

THE DEPARTMENT OF HOMELAND SECURITY

SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM

PROGRAM SOLICITATION FY07.1

Full Solicitation Issued on: 04/20/2007

Revised: 06/01/2007

1. The purpose of this Amendment is to provide the below Questions and Answers.

**ALL OTHER TERMS AND CONDITIONS OF PROGRAM SOLICITATION
FY07.1 REMAIN UNCHANGED.**

Question (General): In section 6.2 of the FY07.1 solicitation, it states that the due date is 4:30pm on June 4th in the text. However, every place else states that it is 4:30pm on June 5th. We are assuming it is June 5th, but could you please confirm.

Answer: The FY07.1 solicitation due date is 4:30pm, June 5th, 2007. An amendment has been posted on [www.fedbizopps](http://www.fedbizopps.gov) and www.sbir.dhs.gov that reflects the June 5th closing date in the FY07.1 solicitation.

Question: We want to visit the Los Angeles L... to see first hand radiation portals and cargo geometries.

Answer: Answer: Unfortunately, it would be inappropriate for the Department of Homeland Security (DHS) to contact CB... on your behalf, enabling you to examine the containers in a "real world situation", while not providing other companies the opportunity to do the same; since the topic, as written, does not allow for such arrangements to be made by DHS for all companies to visit LA/LB port facilities.

Question: 'With regard to section "5.8 Patents: - Small business firms normally may retain the principal worldwide patent rights to any invention developed with Government support. The Government receives a royalty-free license for its use". Please define the terms "Government" and "use".'

Answer: The patent license the Government receives is defined in 35 U.S.C. Chapter 18, specifically sections 202, 203 and 204, and 52.227-11. Generally, the license is stated as follows: "With respect to any subject invention in which the Contractor retains title, the Federal Government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world." However, the Government does have additional rights as set forth in Chapter 18 of Title 35 of the US Code and as further defined in the FAR Clause at 52.227-11. The meaning of "Government" and "Use" have been established by precedent, but generally "Government" refers to the Federal Government of the United

PROGRAM SOLICITATION FY07.1

Published: 04/20/2007

Revised: 06/01/2007

Page 1 of 9

States of America and "Use" refers to all of the exclusive rights granted a patent owner when a patent is issued by the US.

Questions and **Answers** – Topic Number H-SB07.1-006:

1. The topic seems to indicate that there is an existing system at DHS, what is the design of the current distributed system? Answer: We are looking for a new design, one that is enhanced over the present.

2. Would it be advantageous for heterogeneous resources to join the cluster? That is to say, would the system benefit from an architecture that would allow multiple OSEs and Hardware platforms to be utilized? Answer: Yes.

3. Are there chain of custody requirements for the encrypted data? Answer: Yes, but that will be handled prior to the job being mounted

4. How does DHS currently manage Change of Custody for this data? Answer: All evidence is logged and tracked.

5. Can P2P protocols, such as Bittorrent be used to move data between the nodes in the cluster?

Answer: Every proposal will be evaluated on its merits and integration feasibility.

6. Is there a required set of standard technologies that must be used as part of the design? Answer: No, all proposals will be considered. A solution not tied to a specific platform or architecture would be desired.

7. Will the system need to be 800-53 compliant? Answer: Yes

8. Will any element of this project require cleared personnel or the use of SCIFs?

Answer: Cleared personnel

9. Is it anticipated that the nodes in the cluster will need to be housed in SCIFs? Answer: No

Question: SBIR Topic Number H-SB07.1-008 (DNDO Topic) indicates a desire for "monitoring radiological sources that are currently in use." Does this mean sources as they are being used (for example, in a hospital during a brachytherapy treatment of a patient) or simply while they are in the possession of the particular entity whether in storage or in use?

Answer: Yes

PROGRAM SOLICITATION FY07.1

Published: 04/20/2007

Revised: 06/01/2007

Page 2 of 9

Question: In SBIR Topic Number H-SB07.1-008 (DNDO Topic) are there specific types of radiological sources that are to be monitored and what is the minimum detection limit required?

Answer: No

Question: SBIR Topic Number H-SB07.1-008 (DNDO Topic) – Does the term “monitoring” refer to detecting the presence of radiation alone, qualitative, or a quantitative measurement or does it simply refer to the tracking of the source?

Answer: The intent is to monitor sources in current use. The means/mechanism to do this monitoring are not specified.

Question: In SBIR Topic Number H-SB07.1-008 (DNDO Topic) what is meant by “techniques should be low cost”? As the term “low cost” is relative is there a price range?

Answer: There is no specified price range.

Question (SBIR Topic Number H-SB07.1-009): (1) What is the energy range of the neutrons to be detected? Can we assume them to be thermal? (2) Does the detector have to be directional, and if so, what is the desired angular resolution?

Answer: The intent is to develop solid state replacements for He3 tubes.

Question (SBIR Topic Number H-SB07.1-009): With regard to the current DNDO neutron detection solicitation HSB07.1-009 what is the sensitivity of the solid state detector that you are currently using? At least how many percent should the sensitivity of the new detector be improved?

Answer: This topic is looking for a replacement for a He3 tube. All such considerations should be made in reference to this current capability.

Question (SBIR Topic Number H-SB07.1-009): We have specialty (glass based) optical fiber techniques that offer an alternative detection methodology to Helium-3. Does that fit in the scope of this topic?

Answer: The topic calls out “solid state” detectors. In this instance this should be understood to be non-liquid, non-gas.

Question (SBIR Topic Number H-SB07.1-009): Are there size requirements or limitations for the desired detector?

Answer: There are none specified.

PROGRAM SOLICITATION FY07.1

Published: 04/20/2007

Revised: 06/01/2007

Page 3 of 9

Question (SBIR Topic Number H-SB07.1-009): Is there any interest or value in converging with the Department of Transportation's Intelligent Transportation Systems (ITS)?

Answer: For the purpose of this SBIR Topic there is no interest in converging with the DOT ITS.

Question (General): As I read through the FAQs I see references to numbered line items. My question is where are these line items come from? Are they part of a sheet that needs to be included in our submission?

Answer: Responses are provided and posted by DHS to questions asked in general, or to one of the ten specific topic descriptions included in the DHS SBIR Program FY07.1 Solicitation. If there are references to numbered line items within the specific topic description response, they refer to numbered line items within the specific topic description, and you should refer back to the topic description in the solicitation.

Question (General): What is the present per diem rates for a trip to Washington DC?

Answer: Domestic per diem rates can be found by visiting the U.S. General Services Administration web site at:

http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_BASIC&contentId=17943

Question (General): For cost matching, your website mentions funds from "outside investors". I manage the state SBIR/STTR Matching Funds program for the state. Would state funds qualify as "outside investors" in order to qualify for your matching funds component?

Answer: Outside investors may include such entities as another company, a venture capital firm, an individual investor or a non-SBIR government program. Outside investors do not include owners of the small business, their family members, and/or affiliates of the small business. Please see the SBIR solicitation Section 4.6 for additional information.

Question: The topic solicitation states that the objective for this topic is the development of "a device". In the following paragraph, the description calls for "a highly reliable metric and notification system". Is the focus of this topic on the development of sensor devices or the integration of multiple devices into an operational system?

Answer: This is the development of multiple invasive sensors that would allow an incident commander to have accurate, possibly trended data, to determine the physiological status of a firefighter inside different size and types of buildings.

PROGRAM SOLICITATION FY07.1

Published: 04/20/2007

Revised: 06/01/2007

Page 4 of 9

Question: We have a novel idea for recovering passwords of encrypted disks and containers using Field Programmable Gate Arrays (FPGAs) to accelerate recovery. This technique does not employ the exact approach specified by the SBIR, but is still relevant to the topic. Our technique could possibly offer multiple orders of magnitude improvement in terms of speed over existing PC based software tools. As stated in Section 4.1 of the "DHS SBIR Program" document, I would like to know if this approach is deemed to be relevant and a proposal would be useful.

Answer: The proposal would be deemed not relevant.

Question (Topic Number H-SB07.1-002): Is software demonstration of Phase I proof-of-concept sufficient or is hardware-in-the-loop demo required?

Answer: There are three sub topic areas within H-SB07.1-002. Without a finite direction as to the sub-topic the enquiry addresses, a specific response as to a software vs hardware Phase I proof of concept demonstration can not be provided. Please relate the specific area of interest of sub topic area under consideration. Please keep in mind the direction provided in the SBIR Topic area for Phase I. (i.e. The maturity of the component technologies must be clearly identified. A description of how the proposed technology would assist the rescue and/or evacuation of victims from subterranean tunnels must be clearly provided. The Phase I will result in one or more breadboard prototypes of essential system components.)

Question (Topic Number H-SB07.1-002): In Phase I are fire/smoke propagation experiments (software or hardware-based) required?

Answer: The maturity of the component technologies must be clearly identified. A description of how the proposed technology would assist the rescue and/or evacuation of victims from subterranean tunnels must be clearly provided. The Phase I will result in one or more breadboard prototypes of essential system components.

Question: Just some clarification regarding the topic goal. What types of individuals need to be identified? Known authority figures already enrolled in a database? Unknown individuals to `inventory` people at a scene? Are they being enrolled on-the-scene and possibly verified throughout the incident?

Answer: All of these are possible scenarios for the topic goal.

Question: Can you please elaborate on the term "sustained operation in non-optimal conditions" in the solicitation? Does that mean the device must have a recharging method that cannot rely upon standard 120 VAC, 240 VAC, or 12/24 VDC?

Answer: Based on an innovative response, it is up to the offeror to inform the government on what they believe is feasible regarding power and recharging in a non-

PROGRAM SOLICITATION FY07.1

Published: 04/20/2007

Revised: 06/01/2007

Page 5 of 9

optimal condition. If 120 VAC, 240 VAC, or 12/24 VDC would be expected from normal sources in an optimal setting, then a non-optimal setting might not have these sources of power available from the normal sources.

Question: Does that mean the device must operate in enclosed spaces without visibility to the sky for RF communications(e.g. caves, in metal structures, etc)?

Answer: The device may have to operate within structures. It will be understood that the physics of RF will limit performance under those conditions.

Question: Can you provide point of contact information for the company that produce the `fast-capture` fingerprint scan capability that is mentioned in your document entitled "The National Biometrics Challenge", August 2006.

Answer: No

Question: Can you please elaborate on the term "secure wireless communications"? 3.a. Does that mean the device must utilize an NSA approved encryption capability or are commercial encryption methods allowed?

Answer: The level of encryption has not been determined. The basis for "secure wireless communications" is to protect the transfer of a biometric template, if transmitted.

Question: Does that mean any interface computer or system between the IAFIS and ABIS databases and the field device must be FIMFEST protected or equipped with NSA approved encryption?

Answer: No

Question: Can you please provide additional information on the biometrics databases that the device must interface with specifically,

Answer: Additional interface information is not available for this phase of the effort.

Question: Can you provide us with interface documentation that will detail how to interface with the IAFIS and ABIS databases?

Answer: No

Question: Are there any other databases the device should interface with and if so, what are the interface specifics for those databases?

Answer: No

Question: Can you please tell us what the query time is for accessing these databases?

PROGRAM SOLICITATION FY07.1

Published: 04/20/2007

Revised: 06/01/2007

Page 6 of 9

Answer: No

Question: Is there a per unit cost goal for the device?

Answer: No goal has been set at this time. We are looking for feasible innovative research initiatives.

Question: Are there any RF communications devices, systems, or services that DHS is already using that should be considered in the Phase I study?'

Answer: None have been identified.

The following questions are regarding Topic Number H-SB07.1-004

(1) Please confirm if the screening device that you need is expected to operate independent of a computer.

Answer: If by operation you refer to the collection of the biometric then the device may operate independent of a computer. It may or may not be necessary at some point during the operation for a computer to be involved, either locally or remotely. It is up to the innovative approach of the offeror to suggest what is and is not feasible.

(2) Does this screening device lookup a data base in real-time of prints being taken?

Answer: It is up to the innovative approach of the offeror to suggest what is and is not feasible. If a data base lookup in real time is proposed, please specify whether it is against a large remote database, a subset of a larger database kept locally, or any other approach.

(2a) What happens if wireless link is not available?

Answer: That would need to be covered in your proposal.

(3) Questions about capabilities of the wireless link: What is the distance that the wireless link must cover?

Answer: We are looking for innovative solutions. You will need to tell us what is feasible.

Is a secure 802.11 link acceptable?

Answer: See answers above.

Is there a frequency you require to transmit and receive on?

PROGRAM SOLICITATION FY07.1

Published: 04/20/2007

Revised: 06/01/2007

Page 7 of 9

Answer: No frequency has been identified to transmit/receive on, but you can assume it is a frequency either available to the federal government or is commercially available.

What is at the other end of the communications link? (PC, Laptop, Satellite).

Answer: See answers above.

(4) Is the screening device required to have its own keypad and screen display, similar to a cell phone? Could you please specify minimum requirements for the keypad and screen display?

Answer: We are looking for innovative solutions. You will need to tell us what is feasible.

(5) Are you looking for 500 DPI, 1000 DPI live scan resolution?

Answer: We are looking for innovative solutions. You will need to tell us what is feasible.

(6) Does the device take single finger slaps, or does it also have to be able to do a finger roll?

Answer: Same as before. We are looking for innovative solutions. You will need to tell us what is feasible.

(7) Do you expect continuous 10+ hour operation without battery replacement, or is it acceptable to carry around the device with spare fully-charged batteries?

Answer: While we are aware that battery performance continues to improve you will need to tell us what is feasible.

(8) Concerning the ruggedness, what are your specific expectations, e.g. should we aim at meeting a certain ASTM standard? No ASTM standard has been identified.

Answer: You may propose any standard you deem appropriate.

Question (Topic Number H-SB07.1-006): I would like to find out more information about this solicitation: 9.6 SBIR TOPIC NUMBER: H-SB07.1-006 TITLE: Enhanced Project "Safe-Cracker". Specifically, more information about the Safe-Cracker application requirements.

Answer: By harnessing the idle CPU time of existing computers connected via a network, the resulting combined computing power far exceeds the capabilities of the world's most powerful supercomputers. We envision that SAFECRACKER clients would

PROGRAM SOLICITATION FY07.1

Published: 04/20/2007

Revised: 06/01/2007

Page 8 of 9

be loaded on normal office computers that are used during the day but stand idle at night and over the weekend. While these computers are idle the SAFECRACKER system performs computational tasks. When the computer is in use the clients become inactive and, therefore, do not impact the computers performance during normal day-to-day use.

A local system administrator loads encrypted files that need to be broken into the SAFECRACKER system and decryption is performed automatically. When the SAFECRACKER system has successfully broken a file, it notifies the system administrator.

The code breaking efforts of the SAFECRACKER system are coordinated. In a time of emergency the system can be rapidly organized onto a single task thereby harnessing the code breaking power of the entire SAFECRACKER network.

The major development for the enhanced SAFECRACKER project is the creation of the software for the SAFECRACKER infrastructure:

- SAFECRACKER software application capable of managing 100,000+ machines
- SAFECRACKER client support for a minimum of 20 encryption algorithms.
- A SDK (Software Development Kit) so independent third parties can create their own SAFECRACKER decryption modules that run on the SAFECRACKER clients.
- SAFECRACKER clients that will run on MS Windows, Linux and Sun Solaris operating systems.
- Support for the SAFECRACKER clients to include Apple Macintosh, BSD, FreeBSD, and other operating systems.
- Files to be decrypted will include foreign language text files