DEPARTMENT OF THE ARMY

DoD 24.4 Small Business Innovation Research (SBIR)
Annual Broad Agency Announcement (BAA)
Component-Specific Proposal Instructions
Release 2

November 14, 2023: Topics issued for pre-release
November 28, 2023: Army begins accepting proposals via DSIP
December 20, 2023: DSIP Topic Q&A closes to new questions at 12:00 p.m. ET
January 3, 2024: Deadline for receipt of proposals no later than 12:00 p.m. ET

INTRODUCTION

The future Army must be capable of conducting Multi-Domain Operations (MDO) as part of an integrated Joint Force across an array of situations in multiple theaters by 2035. The MDO concept describes how the Army will support the Joint Force in the rapid and continuous integration of all domains of warfare – land, sea, air, and cyberspace – to deter and prevail as we compete short of conflict, and fight and win if deterrence fail. The Army must provide game-changing capabilities to our Soldiers. To capitalize on small business innovation, the Army has implemented an approach to advertise SBIR funding opportunities through the Department of Defense (DoD) Annual BAA process, outside of the three pre-determined BAA cycles. This approach also strives to reduce the time from solicitation to award.

Proposers are encouraged to thoroughly review the DoD Program BAA and register for the DSIP Listserv to remain apprised of important programmatic and contractual changes.

- The DoD Program BAA is located at: https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/#announcements. Be sure to select the tab for the appropriate BAA cycle.
- Register for the DSIP Listserv at: https://www.dodsbirsttr.mil/submissions/login.

CONTACT INFORMATION

Direct specific questions pertaining to the administration of the Department of the Army SBIR Program and proposal preparation instructions to the Point of Contact identified in the Topic announcement. General questions can be directed to the following:

Email: usarmy.pentagon.hqda-asa-alt.mbx.army-applied-sbir-program@army.mil
Website: https://www.armysbir.army.mil/
Mailing Address:
Army Applied SBIR Office 2530 Crystal Dr.; Ste 11192
Arlington, VA 22202

RESPONSIVENESS AND TIMELINESS

All proposals will be evaluated and judged on a competitive basis. Proposals will only be evaluated in response to an active, corresponding Army topic. Proposals will be initially screened to determine responsiveness and timeliness. Proposals passing this initial screening will be technically evaluated by engineers or scientists to determine the most promising technical and scientific approaches. Assessment of responsiveness may continue during technical evaluation and after selection. If at any point the proposal is deemed untimely, unresponsive, ineligible, or non-responsible, the proposal will be disqualified/rejected, and a contract will not be awarded.

Interested firms shall follow the DoD Program BAA instructions as well as the Army's component-specific proposal instructions herein, when preparing and submitting proposals. The DoD 24.4 SBIR Program BAA can be found here: https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/.

The Government reserves the right to disqualify proposals for failing to meet any of the requirements of the SBA SBIR/STTR Policy Directive, the DoD Program BAA instructions, the Army's component-specific proposal instructions herein, and/or in the topic itself. The following include, but are not limited to, the common reasons for which proposals are disqualified/rejected:

- System for Award Management is not properly updated at time of proposal submission.
- The proposal is missing required number of signatures and/or content.
- Minimum Performance Percentage of Work is not allocated properly.
- Work as proposed does not meet the definition of Research and Development required for funding.
- Proposal submitted beyond deadline.
- Price exceeds the maximum funding amount.
- Firm is NOT an eligible small business.
- Firm does NOT meet the ownership and control requirements.
- Firm is 50% or more owned or managed by a corporate entity that is not a small business.
- Firm will NOT perform the prescribed percentage of the research and/or analytical work.
- Primary employment of the Principal Investigator for this project is NOT with the firm.
- Firm has been convicted of a fraud-related crime.
- Principal Investigator or Corporate Official has been convicted of a fraud-related crime.
- Firm and affiliates have employed, on average over the last 24 months, more than 500 employees.
- Firm has been awarded a contract from the US Government for essentially equivalent work.
- Claiming data rights assertions without including a Data Rights Assertions Table.
- Lack of proper documentation for research utilizing human/animal subjects or recombinant DNA.
- Lack of information or negative information concerning use of foreign nationals.
- Offeror requests to award to a different firm/entity after proposal submission.

Failure or refusal to submit certified or other than certified cost data in accordance with DFARS 252.215-7010. Proposal is for a topic other than that which is identified.

SYSTEM FOR AWARD MANAGEMENT (SAM)

Interested firms are required to be registered and active in SAM (www.sam.gov) before submitting a proposal and shall continue to be registered until time of award, during performance, and through final payment of any contract. The proper North American Industry Classification System (NAICS) code and Product and Service Code are as follows:

NAICS: 541715, Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)

PSC: AC12, National Defense R&D Services; Department of Defense - Military; Applied Research

Proposing firms with no SAM registration, inactive SAM registration(s), or SAM registration(s) with improper representations and certifications will be disqualified.

A firm may NOT submit an offer on behalf of another entity. The proposed firm's Entity Information must match the Entity Information (Cage Code/DoDAAC/UEI/Duns) contained in the proposal to be eligible for award.

ELIGIBILITY

The eligibility requirements for the SBIR/STTR programs are unique and do not correspond to those of other small business programs. Please refer to Section 4.2, Proposing Small Business Concern Eligibility and Performance Requirements, of BAA 24.4 for full eligibility requirements.

Ownership in Part by Multiple Venture Capital, Hedge Fund, and Private Equity Firms

Proposing small business concerns that are owned in majority part by multiple venture capital operating companies (VCOCs), hedge funds, or private equity funds are eligible to submit applications or receive awards for this topic.

- Proposing small business concerns must identify each foreign national, foreign entity, or foreign government holding or controlling greater than a 5% equity stake in the proposing small business concern, whether such equity stake is directly or indirectly held.
- The proposing small business concern must also identify any and all of its ultimate parent owner(s) and any other entities and/or individuals owning more than a 5% equity stake in its chain of ownership.

Venture capital operating companies, hedge funds and private equity firms are allowed to hold minority shares of SBIR/STTR awardee so long as they do not have control of the awardee company and so long as their affiliation with the awardee, if any, does not put the awardee firm over the size limit.
If the VCOC is itself more than 50% directly owned and controlled by one or more individuals who are citizens or permanent resident aliens of the United States, the VCOC is allowed to have majority ownership and control of the awardee. In that case, the VCOC and the awardee, and all other affiliates, must have a total of 500 employees or less.

Anticipated Structure/Award Information

For this topic, Department of the Army will accept Phase I proposals for the cost of up to $250,000 for up to a 6-month period of performance.

Proposals that do not comply with the requirements detailed in the DoD Program BAA, these Component Instructions, and the research objectives of the topic are considered non-conforming and therefore are not evaluated nor considered for award.

Phase I proposals in response to this topic include the following:

- Volume 1: Proposal Cover Sheet
- Volume 2: Technical Volume (13 pages maximum; breakdown below)
    - Technical Proposal (5 pages maximum)
    - Commercialization Plan (8 slides maximum saved as PDF)
- Volume 3: Cost Volume
- Volume 4: Company Commercialization Report (REQUIRED)
- Volume 5: Supporting Documents (Requirements outlined in the DoD Program BAA)
    - Contractor Certification Regarding Provision of Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment
    - Disclosures of Foreign Affiliations or Relationships to Foreign Countries
    - Disclosure of Funding Sources - Please refer to the DoD Program BAA for more information.
- Volume 6: Fraud, Waste, and Abuse Training Certificate

PHASE I PROPOSAL INSTRUCTIONS
The Defense SBIR/STTR Innovation Portal (DSIP) is the official portal for DoD SBIR/STTR proposal submission. Proposers (also referred to herein as "offeror(s)") are required to submit proposals via DSIP; proposals submitted by any other means will be disregarded. Detailed instructions regarding registration and proposal submission via DSIP are provided in the DoD SBIR Program BAA.

Proposal Coversheet (Volume 1)
The proposal coversheet must follow the instructions and requirements provided in the DoD SBIR Program BAA.

The offeror shall certify that to the best of its knowledge and belief, its eligibility information under the SBIR Program is accurate, complete, and current as of the date of the offer.

Volume 2 (Technical Volume)
The technical proposal is not to exceed 5 pages and must follow the formatting requirements provided in the DoD SBIR Program BAA. A commercialization plan must also accompany the technical proposal and must be 8 slides. The required content to include within these slides are described in Appendix D. The commercialization plan must be converted to a pdf and attached to the end of the technical volume, resulting in one pdf file to be uploaded to DSIP as Volume 2. The commercialization plan does not count towards the technical proposal 5-page limit. Any proposals submitted without a commercialization plan or in a format other than that provided by the BAA will not be reviewed.

Volume 2 (Part One Technical Proposal)
The technical proposal shall contain two key sections – technical approach and team qualifications. The technical approach section shall contain details on how the proposer is going to solve the problem. It shall detail key elements of the firm's approach, any risks, relevant past work and how success is measured. The team qualifications section shall highlight the key personnel working on the project, and the resources that will be brought to bear on solving the problem.

Volume 2 (Part Two Commercialization Plan)
The commercialization plan shall include:

- Company information: Focused objectives/core competencies; specialization area(s); products with significant sales; and history of previous Federal and non-Federal funding, regulatory experience, and subsequent commercialization successes.
- Customer and Competition: Clear description of key technology objectives, current competition, and advantages compared to competing products or services; description of hurdles to acceptance of the innovation.
- Market: Milestones, target dates, analyses of market size, and estimated market share after first year sales and after 5 years; explanation of plan to obtain market share.
- Intellectual Property: Patent status, technology lead, trade secrets or other demonstration of a plan to achieve sufficient protection to realize the commercialization stage and attain at least a temporal competitive advantage.
- Financing: Plans for securing necessary non-SBIR funding.
- Assistance and mentoring: Plans for securing needed technical or business assistance through mentoring, partnering, or through arrangements with government sponsored

(e.g., State assistance programs, Federally-funded research laboratories, Manufacturing Extension Partnership centers), not-for-profits (e.g., SBDC), commercial accelerators, DOD Prime Contractors, or other assistance provider.

These instructions supersede those stated in section 5.3.c of the DoD Program BAA.

Cost Volume (Volume 3)
The Cost Volume must follow all instructions and requirements provided in the DoD SBIR Program BAA. Supplemental requirements are as follows:

Unless otherwise noted in the topic, the Phase I Base amount must not exceed $250,000 for a 6- month period of performance. Phase I Options are not anticipated at this time. If an option is identified in the topic posting, costs for the Base and Option must be separated and clearly identified on the Proposal Cover Sheet (Volume 1) and in Volume 3. Awards for these topics will be in the form of a firm fixed price contract.

Content of the Cost Volume (Volume 3)
For pricing purposes, offerors should assume a contract or agreement start date of approximately ninety (90) days after submission of the proposal. Awards are executed as FAR-based firm-fixed-price contracts. Fixed price payments shall be tied to measurable milestones, as agreed to by the Government.

In the event that adequate price competition, as defined in FAR 15.403-1(1), is not realized, the Government will conduct additional proposal analysis, in accordance with the techniques identified at FAR 15.404-1. In accordance with FAR 15.402(a), Contracting officers shall purchase supplies and services from responsible sources at fair and reasonable prices. If the Contracting Officer is unable to deem the offeror as responsible (FAR 9.1), the offeror will be disqualified. Proposals lacking a fair and reasonable price will be eliminated.

ALL proposed costs should be accompanied by documentation to substantiate how the cost was derived. For example, if you proposed travel costs to attend a project-related meeting or conference, and used a travel website to compare flight costs, include a screenshot of the comparison. Similarly, if you proposed to purchase materials or equipment, and used the internet to search for the best source, include your market research for those items. You do not necessarily have to propose the cheapest item or supplier, but you should explain your decision to choose one item or supplier over another. It's important to provide enough information to allow evaluators and contracting personnel to understand how the proposer plans to use the requested funds. Some items in the cost breakdown may not apply to the proposed project. If that is the case, there is no need to provide information on each and every item.

ALL proposed costs should be accompanied by documentation to substantiate how the cost was derived. Substantiating documentation guidance is as follows:

- LABOR:
    - List all key personnel by name as well as by number of hours dedicated to the project as direct labor.
    - Explain the basis of proposed labor hours, including required tasks, and substantiating documentation for the costs (e.g. payroll reports).

- MATERIAL/TOOLING/EQUIPMENT:

    - Explain the basis of proposed material and equipment costs. This support should include a consolidated priced summary of individual material and equipment quantities and substantiating documentation for the costs (e.g. vendor quotes, invoice prices, competitive bids, etc.). If your choice isn't the lowest cost available, explain the decision to choose one item or supplier over another.

    - Ensure all materials are American-made to the maximum extent practicable. Offerors who propose to use a foreign-made product in its technology may be required to find an American-made equivalent.

    - While special tooling and test equipment and material cost may be included, it will be carefully reviewed relative to need and appropriateness for the work proposed. The purchase of special tooling and test equipment must, in the opinion of the Procurement/Government Component Contracting Officer, be advantageous to the Government and should be related directly to the specific topic. These may include such items as innovative instrumentation or automatic test equipment. Title to property furnished by the Government or acquired with Government funds will be vested with the DoD Component, unless it is determined that transfer of title to the contractor would be more cost effective than recovery of the equipment by the DoD Component.

- TRAVEL:

    - Explain the basis of proposed travel, including to/from locations, number of trips, number of travelers per trip, and number of days/nights per trip. Include substantiating documentation for the costs (e.g. screenshots of flight cost comparison, rental car quotes, etc.). NOTE: Virtual meetings shall be utilized to the maximum extent practicable.

- SUBCONTRACTS: A subcontract is any agreement, other than one involving an employer-employee relationship, entered into by the prime contractor (awardee) calling for supplies or services for the performance of the contract.

    - All subcontractor costs and consultant costs must be detailed at the same level as prime contractor costs in regard to labor, travel, equipment, etc.

    - Explain the basis of proposed subcontract costs. Include documented support of the offeror's price analyses and degree of competition of all subcontractor proposals. All subcontractor costs and consultant costs, such as labor, travel, equipment, materials, must be detailed at the same level as prime contractor costs. Provide detailed substantiation of subcontractor costs in your cost proposal.

    - Certify that the following requirements are met: For Phase I, the offeror must perform a minimum of two-thirds of the research and/or analytical

effort. One third may be subcontracted to another firm or research organization/facility. The percentage of work is measured by both direct and indirect costs.

- Offerors shall not propose to subcontract to the issuing agency, to any other Federal Government agency, or to other units of the Federal Government, except Federal Laboratories in rare circumstances. As defined in 15 U.S.C. 3703, Federal Laboratory means any laboratory, any federally funded research and development center, or any center established under 15 U.S.C. 3705 and 3707 that is owned, leased, or otherwise used by a Federal Agency and funded by the Federal Government, whether operated by the Government or by a contractor.

- Offerors shall not propose to subcontract to any prohibited sources. Proposals identifying a subcontractor/vendor arrangement with a prohibited source may be rejected.

- Offerors shall ensure subcontracting arrangements are with United States Small Businesses to the maximum extent practicable. Offerors proposing a subcontractor arrangement with other than a United States Small Business (such as, a large business, foreign firm, foreign government, educational institution, unit of Federal Government, etc.) may be required to submit further explanation, and/or have the submitted proposal disqualified.

- INDIRECT COSTS:

  - Explain the basis of the proposed indirect expense rates including overhead, general and administrative, material handling, and fringe benefits.

  - If a Defense Contract Audit Agency (DCAA) Audit has been conducted within the last five (5) years, include the audit compliance documentation in the cost proposal documents. The documentation should also include the offeror's DCAA Point of Contact (if applicable).

  - Offerors shall provide any current Forward Pricing Rate Agreements (FPRA) in effect at time of proposal submission.

If selected for award, failure to include the documentation with your proposal may delay contract award, as the proposer will be asked to submit the necessary documentation to the Contracting Officer to substantiate costs. It is important to respond as quickly as possible to the Contracting Officer's request for documentation. Failure or refusal to provide documentation may result in dissolution of the contract action.

Company Commercialization Report (CCR) (Volume 4)
Completion of the CCR as Volume 4 of the proposal submission in DSIP is required. Please refer to the DoD SBIR Program BAA for full details on this requirement. Information contained in the CCR will be considered by the Department of the Army during proposal evaluations.

Supporting Documents (Volume 5)

Volume 5 is provided for proposers to submit additional documentation to support the Cover Sheet (Volume 1) and the Technical Volume (Volume 2).

All proposing small business concerns are REQUIRED to submit the following documents to Volume 5:

1. Contractor Certification Regarding Provision of Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment
2. Disclosures of Foreign Affiliations or Relationships to Foreign Countries
3. Disclosure of Funding Sources - Please refer to the DoD Program BAA for more information.

In addition to the Volume 5 requirements outlined in the DoD Program BAA, the Department of the Army may accept the following documents in Volume 5:

- Additional Cost Information
- Funding Agreement Certification
- Technical Data Rights (Assertions)
- Lifecycle Certification
- Allocation of Rights
- Other (only as specified in the topic)

Please only submit documents that are identified immediately above and in the DoD Program BAA. All other documents submitted will be disregarded.

Fraud, Waste and Abuse Training (Volume 6)
Follow instructions provided in the DoD Program BAA for completion of the Fraud, Waste and Abuse training in DSIP.

DISCRETIONARY TECHNICAL AND BUSINESS ASSISTANCE (TABA)

The Army, at its discretion, may provide Technical and Business Assistance (TABA). The Army will select a preferred vendor(s) for the Army SBIR TABA program through a competitive process. Alternately, a small business concern may, by subcontract or otherwise, select one or more vendors to assist the firm in meeting the TABA goals. The Applicant must request the authority to select its own TABA provider in its Army SBIR proposal and must demonstrate that the vendor is uniquely postured to provide the specific technical and business services required by providing documentation in Volume 5, Supporting Documentation. TABA funding will be denied if the offeror fails to include the cost and detailed explanation in its proposal. If you prefer to use the Army preferred vendor, you may opt for that support after selection if chosen to receive a contract award.

Participation in the Army SBIR TABA program is voluntary for each Army SBIR awardee. Services provided to Army SBIR firms under the auspices of the TABA program may include, but are not limited to:

1. Access to a network of scientists, engineers, and technologists focused on commercialization and transition considerations such as protected supply chain management, advanced manufacturing, process/product/production scaling, etc;
2. Assistance with intellectual property protections, such as legal considerations, intellectual property rights, patent filing, patent fees, licensing considerations, etc;

3. Commercialization and technology transition support such as market research, market validation, development of regulatory or manufacturing plans, brand development;
4. Regulatory support such as product domain regulatory considerations, regulatory planning, and regulatory strategy development.

The Army SBIR program sponsors participation in the TABA program. The resource limitation for each firm is as follows:

- Phase I Firms:
    - Army-Preferred Vendor: If approved, the contractor may receive up to $6,500 worth of assistance services per project (in addition to the base SBIR award amount).
    - Firm-Selected Vendor: If approved, the contractor may receive up to $6,500 in contract obligation (in addition to the base SBIR award amount) per project.
- Phase II Firms:
    - Army-Preferred Vendor: If approved, the contractor may receive up to $50,000 worth of assistance services per project (in addition to the base SBIR award amount).
    - Firm-Selected Vendor: If approved, the contractor may receive up to $50,000 in contract obligation (included in the base SBIR award amount) per project.

EVALUATION AND SELECTION

The Army will conduct an evaluation of each responsive, timely, eligible proposal in accordance with the evaluation criteria listed in the DoD Program BAA. It is the policy of the Army to ensure equitable and comprehensive proposal evaluations based on the evaluation criteria and to select the source (or sources) whose offer meets the Government's technical, policy, and programmatic goals. Designated support contractors may review submissions for the purposes of technical evaluation. All support contractors are bound by appropriate non-disclosure agreements.

As previously stated herein, timeliness, responsiveness, and eligibility will be assessed upon initial screening, during evaluation, and after selection. Proposals that do not comply with the instructions and requirements detailed in this document, the DoD Program BAA, or the corresponding Topic posting (including the research objective(s)), will be considered ineligible, nonresponsive, untimely, or non-conforming and therefore will not be evaluated or considered for award.

Using the evaluation criteria, the Government will evaluate each responsive, timely, eligible proposal in its entirety. Proposals will not be evaluated against each other during the evaluation process, but rather evaluated on their own individual merit to determine how well the proposal meets the criteria stated in this BAA and the corresponding opportunity.

Selected proposals are those determined to be the most advantageous to the Government, consistent with instructions and evaluation criteria specified in the DoD Program BAA, the component-specific instructions herein, the corresponding Topic posting, and availability of funding.

Proposing firms will be notified via email of selection or non-selection status for a Phase I within 90 days of the closing date of the Topic. The notification will be sent to the Corporate Official listed on the proposal cover sheet from the Army SBIR Program Office mailbox. The Army promotes transparency regarding the technical evaluation for all Army SBIR proposals. The Army will provide a technical evaluation narrative to the proposer in accordance with the SBA Policy Directive, Appendix I, paragraph 4. The selection decision notice contains instructions for retrieving the technical evaluation narrative.

Proposers must not regard the notification email (selection decision notice) as an authorization to commit or expend funds. After the Army SBIR Office has recommended a proposal for award, a Government Contracting Officer may contact the proposer in order to discuss and request additional information required for award. This may include representations and certifications, certified or other than certified cost data, subcontracting plan for small businesses, and/or other information as applicable to the proposed award. Proposers must not regard these communications as an authorization to commit or expend funds. Unless a Government Contracting Officer signs the award document (i.e. contract), no obligations to provide funding are made. The Government may reject the proposal or dissolve award of the contract action at any time.

If signed by the Government Contracting Officer, the award document is the official and authorizing instrument, thereafter referred to as the "contract". The period of performance will begin upon award of the contract. The Contracting Officer will email the signed contract to the principal investigator (PI) and/or an authorized organization representative.

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

Feedback will be provided to applicants that are not selected for further consideration. A notification letter will include instructions for obtaining feedback in the form of a ValidEval Report. Offerors are entitled to no more than one feedback per proposal. NOTE: Feedback is not the same as a FAR Part 15 debriefing. Acquisitions under this solicitation are awarded via "other competitive procedures (FAR 6.102(d)(2))." Therefore, offerors are neither entitled to nor will they be provided FAR Part 15 debriefs. As further prescribed in FAR 33.106(b), FAR 52.233-3, Protests after Award shall be submitted to the Point of Contact identified in the topic solicitation:

Email: usarmy.pentagon.hqda-asa-alt.mbx.army-applied-sbir-program@mail.mil
Mailing Address:
Army Applied SBIR Office
2530 Crystal Dr.; Ste 11192
Arlington, VA 22202

Appendix A
Phase I Evaluation Criteria

Applied SBIR Phase I Proposal Review v2-0-3 Evaluation Criteria Defined

		DEFINITION
INTRODUCTION	weight 5%	Write a clear, concise description of what your innovation does or will do, and where you are in your evolution. Make clear its intended impact on the Army. Evaluators should "get it" after reading this.
POTENTIAL FOR ARMY IMPACT	OPERATIONAL IMPACT	At the scale of a single Army end-user, argue that their jobs or lives will be significantly improved if your solution is adopted. What is the impact of your solution for a soldier/Army civilian vs. today's solutions?
weight 25%	POTENTIAL SCALE OF IMPACT	Here, we're looking for an idea of how broad the impact you described above could be. Look into the future to a time when your solution is both technically mature and actively in use by Army personnel. Describe the scale and scope of your impact within the context of the Army.
TECHNICAL FEASIBILITY	SCIENTIFIC FEASIBILITY	Is the science behind the solution sound? Convince readers who don't have deep expertise in your field that your innovation is built atop sound scientific and engineering principles.
	ENABLING TECHNOLOGIES	Point to the foundational technologies that you rely on to deliver your solution. Do the required enabling technologies introduce added risk? Using proven (and ideally Army-fielded) underlying technologies and techniques helps to lower technical risk.
	ALTERNATIVE TECHNICAL APPROACHES	From a technologist's perspective, why is your proposed solution the best choice for the Army? Refute the alternative engineering approaches others are using. Why does your technology win?
weight 25%	TECHNICAL RISK MITIGATION	No matter your current technology readiness level, technical risks remain. Identify those risks. Present a credible plan to tackle those risks.
TRANSITION	ARMY TRANSITION PATHWAY	Planning for success, what's next for you after this SBIR award? Describe the next type of deal you aim to make with the Army, e.g. a CRADA, a different SBIR contract, a CSO, etc. Briefly outline your current plan to unlock that next opportunity and/or share the biggest risks you see post this SBIR award.
weight 20%	SBIR MILESTONE SCHEDULE	Please share with us a thoughtful execution plan. Strike a balance between giving us a sense of the detailed thinking behind the scenes and the need for your contracting officer to manage a reasonably small number of milestones during your period of performance.
FIRM CASH FLOW	FIRM SURVIVAL RISK	SBIR funds are meant to fuel growth rather than stave off a firm's impending financial failure. Demonstrate that your company will survive financially as a going concern through the early stages of a Phase III contract, sometimes referred to as "transitioning" into use by Army personnel.
	OTHER PEOPLE'S MONEY	Make the case that non-Army and/or non-DoD dollars will continue to fund improvements to your solution from which the Army will benefit in the future. Companies who cannot demonstrate non-Army and/or non-DoD funding sources for future solution enhancements are less attractive to the Applied SBIR program.
weight 10%	FINANCIAL PROFIT POTENTIAL	Through the Applied SBIR program, the Army wants to take advantage of the speed and scalability of dual-use companies. Make your best case that your product is or will be profitable. If you have more than one product, please focus your argument on the product / solution presented for this SBIR program.
TEAM ABILITY	weight 10%	Prove your team has executed well as a group. Please draw clear distinctions between private sector, DoD and civilian government work. What milestones have you accomplished as a group in this company?
SUBMISSION QUALITY	QUALITY OF PROSE	Prove you write clearly. Prove you argue convincingly.
weight 5%	DATA QUALITY & ATTRIBUTION	Support your arguments with relevant, properly attributed data to enhance your credibility.

Appendix B
Direct to Phase II Evaluation Criteria

Applied SBIR D2P2 Proposal Review v2-0-4 Evaluation Criteria Defined

U.S. ARMY APPLIED SBIR

		DEFINITION
INTRODUCTION	weight 2%	Write a clear, concise description of what your innovation does or will do, and where you are in your evolution. Make clear its intended impact on the Army. Evaluators should "get it" after reading this.
POTENTIAL FOR ARMY IMPACT	OPERATIONAL IMPACT	At the scale of a single Army end-user, argue that their jobs or lives will be significantly improved if your solution is adopted. What is the impact of your solution for a soldier/Army civilian vs. today's solutions?
weight 20%	POTENTIAL SCALE OF IMPACT	Here, we're looking for an idea of how broad the impact you described above could be. Look into the future to a time when your solution is both technically mature and actively in use by Army personnel. Describe the scale and scope of your impact within the context of the Army.
TECHNICAL FEASIBILITY	SCIENTIFIC FEASIBILITY	Is the science behind the solution sound? Convince readers who don't have deep expertise in your field that your innovation is built atop sound scientific and engineering principles.
	ENABLING TECHNOLOGIES	Point to the foundational technologies that you rely on to deliver your solution. Do the required enabling technologies introduce added risk? Using proven (and ideally Army-fielded) underlying technologies and techniques helps to lower technical risk.
	ALTERNATIVE TECHNICAL APPROACHES	From a technologist's perspective, why is your proposed solution the best choice for the Army? Refute the alternative engineering approaches others are using. Why does your technology win?
weight 30%	TECHNICAL RISK MITIGATION	No matter your current technology readiness level, technical risks remain. Identify those risks. Present a credible plan to tackle those risks.
TRANSITION	ARMY TRANSITION PATHWAY	Planning for success, what's next for you after this SBIR award? Describe the next type of deal you aim to make with the Army, e.g. a CRADA, a different SBIR contract, a CSO, etc. Briefly outline your current plan to unlock that next opportunity and/or share the biggest risks you see post this SBIR award.
weight 20%	SBIR MILESTONE SCHEDULE	Please share with us a thoughtful execution plan. Strike a balance between giving us a sense of the detailed thinking behind the scenes and the need for your contracting officer to manage a reasonably small number of milestones during your period of performance.
FIRM CASH FLOW	FIRM SURVIVAL RISK	SBIR funds are meant to fuel growth rather than stave off a firm's impending financial failure. Demonstrate that your company will survive financially as a going concern through the early stages of a Phase III contract, sometimes referred to as "transitioning" into use by Army personnel.
	OTHER PEOPLE'S MONEY	Make the case that non-Army and/or non-DoD dollars will continue to fund improvements to your solution from which the Army will benefit in the future. Companies who cannot demonstrate non-Army and/or non-DoD funding sources for future solution enhancements are less attractive to the Applied SBIR program.
weight 15%	FINANCIAL PROFIT POTENTIAL	Through the Applied SBIR program, the Army wants to take advantage of the speed and scalability of dual-use companies. Make your best case that your product is or will be profitable. If you have more than one product, please focus your argument on the product / solution presented for this SBIR program.
TEAM ABILITY	weight 10%	Prove your team has executed well as a group. Please draw clear distinctions between private sector, DoD and civilian government work. What milestones have you accomplished as a group in this company?
SUBMISSION QUALITY	QUALITY OF PROSE	Prove you write clearly. Prove you argue convincingly.
weight 3%	DATA QUALITY & ATTRIBUTION	Support your arguments with relevant, properly attributed data to enhance your credibility.

Appendix C

Phase II Evaluation Criteria

Applied SBIR Phase II Proposal Review v2-0-3 Evaluation Criteria Defined

		DEFINITION
INTRODUCTION	weight 2%	Write a clear, concise description of what your innovation does or will do, and where you are in your evolution. Make clear its intended impact on the Army. Evaluators should "get it" after reading this.
POTENTIAL FOR ARMY IMPACT	OPERATIONAL IMPACT	At the scale of a single Army end-user, argue that their jobs or lives will be significantly improved if your solution is adopted. What is the impact of your solution for a soldier/Army civilian vs. today's solutions?
weight 20%	POTENTIAL SCALE OF IMPACT	Here, we're looking for an idea of how broad the impact you described above could be. Look into the future to a time when your solution is both technically mature and actively in use by Army personnel. Describe the scale and scope of your impact within the context of the Army.
TECHNICAL FEASIBILITY	SCIENTIFIC FEASIBILITY	Is the science behind the solution sound? Convince readers who don't have deep expertise in your field that your innovation is built atop sound scientific and engineering principles.
	ENABLING TECHNOLOGIES	Point to the foundational technologies that you rely on to deliver your solution. Do the required enabling technologies introduce added risk? Using proven (and ideally Army-fielded) underlying technologies and techniques helps to lower technical risk.
	ALTERNATIVE TECHNICAL APPROACHES	From a technologist's perspective, why is your proposed solution the best choice for the Army? Refute the alternative engineering approaches others are using. Why does your technology win?
weight 25%	TECHNICAL RISK MITIGATION	No matter your current technology readiness level, technical risks remain. Identify those risks. Present a credible plan to tackle those risks.
TRANSITION	ARMY TRANSITION PATHWAY	Planning for success, what's next for you after this SBIR award? Describe the next type of deal you aim to make with the Army, e.g. a CRADA, a different SBIR contract, a CSO, etc. Briefly outline your current plan to unlock that next opportunity and/or share the biggest risks you see post this SBIR award.
weight 25%	SBIR MILESTONE SCHEDULE	Please share with us a thoughtful execution plan. Strike a balance between giving us a sense of the detailed thinking behind the scenes and the need for your contracting officer to manage a reasonably small number of milestones during your period of performance.
FIRM CASH FLOW	FIRM SURVIVAL RISK	SBIR funds are meant to fuel growth rather than stave off a firm's impending financial failure. Demonstrate that your company will survive financially as a going concern through the early stages of a Phase III contract, sometimes referred to as "transitioning" into use by Army personnel.
	OTHER PEOPLE'S MONEY	Make the case that non-Army and/or non-DoD dollars will continue to fund improvements to your solution from which the Army will benefit in the future. Companies who cannot demonstrate non-Army and/or non-DoD funding sources for future solution enhancements are less attractive to the Applied SBIR program.
weight 20%	FINANCIAL PROFIT POTENTIAL	Through the Applied SBIR program, the Army wants to take advantage of the speed and scalability of dual-use companies. Make your best case that your product is or will be profitable. If you have more than one product, please focus your argument on the product / solution presented for this SBIR program.
TEAM ABILITY	weight 5%	Prove your team has executed well as a group. Please draw clear distinctions between private sector, DoD and civilian government work. What milestones have you accomplished as a group in this company?
SUBMISSION QUALITY	QUALITY OF PROSE	Prove you write clearly. Prove you argue convincingly.
weight 3%	DATA QUALITY & ATTRIBUTION	Support your arguments with relevant, properly attributed data to enhance your credibility.

Appendix D
Commercialization Plan Template

General Instructions/Guidance:

1. The slide deck must be 8 slides total, per Component Instructions, and follow the formatting contained in the template. Font size shall be no smaller than 10-point font.
2. Slides should display the slide number in bottom right corner
3. All text (including tables, charts, plots, axes labels, legends, captions) must be readable without zooming and understandable without voice-over
4. For plots and charts:
    a. Include title/bullet describing importance of plot/chart, and/or data (be specific)
    b. Axes must be meaningfully labeled (to be understandable by non-experts) and include scale
5. Avoid jargon; define technical terms
6. Convert from slide format to a PDF file for submission to DSIP alongside the technical volume proposal
7. To insert images, capture a screenshot of the image and paste it into the slide. Please do not drag-drop a file into the presentation or use the Insert Pictures menu function.
8. Use PowerPoint's "Compress Pictures" feature to reduce file size
    a. Select 96ppi resolution
    b. Uncheck “For this picture only"
9. Replace the boilerplate footer below with distribution markings as appropriate
10. Do not put any company logos (Twitter, Reddit, GitHub, etc) on your slides

To be considered valid proposals, Commercialization Plan submissions must follow the number and content of each slide as contained in the attached template.

Appendix D
Commercialization Plan Template cont.

Firm Name

SBIR Project Title

Principal Investigator Name / Title
Key (or other relevant) Personnel, and
Subcontractors

.....

Insert Topic Number
Insert Proposal Number

BLUF: Bottom Line Up Front

- BLUF:
  1. **Company information and background** : Core competencies, significant sales, previous funding, commercialization successes.
  2. **Customer and Competition** : Clear description of key technology objectives, current competition, and advantages.
  3. **Market**: Plan to obtain market share.
  4. **Intellectual Property**: Patent status, technology lead, trade secrets or other demonstration of a plan to protect the company's technical advantage.
  5. **Financing/Revenue**: Plans for securing necessary non -SBIR funding.
  6. **Assistance and mentoring** : Plans for securing needed technical or business assistance.

Appendix D
Commercialization Plan Template cont.

Company Information and Background

- Core competencies and areas of specialization.
- Products with significant sales.
- Concise history of previous Federal and non -Federal funding/investments.
- Regulatory experience (if applicable).
- Past commercialization successes.
- Past failure and how you overcame.

Customer & Competition

- Description of key technology objectives.
- Current competition and/or alternative solutions.
- Advantages of company's offer compared to competing products or services.
- Hurdles to acceptance of the proposed innovation.
- Description of possible areas where your technology may be utilized or is under utilized.

Appendix D
Commercialization Plan Template cont.

Market

- Analysis of market size and 1 and 5 year forecasted market share.
- Explanation of milestones and target dates of plan to obtain that market share.
- What experience do you have with marketing to this target market?
- What commercialization strategy appears to be the best for bringing this product to the target market?
- What experience do you have with bring products to market – either through this company or though other companies with which you have worked.
- Does the company currently market, manufacture, or license technology? Describe what you do.

Intellectual Property

- Patent status, technology lead, trade secrets or other demonstration of a plan to achieve sufficient protection to realize the commercialization stage and attain at least a temporary competitive advantage .

- Describe how you will protect the intellectual property that enables commercialization of its products while keeping competitors at bay. Note any actions you may consider to attain at least a temporary competitive advantage. Also consider your company's prior record in this area. Comment on your company's strategy to build a sustainable business through protection of intellectual property.

Appendix D
Commercialization Plan Template cont.

Financing

- Plan for securing non-SBIR, private or government funding necessary to enter low rate of production of anticipated technical solution.
- Describe your revenue steam generation to include but not limited to:
  - Manufacture and direct sales
  - Sales through value added resellers or other distributors
  - Joint venture

Assistance & Mentoring

- Plans for securing needed technical or business assistance through mentoring, partnering, or arrangements with government sponsored (e.g., SBIR funded Discretionary Technical and Business Assistance (TABA), State assistance programs, Federally-funded research laboratories, Manufacturing Extension Partnership centers), not-for-profits (e.g., Small Business Development Center (SBDC) or Small Business Technical Development Center (SBTDC)), commercial accelerators, DOD Prime Contractors, SBA Mentor - Protégé program, Procurement Technical Assistance Center (PTAC) or other assistance provider.

Army SBIR 24.4 Topic Index
Release 2

A244-002 Precision Control Lens Eye Tracking Sensors

OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Integrated Sensing and Cyber; Microelectronics; Advanced Materials

OBJECTIVE: Develop precision contact lens eye tracking sensors for Extended Reality (XR) interaction, training optimization and cognitive monitoring. Eye tracking is poised to serve as a critical technology for enhancing C2 capabilities in XR environments, optimizing training and cognitive monitoring for enabling real-time adaptive systems. However, current eye tracking technologies do not have form factors which can operate in rugged, highly mobile army environments and the precision necessary to enable necessary capabilities. A contact lens form factor would allow for operational integration into multiple wartime dynamic scenarios for joint mission precision to include manned and unmanned air operations and ground vehicle systems.

DESCRIPTION: Camera-based eye tracking technology lacks precision, manufacturability, and sustainment for high tempo and mobile operations. Current high precision eye trackers require minimal changes in head position, pupil size, and ambient lighting for valid data and only enable static operational scenarios. Contact lens-based eye tracking can measure movement of the eye itself thereby avoiding complex and noisy image processing algorithms that traditional high precision eye tracking systems rely on and have a form factor that is acceptable for mission demands. Ground Vehicle System Center (GVSC) has a concept for using the contact lens in mounted individuals as a controller in a multilayered XR User Interface (UI) for Head-Mounted Displays (HMDs) where instead of using a physical controller or gesture recognition, the eyes can serve to select virtual objects in the environment. Here soldiers would not rely on traditional physical buttons or controllers to interact and could rely on their eyes thereby increasing the speed and intuitive nature of interacting with HMD interfaces.

PHASE I: Feasibility studies for eye tracking system and sensors embedded in contact lens.

PHASE II: Working prototype of testbed and sensors which can collect binocular eye gaze position, pupil size, and blinks and comparison to gold standard high precision eye trackers. Phase II Sequential: Human factors feasibility studies and soldier touchpoints.

PHASE III DUAL USE APPLICATIONS:

- Academic research focuses namely on general eye tracking use cases with little emphasis put on the contact lens submarket. Fabrication of smart lenses has stymied companies, however, 3D printing has shown early signs of circumventing current roadblocks.
- Data leverages numerous enabling technologies, ranging from semiconductors, microLED displays, sensors, and RF/Non-RF bandwidth vehicles to transfer data.
- Current market applications, including start-up usage, for smart contact lenses include:
    - Eye disease, blood pressure and glucose monitoring, and other health issues.
    - Supplanting smartphones from app usage to music playback
    - The ability to see in multiple different environments, like the dark, that would otherwise obstruct vision.

KEYWORDS: Head-Mounted Display (HMD); Sensors; Contact Lens; Eye Tracking; Extended Reality (XR)

REFERENCES: https://www.nature.com/articles/s41598-020-71233-1