VERSION 2

Defense Logistics Agency (DLA)
24.1 Small Business Innovation Research (SBIR)
Proposal Submission Instructions

INTRODUCTION

The Defense Logistics Agency's (DLA) mission has three lines of effort the DLA Small Business Innovation Program (SBIP) supports. They include supporting the **NUCLEAR ENTERPRISE** by maintaining nuclear systems readiness, qualifying alternate sources of supply, improving the quality of consumable parts, and increasing materiel availability. **FORCE READINESS & LETHALITY** through improvements to life cycle performance through technological advancement, innovation, and reengineering, mitigate single points-of-failure that threaten the readiness of weapons systems used by our Warfighters. **SUPPLY CHAIN INNOVATION & ASSURANCE** through improved lead times, reduced lifecycle costs, maintaining a secure and resilient supply chain, providing opportunities for the small business industrial base to enhance supply chain operations with technological innovations. Lastly supply chain assurance securing the microelectronics supply chain, development of a domestic supply chain for rare earth elements, the adoptions of industrial base best practices associated with counterfeit risk reduction.

Proposers responding to a topic in this Broad Agency Announcement (BAA) must follow all general instructions provided in the Department of Defense (DoD) SBIR Program BAA. DLA requirements in addition to or deviating from the DoD Program BAA are provided in the instructions below.

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.

Specific questions pertaining to the administration of the DLA Program and these proposal preparation instructions should be directed to:

Defense Logistics Agency
Small Business Innovation Program (SBIP) Office DLA/J68
Email: DLASBIR2@DLA.mil

This release contains an open topic. As outlined in section 7 of the SBIR and STTR Extension Act of 2022, innovation open topic activities—

(A) Increase the transition of commercial technology to the Department of Defense.
(B) Expand the small business nontraditional industrial base.
(C) Increase commercialization derived from investments of the Department of Defense; and
(D) Expand the ability for qualifying small business concerns to propose technology solutions to meet the needs of the Department of Defense.

Unlike conventional topics, which specify the desired technical objective and output, open topics can use generalized mission requirements or specific technology areas to adapt commercial products or solutions to close capability gaps, improve performance, or provide technological advancements in existing capabilities.

A small business concern may only submit one (1) proposal to each open topic. If more than one proposal from a small business concern is received for a single open topic, only the most recent proposal

to be certified and submitted prior to the submission deadline will receive an evaluation. All prior proposals submitted by the small business concern for the same open topic will be marked as nonresponsive and will not receive an evaluation.

PHASE I PROPOSAL GUIDELINES

The Defense SBIR/STTR Innovation Portal (DSIP) is the official portal for DoD SBIR/STTR proposal submission. Proposers 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. https://www.dodsbirsttr.mil/submissions/login

Technical Volume (Volume 2)

DLA's objective for the Phase I effort is to determine the merit and technical feasibility of the concept. The technical volume is not to exceed 20 pages and must follow the formatting requirements provided in the DoD SBIR Program BAA. Any pages submitted beyond the 20-page limit within the Technical Volume (Volume 2) will not be evaluated. If including a letter(s) of support, they should be included in Volume 5, and they will not count towards the 20-page Volume limit. Any technical data/information that should be in the Volume 2 but is contained in other Volumes will not be considered.

Content of the Technical Volume

Refer to the instructions provided in the DoD Program BAA.

Cost Volume (Volume 3)

A list of topics currently eligible for proposal submission is included in these instructions, followed by full topic descriptions. These are the only topics for which proposals will be accepted at this time. Refer to the topic for cost and duration structure. Proposers must utilize the excel cost volume provided during proposal submission on DSIP.

Please review the updated Percentage of Work (POW) calculation details included in section 5.3 of the DoD Program BAA. DLA will occasionally accept deviations from the POW requirements with written approval from the Funding Agreement officer.

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 Program BAA for full details on this requirement. Information contained in the CCR will be considered by DLA during proposal evaluations.

Supporting Documents (Volume 5)

Volume 5 is provided for proposers to submit additional documentation to support the Coversheet (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.

Additional DLA-specific supporting documents:

- Optional, A qualified letter of support is from a relevant commercial or government agency procuring organization(s) working with DLA, articulating their support for the technology (i.e., what DLA need(s) the technology supports and why it is important to fund it), and possible commitment to provide additional funding and/or insert the technology in their acquisition/sustainment program.
- Letters of support shall not be contingent upon award of a subcontract.

The standard formal deliverables for a Phase I are the:

- Plan of Action and Milestones (POAM) with sufficient detail for monthly project tracking.
- Initial Project Summary: one-page, unclassified, non-sensitive, and non-proprietary summation of the project problem statement and intended benefits (must be suitable for public viewing).
- Monthly Status Report. A format will be provided at the Post Award Conference (PAC).
- The Technical Point of Contact (TPOC) and the Program Manager (PM) will determine a meeting schedule at the PAC. Phase I awardees can expect monthly (or more frequent) project reviews.
- Draft Final Report including major accomplishments, business case analysis, commercialization strategy, transition plan with timeline, and proposed path forward for Phase II.
- Final Report including major accomplishments, business case analysis, commercialization strategy and transition plan with timeline, and proposed path forward for Phase II.
- Final Project Summary (one-page, unclassified, non-sensitive and non-proprietary summation of project results, high resolution photos or graphics intended for public viewing).
- Applicable patent documentation.
- Other deliverables as defined in the Phase I Proposal.
- Phase II Proposal is optional at the Phase I Awardee's discretion (as applicable).

DIRECT TO PHASE II PROPOSAL GUIDELINES

15 U.S.C. §638 (cc), as amended by NDAA FY2012, Sec. 5106, and further amended by NDAA FY2019, Sec. 854, PILOT TO ALLOW PHASE FLEXIBILITY.

This allows the Department of Defense to make an award to a Small Business Concern (SBC) under Phase II of the SBIR Program with respect to a project, without regard to whether the small business concern received an award under Phase I of an SBIR Program with respect to such project.

DLA is conducting a "Direct to Phase II" implementation of this authority for this SBIR Announcement. This pilot does not guarantee DLA will offer any future Direct to Phase II opportunities.

PROJECT DURATION and COST:

Direct to PHASE II: – Cost not to exceed $1,000,000.

PERIOD OF PERFORMANCE: The Direct to Phase II period of performance is not to exceed 24 months total.

INTRODUCTION

Direct to Phase II proposals must follow the steps outlined in the following statements.

1. Offerors must provide documentation that satisfies the Phase I feasibility requirement*.
   - This documentation will comprise the first twenty pages of Volume 2 (Technical Volume) of the Direct to Phase II proposal.
2. Offerors must submit a complete Phase II proposal using the DLA Phase II proposal instructions below.

* NOTE: Offerors are required to provide information demonstrating that the scientific and technical merit and feasibility. DLA will not evaluate any Phase II proposal if it determines that the offeror has failed to demonstrate the establishment of technical merit and feasibility.

PROPOSAL SUBMISSION

Submit the complete proposal electronically at https://www.dodsbirsttr.mil/submissions/login

Complete proposals must include all the following:

a. Volume 1: DoD Proposal Cover Sheet, Produced in the DSIP System by your company profile.
b. Volume 2: Technical proposal
    Part 1: Phase I Justification (20 Pages Maximum)
    Part 2: Phase II Technical Proposal (40 Pages Maximum)
c. Volume 3: Cost Volume (Excel spreadsheet upload)
d. Volume 4: Company Commercialization Report
e. Volume 5: Additional Documents (Optional)
f. Volume 6 FWA Training Certificate is required for proposal submission.

Phase II proposals require a comprehensive, detailed submission of the proposed effort. DLA SBIR Direct to Phase II periods of performance are 24 months. Commercial and military potential of the technology under development is extremely important. Successful proposals will emphasize applicability to specific DOD programs of record as well as dual- use applications and commercial exploitation of resulting technologies,

2. Direct to Phase II PROPOSAL PREPARATION INSTRUCTIONS AND REQUIREMENTS

PROPOSAL FORMAT (60 pages maximum)

A. **Cover Sheet**. This is completed using the DSIP Portal on the Submission Site. This is a compilation of company data as well as specific information regarding the proposed project. Include a brief description of the problem or opportunity, objectives, effort, and anticipated results. Summarize the expected benefits, as well as any government or private sector applications of the proposed research. OSD and SBA will post the Project Summary of selected proposals with unlimited distribution. Therefore, the summary should not contain any classified or proprietary information.

B. Technical Volume

- Phase I Justification (20 Pages Maximum). Offerors are required to provide information demonstrating the establishment of the scientific and technical merit and feasibility.

- Phase II Technical Objectives and Approach (40 Pages Maximum). List the specific technical objectives of the Phase II research and describe the planned technical approaches used to meet these objectives.

- Phase II Work Plan. Provide an explicit, detailed description of the Phase II approach. The plan should indicate how and where the firm will conduct the work, a schedule of major events, and the final product to be developed. The Phase II effort should attempt to accomplish the technical feasibility demonstrated in the justification, including potential commercialization results. Phase II is the principal research and development effort and is expected to produce a well-defined deliverable product or process.

- Related Work. Describe significant activities directly related to the proposed effort, including those conducted by the Principal Investigator, the proposing firm, consultants, or others. Report how the

activities interface with the proposed project and discuss any planned coordination with outside sources. The proposers must demonstrate an awareness of the state- of-the-art in the technology and associated science.

- Relationship with Future Research or Research and Development. State the anticipated results of the proposed approach if the project is successful. Discuss the significance of the Phase II effort in providing a foundation for a Phase III research or research and development effort.

- Technology Transition and Commercialization Strategy**.** Describe your company's strategy for converting the proposed SBIR research, resulting from your proposed Phase II contract, into a product or non-R&D service with widespread commercial use -- including private sector and/or military markets. Note that the commercialization strategy is separate from the Commercialization Report described in Section 4.L below. The strategy addresses how you propose to commercialize this research, while the Company Commercialization Report covers what you have done to commercialize the results of past Phase II awards. Historically, a well- conceived commercialization strategy is an excellent indicator of ultimate Phase III success. The commercialization strategy must address the following questions:

  - What DoD Program and/or private sector requirement does the technology propose to support?
  - What customer base will the technology support, and what is the estimated market size?
  - What is the estimated cost and timeline to bring the technology to market to include projected funding amount and associated sources?
  - What marketing strategy, activities, timeline, and resources will be used to enhance commercialization efforts??
  - Who are your competitors, and describe the value proposition and competitive advantage over the competition?

- Key Personnel. Identify key personnel, including the Principal Investigator, who will be involved in the Phase II effort. List directly related education and experience and relevant publications (if any) of key personnel. Include a concise resume of the Principal Investigator(s).

- Facilities/Equipment. Describe available instrumentation and physical facilities necessary to carry out the Phase II effort. Justify the purchase of any items or equipment (as detailed in the cost proposal) including Government Furnished Equipment (GFE). All requirements for government furnished equipment or other assets, as well as associated costs, must be determined and agreed to during Phase II contract negotiations. State whether the proposed work facilities will be performed meet environmental laws and regulations of federal, state (name) and local governments. This includes, but is not limited to, the following groupings: airborne emissions, waterborne effluents, external radiation levels, outdoor noise, solid and bulk waste disposal, and handling and storage of toxic and hazardous materials.

- Consultants**.** Involvement of university, academic institution, or other consultants in the project may be appropriate. If the firm intends to involve these types of consultants, describe these costs in detail in the Cost Volume.

C. **Cost Volume**. Download, complete, and upload the Spreadsheet. Some items in the cost volume template may not apply to the proposed project. Provide enough information to allow the DLA evaluators to assess the proposer's plans to use the requested funds if DLA were to award the contract.

- List all key personnel by name as well as number of hours dedicated to the project as direct labor.

- Special Tooling, Test Equipment, and Materials Costs:
- Special tooling, test equipment, and materials costs may be included under Phase II. The inclusion of equipment and material will be carefully reviewed relative to need and appropriateness for the work proposed; and
- The purchase of special tooling and test equipment must, in the opinion of the Contracting Officer, be advantageous to the Government and relate it directly to the specific effort.
- Cost for travel funds must be justified and related to the needs of the project.

D. **Commercialization Report.** Completion of the CCR as Volume 4 of the proposal submission in DSIP is required. This required proposal information does not count against the 60-page limit. Please refer to the DoD Program BAA for full details on this requirement. Information contained in the CCR will be considered by DLA during proposal evaluations.

E. **Supporting Documents (Volume 5)**

Volume 5 is provided for proposers to submit additional documentation to support the Coversheet (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.

SELECTION AND EVALUATION (Direct to Phase II only)

A. **Evaluation Criteria**. DLA will review all proposals for overall merit based on the evaluation criteria published in the DoD SBIR Program BAA:

CONTRACTUAL CONSIDERATIONS

A. Awards. The number of Direct to Phase II awards will depend upon the quality the Phase II proposals and the availability of funds. Each Phase II proposal selected for award under a negotiated contract requires a signature by both parties before work begins. DLA awards Phase II contracts to Small Businesses based on results of the agency priorities, scientific, technical, and commercial merit of the Phase II proposal.

B. Reports**.** For incrementally funded Direct to Phase II projects an interim, midterm written report maybe required (at the discretion of the awarding agency).

C. Payment Schedule. DLA Phase II Awards are Firm Fixed Price / Level of Effort contracts. Base monthly invoices on the labor hours recorded **PLUS** the monthly costs associated with the project.

D. Markings of Proprietary Information. In accordance with DoD SBIR Program BAA, section 5.3. DLA does not accept classified proposals. All Final Reports are marked with CUI // SBIZ// FEDONLY, and the Initial Project Summary as well as the Final Project Summary should reference compliance with FOR PUBLIC RELEASE.

E. Copyrights, Patents and Technical Data Rights. DLA handles all Copyrights, Patents, and Technical Data Rights in accordance with the guidelines in the DoD SBIR Program BAA.

DISCRETIONARY TECHNICAL AND BUSINESS ASSISTANCE (TABA)

The DLA SBIR Program does not participate in the Technical and Business Assistance (formally the Discretionary Technical Assistance Program). Contractors should not submit proposals that include Technical and Business Assistance.

PHASE II PROPOSAL GUIDELINES

Per SBA Policy Directive SBIR Phase II Proposal guidance, all Phase I awardees are permitted to submit a Phase II proposal for evaluation and potential award selection, without formal invitation. Details on the due date, format, content, and submission requirements of the Phase II proposal will be provided by the DLA SBIP Program Management Office (PMO) on/around the midway point of the Phase I period of performance. Only firms who receive a Phase I award may submit a Phase II proposal.

DLA will evaluate and select Phase II proposals using the same criteria as Phase I evaluation. Funding decisions are based upon the results of work performed under a Phase I award, the Scientific & Technical Merit, Feasibility, and Commercial Potential of the Phase II proposal; Phase I final reports may be reviewed as part of the Phase II evaluation process. The Phase II proposal should include a concise summary of the Phase I effort including the specific technical problem or opportunity addressed and its importance, the objective of the Phase I effort, the type of research conducted, findings or results of this research, and technical feasibility of the proposed technology.

Due to limited funding, DLA reserves the right to limit awards under any topic and only proposals considered to be of superior quality will be funded.

Phase II Proposals should anticipate a combination of any or all the following deliverables:

- Plan of Action and Milestones (POAM) with sufficient detail for monthly project tracking.
- Initial Project Summary: one-page, unclassified, non-sensitive, and non-proprietary summation of the project problem statement and intended benefits (must be suitable for public viewing).
- Monthly Status Report. A format will be provided at the PAC.
- Meeting schedule to be determined by the Technical Point of Contact (TPOC) and PM at the PAC.
- Phase II awardees expect Monthly (minimum) Project Reviews (format provided at the PAC).
- Draft Final Report including major accomplishments, commercialization strategy and transition plan and timeline.
- Final Report including major accomplishments, commercialization strategy, transition plan, and timeline.
- Final Project Summary (one-page, unclassified, non-sensitive and non-proprietary summation of project results, non-proprietary high-resolution photos, or graphics intended for public viewing).
- Applicable patent documentation.
- Other deliverables as defined in the Phase II Proposal.

EVALUATION AND SELECTION (Phase I and Phase II)

Use of Support Contractors in the Evaluation Process

Only government personnel with active non-disclosure agreements will officially evaluate proposals.

Non-government technical consultants (consultants) to the government may review and provide support in proposal evaluations during source selection.

Consultants may have access to the offeror's proposals, may be utilized to review proposals, and may provide comments and recommendations to the government's decision makers. Consultants will not establish final assessments of risk and will not rate or rank offerors' proposals. They are also expressly prohibited from competing for DLA SBIR awards in the SBIR topics they review and/or on which they provide comments to the government.

All consultants are required to comply with procurement integrity laws. Consultants will not have access to proposals or pages of proposals that are properly labeled by the offerors as "FEDONLY." Pursuant to FAR 9.505-4, DLA contracts with these organizations include a clause which requires them to

(1) Protect the offerors' information from unauthorized use or disclosure for as long as it remains proprietary and

(2) Refrain from using the information for any purpose other than that for which it was furnished. In addition, DLA requires the employees of those support contractors that provide technical analysis to the SBIR/STTR Program to execute non-disclosure agreements. These agreements will remain on file with the DLA SBIP PMO.

Non-government consultants will be authorized access to only those portions of the proposal data and discussions that are necessary to enable them to perform their respective duties. In accomplishing their duties related to the source selection process, employees of the organizations may require access to proprietary information contained in the offerors' proposals.

All proposals will be evaluated in accordance with the evaluation criteria listed in the DoD SBIR Program BAA. DLA will evaluate and select Phase I and Phase II proposals using scientific review criteria based upon technical merit and other criteria as discussed in this Announcement document.

- DLA reserves the right to award none, one, or more than one contract under any topic.
- DLA is not responsible for any money expended by the offeror before award of any contract.
- Due to limited funding, DLA reserves the right to limit awards under any topic.
- Only proposals considered to be "Highly Acceptable" as determined by DLA will be funded.

Please note that potential benefit to the DLA will be considered throughout all the evaluation criteria and in the best value trade-off analysis. When combined, the stated evaluation criteria are significantly more important than cost or price.

It cannot be assumed that reviewers are acquainted with the firm or key individuals or any referenced experiments. Technical reviewers will base their conclusions only on information contained in the proposal. Relevant supporting data such as journal articles, literature, including government publications, etc., should be listed in the proposal and will count toward the applicable page limit.

Final Selection may require an oral presentation. This may include an in-person meeting or a Zoom.gov meeting.

The two-part evaluation process is explained below:

Part I: The evaluation of the Technical Volume will utilize the Evaluation Criteria provided in the DoD SBIR BAA. Once the initial evaluations are complete, all offerors will be notified as to whether they were selected to present the slide deck portion of their proposal within 60 days of the BAA close date. Only proposals receiving a "Highly Acceptable" rating will receive an invitation to present orally.

Part II: If selected for an oral presentation, offerors shall submit a slide deck not to exceed 15 PowerPoint slides to DLASBIR@dla.mil.

- There are no set format requirements other than the 15-page maximum page length.
- It is recommended (but not required) that more detailed information is included in the technical volume and higher-level information is included in the slide deck.

Selected offerors will receive an invitation to present a slide deck (15-minute presentation time / 15-minute question and answer) in a technical question and answer forum to the DLA evaluation team via electronic media. This presentation will be evaluated by a panel against the criteria listed above and your overall presentation. DLA will evaluate the presentation for Business Acumen, and Core Business Capabilities (Customer Engagement / Presentation Skills). The rating of the presentation will be a Go/No-Go rating.

Notification of the Go/No-Go rating decision will occur within 5 days of the presentation. Input on technical aspects of the proposals may be solicited by DLA from non-government consultants and advisors who are bound by appropriate non-disclosure requirements.

The SBIP PMO will distribute selection and non-selection email notices to all firms who submit a SBIR/STTR proposal to DLA. The email will be distributed to the "Corporate Official" and "Principal Investigator" listed on the proposal coversheet. DLA cannot be responsible for notification to a company that provides incorrect information or changes such information after proposal submission. DLA will distribute the selection and non-selection notifications to all offerors within 90 days of the BAA close date.

DLA will provide written feedback to unsuccessful offerors regarding their proposals on the non-selection notification. Only firms that receive a non-selection notification are eligible for written feedback.

AWARD AND CONTRACT INFORMATION

Typically, the contract period of performance for Phase I should be up to 12 months and the award should not exceed $100,000. However, each topic may have a different threshold. The DLA Contracting Office utilizes a Firm Fixed Price (FFP) Contract for DLA Phase I Projects

The expected budget for Phase II should not exceed $1,000,000 unless approved by the DLA Program Manager, and the duration should not exceed 24 Months. Proposals more than $1,000,000 will not be considered without written PM approval. The DLA Contracting Office utilizes a Firm Fixed Price Level of Effort (FFP/LOE) Contract for DLA Phase II Projects.

Proposals not conforming to the terms of this Announcement will not be considered. DLA reserves the right to limit awards under any topic, and only those proposals of superior scientific and technical quality as determined by DLA will be funded.

DLA reserves the right to withdraw from negotiations at any time prior to contract award.

Post Award, DLA may terminate any award at any time for any reason to include matters of national security (foreign persons, foreign influence or ownership, inability to clear the firm or personnel for security clearances, or other related issues).

Please read the entire DoD Announcement and DLA instructions carefully prior to submitting your proposal. Please go to https://www.sbir.gov/about/about-sbir#sbir-policy-directive to read the SBIR/STTR Policy Directive issued by the Small Business Administration.

USE OF FOREIGN NATIONALS (also known as Foreign Persons), GREEN CARD HOLDERS AND DUAL CITIZENS

If proposing to use foreign nationals (also known as foreign persons), they must be green card holders, and/or dual citizens. (No Student or Temporary Visa holders will be approved). The offeror must identify the personnel they expect to be involved on this project, the type of visa or work permit under which they are performing, country of origin and level of involvement.

You will be asked to provide additional information during negotiations to verify the foreign citizen's eligibility to participate on a SBIR contract. Supplemental information provided in response to this paragraph will be protected in accordance with the Privacy Act (5 U.S.C. 552a), if applicable, and the Freedom of Information Act (5 U.S.C. 552(b)(6)).

Proposals submitted to export control-restricted topics and/or those with foreign nationals, dual citizens, or green card holders listed will be subject to security review during the contract negotiation process (if selected for award).

DLA reserves the right to vet all uncleared individuals involved in the project, regardless of citizenship, who will have access to Controlled Unclassified Information (CUI) such as export controlled information. If the security review disqualifies a person from participating in the proposed work, the contractor may propose a suitable replacement.

In the event a proposed person and/or firm is found ineligible by the government to perform proposed work, the contracting officer will advise the offeror of any disqualifications but is not required to disclose the underlying rationale.

V. EXPORT CONTROL RESTRICTIONS

The technology within most DLA topics is restricted under export control regulations including the International Traffic in Arms Regulations (ITAR) and the Export Administration Regulations (EAR). ITAR controls the export and import of listed defense-related material, technical data and services that provide the United States with a critical military advantage. EAR controls military, dual-use and commercial items not listed on the United States Munitions List or any other export control lists. EAR regulates export-controlled items based on user, country, and purpose. The offeror must ensure that their firm complies with all applicable export control regulations. Please refer to the following URLs for additional information: https://www.pmddtc.state.gov/ and https://www.bis.doc.gov/index.php/regulations/export-administration-regulations-ear.

Most DLA SBIR topics are subject to ITAR and/or EAR. If the topic write-up indicates that the topic is subject to International Traffic in Arms Regulation (ITAR) and/or Export Administration Regulation (EAR), your company may be required to submit a Technology Control Plan (TCP) during the contracting negotiation process.

CLAUSE H-08 PUBLIC RELEASE OF INFORMATION (Publication Approval)

Clause H-08 pertaining to the public release of information is incorporated into all DLA SBIR contracts and subcontracts without exception. Any information relative to the work performed by the contractor under DLA SBIR contracts must be submitted to DLA for review and approval prior to its release to the public. This mandatory clause also includes the subcontractor who shall provide their submission through the prime contractor for DLA's review for approval.

FLOW-DOWN OF CLAUSES TO SUBCONTRACTORS
The clauses to which the prime contractor and subcontractors are required to comply include but are not limited to the following clauses:

1) DLA clause H-08 (Public Release of Information),
2) DFARS 252.204-7000 (Disclosure of Information),
3) DFARS clause 252.204-7012 (Safeguarding Covered Defense Information and Cyber Incident Reporting), and
4) DFARS clause 252.204-7020 (NIST SP 800-171 DoD Assessment Requirements). Your proposal submission confirms that any proposed subcontract is in accordance with the clauses cited above and any other clauses identified by DLA in any resulting contract.
5) DFARS Clause 252.223-7999 Ensuring Adequate COVID-19 Safety Protocols for Federal Contractors.

OWNERSHIP ELIGIBILITY
Prior to award, DLA may request business/corporate documentation to assess ownership eligibility as related to the requirements of SBIR Program Eligibility. These documents include, but may not be limited to, the Business License; Articles of Incorporation or Organization; By-Laws/Operating Agreement; Stock Certificates (Voting Stock); Board Meeting Minutes for the previous year; and a list of all board members and officers.

If requested by DLA, the contractor shall provide all necessary documentation for evaluation prior to SBIR award. Failure to submit the requested documentation in a timely manner as indicated by DLA may result in the offeror's ineligibility for further consideration for award.

ADDITIONAL INFORMATION

Classified Proposals
Classified proposals **ARE NOT** accepted under the DLA SBIR Program. The inclusion of classified data in an unclassified proposal is grounds for the agency to determine the proposal as non-responsive and the proposal not to be evaluated.

Contractors currently working under a classified contract must use the security classification guidance provided under that contract to verify new SBIR proposals are unclassified prior to submission.

Phase I contracts are not typically awarded for classified work. However, in some instances, work being performed on DLA SBIR/STTR contracts will require security clearances. If a DLA SBIR/STTR contract develops into or identifies classified work, the offeror must have a facility clearance, appropriate personnel clearances to perform the classified work and coordinate the DD254 with the Contract Officer and the service owning the classified data.

For more information on facility and personnel clearance procedures and requirements, please visit the Defense Counterintelligence and Security Agency Web site at: https://www.dcsa.mil.

Use of Acronyms

Acronyms should be spelled out the first time they are used within the technical volume (Volume 2), the technical abstract, and the anticipated benefits/potential commercial applications of the research or development sections. This will help avoid confusion when proposals are evaluated by technical reviewers.

Communication
All communication from the DLA SBIR/STTR PMO will originate from the DLASBIR2@DLA.mil email address. Please white list this address in your company's spam filters to ensure timely receipt of communications from our office.

All attachments sent via email require encryption. The firm will have to purchase External Certificate Authority (ECA) certificates to send and receive encrypted email if they do not have a Common Access Card (CAC) or Personal Identity Verification (PIV) issued. The cost is approximately $100 per year per user. This will be a Cybersecurity Maturity Model Certification CMMC requirement for all future contracts.

ORGANIZATIONAL CONFLICTS OF INTEREST (OCI)
The basic OCI rules for contractors which support development and oversight of SBIR topics are covered in FAR 9.5 as follows (the offeror is responsible for compliance):

(1) The contractor's objectivity and judgment are not biased because of its present or planned interests which relate to work under this contract.

(2) The contractor does not obtain unfair competitive advantage by virtue of its access to non-public information regarding the government's program plans and actual or anticipated resources.

(3) The contractor does not obtain unfair competitive advantage by virtue of its access to proprietary information belonging to others.

All applicable rules under the FAR Section 9.5 apply.

If you, or another employee in your company, developed or assisted in the development of any SBIR requirement or topic, please be advised that your company may have an OCI. Your company could be precluded from an award under this BAA if your proposal contains anything directly relating to the development of the requirement or topic. Before submitting your proposal, please examine any potential OCI issues that may exist with your company to include subcontractors and understand that if any exist, your company may be required to submit an acceptable OCI mitigation plan prior to award.

PHASE III GUIDELINES & INSTRUCTIONS

Phase III is any proposal that "Derives From", "Extends" or completes a transition from a Phase I or II project. Phase III proposals will be accepted after the completion of Phase I and or Phase II projects.

There is no specific funding associated with Phase III, except Phase III is not allowed to use SBIR/STTR coded funding. Any other type of funding is allowed.

Phase III proposal submission. Phase III proposals are emailed directly to DLASBIR2@dla.mil. The PMO team will set up evaluations and coordinate the funding and contracting actions depending on the outcome of the evaluations. A Phase III proposal should follow the same format as Phase II for the

content, and format. There are, however, no limitations to the amount of funding requested, or the period of performance. All other guidelines apply. More specific instructions may be available when a firm submits a Phase III proposal.

VERSION 2

DLA SBIR 24.1 Topic Index

DLA241-P01	Phase I Open Call for Small Business Closing Supply Chain Gaps for Aging Weapon Systems
DLA241-002	Engaging the Manufacturing Industrial Base in Support of DLA's Critical Supply Chains
DLA241-003	Novel Metal and Ceramic Based Coatings for Military Applications
DLA241-004	Utilizing Large Language Model (LLM)/Generative AI to Develop Energy Calculation Tool for Manufacturing Processes
DLA241-D05	Domestic Sourced or Manufactured Coal Tar Pitch to Meet Military Requirements

DLA241-P01 TITLE: Phase I Open Call for Small Business Closing Supply Chain Gaps for Aging Weapon Systems

OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Mission Readiness & Disaster Preparedness; Nuclear; Sustainment & Logistics

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

OBJECTIVE: To expand and develop new Small Business Manufacturer (SBM) industrial base partners to grow participation in support of manufacturing parts managed by DLA and the Services for Aging Weapon Systems in support of DLA's mission described in Ref. 1.

DESCRIPTION: DLA SBIR Program has a legacy of success in the advancement of critical manufacturing technologies that support our national security, along with a growing small business manufacturing network that fortify DLA supply chains. These efforts together with our Service partners are helping the DLA to build a resilient SBM base to reduce the acquisition and supportability costs of defense weapons systems, reduce manufacturing and repair cycle times across the life cycles of such systems, and transition manufacturing research and development processes into production. Competitive proposals should originate from small business manufacturing firms and include their process for manufacturing a National Stock Number (NSN) or component for specific weapon platform. Proposals with software or integrated manufacturing solutions will not be evaluated.

Projects of this open topic can develop in several ways:
a) SBMs can identify NSNs on the DLA Internet Bid Board System (DIBBS). More details are available at Ref. 2. JCP Certification required as described in Ref. 3.
b) SBMs can identify NSNs through partnerships with the Air Force, Navy, Army or Marine Corps or Original Equipment Manufacturer (OEM).
c) SBMs can propose advanced manufacturing methods for existing NSNs to improve cost, reduce lead time and/or improve quality.

None of these projects can proceed without appropriate sponsorship from the DLA or one of the military Services. Identify specific partnerships and points of contact to strengthen your proposal. A specific NSN must be identified to participate in the open topic through independent SBM research. NSN's will not be provided. The Offeror must fully understand the path to becoming an approved source for the proposed NSN and describe it in their proposal.

PROJECT DURATION and COST: Proposals exceeding these limits will not be evaluated.
PHASE I: Not to exceed a duration of 6 months and cost of $50,000.
PHASE II: Not to exceed a duration of 24 Months and cost of $1,000,000.

DLA intends to make 5-10 awards against this topic. A small business concern may only submit one (1) proposal to this open topic. If more than one proposal from a small business concern is received for this open topic, only the most recent proposal to be certified and submitted prior to the submission deadline

will receive an evaluation. All prior proposals submitted by the small business concern for this open topic will be marked as nonresponsive and will not receive an evaluation.

PHASE I: The project schedule should plan to perform all tasks necessary to become an approved source including but not limited to completing the TDP if applicable and/or Source Approval Request (SAR) within the period of performance.

The goal of phase I is for the SBM to develop the appropriate documentation to qualify as a source of supply for a DLA managed NSN which will demonstrate their capability to be added to a list of DLA SBIR SBM network. In this phase, manufacturers will submit a Technical Data Package and/or Source Approval Request via DLA to the applicable Engineering Support Activity (ESA), as required, for approval. The benefit to the SBM for qualifying for DLA's SBM network is eligibility for non-competitive SBIR Phase II awards and DLA NSN procurements.

All Phase I Proposals should demonstrate an understanding of the NSN and the general challenges involved in their manufacture. Proposals that fail to demonstrate knowledge of the NSN will be rejected. JCP Certification is required to access Government drawings and data. Please see reference 2. A review of references 4, 5, and 6 is highly recommended.

PHASE II: Typically, Phase II advances the project into production when representative articles are required to support validation and/or testing for source approval. Secondly, if a complete solution is not apparent by the end a Phase I, additional research may be required and funded in Phase II. Finally, in some cases the path to Low-Rate Initial Production may require funding for pre-production, test equipment and/or test services. The goal being to transition the NSN to a program or record as an approved manufacturing source.

PHASE III DUAL USE APPLICATIONS: A successful Phase III is an award(s) from DLA or the Services for the NSN proposed.

PHASE III DUAL USE APPLICATIONS: This NSN or related technology and manufacturing processes developed under this award could be used in a broad range of military and commercial applications.

COMMERCIALIZATION: The SBM will pursue commercialization of the various technologies and processes developed in prior phases through participation in future DLA procurement actions on items identified but not limited to this BAA.

REFERENCES:

1. DLA Strategic Plan 2021-2026: https://www.dla.mil/Info/Strategic-Plan/
2. Access the web address for DIBBS at https://www.dibbs.bsm.dla.mil, then select the "Tech Data" Tab and Log into c-Folders.
3. JCP Certification: https://www.dla.mil/Logistics-Operations/Services/JCP/
4. DLA Aviation SAR Package instructions. DLA Small Business Resources: http://www.dla.mil/Aviation/Business/IndustryResources/SBO.aspx
5. DLA Small Business Innovation Programs web site: http://www.dla.mil/SmallBusiness/SmallBusinessInnovationPrograms
6. DLA Aviation Repair Parts Purchase or Borrow (RPPOB) Program: https://www.dla.mil/Aviation/Offers/Services/AviationEngineering/Engineering/ValueEng.aspx

KEYWORDS: Manufacturing, National Stock Number, Commercialization, Weapon System, Reverse Engineering, Technical Data Package

DLA241-002 TITLE: Engaging the Manufacturing Industrial Base in Support of DLA's Critical Supply Chains

OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Mission Readiness & Disaster Preparedness; Nuclear; Sustainment & Logistics

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

OBJECTIVE: Expand the Small Business Manufacturer (SBM) base to address the Agency's need to develop qualified sources of supply to improve DLA product availability, provide competition for reduced lead time and cost, as well as address lifecycle performance issues. Through participation in DLA SBIR, SBMs will have an opportunity to collaborate with DLA Weapons System Program Managers (WSPMs) and our customer Engineering Support Activities (ESAs) to develop innovative solutions to DLA's most critical supply chain requirements. In the end, the SBM benefits from the experience by qualifying as a source of supply as well as from the business relationships and experience to further expand their product lines and readiness to fulfill DLA procurement requirements.

DESCRIPTION: Competitive applicants will have reviewed the parts list provided on DLA Small Business Innovation Program (SBIP) website, (Reference 4) as well as the technical data in the cFolders of DLA DiBBs, (Reference 3). Proposals can evolve in one of four ways depending on the availability of technical data and NSNs for reverse engineering as follows. Information on competitive status, RPPOB, and tech data availability will be provided on the DLA SBIP website, (Reference 4).

a. Fully Competitive (AMC/AMSC-1G) NSNs where a full technical data package is available in cFolders. The SBM proposal should reflect timeline, statement of work and costs associated with the manufacturing and qualification of a representative article.
b. Other than (AMC/AMSC-1G) NSNs where a full Technical Data Package (TDP) is available in cFolders. These items may also require a qualification of a Representative Article. The SBM proposal should reflect timeline, statement of work, and costs associated with producing a Source Approval Request (SAR) and (if applicable) qualification of a Representative Article. Contact the TPOC if necessary. The scope and procedures associated with development of a SAR package are provided in Reference 1.
c. Repair Parts Purchase or Borrow (RPPOB) or Surplus may be an option for other than 1G NSNs where partial or no technical data is available in cFolders. NSNs, if available, may be procured or borrowed through this program for the purposes of reverse engineering. The instructions for RPPOB can be found on the websites, Reference 5. The SBM proposal should reflect timeline, statement of work and costs associated with the procuring the part and reverse engineering of the NSN. Depending on complexity, producing both the TDP and SAR package may be included in Phase I.
d. Reverse Engineering (RE) without RPPOB or Surplus available is when the NSN will be provided as Government Furnished Material (GFM) if available from the ESA or one of our Service customers post award. In this case, contact the TPOC to discuss the availability of the NSN prior to starting the proposal.

Typically, a competitive SBM will have relevant experience in producing a similar item which will enable them to propose without a representative article. The SBM proposal should reflect timeline, statement of

work and costs associated with the reverse engineering of the NSN and depending on complexity producing a TDP and SAR package in Phase I.

Specific parts may require minor deviations in the process dependent on the Engineering Support Activity (ESA) preferences and requirements. Those deviations will be addressed post award

PROJECT DURATION and COST: Proposals exceeding these limits will not be evaluated.
PHASE I: Not to exceed a duration of 12 Months and a cost of $100,000. The project schedule should plan to complete the TDP and SAR in the first six months.
PHASE II: Not to exeed a duration of 24 Months and a cost of $1,000,000.

The Phase II proposal is optional for the Phase I awardee. Phase II selections are based on Phase I performance, Small Business Manufacturer innovation and engineering capability and the availability of appropriate requirements. Typically the goal of Phase II is to expand the number of NSNs and/or to build capability to expand capacity to better fulfill DLA requirements.

Participating small businesses must have an organic manufacturing capability and a Commercial and Government Entity (CAGE) code and be Joint Certification Program (JCP) certified in order to access technical data if available.

Refer to “link 2” below for further information on JCP certification. Additionally, small businesses will need to create a DLA’s Internet Bid Board System (DIBBS) account to view all data and requirements in C Folders.

Refer to “links 3 and 4” below for further information on DIBBS and C Folders. All available documents and drawings are located in the C Folder location “SBIR241A”. If the data is incomplete, or not available, the effort will require reverse engineering.

PHASE I: Not to exceed - 12 months - $100,000
The goal of phase I is for the Small Business Manufacturer to qualify as a source of supply for the DLA NSN(s) to improve DLA NSN availability, provide competition for reduced lead time and cost, and address lifecycle performance issues. In this phase, manufacturers will request TDP/SAR approval from the applicable Engineering Support Activity (ESA), as required, for the NSN(s). At the Post Award Conference, the awardee will have the opportunity to collaborate with program, weapon system, and/or engineering experts on the technical execution and statement of work provided in their proposal.
All Phase I Proposals should demonstrate an understanding of the NSN(s) and the general challenges involved in their manufacture. Proposals that fail to demonstrate knowledge of the part will be rejected.
JCP Certification is required to access Government Drawings and Data

PHASE II: Not to exceed - 24 months - $1,000,000
The Phase II proposal is optional for the Phase I awardee. Phase II selections are based on Phase I performance, Small Business Manufacturer innovation and engineering capability and the availability of appropriate requirements. Typically the goal of Phase II is to expand the number of NSNs and/or to build capability to expand capacity to better fulfill DLA requirements.

The Phase II proposal is optional for the Phase I awardee. Phase II selections are based on Phase I performance, Small Business Manufacturer innovation, engineering and manufacturing capability and the availability of appropriate requirements and funding. Typically the goal of Phase II is to expand the number of NSNs and/or to build capability to expand capacity to better fulfill DLA requirements.

PHASE III DUAL USE APPLICATIONS: Phase III is any proposal that "Derives From", "Extends" or "Completes" a transition from a Phase I or II project. Phase III proposals will be accepted after the completion of Phase I and or Phase II projects.
There is no specific funding associated with Phase III, except Phase III is not allowed to use SBIR/STTR coded funding. Any other type of funding is allowed.

Phase III proposal Submission. Phase III proposals are emailed directly to DLA SBIR2@dla.mil. The PMO team will set up evaluations and coordinate the funding and contracting actions depending on the outcome of the evaluations. A Phase III proposal should follow the same format as Phase II for the content, and format. There are, however, no limitations to the amount of funding requested, or the period of performance. All other guidelines apply.

COMMERCIALIZATION: The SBM will pursue commercialization of the various technologies and processes developed in prior phases through participation in future DLA procurement actions on items identified but not limited to this BAA.

REFERENCES:

1. DLA Aviation SAR Package instructions. DLA Small Business Resources: http://www.dla.mil/Aviation/Business/IndustryResources/SBO.aspx
2. JCP Certification: https://public.logisticsinformationservice.dla.mil/PublicHome/jcp
3. Access the web address for DIBBS at https://www.dibbs.bsm.dla.mil, then select the "Tech Data" Tab and Log into c-Folders. This requires an additional password. Filter for solicitation "SBIR241A"
4. DLA Small Business Innovation Programs web site: http://www.dla.mil/SmallBusiness/SmallBusinessInnovationPrograms
5. DLA Aviation Repair Parts Purchase or Borrow (RPPOB) Program: https://www.dla.mil/Aviation/Offers/Services/AviationEngineering/Engineering/ValueEng.aspx

KEYWORDS: Nuclear Enterprise Support (NESO), Source Approval, Reverse Engineering

VERSION 2

DLA241-003 TITLE: Novel Metal and Ceramic Based Coatings for Military Applications

OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Advanced Materials

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

OBJECTIVE: The Defense Logistics Agency (DLA) seeks to provide responsive, best value supplies of related materials consistently to our Department of Defense (DoD) customers and other DoD stakeholders. DLA continually investigates diverse coating technologies for new or improved materials, more efficient means of their production, and more competitive domestic supply chains which would lead to higher levels of innovation in current and future systems combined with benefits to other commercial and government technology applications. In an effort to reduce costly foreign reliance and/or single points of failure, DLA is looking for domestic capability that could deposit novel metal, ceramic and organomettalic based coatings for various mililtary applications such as hypersonics, gun barrels, missile launchers, and others that could improve fleet operations and sustainment. The end goal of the project would be for the development of a domestic source that would produce industrial quantities of high corrosion and wear resistance, self-lubricating, low friction, thermallly stable coatings with a fully domestic or friendly supply chain. New and novel ideas that would allow for competitive pricing with domestically deposited coatings with novel feedstocks will have preference. Ideally, the production process would be modular and scalable.

Advanced technology demonstrations for increasing production capacity, affordability and supply chain resiliency for coating techniques and processing are of high interest to DoD. These areas of materials and manufacturing technology provide potential opportunities toward achieving breakthrough advances for national defense. Proposed efforts funded under this topic may encompass diverse feedstock and processing at any level that will result in increasing production capacity, affordablity, and supply chain resiliency.

Research and Development (R&D) efforts selected under this topic shall demonstrate and involve a degree of risk where the technical feasibility of the proposed work has not been fully established. Further, proposed efforts must be judged to be at a Technology and/or Manufacturing Readiness Level (TRL/MRL) 6 or less, but greater than TRL/MRL 3 to receive funding consideration.
TRL 3. (Analytical and Experimental Critical Function and/or Characteristic Proof of Concept)
TRL 6. (System/Subsystem Model or Prototype Demonstration in a Relevant Environment)

DESCRIPTION: The Department Of Defense (DoD) has a need for robust metal or ceramic based coatings to support operational requirements for warfighter. To this end DLA is looking for domestic capabilities and capacity to produce various different kinds of coatings including but not limited to cold spray, plasma electrolytic oxidation (PEO), diamond-like carbon (DLC), amorphous carbide, etc for advanced weapons manufacturing. Novel techniques that increase the domestic availability of technology for supply chain resiliency of coating materials will have preference. The ideal production process will be both modular and easily scalable.

PROJECT DURATION and COST: Proposals exceeding these limits will not be evaluated.

PHASE I: Not to exceed a duration of 12 months and cost of $100,000.
PHASE II: Not to exceed a duration of 18 months and cost of $1,000,000.

PHASE I: Phase I will consist of a full process flow including deposition technique, availability of feedstock and coating characterization. Thus delivering a solid proof of concept. . A preliminary economic review must be carried out evaluating the cost vs. currently available products as well as determining the cost of production when using traditional deposition techniques. An alignment or collboartion with a relavant DoD Component organzation/supplier (e.g., DoD lab, defense system program office or prime contractor) and one or more relavant DoD weapon system supply chain participants or other suitable organization is highly desirable.

PHASE II: Phase II will consist of making a pilot/low-rate deposition process of coatings used in at least two weapon systems. Coatings deposited will be characterized for purity, phase, thickness, adhension, wear and tear, etc. Two (2) or more sources of coating materials will be identified and tested in this process. A lab-scale process should be used to confirm the estimates and provide preliminary cost and pricing data. A business case will be generated using both DoD and commercial markets. Collaboration with a relavant DoD Component organzation/supplier (e.g., DoD lab and/or prime contractor) and one or more relavant DoD weapon system supply chain participants or other suitable organization is required Identify commercial benefit or application opportunities of the innovation. Innovative processes should be developed with the intent to readily transition to production in support of DoD and its supply chains.

PHASE III DUAL USE APPLICATIONS: At this point, no specific funding is associated with Phase III. Relationships developed and progress made in Phase I and Phase II projects should result in the ability to produce to DoD orders and organic growth of business from there.

REFERENCES:

1. Sunil Pathak, Gobind C. Saha, Development of Sustainable Cold Spray Coatings, and 3D Additive Manufacturing Components for Repair/Manufacturing Applications: A Critical Review, Coatings 2017, 7(8), 122.
2. Sheikh Farooq, Ankush Raina, Sanjay Mohan, Ramachandra Arvind Singh, Subramanian Jayalakshmi, and Mir Irfan Ul Haq, Nanostructured Coatings: Review on Processing Techniques, Corrosion Behavior and Tribological Performance, Nanomaterials, 2022 Apr; 12(8), 1323

KEYWORDS: Cold Spray, Coatings, Amorphous Carbide, PEO, DLC, Thermal Stability

VERSION 2

DLA241-004 TITLE: Utilizing Large Language Model (LLM)/Generative AI to Develop Energy Calculation Tool for Manufacturing Processes

OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Advanced Computing and Software, Advanced Infrastructure & Advanced Manufacturing, Trusted AI, and Autonomy

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

OBJECTIVE: Energy cost has a direct impact on the cost of production. DLA, as a procurement agent for DoD and all of government, understanding the cost elements are essential. Given that DLA procures more than $40 billion worth of items annually, a small percentage reduction in energy consumption can translate to substantial monetary savings.

Manufacturing, a cornerstone of modern economies, broadly encompasses two primary domains: discrete and continuous. Discrete manufacturing refers to the production of items such as weapons, military uniforms, etc. In contrast, continuous manufacturing involves non-stop processes producing goods like chemicals, fuels, and certain consumables. Regardless of the category, energy remains a pivotal input, significantly influencing the cost, efficiency, and environmental footprint of the production process.
TRL 3. (Analytical and Experimental Critical Function and/or Characteristic Proof of Concept)
TRL 6. (System/Subsystem Model or Prototype Demonstration in a Relevant Environment)

DESCRIPTION: Central to the discourse on energy efficiency in manufacturing is the concept of value added (VA) and non-value added (NVA) processes. Value-added processes directly contribute to the product's transformation, whereas non-value-added ones, although often essential, don't enhance the product's inherent value from a customer's perspective. By dissecting the energy usage into these two categories and employing precise quantification mechanisms, manufacturers and DoD can achieve a deeper understanding and, subsequently, higher operational efficiencies.

This research is based on the following hypotheses:
(1) Energy used to add value (product transformation) could be modeled analytically (either physics or chemistry based),
(2) Nonvalue added energy would be a function of value-add and it could be derived either from the total energy and value-add energy or allocated using empirical techniques.

There are several databases and peer reviewed journal papers are available that shows the total energy required for various manufacturing processes. See References section for examples of where one could get the total energy required for various manufacturing processes.

Since the value-added energy in manufacturing is based on physics or chemistry-based equations, one could make use of Large Language Model (LLM)/Generative AI to identify the representative equations, and then use the same LLM/generative AI to develop the python code. Relying on the vast knowledge reservoir of the LLM/generative AI, the architecture of IT could deliver continuous refinement. This adaptability ensures that it remains relevant, accommodating emerging manufacturing methodologies and

integrating the freshest insights from physics and chemistry. Also, using GitHub, one could get support/assistance from other developers to improve the accuracy of the code.

PROJECT DURATION and COST: Proposals exceeding these limits will not be evaluated.
PHASE I: Not to exceed a duration of 12 months and cost of $100,000.
PHASE II: Not to exceed a duration of 18 months and cost of $1,000,000.

PHASE I: Phase I will consist of delivering a TRL level 3 proof of concept that will include the design of an IT system that calculates value-add, non-value-add, and the total energy for a minimum of 15 discrete manufacturing processes. In addition to calculating the energy required for various manufacturing processes, it should include the greenhouse gas emissions from the energy use during value-add and non-value add processes. This system should plan to meet all the DoD physical and cybersecurity requirements.

Collaboration with a relavant DoD Component organzation/supplier (e.g., DoD lab and/or prime contractor) and one or more relavant DoD weapon system supply chain participants or other suitable organization is reccomended.

PHASE II: Phase II will build a working prototype system based on the Phase I design. The prototype should address the identified discrete manufacturing processes from Phase I. Furthermore, it should be used to confirm the estimates and provide preliminary cost and pricing data. A business case will be generated using both DoD and commercial markets.

Collaboration with a relavant DoD Component organzation/supplier (e.g., DoD lab and/or prime contractor) and one or more relavant DoD weapon system supply chain participants or other suitable organization is required.

PHASE III DUAL USE APPLICATIONS: At this point, no specific funding is associated with Phase III. Relationships developed and progress made in Phase I and Phase II projects should result in the ability to produce to DoD orders and organic growth of business from there.

REFERENCES:

1. https://publications.anl.gov/anlpubs/2010/10/68288.pdf
2. https://us-west-1-02900067-inspect.menlosecurity.com/safeview-fileserv/tc_download/beb9a1d4aeb1d8ce2d2fdfb4fb637f52e8537f85f3ac8225281c2e67de92cdbc/?&cid=NC949DF232947_&rid=53a12180f385ba1d5ce1e51c044cdc97&cl=9LEI8II9B3b&file_url=http%3A%2F%2Fweb.mit.edu%2Febm%2Fwww%2FPublications%2F9_Paper.pdf&type=original

KEYWORDS: discrete manufacturing, energy use, value and non-value add, IT system, Large Language Model (LLM), Generative AI

DLA241-D05 TITLE: Domestic Sourced or Manufactured Coal Tar Pitch to Meet Military Requirements

OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Advanced Materials

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

OBJECTIVE: The Defense Logistics Agency (DLA) seeks to provide responsive, best value supplies consistently to our customers. DLA continually investigates diverse technologies for manufacturing which would lead to the highest level of innovation in the discrete-parts support of fielded weapon systems (many of which were designed in the 1960's, 1970's and 1980's) with a future impact on both commercial technology and government applications. As such, advanced technology demonstrations for affordability and advanced industrial practices to demonstrate the combination of improved discrete-parts manufacturing and improved business methods are of interest. All these areas of manufacturing technologies provide potential avenues toward achieving breakthrough advances. Proposed efforts funded under this topic may encompass any specific discrete-parts or materials manufacturing or processing technology at any level resulting in a unit cost reduction.

Advanced technology demonstrations for increasing production capacity, affordability and supply chain resiliency for coating techniques and processing are of high interest to DoD. These areas of materials and manufacturing technology provide potential opportunities toward achieving breakthrough advances for national defense. Proposed efforts funded under this topic may encompass diverse feedstock and processing at any level that will result in increasing production capacity, affordablity, and supply chain resiliency.

Research and Development efforts selected under this topic shall demonstrate and involve a degree of risk where the technical feasibility of the proposed work has not been fully established. Further, proposed efforts must be judged to be at a Technology Readiness Level (TRL) 6 or less, but greater than TRL 3 to receive funding consideration.
TRL 3. (Analytical and Experimental Critical Function and/or Characteristic Proof of Concept)
TRL 6. (System/Subsystem Model or Prototype Demonstration in a Relevant Environment)

DESCRIPTION: DLA R&D is looking for a domestic capability to address the lacking viable domestic source of defense grade coal tar pitch solid. Coal tar pitch is a pre-cursor material for a variety of military applications, including tactical munitions, strategic rockets and missiles, and large, advance-launch systems, and hypersonic veichles. The United States has been dependent on foreign sources or a single domestic source of coal tar pitch. Verifying a domestic manufacturing production process for coal tar pitch meets military reuqirements would elimate the costly foreign alliance for this material.
R&D tasks include qualifying domestically manufactured or sourced coal tar pitch meets militrary requirements, and qualify the material on military applictions.

PHASE I: This topic is accepting Direct to Phase II proposals ONLY.
The successful proposal will submit documetation demonstrating the projet proposal is at the (Analytical and Experimental Critical Function and/or Characteristic Proof of Concept level (TRL 3). Develop

applicable and feasible process demonstration for the approach described, and demonstrate a degree of commercial viability.

PHASE II: Not to exceed a duration of 24 Months and a cost of $1,750,000. Proposals exceeding these limits will not be evaluated.

Phase II will consist of making a pilot/low-rate Validate that domestically sourced coal tar pitch pre-cursor materials for the coal tar pitch material can be utilized. Validation would include, but not be limited to, prototype quantities, data analysis, and labortaory tests. A lab-scale process should be used to confirm the estimates and provide preliminary cost and pricing data. A business case will be generated using both DoD and commercial markets. Collaboration with a relavant DoD Component organzation/supplier (e.g., DoD lab and/or prime contractor) and one or more relavant DoD weapon system supply chain participants or other suitable organization is required

Identify commercial benefit or application opportunities of the innovation. Innovative processes should be developed with the intent to readily transition to production in support of DoD and its supply chains.

PHASE III DUAL USE APPLICATIONS: At this point, no specific funding is associated with Phase III. Relationships developed and progress made in Phase I and Phase II projects should result in the ability to produce to DoD orders and organic growth of business from there. Validate the prouction process can manufature coal tar pitch can meet property specifications of previously used coal tar pitch for military applications. Validation would include, but not be limited to, production quantities, data analysis, and labortaory tests. Qualify the coal tar pitch material on military applications.

REFERENCES:

1. https://apps.dtic.mil/sti/pdfs/ADA542014.pdf

KEYWORDS: Coal tar pitch