

Extended Solids (XSolids)
Frequently Asked Questions

Last Updated: 3/14/12

General Information

Q: Are Proposal Abstracts (White Papers) requested?

A: Submission of proposal abstracts is strongly encouraged to enable potential proposers to outline their concepts with some supporting information, obtain feedback, and minimize unnecessary effort in proposal preparation and review. Please review the guidelines outlined in the BAA for specifics on proposal abstract content and format. Proposal abstracts may be sent in on a rolling basis, but the final due date is March 20, 2012.

Q: Is there a date by which proposal abstract feedback will be provided?

A: DARPA will attempt to respond to all proposal abstracts in a timely manner. The amount of time that it takes is dependent on the volume of abstracts received.

Q: Do teams need to be fully formed when the proposal abstract is submitted?

A: While we prefer that team formation is well underway for submission of the proposal abstract, it is understood that this is a dynamic process and teams may undergo modification or reforming as the proposal is developed.

Q: I was not able to attend the Proposer's Workshop. Can I still submit a proposal, and will all the presentations be posted online?

A: Yes, you may propose regardless of whether you attended the Proposer's Workshop. Presentations presented at the workshop have been approved for public release, and will be posted to the XSolids information and teaming website (<https://team.sainc.com/XSolids>).

Q: Where can I find information about the technical requirements of the program and how to submit a proposal?

A: Pertinent technical and programmatic information, including proposal format and submission procedures are fully described in the Extended Solids Broad Agency Announcement, DARPA-BAA-12-20, which appears in FedBizOpps and has been posted to the XSolids information and teaming website (<https://team.sainc.com/XSolids>).

Q: How do I get answers to questions that are not covered in the BAA?

A: Please submit all questions to DARPA-BAA-12-20@darpa.mil.

PROPOSALS

Q: What is the best way to submit a proposal?

A: Proposers may submit proposals using any of the methods described in the BAA. If you are proposing a grant, you must submit through Grants.gov. Otherwise, you may submit your proposal via the DSO Electronic Business Application or by sending a Hard copy/CD-ROM by mail. Procedures for doing so are described in the proposal information section of the BAA.

Q: How do I upload the DARPA Cover Sheet if I use Grants.Gov?

A: The cover sheet should be the first page in your proposal. The proposal itself (two separate files, one for each volume) should be uploaded as attachments to the application package. The SF424 is the only Grants.gov form required.

Q: Will proposals be evaluated against each other?

A: No. This is a BAA, not an RFP. Proposals will be evaluated individually, on their own merit, and not against each other since they are not submitted in accordance with a common work statement.

ELGIBILITY & TEAMING

Q: Is teaming required?

A: Proposals must be structured to address all of the requirements outlined in the BAA. The challenging and multidisciplinary nature of this program will require diverse sets of skills and expertise to develop total solutions to the program objectives and achieve all of the program goals and milestones. Collaborative efforts/teaming are, therefore, highly encouraged, ensuring that the strongest programs are proposed, but they are not required. Organizations which are confident that they have the capabilities necessary to address all of the objectives, develop the critical technologies and meet the milestones outlined in the BAA may elect to propose alone.

Q: Can you help me find a Prime/Sub for my team?

A: DARPA cannot arrange teaming relationships. The XSolids information and teaming website (<https://team.sainc.com/XSolids>) was established to facilitate teaming. There is a list of all of the people who have registered with the website and their research interests. This information is provided to enable you to identify researchers whose expertise may complement yours in the event that you are looking for team members or collaborators. You may also post documents, or if you are looking for collaborators elaborate on what/whom you may be looking for. However, it is the responsibility of individuals and organizations to for their own teams should be independently.

Q: Can DoD Laboratories and/or Federally Funded Research and Development Centers (FFRDCs) submit proposals to the BAA?

A: FFRDCs and government entities are subject to applicable direct competition limitations and cannot propose to this BAA in any capacity unless they meet the specific conditions. FFRDCs must clearly demonstrate that the work is not otherwise available from the private sector AND they must also provide a letter on letterhead from their sponsoring organization citing the specific authority establishing their eligibility to propose to government solicitations and compete with industry in compliance with the associated FFRDC sponsor agreement terms and conditions. FFRDCs must satisfy the eligibility requirements articulated in the BAA.

Q: Can researchers/organizations join more than one team?

A: Yes, provided that there are no organizational conflicts of interest and they can establish that the personnel/facility resources are available to support all the efforts proposed. Proposers should consider, though, their expertise, capabilities, and ability to support the efforts of each

team that they join so that the strongest, most competitive programs are proposed.

Q: My organization can provide support or engineering services to potential proposers. Can I use the XSolids information and teaming website?

A: Yes, but not as a standalone proposal. Please join a team that can address the all of the technical areas and research challenges.

Q: Can foreign nationals work on this project? Are we allowed to collaborate with foreign universities?

A: This is an unclassified solicitation. As specified in the BAA, the contractor must comply with the security requirements as described and all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR). As long as these requirements are satisfied, foreign nationals may support research efforts.

COST/PERIODS OF PERFORMANCE

Q: Are there funding limits for individual proposals? Are multiple awards anticipated?

A: Although the funding level for XSolids is not specified in the BAA, DARPA anticipates multiple awards to incorporate a diversity of materials and approaches. Each proposal should include a realistic and reasonable cost/cost profile with respect to the research necessary to accomplish the proposed project goals. Even if a proposal has appropriate technical content, failure to strictly adhere to the Volume II Cost Proposal guidelines may result in a proposal being rejected, or may subsequently complicate or eliminate the ability to negotiate an award on a proposal recommended for funding.

Q: If the interim proposer-specified milestones are achieved ahead of schedule, is it possible to proceed to the next period early?

A: DARPA encourages rapid progress to the final program goals. Therefore, if interim metrics are demonstrated, additional periods may be exercised ahead of schedule pending the availability of additional funds.

Q: When will the program begin?

A: DARPA anticipates awards being executed near the end of the current government fiscal year (September 2012).

PROGRAM STRUCTURE

Q: What are the evaluation criteria?

A: Evaluation criteria are specified in the BAA.

Q: Must all of the program objectives specified in the BAA be proposed?

A: Since a comprehensive, integrated solution is solicited, all three program objectives must be addressed in order for a proposal to be considered responsive. The objectives of the Extended Solids program are to: (i) identify high pressure material polymorphs/phases of molecular compounds that exhibit superior properties that are likely to enhance performance by >50% for DoD application(s), (ii) develop methodologies to ensure that these materials are stable at

ambient temperatures and pressures, and (iii) develop processes that are scalable, which will permit access to these high pressure polymorphs/phases without having to go to the ultrahigh pressures currently required. Further details can be found in the BAA.

TECHNICAL INFORMATION

Q: If a template or additive is used for the synthesis of the extended solid, does it need to be removed from the final material?

A: It is up to the proposer to establish the synthetic path to achieve the program objectives. If a proposed methodology requires a template or any other additive for synthesis or stabilization, and the final product achieves the program objectives, it is immaterial to DARPA whether it remains or is removed.

Q: Since the program emphasizes scale-up, must all of the synthesis methodologies transition to medium or large scale early on?

A: Proposers are free to use small scale, high pressure presses throughout the program in order to test concepts and characterize materials. However, early in the program, you will need to establish that the synthesis steps (including intermediates) you develop in your synthesis strategy are scalable. The transition from the small to the medium to large scale will depend on the material chosen, synthesis strategy, and intermediates to the target materials. These need to be addressed in your proposal.

Q: How will manufacturability and scale-up be evaluated? Is manufacturability going to be evaluated based on commercialization potential?

A: Proposals should address the feasibility for scale-up and manufacture of the material of interest (demonstrate a methodology that is scalable) based on the synthesis strategy and fabrication methodologies. The work should culminate in the 1kg fabrication demonstration as described in the BAA. The proposed approach should also result in a fabrication process that has the potential for commercialization.

Q: What do you mean by lower pressure for synthesis of the final material?

A: Synthesis of proposed materials must be suitable for a commercially scalable process at the end of the program:- i.e., pressures in the range of 0.5 GPa or below.

Q: Do “superior” properties mean “new” properties? Can a combination of properties result in meeting the 1.5x metric?

A: As described in the BAA, the goal of the XSolids program is to develop and demonstrate synthesis of materials with superior properties:- i.e. >1.5x over currently achievable. It is possible that a combination of properties may result in 1.5x improvement over SOA for an application of interest. How this is achieved must be quantitatively addressed in the proposal. It is up to the proposer to define the material and the application for which the material is intended, and how it will meet this 1.5x metric.

Q: Is there a timescale associated with “stability”?

A: The material should be stable to degradation and decomposition over the life of its use.

Q: Is DARPA interested in composite materials?

A: Composite materials in the traditional sense (i.e., fiber or particle reinforced matrices) are outside the scope of the program. However, additives that are part of the synthesis or stabilization of the target extended solid are acceptable. Please refer to the Program Objectives, Structure, and Milestones section of the BAA for more detail.

Q: Would you consider FSW (Friction Stir Welding) to be a non-responsive technology to the Extended Solids DARPA-BAA-12-20 call since it does involve elevated pressures at the mandrel tip during the welding process?

A: The method to achieve fabrication of proposed extended solids is up to the proposer, provided that the goals of the program are addressed. Specifically, the proposal must address all three technical areas that the BAA requires:-(i) Development and implementation of computational techniques to assist in discovery, stabilization and synthesis of high pressure polymorphs/phases with superior properties, (ii) Synthesis and stabilization of intermediates and extended solid polymorphs/phases to room temperature and pressure., and (iii) Reduced pressure (<0.5GPa) synthesis, scale-up and demonstration of properties of extended solid polymorphs/phases. A proposal that focuses on friction stir welding and does not address the goals and these technical areas would not be responsive to the solicitation.

Q: Would diamond as a high pressure phase be responsive to the BAA or do you prefer a new material / phase that has not been made before?

A: Since diamond can currently be synthesized below 0.5 GPa, and is known to be stable at ambient conditions, a proposal for diamond synthesis would not be responsive to this BAA.

Q: Would an approach that uses pressures below atmospheric (i.e. rough vacuum) be suitable for the Extended Solids program?

A: Synthesis approaches that meet the BAA requirements for manufacturability and scale-up (> 100g billets; kg fabrication capability) by the end of the program, as well as ensuring subsequent material stability under ambient conditions, are appropriate. Each proposal must explicitly address these issues for the proposed methodology.