full payload release (T=O).
    g. Circular Error of Probability (CEP) less than 1 meter (T=O).

20. NGOS shall be designed to be employed from a single operating system (T=O), with the additional capability (marsupial) to be carried by and launched from other platforms in motion (O). It shall be a modular system with no individual component measuring more than 24 inches (T=O).

21. NGOS and all system components shall be compliant with American Security Drone Act (ASDA) and Department of Defense Instructions (DoDI) (T=O).

22. NGOS shall be capable of operability with minimal support equipment and personnel. It shall be designed to require no special tools to operate and maintain at the tactical level. NGOS system shall include built in tests (BIT) that can be performed prior to execution and reuse by a trained operator in the field to ensure all components and the entire integrated system is functioning (T=O).

23. NGOS system training shall include operations and maintenance manual with troubleshooting, quick reference card, new equipment field hands on training, and video sustainment training (T=O).

Deliverables:

1. Base Contract: 12-month PoP – Deliver 20 systems (Reconnaissance and Surveillance Only - Inert) OT&E prototypes for initial CONUS safety testing, troop training and OT&E.

2. Option 1: 6-month PoP – Analysis of Alternatives (AoA): Design of lethality package.

3. Option 2: 12-month PoP – Develop and deliver 10 systems (RSTA plus lethal payload) for required testing and Safety Board(s) approval.

4. Option 3: 9-month PoP – Develop and deliver up to 50 additional systems (RSTA-plus lethal payload) for CONUS Operational Test & Evaluation (OT&E).

5. Option 4: 9-month PoP – Develop and deliver 2 inert prototypes with SAASM/M-Code GPS integration.

6. Option 5: 6-month PoP – Deliver up to 50 SAASM/M-Code GPS and integrate with NGOS.

Firm-fixed-price proposals are preferred with twelve (12) month or less base contract period of performance, six (6) to twelve (12) months or less periods of performance for options. Base contract and options may be exercised concurrently by the Government.

Responses to this requirement should include a proposed post-development end-unit ROM cost for follow on deliverables.

R000-TOS-FY24-TC Unspecified Requirement - Small Team Tactical Advanced Communications (TAC)

Small Tactical Teams require leap-ahead, flexible means of full-spectrum communications designed for Irregular Warfare (IW) beyond the threshold of violence leading into Large Scale Combat Operations (LSCO). TAC will reduce cognitive load and enable communicators to hide in plain sight by balancing data filters, signature magnitude, transmission range, and transport bandwidth based on operational conditions. Platforms will accommodate dismounted operator mobility and efficiency by way of reduced size and weight, handheld and manpack form factors.

Teams engaged in Irregular Warfare must have robust and resilient communication technologies. TAC will develop and deliver assured low-visibility tactical communication platforms with low probability of detection, interception, and jamming in order to ensure connectivity against a range of electronic threats and geographic conditions, prioritizing dense urban, littoral, jungle, and subterranean environments.

TAC should integrate features including, but not limited to, exploitation resistance, cyber hardened encryption, compressed communications for command and control (C2) of small tactical team unmanned assets, and other technologies necessary to defeat Great Power Competitor evolving and emerging threats.

TAC submissions should consider in part or whole the following preferred performance parameters:

1. Radio Frequency (RF) Environmental Sensing in order to inform algorithm-driven “smart” behaviors such as interference avoidance and threat RF emitter characterization.

2. Spread Spectrum Transmission in order to both lower probability of detection (LPD) by transporting data across a distributed band of frequencies using algorithm-driven mesh networks and enable frequency-hopping “anti-jam” protocols.

3. Dynamic Bandwidth Networks guided by machine-learning & user-specified parameters in order to “data filter” in terms of quantity, speed, and power based on the degree of

electromagnetic threat in the operational environment.

a. Networks should accommodate 100 users (T); 300 users (O) without incurring noticeable latency or resolution degradation.

b. Networks should accommodate up to simultaneous data transfer of UDP, TCP/IP, PLI, chat, text, and three (3) full motion video (FMV) feeds per user. This bandwidth capacity is estimated at 20 Mbps (T); 50 Mbps (O).

TAC submissions should consider in part or whole the following preferred system attributes:

4. Beam Forming Techniques and Resilient Packet Routing Protocols in mobile ad hoc networks (MANETs) leveraging machine-learning tools in order to lower probability of detection and interception (LPD/LPI) by splitting data packages at the point of origin for simultaneous transfer over distributed nodes for reassembly as a coherent package at destination.

TAC submissions should consider in part or whole the following additional system attributes:

5. Bridging Gateways capable of transferring data between different frequencies, with a focus on non-compatible mobile ad hoc network (MANETS) wave forms and significantly different transport capacities (i.e., bridging between large and small bandwidth networks).

6. Wireless Integration of Radio Suites (i.e., headset, mic, end user devices, and antennas) using novel wave forms, hardware, and software in order to increase tactical communications durability, efficiency, and weight-management.

7. When and if appropriate, Partner Force Accessibility to Technology in order to ensure sharing and maintenance of communication systems without incurring unnecessary operational security (OPSEC) or logistical risk.

All submissions shall identify the anticipated U.S. DoD end user and/or endorsing organization. This unspecified requirement (R000) is for proposing unique innovations that have not yet been identified by IWTSD. Submissions against an unspecified requirement shall be responsive to the topics noted. In addition, proposed technologies must not be a fully-developed, commercially-available product. Proposed technologies from the unspecified requirements will be competing against proposed technologies for identified and prioritized specified requirements. Because IWTSD does not budget for unspecified requirements, awards may not be made against them.

Note: Quad charts submitted in response to a Subgroup’s R000 may be shared with other IWTSD Subgroups if the submission demonstrates relevance to that Subgroup’s Focus Areas.

R4882 Small Tactical Team – Target Engagement Laser (TEL)
Increased Survivability and Force Protection. Small Tactical Teams will use this new, novel advanced low-vis capability in Irregular Warfare Operations that require precision line-of-sight effects against Great Power Competitor enemy material targets with limited collateral damage.

Small Tactical Team operators require an easily deployed, low-visibility capability to disorient, distract, or delay opposing forces that can also degrade, disable, or destroy critical infrastructure nodes. TEL shall be man-portable, contained and carried in a rucksack.

Device attributes and performance standards:

1. TEL shall engage enemy targets and infrastructure nodes that are composed of the following components and material types at a minimum):
    a. Communications systems and subsystems, Utilities (electric, gas, solar), Cameras, Lights, Power Switches & Cables, Electronics, Metal, Fuel Tanks and Containers, Vehicles (exterior and interior), Aircraft (large airframe components and all unmanned aircraft), Maritime vessel components (engine cowling, gearbox, piece of fiberglass hull, cables or windshield), building entrance/exit locking mechanisms, Glass, Fiberglass, Plastic, Rubber, Fabric, Manufactured/Improvised ammunition and munitions.
    b. Disrupt, degrade, or temporarily disable functionality of the above (T), in less than 60 seconds (T), 30 seconds (O).
    c. Sever, permanently disable functionality, or destroy the above in less than 60 seconds (O).
    d. TEL system range shall be effective at 100 meters (T), 1,500 meters (O).

2. TEL shall be man-portable: 65 lbs. or less (T), 40 lbs. or less (O); two-man (T), one-man (O).

3. TEL shall operate on tactical unit level available power sources - organic, lightweight battery and battery chargers that are safety-approved for military use, both COTs and GOTs (T=O).

4. TEL shall be aimed manually using a near IR laser, and/or reticle type sighting system; shoulder or tripod-mount fired by a single operator (T=O).

5. TEL shall have a master system on-off arming safety mechanism with a dual-safety trigger device that must be engaged prior to firing (T=O).

6. TEL shall be operationally durable for comprehensive field live fire characterization testing against the variety of targets and/or target material listed above (T=O).

7. TEL shall remain functional when deployed operationally, prior to reloading power sources, for a period of continuous use for 15 minutes (T), 30 Minutes (O).

8. TEL shall have an aiming mechanism capable of bore sighting both day and night to

ensure point-of-aim, point-of-impact system accuracy and to reduce collateral damage (T=O).

9. TEL shall be utilized in open areas and confined spaces (T=O).

10. TEL shall be reloadable and reusable by a trained tactical operator in an operational environment (T=O); contain all spare parts necessary for maintenance and replacement during deployment (T=O); *spare parts necessary for maintenance and replacement during deployment are not counted against the weight requirement identified in #2 above.*

Deliverables:

- Base Contract: Characterization
    - Part 1 (9-month PoP) Contractor shall develop four (4) each prototype systems, provide a variety of targets listed and a 2-kilometer range facility; conduct CONUS live fire field demonstrations and training for safety testing, determine effects, operational feasibility and effectiveness.
    - Part 2 (9-month PoP) Contractor shall make reasonable modifications to prototype systems based on user feedback from Part 1, provide information and briefings for safety board(s) tech assists and reviews. Contractor shall provide four (4) each upgraded prototype systems, provide a variety of targets listed and a 2-kilometer range facility; conduct CONUS live fire field demonstrations and training to address required safety considerations, further determine effects, operational feasibility and effectiveness.

- Contract Option 1: Optimization (12-month PoP) – develop and deliver four (4) each spiral developed prototype systems and targets for CONUS follow-on optimized SWaP/performance, safety, training, and testing. Support the Government to obtain limited safety release for controlled and focused OT&E.

- Contract Option 2: OT&E (6-month PoP) - deliver up to an additional twenty-four (24) OT&E prototypes, and training for controlled OT&E.

- Base Contract and Options will provide New Equipment Training, Operations & Maintenance Manual, Quick Reference Card and Video Sustainment Training.

A firm-fixed-price proposal is preferred; eighteen (18) months or less base Contract period of performance (PoP); twelve (12) months or less for Contract Option 1 PoP; six (6) months or less for Contract Option 2 PoP.

Responses to this requirement should include a proposed post-development end-unit ROM cost.

R4883 Thermal Elevation Device (TED) for Extreme Range Target Engagement
Snipers require a new and advanced clip-on Thermal Elevation Device (TED) to substantially improve extreme range target engagement capability using the USSOCOM Program of Record Improved Night / Day Observation Device (INOD) Mid-Wave Infra-Red (MWIR) Block III Thermal Weapon Sight produced by DRS. TED will enable snipers using the INOD Block III to

increase day and night extreme range targeting capabilities while maintaining a full field of view in their day and night optics.

Device attributes and performance standards:

1. TED shall attach directly and Quickly Detach (QD) to the objective lens housing of the USSOCOM Program of Record INOD Block III MWIR Thermal Weapon Sight produced by DRS (T) additionally attach to rail (O).
    a. Attachment shall ensure proper alignment to the INOD Block III objective lens throughout operations to ensure, once attached, it provides calibrated elevation and horizontal deviation / cant. within ± 0.2 mil (T), within ± 0.1 mil (O).

2. TED shall provide a 10 milliradian (mil) elevation shift within ± 0.2 mil (T) when attached to the INOD Block III, within ± 0.1 mil (O) when attached to the INOD Block III.

3. TED shall not degrade INOD Block III optical clarity (T), performance of the INOD Block III in any way (O).

4. TED shall provide the capability to attach up to 2 additional TED units to the base TED unit, to increase elevation capabilities (T=O).

5. TED shall withstand recoil and maintain proper alignment on the INOD Block III when utilizing the MK15, M107, MK22 ASR using 338NM, 300NM, 7.62mm or 6.5mm CM ammunition; M110 SASS, MRGG-S, and 5.56mm Carbines (T=O).

6. TED shall have a protective flip cover (T=O).

7. TED shall have a soft tactical carrying case and a hard transport case (T=O).

Deliverables:

- Base Contract: (12-month PoP) – Develop, deliver and train twenty-one (21) complete prototype systems for CONUS operational test and evaluation (OT&E).

- Contract Options: (4-month PoP) – Deliver and train up to an additional thirty-nine (39) complete prototype systems for expanded CONUS OT&E and Combat OPEVALs.

- Base Contract and Options will provide New Equipment Training, Operations & Maintenance Manual, Quick Reference Card and Video Sustainment Training.

A firm-fixed-price proposal is preferred; twelve (12) months or less base contract period of performance; four (4) months or less for contract options period of performance.

Responses to this requirement should include a proposed post-development end-unit ROM cost.

R4884 Next Generation Lightweight Machine Gun Tripod (LMGT)

LMGT will equip and enable tactical unit operators that conduct target engagement with reduced

operational load, rapid emplacement, and increased accuracy in training and when conducting Irregular Warfare and large-scale combat operations.

The Next Generation Lightweight Machine Gun Tripod (LMGT) is required to improve the performance, durability, and load of the medium machine gun support platform while accommodating both the legacy M240-B and L variants chambered in 7.62×51mm NATO and the forthcoming .338 Norma Magnum (.338NM) Lightweight Medium Machine Gun (LWMMG). Infantry Unit machine gunners require optimized tripods to mount medium machine guns in order to effectively engage enemy targets in support of maneuvering assault forces.

The currently fielded M192 Lightweight Ground Mount for Machine Guns was designed twenty years ago. While it was a welcomed improvement, lighter than the legacy M122 with a modification upgrade in 2021 that addressed Soldier concerns with pintle height, various ergonomic and functional deficiencies still remain. For instance, the traversing and elevation mechanism (T&E) is manufactured with a high degree of "play," resulting in imprecise and delayed transition between targets. Under the duress of repeated use, the T&E interface is known to deteriorate even further and its aluminum components snap, adversely affecting the lethality of the element employing it.

LMGT's design shall leverage modern standards of materials engineering, using AI-derived structural efficiency, additive manufacturing, and ballistic capability to help optimize stability, transition speed, and accuracy of the machine guns it supports. Once developed, LMGT will improve Small Tactical Team Lethality when deployed on Irregular Warfare missions throughout all terrestrial environments, including but not limited to urban, jungle, desert, mountain, and artic battlefields. LMGT will help improve unit readiness for these operations during training cycles by reducing human error & potential injury alongside system durability & maintenance requirements.

Next Generation Lightweight Machine Gun Tripod (LMGT) shall:

1. The LMGT weight, to include mounting bracket (if required), shall not exceed 11 lbs. (T); 7 lbs. (O)

2. The LMGT length shall not exceed 24 inches when stowed; 32 inches, ± three inches variation when in firing configuration. (T=O)

3. The LMGT width shall be 11.5 inches to 16 inches when stowed. (T=O)

4. The LMGT height (flat hard surface) shall have the ability to adjust the front leg height between 7.5 inches and 12.5 inches ±1 inch to accommodate for micro-terrain. (T=O)

5. The LMGT shall mount machine gun to tripod IAW NATO STANREC 4796. (T=O)

6. The LMGT shall mount via a single point with single hand release (T); via a dual point with single hand release. (O)

7. The LMGT pintle receiver shall be constructed with a 45-degree bevel ±5-degree variation. (T=O)

8. The LMGT T&E mechanism attachment method shall be integrated. (T=O)

9. If the LMGT T&E mechanism is enclosed, it shall have cleaning access points (T); If all weather enclosed, it shall be self-cleaning (O).

10. The LMGT T&E mechanism shall have the ability to release tension to allow the operator to make gross adjustments rapidly (T=O).

11. The LMGT milliradian scale shall be the same as the current M192 tripod and shall have a small tic mark for every 10 mils, with a longer tic mark for every 20 mils (T); tic marks shall be clearly visible in low light conditions (O).

12. The LMGT free depression shall be 500 mils (T) 600 mils (O); T&E engaged depression shall be 275 mils (T), 350 mils (O).

13. The LMGT free elevation shall be 375 mils (T); 475 mils (O); T&E engaged elevation 235 mils (T); 300 mils (O).

14. The LMGT free gun traverse shall be 6400 mils (T=O); T&E engaged traverse 900 mils (T); 1125 mils (O).

15. The LMGT shall accommodate weapon platforms and system accessories weighing up to 40 pounds capable of a cyclic rate of fire up to 1000 rounds per minute.

16. The LMGT shall exceed the current performance specifications for durability and endurance over the M192 tripod by 25%, measured as a function of cumulative life cycle shock force and rounds fired (T=O).

17. The LMGT form factor, including ground points of contact on a variety of surfaces, shall be optimized for rapid establishment of a stable firing position and relocation in all operating environments (T=O).

18. The LMGT shall not interfere with currently issued SOF Peculiar Equipment Advanced Requirement (SPEAR) Personal Protective Equipment (PPE). It shall include new carrying bag if design does not fit in current fielded barrel bag (T=O).

19. The LMGT shall not require tools when converting from stowed to ready to fire configuration (T=O).

Deliverables:

- Base Contract: Twelve (12) or less month Period of Performance (PoP) develop and deliver twelve (12) LMGT prototypes with training, compatible with and using current and future machine gun platforms.

- Contract Options: Four (4) month or less PoP- deliver up to an additional forty (40) LMGT prototypes with training for expanded OT&E and Combat Evaluations (CV).

- Base Contract and Options will provide New Equipment Training, Operations & Maintenance Manual, Quick Reference Card and Video Sustainment Training.

A firm-fixed-price proposal is preferred; twelve (12) months or less base contract PoP; four (4) months or less contract options PoP.

Responses to this requirement should include a proposed post-development end-unit ROM cost.