

**Department of the Army**  
**23.4 Small Business Innovation Research (SBIR)**  
**xTechSBIR Autonomy Competition Finalists**  
**Component-Specific Proposal Instructions**  
**Release 12**

**May 25, 2023:** Topics issued for pre-release

**October 10, 2023:** Army begins accepting proposals via DSIP

**October 17, 2023:** Deadline for receipt of proposals no later than 12:00 p.m. ET

**IMPORTANT: A prize competition, xTechSBIR Autonomy Competition, will be used to identify small business concerns that meet the criteria for award. Winners selected from the xTechSBIR Autonomy prize competition will be the only firms eligible to submit a proposal under this topic. All other proposals will not be evaluated. See the full xTechSBIR Autonomy prize competition RFI here: <https://www.xtech.army.mil/competitions/>**

### **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 create a more rapid award time from solicitation to closing.

**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](mailto: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-responsive, the proposal will be rejected / the contract action will be cancelled.

## **SYSTEM FOR AWARD MANAGEMENT (SAM)**

Interested firms are required to be registered and active in SAM ([www.sam.gov](http://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 must be the same firm (Cage Code/DoDAAC/UEI/Duns) that receives the 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 3.1, Eligible Applicants, of BAA 23.4 for full eligibility requirements.

A prize competition, xTechSBIR Autonomy Competition, will be used to identify small business concerns that meet the criteria for award of a Phase I SBIR contract under 10 U.S.C. §2374a. Winners selected from the xTechSBIR Autonomy prize competition will be the only firms eligible to submit a Phase I proposal under this announcement. The xTechSBIR Autonomy prize competition announcement can be found at: <https://www.xtech.army.mil/competitions/>

## **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 6-month period of performance. Eligible firms will be notified to submit a Phase I proposal following completion of the xTechSBIR Autonomy prize competition, executed in accordance with 10 U.S.C. Section 2374a.

Proposals that do not comply with the requirements detailed in BAA 23.4 and the research objectives of these Component Instructions are considered non-conforming and therefore are not evaluated nor considered for award.

Phase I proposals in response to this BAA 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 pages 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.
  - 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 volume 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 A. 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 volume 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 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). Volume 5, Supporting Documents, may be used if additional space is needed.
- 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. Volume 5, Supporting Documents, may be used if additional space is needed.
  - 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 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. Volume 5, Supporting Documents, may be used if additional space is needed.
- 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. Volume 5, Supporting Documents, may be used if additional space is needed.
  - 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.
- **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 cancellation 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), Technical Volume (Volume 2), and the Cost Volume (Volume 3).

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.
4. Fraud, Waste, and Abuse Training Certificate

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.

## **PHASE II PROPOSAL INSTRUCTIONS**

Follow-on Phase II proposals may only be submitted by Phase I awardees. Follow-on Phase II proposal submission window, notification process, expected budget/duration structure and additional instructions will be provided in the Phase II contract or by subsequent notification.

## **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 contract 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. TABA funding will be denied if the offeror fails to include the cost and detailed explanation in its proposal.

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**

All proposals will be evaluated during the xTechSBIR Autonomy competition Finals in accordance with the evaluation criteria that has been provided to the xTechSBIR Autonomy Competition. It is the policy of the Army to ensure equitable and comprehensive proposal evaluations based on the evaluation criteria provided to the finalists and to select the source (or sources) whose offer meets the Government's technical, policy, and programmatic goals.

All proposal evaluations will be based solely on the evaluation criteria. The Army will conduct an evaluation of each conforming proposal. Proposals that do not comply with the requirements detailed in this BAA and the research objective(s) of the corresponding opportunity are considered non-conforming and therefore will not be evaluated nor considered for award.

During the xTechSBIR Autonomy Competition finals, the Government will evaluate each proposal in its entirety, documenting the strengths and weaknesses relative to each evaluation criterion, and based on these identified strengths and weaknesses, make a determination of the proposal's overall qualifications. 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 the xTechSBIR Autonomy prize competition.

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 award 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 cancel the contract action at any time.



If signed by the Government Contracting Officer, the award document is the official and authorizing instrument (i.e. contract). The anticipated period of performance start date will be determined at time of award. The Contracting Officer will email the signed, authorizing award instrument 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.

As further prescribed in FAR 33.106(b), FAR 52.233-3, Protests after Award shall be submitted to the Point of Contract identified in the topic solicitation:

**Email:** [usarmy.pentagon.hqda-asa-alt.mbx.army-applied-sbir-program@mail.mil](mailto: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

## **AWARD AND CONTRACT INFORMATION**

Only proposers who are winners in xTechSBIR Autonomy Competition Finals and follow the evaluation criteria provided to them will be during their pitch will considered for this topic. If you are NOT a winner as a result of the xTechSBIR Autonomy Competition finals, please do not submit proposals for this topic as they will be automatically disqualified.

## **Appendix A 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.

**Firm Name**

**SBIR Project Title**

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

.....  
Insert Topic Number  
Insert Proposal Number

Distribution markings as appropriate for your organization

**BLUF: Bottom Line Up Front**

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- 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.

Distribution markings as appropriate for your organization

**Appendix A  
Commercialization Plan Template cont.**

## Company Information and Background

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- 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.

Distribution markings as appropriate for your organization

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## Customer & Competition

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- 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.

Distribution markings as appropriate for your organization

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## **Appendix A Commercialization Plan Template cont.**

## Market

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- 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 through other companies with which you have worked.
- Does the company currently market, manufacture, or license technology? Describe what you do.

## Intellectual Property

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- 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 A Commercialization Plan Template cont.**

## Financing

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

## Assistance & Mentoring

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- 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 (TABAs), 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 23.4 Topic Index  
Release 12**

A234-P017    xTechSBIR Autonomy Finalist Open Topic Competition



OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Autonomy; Advanced Computing and Software; Human-Machine Interfaces

**OBJECTIVE:**

xTechSBIR Autonomy is seeking novel capabilities and technology solutions that can support the Army's current and future needs, enable new capabilities, improve performance, faster production, and/or provide a cost savings for Army systems. The Army is particularly interested in research in autonomous ground and air vehicles, which must operate in open, urban and cluttered environments. Robotics and autonomous systems regardless of their missions require similar concepts and technologies including:

- Ability to move in very cluttered, irregular, urban and underground terrains.
- Ability to move effectively in contested environments and survive attacks.
- Technologies to enable low electronic and physical profiles.
- Techniques to allow operators to be trained quickly even for complex tasks.
- Architectures to enable reprogrammable platforms under dynamic conditions.
- Sensors to detect obscured targets and to characterize terrain obstacles.
- Autonomous ground and air structures, propulsion, and mobility components.
- Technologies to significantly reduce logistical burdens.

**DESCRIPTION:**

While the competition is open to any solutions within the Autonomy space, there are specific areas that are of interest to the Army which include:

- Solutions or incorporated technologies to support autonomous vehicle tasks such as cross-country mobility and navigation.
- Solutions or incorporated technologies to support advanced perception and automated mobility functions to maneuver in complex, off-road, and contested environments.
- Remote operation software and/or hardware systems capable of multi-domain situational awareness (SA) without exposing the human element of additional risk.
- Solutions or incorporated autonomous vehicle technologies to increase automation and to operate remotely within limited bandwidth and signature management constraints.
- Visual and targeted technologies to support complete situational awareness that can enhance vision in one system.
- Solutions or incorporated technologies to help protect autonomous sensors from external environmental factors (e.g., dust, dirt, rain) in an off-road environment.

The U.S. Army would like to invite interested entities to participate in the xTech Small Business Innovation Research Autonomy competition, an opportunity for eligible small businesses to engage and pitch their novel technology solutions directly to the Department of Defense, earn prize money and potentially receive a Phase I SBIR award of up to \$250,000 each.

The Army recognizes that the DoD must enhance engagements with eligible small businesses, by: (1) understanding the spectrum of 'world-class' technologies being developed commercially that may benefit the DoD in the autonomy space; (2) integrating the sector of non-traditional

innovators into the DoD Science and Technology (S&T) ecosystem; and (3) providing expertise and feedback to accelerate, mature, and transition technologies of interest to the DoD.

The xTechSBIR Autonomy competition will consist of four-rounds: (1) Call for concept white papers; (2) Final Technology Pitch event; (3) Request for Phase I SBIR Proposal Submission; and (4) Request for Phase II SBIR Demonstration. The competition will be awarding up to \$500,000 in cash prizes to select eligible entities throughout the competition. Ultimately, up to 20 winners will be selected from the technology pitch event round and will be invited to submit an application for a potential Phase I SBIR Proposal worth up to \$250,000. Up to 20 companies will be selected to receive a Phase I SBIR award and then will be invited back after six months of award to conduct a live demonstration to a key panel of DoD experts. Details on the prize structure and phases, are listed in this announcement below.

In addition to non-dilutive cash prizes, participants will have the opportunity to engage with U.S. DoD and winners from the Part 1: Concept White Paper round will be invited to conduct an in-person pitch at Grace's Quarters in Maryland.

The efforts described in this notice are being pursued under the authorities of 10 U.S.C. § 4025 (formerly 2374a, Prizes for Advanced Technology Achievements) to award cash prizes as described in this announcement and potential SBIR contracts (15 U.S. Code §638) to only those eligible and selected entities as described in this announcement. In addition, 10 U.S.C. § 4003 (Prototype Projects) can be utilized to award additional follow-on contracts for additional proof-of-concept or prototype development. While the authority of this program is 10 U.S.C. § 4025, the xTechSBIR Autonomy competition may generate interest by another U.S. Army, DoD or USG organization for a funding opportunity outside of this event. The interested organization may contact the participant to provide additional information which may or may not result in partnership opportunities.

**PHASE I:** Companies will complete a feasibility study that demonstrates the firm's competitive technical advantage relative to other commercial products (if other products exist) and develop concept plans for how the company's technology can be applied to Army modernization priority areas. Studies should clearly detail and identify a firm's technology at both the individual component and system levels, provide supporting literature for technical feasibility, highlight existing performance data, showcase the technology's application opportunities to a broad base of customers outside the defense space, a market strategy for the commercial space, how the technology directly addresses the Army's modernization area as well as include a technology development roadmap to demonstrate scientific and engineering viability.

At the end of Phase I, the company will be required to provide a concept demonstration of their technology to demonstrate a high probability that continued design and development will result in a Phase II mature product.

**PHASE II:** Produce prototype solutions that will be easy to operate by a Soldier. These products will be provided to select Army units for further evaluation by the soldiers. In addition, companies will provide a technology transition and commercialization plan for DOD and commercial markets.

**PHASE III DUAL USE APPLICATIONS:** Complete the maturation of the company's technology developed in Phase II to TRL 6/7 and produce prototypes to support further development and commercialization. The Army will evaluate each product in a realistic field environment and provide small solutions to stakeholders for further evaluation. Based on soldier evaluations in the field, companies will be requested to update the previously delivered prototypes to meet final design configuration.

**REFERENCES:** <https://www.xtech.army.mil/competitions/>

KEYWORDS: autonomy; xTech; xTechSBIR; 3D printing; additive fabrication; rapid prototyping; advanced materials; autonomous vehicles; off-roading; terrain; autonomous sensors; open topic