

DARPA-SN-17-72 Imaging Through Almost Anything, Anywhere (ITA3)
Frequently Asked Questions (FAQs)
as of **9/11/2017**

35Q: **This FAQ supercedes 30Q.** Are there any plans to postpone the solicitation deadline due to hurricanes Harvey or Irma?

35A: The proposal due date is now September 18, 2017. This extension was posted as Amendment 1 to the original Special Notice at <https://www.fbo.gov>.

34Q: Are electromagnetic imaging techniques within scope of this SN?

34A: Yes. The goal of the program is to obtain images or signatures of targets in complex environments through the exploitation of low frequency electromagnetic waves as described in the SN. The measured data may be processed using imaging techniques and/or inverse methods.

▲ ▲ ▲ ▲ New Questions and Answers ▲ ▲ ▲ ▲

33Q: What is the deadline for submitting a question?

33A: DARPA will attempt to answer questions publically in a timely manner; however, questions submitted within 7 days of the proposal due date (**September 18** ~~September 11,~~ 2017) may not be answered.

32Q: May I email the Program Manager directly with my inquiry?

32A: All technical, contractual, and administrative questions regarding this notice must be emailed to ITA3@darpa.mil. Emails sent directly to the Program Manager or any other address may result in delayed or no response.

31Q: What are the templates required to submit a proposal in response to this SN?

31A: Per Section IV of the SN and Section IV.B.3 of BAA HR001117S0040, all proposals must use the templates provided as Attachments 1, 5, 6, 7, 8 to the BAA.

30Q: Are there any plans to postpone the solicitation deadline due to hurricanes Harvey or Irma?

30A: There are no plans to extend the deadline at this time. Any changes would be posted as an amendment to the original Special Notice at <https://www.fbo.gov>.

29Q: What sorts of resolution do you think may be achievable using these sorts of techniques?

29A: This will depend on the detector and its proximity to the object being imaged; determining this is one of the program objectives.

28Q: Can I submit an abstract or executive summary for review?

28A: Abstracts and executive summaries are not solicited in response to DARPA-SN-17-72. All formal responses to Disruption Opportunities must be full proposals as described in the SN and DSO Office-wide BAA (HR001117S0040).

27Q: Is subsampling a GHz coding method of interest?

27A: Subsampling a GHz coding method may not lead to the same deep penetration/increased skin depth associated with actual ELF waves. Also the detection method for imaging based on this approach would need to be clearly explained.

26Q: Is there a particular reason why fog is mentioned in the SN?

26A: Fog is included to learn whether the exploitation of background low frequencies may still provide useful imaging opportunities under some circumstances.

25Q: I have been involved in marine EM exploration for quite some time, would it be possible for you to share the seabed targets that DARPA is interested in imaging?

25A: This program seeks to investigate fundamental limits to imaging inside and behind multiple structures in complex environments by inverting information contained in the measurements of low frequency electromagnetic waves. Of interest are targets with different material properties that might be close or far away. There is no specific imaging application in mind at this stage.

24Q: Are proposers expected to purchase/rent highly sensitive geophysical systems (or are they even commercially available)? Alternatively, would DARPA be able to provide access to such equipment through an agreement with their vendor(s), or are such systems classified?

24A: It should be possible to acquire the sensors necessary to evaluate the ITA3 concepts. Depending on your statement of work, and the significance of the imaging possibilities being proposed, it might be possible to connect performers with those who possess detectors having the sensitivities you believe you would need. There is no expectation that classified systems would be required for this program.

23Q: Are Government-funded entities eligible to apply?

23A: Yes. Please see Section III of the BAA for more information.

22Q: Could you point me towards potential team members?

22A: Teaming is at the discretion of the proposer.

21Q: Is there any interest in low frequency acoustic methods?

21A: While we wouldn't rule these out, they are not the primary focus of ITA3.

20Q: I'd like to learn more about your EM ELF/VLF data. Could you point me towards more detailed descriptions, starting with the very basics?

20A: There are a number of references that contain descriptions of imaging methods using low-frequency waves. We would prefer not to list any specific ones.

19Q: (Is the detection of quantum entanglement in photons within scope of the SN?)

19A: While interesting, the means for entanglement and then detection are not obvious, too speculative and outside of the main thrust of ITA3.

18Q: Is it mandatory to use SQIF technology?

18A: It is not mandatory to use SQIF technology. SQIFs were mentioned as an example of a recent development that may have the required sensitivities to measure the small waveform disturbances we are looking to exploit. We are open to exploring other sufficiently sensitive detectors.

17Q: What does SQIF stand for?

17A: SQIF stands for Superconducting Quantum Interference Filter

16Q: I have developed some approaches to imaging objects through strongly scattering media using visible and infrared wavelengths. Are they of interest to ITA3?

16A: The main goal of ITA3 is to determine the penetration and 3D resolution possible using VLF or lower frequencies, as a function of material properties and image volume from where measured data originates. These frequencies are already being generated by the Navy for communications and surround us, and could be used immediately. The number of detector elements and their location will play a role. If your proposal addresses these points and identifies one or more disruptive consequences of using low frequencies for imaging, then it will be competitive.

15Q: My organization works with months of effort rather than hours. Should we adapt the spreadsheet to be in months and monthly salary instead?

15A: Pricing using months of effort and monthly salary is acceptable.

14Q: Are basic Other Transaction Agreements being contemplated for any awards, or only OTs for prototypes?

14A: Technology Investment Agreements (TIAs) are the available Other Transaction Agreement type that does not require a prototype. TIA awards are limited to commercial firms and require cost share (usually 50%) between the Government and the Performer.

13Q: We are developing a kHz imaging system employing a number of moving detector locations that we believe could be scaled to much larger volumes of interest. Is this of interest to ITA3?

13A: It is of interest if trade-offs between volume penetration and achievable 3D image resolution are clearly described and new (disruptive) imaging capabilities appear likely.

12Q: Can we work in the mHz regime?

12A: If sources and detectors are available and the bounds on penetration and resolution for imaging can be determined, this choice is acceptable.

11Q: Eligibility to submit: although I work at a U.S. institution, I am on an H1B visa (and am in the process of applying for a Green Card). Is this opportunity limited to U.S. citizens?

11A: You can submit a proposal. Non-U.S. organizations and/or individuals may participate to the extent that such participants comply with any necessary nondisclosure agreements, security regulations, export control laws, and other governing statutes applicable under the circumstances. Please review Section III "Eligibility Information" of the DSO Office-wide BAA (HR001117S0040) at

https://www.fbo.gov/index?s=opportunity&mode=form&id=b8a6dfbaeaf3a6eaae3b90c1ddb2f1a2&tab=core&_cview=1

10Q: Would it be advisable to team with an industry partner?

10A: Teaming is encouraged if necessary to the proposed work.

9Q: Are only basic research (6.1-type) proposals encouraged?

9A: Both basic and applied research proposals may be submitted.

8Q: Is there a dollar amount that we should stay within for proposals submitted in response to DARPA-SN-17-72?

8A: Yes. Dollar guidelines are stated in the Appendix IX of the DSO Office-wide BAA (beginning on page 24):

(https://www.fbo.gov/index?s=opportunity&mode=form&id=b8a6dfbaeaf3a6eaae3b90c1ddb2f1a2&tab=core&_cview=1)

7Q: Is it correct that most targets can be well identified using inversion methods, even if measuring a small portion of the wavefront?

7A: This is what needs to be determined, i.e. to determine how a "small portion of the wavefront" translates into image information and resolution.

6Q: What if my proposal would just focus on one or two imaging applications, such as imaging tunnels and I only use simulated data?

6A: Imaging tunnels could be the primary example, but inferring general imaging capabilities, as a function of penetration, lateral and range resolution when inverting measured data still need to be addressed. Using simulated data to address the latter is OK.

5Q: Must experiments be proposed for a proposal to be successful?

5A: Conducting experiments would be very good but they are not essential for showing that there might be a potentially disruptive new technology based on algorithms for inverting these low-frequency near-field measurements. The inversion step is very important since it will dictate the eventual quality of an image for the various imaging situation of interest (e.g., seeing inside a metal container or distant imaging through fog) as a function of some number of measurements.

4Q: Can I submit more than one proposal?

4A: You can submit more than one proposal.

3Q: Is this new program focused on RF for communications, detection and imaging?

3A: The program is strongly directed towards exploring the possibilities of using longer ELF-VLF wavelengths with appropriate detectors and inversion methods, for imaging. The goal is to determine whether ELF-VLF can and will provide imaging improvements or new disruptive imaging capabilities in one or more of the imaging scenarios mentioned.

2Q: I have a new design of a compact antenna whose properties and characteristics are not yet fully understood; can I include it in my proposal?

2A: A new type of antenna and its possibly unique beam properties would be relevant if it can clearly bring something important towards addressing ITA3's goals.

1Q: Might use of a reference feature or scatterer be a good fit for this program?

1A: The focus of ITA3 is specifically on exploiting ELF to VLF for imaging. If a reference or known scattering concept can advance this effort, then it could be a good fit.