

**23.A DEFENSE LOGISTICS AGENCY (DLA)
SMALL BUSINESS TECHNOLOGY TRANSFER (STTR) PROGRAM
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 BAA must follow all general instructions provided in the Department of Defense (DoD) STTR Program BAA. DLA requirements in addition to or deviating from the DoD Program BAA are provided in the instructions below.

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

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 STTR 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 twenty pages and must follow the formatting requirements provided in the DoD STTR 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.

Company Commercialization Report (CCR) (Volume 4)

Completion of the CCR as Volume 4 of the proposal submission in DSIP is required. The Company Commercialization Report (CCR) allows companies to report funding outcomes resulting from prior SBIR and STTR awards. SBIR and STTR awardees are required by SBA to update and maintain their organization's CCR on SBIR.gov. Commercialization information is required upon completion of the last deliverable under the funding agreement. Thereafter, SBIR and STTR awardees are requested to voluntarily update the information in the database annually for a minimum period of 5 years.

If the proposing firm has prior DoD and/or non-DoD Phase I and/or Phase II SBIR/STTR awards, regardless of whether the project has any commercialization to date, a PDF of the CCR must be downloaded from SBIR.gov and uploaded to the Firm Forms section of DSIP by the Firm Admin. Firm Forms are completed by the DSIP Firm Admin and are applied across all proposals the firm submits. The DSIP CCR requirement is fulfilled by completing the following:

1. Log into the firm account at <https://www.sbir.gov/>.
2. Navigate to My Dashboard > My Documents to view or print the information currently contained in the Company Registry Commercialization Report.
3. Create or update the commercialization record, from the company dashboard, by scrolling to the "My Commercialization" section, and clicking the create/update Commercialization tab under "Current Report Version". Please refer to the "Instructions" and "Guide" documents contained in this section of the Dashboard for more detail on completing and updating the CCR. **Ensure the report is certified and submitted.**
4. Click the "Company Commercialization Report" PDF under the My Documents section of the dashboard to download a PDF of the CCR.
5. Upload the PDF of the CCR (downloaded from SBIR.gov in previous step) to the Company Commercialization Report in the Firm Forms section of DSIP. This upload action must be completed by the Firm Admin.

This version of the CCR, uploaded to DSIP from SBIR.gov, is inserted into all proposal submissions as Volume 4. More detailed Instructions are contained the DoD BAA Section 5.3. Phase I proposal Instructions section e. Volume 4.

Supporting Documents (Volume 5)

- Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment (required),
- Foreign Ownership or Control Disclosure (Proposers must review Attachment 2 in the DoD STTR BAA: Foreign Ownership or Control Disclosure to determine applicability),
- Additional Cost information (optional),
- Letters of Support (optional),
- Any other supporting documents (optional),
- A qualified letter of support is from a relevant commercial or Government Agency procuring organization(s) working with DLA, articulating their pull 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 PAC.
- The TPOC and 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)

PHASE II PROPOSAL GUIDELINES

Per SBA SBIR/STTR 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 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.

TECHNICAL AND BUSINESS ASSISTANCE (TAB A)

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.

EVALUATION AND SELECTION

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/STTR awards in the SBIR/STTR 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 STTR 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.

Phase I proposals will be evaluated based on the criteria outlined below, including potential benefit to the DLA. Selections will be based on best value to the Government considering the following factors which are listed in descending order of importance:

- a) The soundness, technical merit, and innovation of the proposed approach and its incremental progress toward topic or subtopic solution.
- b) The qualifications of the proposed principal/key investigators, supporting staff, and consultants. Qualifications include not only the ability to perform the research and development but also the ability to commercialize the results.
- c) The potential for commercial (Government or private sector) application and the benefits expected to accrue from its commercialization.

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.

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.

Refer to the DoD STTR Program BAA for procedures to protest the Announcement. As further prescribed in FAR 33.106(b), FAR 52.233-3, Protests after Award should be submitted to: DCSO Small Business Innovation Program SBIP.DCSO@dla.mil. This is the DLA Contracting Team workflow email address.

AWARD AND CONTRACT INFORMATION

Typically, the contract period of performance for Phase I should be up to twelve (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 \$1M unless approved by the DLA Program Manager,

and the duration should not exceed 24 Months. Proposals in excess of \$1M 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. (DLA will not approve any Student or Temporary Visa holders). 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 STTR 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/STTR 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 STTR contracts and subcontracts without exception. Any information relative to the work performed by the contractor under DLA STTR 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 STTR 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 STTR 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/STTR 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/STTR 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 ECA certificates to send and receive encrypted email if they do not have a CAC or PIV issued. The cost is approximately \$100 per year per user. This will be a CMMC requirement for all future contracts.

ORGANIZATIONAL CONFLICTS OF INTEREST (OCI)

The basic OCI rules for Contractors which support development and oversight of SBIR/STTR 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; and
- (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/STTR 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.

DLA STTR 23.A Topic Index

DLA23A-003 Innovation in High Temperature Resistant Thermal Protection System (TPS)
Materials, Manufacturing, and Resilient Supply Chains for Hypersonics TPS and
Related Defense Applications

DLA23A-003 TITLE: Innovation in High Temperature Resistant Thermal Protection System (TPS) Materials, Manufacturing, and Resilient Supply Chains for Hypersonics TPS and Related Defense Applications

OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Hypersonics;

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: High temperature resistant Thermal Protection System (TPS) materials and structures, including their means of supply, are critical to the success of new hypersonic weapons and related U.S. defense modernization priorities. Key to their success is increased domestic production capacity, affordability, and supply chain resiliency. Hypersonics TPS applications of particular interest include boost glide vehicle acerage, leading edge, nosetip, and control surfaces as well as similar materials and supply chains of importance to the production rocket motors and other re-entry systems. Supply chain resisancy concerns include foreign reliance, single point of failure supply, obsolescence, long-lead times, and low manufacturing yields).

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 technologies for new or improved materials, more efficient means of their production, and more competitive domestic supply chains which would lead to the higher levels of innovation in current and future weapon systems combined with benefits to other commercial and government technology applications.

Advanced technology demonstrations for increasing production capacity, affordability and supply chain resiliency for high temperature resistant TPS and related materials and processing are of high interest to DoD. These areas of materials and manufacturing technologies provide potential opportunities toward achieving breakthrough advances for national defense. Proposed efforts funded under this topic may encompass diverse TPS materials and processing at any level that will result in increasing production capacity, affordability, 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: DLA R&D is looking for domestic capabilities and capacity that demonstrates new or improved high temperature resistant TPS materials, processing, and supply chains that increase domestic defense industrial base production capacity, affordability, and supply chain resiliency for hypersonic systems and other defense programs that depend on similar materials (e.g., other conventional weapons, strategic programs, and space systems).

R&D tasks include identifying, developing, and demonstrating new and/or improved high temperature resistant TPS materials and production processes that support this topic area's objectives for increasing production capacity, affordability, and supply chain resiliency. Related areas of interest include materials, processing and fabrication of TPS components and structures as well as their various constituent materials and processes (e.g., fiber reinforcements and their precursors, woven textiles and complex preforms, matrix precursors and prepreg, rapid densification, heat treating, additive manufacturing, production automation of weaving and prepreg application, and oxidation resistant coatings).

PHASE I: PHASE I: Not to exceed a duration of 6 months and cost of \$100,000.

Determine, insofar as possible, the scientific, technical, and commercial feasibility of the TPS concept. Include a plan to demonstrate the innovative TPS materials process and/or discrete TPS parts or structures manufacturing and address implementation approaches for near term insertion into the manufacturing of relevant DoD hypersonic systems and/or related subsystems, components, parts, or related material supply chains. Collaboration with a qualifying Research Institution (RI) is required for Small Business Technology Transfer (STTR) projects. Collaboration with a relevant DoD Component organization (e.g., DoD lab and/or defense system program office) and one or more relevant DoD weapon system supply chain participants or other suitable organization is highly desirable.

PHASE II: Not to exceed a duration of 24 months and cost of \$1,000,000.

The expectation is to develop a solution to the System/Subsystem Model or Prototype Demonstration in a Relevant Environment level, (TRL 6).

Validate the feasibility of the innovative process by demonstrating its use in the production, testing, and integration of items, and/or materials and processes, for DLA and key DoD stakeholders. Validation would include, but is not be limited to, prototype quantities, data analysis, laboratory tests, system simulations, operation in test-beds, or operation in a demonstration system. A partnership with a current or potential supplier to DoD or other suitable partner is highly desirable. 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: TPS technology transition via successful demonstration of a new material, processing or fabrication technology. This demonstration should show near-term TPS application to one or more DoD systems, subsystems, components, or their related material supply chains. This demonstration should also verify the potential for enhancement of increased TPS production capacity, affordability, and supply chain resiliency.

Private Sector Commercial Potential: TPS materials and manufacturing improvements, including development of domestic manufacturing capabilities, increased capacity, and affordability, have a direct applicability to diverse defense system technologies. Material manufacturing technologies, processes, and systems have wide applicability to the defense industry including air, ground, sea, space, and related defense technologies. Competitive material manufacturing improvements should have leverage into private sector industries as well as civilian sector relevance. Advancements in high temperature resistant materials, processing, and supply chain resiliency will benefit the defense industrial base and key weapon system development, production, and sustainability, as well as afford spin-off opportunities to civilian and other commercial sectors that depend on associated technologies and their innovators.

REFERENCES:

1. Affordable Hypersonic Missiles for Long-Range Precision Strike
<https://www.jhuapl.edu/content/techdigest/pdf/V20-N03/20-03-White.pdf>

2. Increasing Production Is Important for Hypersonics, Defense Official Says:
<https://www.defense.gov/News/News-Stories/Article/Article/2927403/increasing-production-is-important-for-hypersonics-defense-official-says/>

KEYWORDS: Hypersonics, Thermal Protection Systems (TPS), aeroshell, leading edge, control surfaces, nose tips, high temperature resistant materials (e.g., carbon/carbon, ceramics, ablative phenolics, composites, metals and alloys); materials and processing (e.g., fiber reinforcement, matrix precursors, woven textiles and preforms, prepreg, rapid densification, heat treating, additive manufacturing, manufacturing automation, and oxidation resistant coatings); and structures fabrication.

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