Amendment Number 0001: Questions and Answers

Broad Agency Announcement 12-005

"Image Optimization for Small Focal Plane Arrays"

The purpose of Amendment Number 0001 is to provide answers to questions received under BAA 12-005, entitled "Image Optimization for Small Focal Plane Arrays", and provide additional information as follows.

Q#1: In a case of an award, can a Federally Funded Research & Development Center (FFRDC), in partnership with an eligible principal bidder, be funded through a separate IPR?

A#1: A FFRDC in partnership with an eligible principal bidder may be funded through a separate IPR.

Q#2: What is the primary drawback of the smaller FPA? Is it purely the decreased resolution, does image noise substantially increase, is there increased jitter?

A#2: The primary drawback of the smaller FPA is the coverage area or resolution, depending on the optical system.

Q#3: Would the system tolerate additional on-board processing, in the form of FPGAs, ASICs, or similar, to make up for the smaller arrays?

A#3: Yes, the system will tolerate additional on-board processing , in the form of FPGAs, ASICs, or similar, to make up for the smaller arrays?

Q#4: Do you envision all processing to take place at a ground station?

A#4: The government does not envision all processing to take place at a ground station.

Q#5: The BAA references "some past and on-going ONR efforts." Is it necessary for proposed topics to compliment specific past and on-going ONR efforts? Please provide details (program name, description, contract number, date of award and period of performance) of programs relevant to this BAA.

A#5: The efforts that are referenced concern EO/IR payloads for air vehicles (UAS), ships, and submarines.

Q#6: The BAA references a "more cost effective approach (especially for smaller unmanned aerial systems)." What classifications of "smaller" UAS' is this BAA intended to support?

A#6: The classifications of "smaller" UAS' that the BAA is intended to support include STUAS and SHADOW -class UAS.

Q#7: The BAA references "small-format EO-IR sensor architectures" and "imaging systems based on smaller (FPAs)." What types of sensor architecture and size of formats does this BAA support?

A#7: This BAA is not associated with any specific FPA size or architecture.

Q#8: Will responses that are focused on the Visible-NIR-SWIR end of the spectrum be of interest?

A#8: Yes, responses that focus on the Visible-NIR SWIR end of the spectrum is of interest.

Q#9: Does your definition of small FPAs include those commercially available today at small SWaP and cost, e.g., 4-8 megapixel visible imagers and ~1 megapixel SWIR imagers?

A#9: The government's definition of small FPAs include those commercially available today at small SWaP and cost, e.g., 4-8 megapixel visible imagers and ~1 megapixel SWIR imagers.

Q#10: Are you interested in solutions that involve a combination of developments in optics and image processing?

A#10: Yes, while keeping in mind that this BAA is not intended for supporting direct hardware development.

Q#11: If a proposed approach works only in a relatively narrow band (say 100 nm) but increases the performance of small FPAs, will it be of interest to you?

A#11: If the approach is limited to 100 nm narrow bands it will likely be of limited utility for the purposes of this BAA.

Q#12: Can you tell us anything about the target UAV size or payload size, whether the payload is likely to include a gimbal, and what the typical camera field of view needs are?

A#12: Requirements are general and solutions could support a range of configurations (with or without gimbal), FOVs, and UAS payload size (down to STUAS range – 35 lb).

Q#13: The description indicates that the development of new sensor hardware is not intended. While the white paper I am preparing is focusing mostly on the development of computational methods, I am wondering if some simple experimental proof of concept add-ons to existing hardware may be acceptable under this BAA. The add-ons would only test the simplest of the concepts proposed and would not require the purchase of much equipment, perhaps as little a one or two additional cameras.

A#13: Some simple experimental proof of concept add-ons to existing hardware are acceptable and within scope under this BAA.

Q#14: Our work will be basic research and will be on the algorithm side. Can you please tell me whether this theme will be entertained as part of this call?

A#14: The rudimentary development of algorithms in support of applied research will be of interest under this BAA.

Q#15: Is passive 3D imaging, consisting of multi-aperture (integral imaging) and passive 3D (using polarimetric diversity), of interest for the current BAA?

A#15: It all depends how well this approach meets the objectives laid out in the BAA.

Q#16: In the proposal, do you have a preference for short, medium or long wave FPAs? Our team has experience in working in all the wavelengths.

A#16: The government has no preference.

Q#17: Is there any measurement and/or post-processing SNR and computational complexity (FLOPS) budget that you want to apply to the proposed work?

A#17: There is no measurement/or post-processing SNR and computational complexity budget currently defined.

Q#18: In addition to point spread function engineering based computational imaging, our team has experience working in. Would you be interested in proposed work in the area of polarization imaging to further enhance detection tracking and identification requirements?

A#18: See the response for A#15.

Q#19: I would very much appreciate your clarification whether foreign institutions may apply to this BAA.

A#19: Foreign entities are welcome to respond as long as the International Traffic in Arms Regulations (ITAR) - 22 CFR § 1201.1 et seq, referenced in the BAA, are followed.