

HR001118S0005

FREQUENTLY ASKED QUESTIONS

Last Updated: **1/4/18**

GENERAL INFORMATION

- 1. My research is not geared specifically to meet the Advanced Plant Technologies program goals. Is there an alternate solicitation that I can respond to?**

A: Yes. DARPA/BTO has an office-wide solicitation (HR001117S0030) for this purpose. Responses are being collected through April 28, 2018.

- 2. Is Dr. Bextine available for a call to discuss our proposed approach?**

A: The best way to receive feedback on an approach is through the submission of a proposal abstract prior to the deadline specified in the BAA. The BAA describes the program, including metrics, in detail. If you have specific questions, please submit them by email to APT@darpa.mil. Please be aware that your question and its answer may be published on this FAQ page, after the question has been revised to remove proprietary information.

- 3. Will the Proposers Day slides be posted online?**

A: Yes, information relayed during the Proposers Day will be made available on the BTO section of the DARPA Opportunities page: <http://www.darpa.mil/work-with-us/opportunities>.

- 4. Do I need to submit an abstract? What is the advantage of submitting an abstract? Does my abstract need to match the full proposal submitted?**

A: Abstracts are strongly encouraged, but not required, to submit a full proposal. DARPA will provide feedback for each abstract submitted.

DARPA will respond to abstracts with a statement as to whether DARPA is interested in the idea. If DARPA does not recommend the proposer submit a full proposal, DARPA will provide feedback to the proposer regarding the rationale for this decision. Regardless of DARPA's response to an abstract, proposers may submit a full proposal. DARPA will review all full proposals submitted using the published evaluation criteria and without regard to any comments resulting from the review of an abstract.

Finally, DARPA understands that final proposals and team make-up may vary somewhat from initial abstracts as content of teams and concepts proposed matures during preparation of the proposals.

CONTRACTING

- 5. What is the expected number of performing teams? Is there a planned down-selection between phases?**

A: The BAA states the following: "Multiple awards are possible. The amount of resources made

available under this BAA will depend on the quality of the proposals received and the availability of funds." Also, "Each component of the approach must build towards overall program success, and progress towards the program goal will be assessed at the end of each phase (Section 1.4) through a workshop (Phase I) and demonstrations (Phases II and III)."

6. How much funding is available? The Proposer's Day mentioned \$50M for the budget of the program. Is it \$50M over 4 years or per year?

A: To avoid biasing the proposals that are submitted, DARPA is not defining an anticipated budget at this time. However, typical DARPA programs range from \$30M-\$70M over 3-5 years. \$50M was mentioned as a notional figure, but that amount would be for the lifespan of the program, not on an annual basis.

7. The Proposer's Day mentioned there would be maybe 2 or 3 awards. Would it be that more awards are made for Phase 1 and then it is narrowed down to 2 or 3 awards by phase 3?

A: Again, the award information provided at the Proposers Day was notional, and meant to be representative of a typical BTO program. It is impossible to forecast the number of selections prior to the receipt and evaluation of proposals.

8. Is this a contract or a grant?

A: DARPA anticipates awarding cooperative agreements, contracts or other transactions under this BAA. Proposers may request the type of award instrument they would like. However, as noted in the BAA, the Government contracting officer shall have sole discretion to select award instrument type, regardless of instrument type proposed, and to negotiate all instrument terms and conditions with selectees.

9. Your clarification of "No Grants" is quite helpful. Is there a precedence that a startup with non-linear idea, but without any University/Lab affiliation, has been awarded BAA funding? More important, will such a scenario be acceptable for this APT BAA? Please clarify before we invest significant energy in submitting the abstracts and phase-I proposals.

A: Yes, per the BAA, "All responsible sources capable of satisfying the Government's needs may submit a proposal that shall be considered by DARPA." All conforming proposals received will be evaluated according to the criteria listed in the BAA.

10. Is it permissible for a University-led team to engage Edgewood Chem/Bio Center in Phase III testing? Can DARPA send them funding directly for this work?

A: Proposers are encouraged to communicate with any eligible entities that can improve their likelihood of success. DARPA typically arranges to fund other Government Entities directly.

PROGRAM STRUCTURE

11. Will there be monthly calls with submission of slides? Quarterly reports?

A: Yes to both.

12. How, at what stage, and to what extent should USDA APHIS be contacted and engaged?

A: As soon as possible to the full extent that the research timeline reasonably allows.

13. As we modify plants for specific use, what steps are being taken by DARPA to recognize societal impacts/ policy concerns about this science?

A: The APT program is advised by a group of independent scientists and bioethicists who help DARPA to understand potential ethical, legal, and social impacts of this research. Our goal with this engagement is to proactively raise potential issues and begin conversations about how to address potential concerns.

SECURITY

14. Is CUI FOIA exempt and does it include export controlled information?

A: Yes, Controlled Unclassified Information (CUI) is inherently FOIA exempt. Information provided to DARPA by performers will be evaluated on a case-by-case basis, and the DARPA team will provide a final determination for information that falls into this category.

CUI is information that requires safeguarding or dissemination controls pursuant to and consistent with applicable law, regulations, and government-wide policies to include Department of Defense Manual 5200.01 Volume 4, but is not classified under Executive Order 13526 or the Atomic Energy Act, as amended.

Common categories of CUI at DARPA:

- Controlled Technical Information (CTI) - Distribution B through X
- Export Controlled and International Traffic in Arms Regulations (ITAR)
- International Agreements
- Privacy - Personally Identifiable Information (PII)
- Procurement & Acquisition - Proprietary Information
- Procurement & Acquisition - Source Selection Sensitive
- Law Enforcement Sensitive (LES)
- DoD Category - For Official Use Only (FOUO)

15. How does categorizing the research as being CUI affect who can work on it? I.e., can foreign researchers participate? Are specialized procedures required for data acquisition/storage?

A: Data acquisition/storage information is addressed on page 30 of the BAA. U.S. persons (green card holders) are authorized to participate in work including Controlled Unclassified Information. However, foreign nationals will not be authorized to participate. Instances of Fundamental Research not containing CUI will not be restricted.

16. If the proposer assesses the existence of CUI in the proposal, do we need to involve/ get approval from DARPA prior to submission?

A: CUI-related questions/concerns should be directed to DARPA prior to proposal submission.

17. If the abstract contains CUI do we need to submit do we need to submit via hard copy/ CD?

A: Yes.

PROPOSALS

18. Are there any line spacing or margin requirements?

A: There are no line spacing requirements. Standard 1" margins should be used.

19. Can you please clarify if resumes do or do not count against the page limit?

A: Resumes do not count towards the page limit – no more than two should be included with a proposal abstract submission.

20. For either/both volumes, are we allowed to put a table of contents in (without it counting against the page count)?

A: Yes, for both volumes.

21. Should we provide letters of commitment from our subcontractors?

A: Letters of commitment are not required. However, as stated in the BAA, all subcontractor cost proposal documentation must be prepared at the same level of detail as that required of the prime.

22. Is there a specific template for the “Official Transmittal Letter” referenced in Section 4.2.2 or would a basic transmittal letter suffice?

A: There is no specific template – it should be a brief signed statement from an official at the institution acknowledging and endorsing the proposed research. A basic transmittal letter should suffice.

23. Where should proposal abstracts be submitted? And will late submissions be accepted?

A: Proposal abstracts should be submitted by January 11, 2018 at <https://baa.darpa.mil>, no later than 4:00 PM ET. Late abstract submissions may not be reviewed. Abstracts are strongly encouraged and will receive feedback, but are not required for consideration for funding under the program. Therefore, proposers may still apply with full proposals without submitting an abstract.

24. What is the registration process for submission? Should the PI create his/her own account?

A: We typically recommend that grants/research or contracts office create an account linked to a generic e-mail address so that the login information can be shared throughout the entire department or workgroup and used to submit on behalf of any PI from the organization. However, the BAA Portal does not in any way restrict the number of registered users from a given organization (many times PIs wait until the last minute to upload and finalize submissions, so we need to allow for this). To that end, there is no required order to the registrations and there are no separate registration types (one for a PI/User and another for an Organization).

TECHNICAL

25. Does DARPA anticipate actual field demos and will you provide a test site (analogous to ARPA-E site)?

A: There will be no open environmental release of any developed plant sensors and all research

will occur in secure biocontainment facilities. DARPA will not provide test sites and performers must provide their own test facilities.

26. If a model species is used in Phase 1 and Phase 2, is it okay to transition to field species in Phase 3?

A: Phase III deliverables must be non-model species. The use of model species is acceptable if it is in the development of non-model APT sensors.

27. Is food safety DoD relevant?

A: APT is specifically interested in detection of chemicals, pathogens, radiation, and electromagnetic signals with DoD relevance. DoD's interest in food security is in developing countermeasures to potential threats to the food supply. Proposals in this vein would have to relate to this type of countermeasure capability to be considered responsive.

28. Is there a preference for active (energy requiring interrogation i.e. laser) vs. passive (receiving only) sensing platforms?

A: No preference.

29. Do responses/signals to different concentrations need to be quantitative?

A: Yes.

30. Is "stand off" – "purely optical"?

A: No.

31. Does DARPA have a preference between chemical + biological threat detection?

A: No.

32. Is a proposal that targets multiple threats considered more favorably than one that targets only a single threat?

A: Proposals must meet the minimal metrics in the BAA. For example during Phase I performers must show "Successful in vitro expression of 3+ stimulus (sensing) genetic pathways."

33. Does the requirement of 3+ stimuli refer to 3 subclasses or 3 types within a subclass?

A: No preference.

34. Are stimuli such as temperature, pressure, vibrational patterns, and electrical signal fluctuations within scope?

A: Per the BAA, proposers should explore sense-and-report capabilities that overcome drawbacks associated with non-plant sensors and are encouraged to leverage the unique physiological characteristics of their chosen plant species to accomplish this task.

35. Genetic biocontainment was listed as an interest in the slides, but was not mentioned in the BAA. Is this within the scope of the program?

A: Yes.

36. Is it required to genetically modify the plant for the development of the sensors or a technology that is not based on genetic modification is also relevant for this call?

A: The solicitation is open to unique approaches to identify, test, and integrate genetic components for plant sensing and reporting that are not solely based on traditional plant genetic modification techniques. However, proposed approaches must adhere to the metrics in the BAA

- including large gene-based trait acquisition for the development of robust plant sensors.

37. For an exploration of chemical weapons sensing, would a demonstration of DMMP (as a simulant) be appropriate for the program or should we stick to analytes that have immediate utility in the field?

A: The BAA states that classes of DoD-relevant stimuli include: biological agents, chemical, and radiative signals. Substitute stimuli that are similar to but less toxic/dangerous than existing national security threats, and that are equally difficult to detect, are preferred.

38. Please elaborate on the goal and preferred approach of the mathematical modelling in the solicitation.

A: From the BAA, “proposers must develop predictive mathematical and/or conceptual model(s) to predict the interaction of all proposed traits.” The goal of the mathematical model is to demonstrate feasibility of the plan, to evaluate project risks, and determine appropriate risk mitigation strategies. There is no preferred approach.

39. What is the preferred environment these plants have to work in?

A: Proposers are required to identify their operational environment. There is no preferred environment.

40. Is propensity (or not) for release, persistence, and transformation of unintended targets something this program considers with respect to GMOs? If not explicitly considered, is it something that will be considered in potential future iterations of this program?

A: There will be no environmental release during the APT program and all work will take place in secure biocontainment facilities.

The potential for transformation of unintended targets will be evaluated during the course of the program by the appropriate regulatory authorities, an ELSI panel, and DARPA. Safety is a top priority for the APT program.

41. Regarding “standoff” detection, what distances are of interest? What distance will you accept as proof-of-concept?

A: Per the BAA, the minimum standoff distance is 3 meters.

42. Will proposals that study both plant and rhizosphere manipulation be considered?

A: Yes.

43. Can you comment on the likelihood of coupling plant sensing modalities with existing augmented reality software to sense threats in the environment?

A: DARPA will consider all approaches.

44. How do we handle the specific metrics outlined in the BAA if we have technology for sensing and reporting which does not have major impacts on resource allocation and has a neutral ecological impact?

A: Proposers must demonstrate in their proposal that their effort meets all program-wide metrics.

45. The BAA appears to assume continuous presence of the substance. Should we consider continuous or transient exposure?

A: Both.

46. The BAA does not describe how/where the substance will be applied/detected. Should we assume application and response in the shoot/leaves or root application? What about detection of underground responses?

A: DARPA will consider all approaches.

47. Are native plant species desired?

A: There is no preference.

48. For a non-biologist, what is meant by “successful induction” (Table Phase I milestone)?

A: Trigger the response.

49. This is a question about project scope. Do you expect that successful proposals will address multiple types of sensing targets? E.g., chemical and biological and EM?

A: Per the BAA, proposers should explore sense-and-report traits that overcome drawbacks associated with currently deployed, non-plant sensors and consider the creation of systems capable of concurrently sensing multiple (>3) stimuli with separate identifiable response traits for each.

50. 80% of plants form highly influential symbioses with fungi. To what degree will these fungal information networks be considered in DARPA’s vision? In addition, would a fungi sensor (e.g. mushrooms) that operated in the same way detailed in the BAA also be conforming?

A: Proposers must make a case for their approach.

51. Does a transgene need to be self-deleting?

A: No, but DARPA would consider such an approach.

52. Are crops as target sentinels acceptable? Does the sentinel need to establish itself at a site and stay there long term (i.e. multiple years)? Or can you plant it yearly?

A: Yes. Either is fine.

53. Do both biotic and abiotic signals need to be detected? Or is one class ok? With multiple signals?

A: Either is fine.

54. Are algae and marine plants within scope for marine environments?

A: Yes.

55. Are plants with longer growing cycles, such as trees, of interest?

A: Yes.

56. Does the relatively short duration of Phase II necessarily restrict the plant species targeted in the program (due to growth cycle)?

A: No.

57. Does the scope of the call include aquatic environments?

A: Yes.

58. Does the scope of the call include plant-microbe interactions?

A: Yes.