

**Department of Homeland Security (DHS) Science and Technology Directorate (S&T)  
Chemical and Biological Defense Division (CBD) BAA 14-003/Call 0005**

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1. **Announcement Number:** Open Broad Agency Announcement Number (OBAA) 14-003/Call 0005
2. **FBO Solicitation Number:** HSHQDC14RB0009OBAA14003Call5
3. **Solicitation Event Dates/Time (Local Eastern Time):**
  - Call Opening Date– February 19, 2015
  - Full Proposal Due Date– March 23, 2015

Full proposals are due by 3:00pm EST on the closing date. There will be no exceptions to the time and date on which responses are due, unless determined otherwise by the Government. Full Proposals received after the designated closing date/time will not be considered.

This Call will be conducted in accordance with the Single-Phased Evaluation Process as described under Section 1.6 of the OBAA. The OBAA Solicitation HSHQDC-14-R-B00009 was posted on Federal Business Opportunities on June 16, 2014. See Link <https://www.fbo.gov/index?mode=form&id=59fb4fd55df126478cb38df3945696f2&tab=ntype>

This Call will consist of the solicitation, receipt, and evaluation of a Full Proposal, limited to 30 pages, excluding the Formal Transmittal Letter, Cover Page, Summary of Costs and Related Information, Table of Contents and resumes/biographical information for proposed performers. Once the Full Proposal peer/scientific review process has been completed, offerors will be notified via e-mail, or in writing, that its proposal has been selected, selected but not funded, or not selected for award.

**4. OBAA Call Technical Topic Area (TTA) of Interest:**

Chemical and Biological Research and Development CBD.01 – Diagnostics and Agent Characterization: Research to develop rapid, robust, and affordable diagnostic tools to support detection, response, recovery, and real-time bio-surveillance and situational awareness. CBD's interest in diagnostics includes efforts in the areas of biological assays, sample preparation, advanced diagnostics (e.g. multiplex, high throughput, low-cost, field-deployable, complex sample matrices (environmental, milk, blood, oral/nasal, sputum), multiple target types, pathogen agnostic diagnostics), and agent characterization of chemical or biological materials. CBD's interest includes new or improved rapid diagnostic tests that facilitate foreign animal disease (FAD) outbreak surveillance, response, and recovery in livestock.

**4.1. Research Opportunity Description**

**4.1.1. DHS S&T: Novel and Rapid Toxin and Antigen Detection Methods**

**Background**

The U.S. Department of Homeland Security (DHS) is committed to using cutting-edge technologies and scientific talent in its quest to make America safer. The DHS Directorate of Science and Technology (S&T) is tasked with researching and organizing the scientific, engineering, and technological resources of the United States and leveraging these existing resources into technological tools to help protect the homeland. The Chemical and Biological Defense Division of S&T supports this mission by identifying and developing technologies for the DHS operational components that are needed to reduce the probability and potential consequences of a biological pathogen or a chemical attack on the nation's civilian population, its infrastructure, or its agricultural system.

DHS's mission space includes preventing, detecting, responding to, and recovering from intentional or accidental introduction of biological and chemical agents which present a threat against the Nation's human population and critical infrastructure. To support this mission, DHS and its state and local partners have a need to quickly collect reliable information to enable a swift and confident response to a biological and chemical threat. The Chemical and Biological Defense (CBD) Division within DHS S&T is working toward developing and transitioning technologies that ***demonstrate significant improvements*** to current analytical approaches in sensing and identifying chemical or biological contaminants in all types of environmental samples (solid, vapor, liquid, serum, blood, growth media) with high confidence.

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First responders and public health officials require validated detection assays to analyze suspected biothreat samples and enable them to take appropriate actions in the interest of public safety (e.g., evacuating a building) and public health (e.g., distributing antibiotics). The BioAssays Project enables capabilities to rapidly screen and detect high consequence biological pathogens and toxins that can have a significant Public Health impact. The project develops, tests, evaluates and validates nucleic acid detection assays (TaqMan PCR), antigen detection assays (immunoassays) and rapid antimicrobial susceptibility assays (based on microculture and PCR), using the Government Unique Standards for the Implementation of Public Health Actionable Assays (PHAA) for deployment and employment through the Centers for Disease Control and Prevention Laboratory Response Network and other federally-sponsored laboratory response networks. These assays are intended to be dual purpose assays that can be used for environmental sample analysis as well as clinical specimen analysis. This project encompasses developing bio-informatics resources, reference strain repository, antibody repository, and the appropriate standards. Finally, the PHAA and BioAssays Project also evaluates novel approaches to recognize and identify emerging, advanced, and enhanced threat agents.

This project seeks to build on the legacy of successful DHS S&T detection and assay development projects. DHS S&T requires the rapid detection (within 30 minutes) of biothreat and select agents, specifically, biological toxins, and bacterial and viral antigens. DHS is seeking methods that are **novel**, yield rapid results, are easy to use, reasonably priced (< 5-10 dollars/test), with high sensitivity and specificity for both environmental and clinically relevant amounts of target species, and based on immunological methods. Therefore, the “rapid” methods listed below will **not qualify** for funding under this Open BAA Topic. Enzyme Linked Immuno-Sorbent Assays (ELISA), Luminex or similar synthetic based, latex, polystyrene, or magnetic based, and antibody coupled, suspension bead systems. Additionally, no Fourier Transform Infrared Spectrometry (FTIR), RAMAN Spectroscopy, **Surface-Enhanced Raman Scattering** (SERS), “Photonics,” **Surface Plasmon Resonance** (SPR), or similar spectroscopic, electrical or magnetic field based methods are acceptable.

Acceptable methods could include biological readout (not in an animal), living cell, or cellular component based methods, which are capable of providing the rapid detection of biothreat agents, with easily interpretable and readable results. The technology may be laboratory based but must be based on an economical and inexpensive platform and technology. Proposers are encouraged to submit their proposal for platforms and systems that are under development, and which fulfill the requirements listed in this BAA. The platform to be proposed should be capable of eventually being CLIA Waivable (Clinical Laboratory Improvement Act). Full proposals are accepted, no white papers necessary.

### 4.1.2. Description Technical Topic Area

The performer will present as is, or propose to continue to develop, create, or modify, a platform under development that they believe meets the criteria set forth above. DHS seeks a rapid, inexpensive method to detect toxins and antigens in a cost effective manner to support routine, daily screening of samples, some of which may be suspected of containing low amounts of a biological agents as defined under the select agent list. DHS may have limited participation in the development and subsequent test and evaluation of such existing platforms or methods by providing panels of well characterized validation samples and materials to facilitate DHS’s mission, and to conduct specialized and specific analysis, test, evaluation, and validation of assays and platforms to characterize and facilitate the deployment of these biological threat assays for use by DHS customers with areas of responsibility for biological defense, detection, and surveillance.

The Government has established metrics for assessing the capabilities and qualifications of the Offeror to successfully meet the requirements of the task. The criteria shown in the Evaluation Criteria section will be given equal weight in determining the final decisions of the source selection committee. Note that the emphasis with respect to past performance for the topic areas will be based on demonstrated and prior experience as judged by reviewers to yield the highest quality of performance to assist the DHS in its biological detection and surveillance portfolio. Offerors are encouraged to submit brief and concise plans for such systems, platforms, and assays, and to include information that will allow the reviewers to judge against the criteria shown in the Evaluation Criteria section.

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Specific elements of the major task areas will be:

- 1) Demonstrate a diagnostic or detection platform, device, system, or assay that fulfills the criteria set forth above in 1.8.2.
  - 2) Production of reagents and assembly of reagents for test kits to support test, evaluation, and validation studies. For costing purposes, the Offeror should consider the cost of preparing a kit capable of analyzing 100 samples for testing by another laboratory.
  - 3) Demonstrate the successful and accurate detection of agent(s) by the system.
  - 4) Demonstrate the operation and functionality of the diagnostic or detection platform, device, system, or assay and conduct appropriate studies to support test sample stability for test and evaluation studies using government supplied panels for test, evaluation, and validation studies. Test panel materials could include (depending on the specific agent) environmental matrices, whole blood, urine, mucous secretions, and creation of some contrived samples spiked with various agent materials.
  - 5) Produce at least **three** (3) platforms or devices to be transitioned into DHS custody and ownership for further study in U.S. government select agent laboratories, selected at a later time for more extensive test and evaluation.
5. **Number of Selections:** It is anticipated that multiple selections will be made depending on the quality of the Proposals and availability of funds.
6. **Anticipated Ceiling:** Although subject to official fiscal appropriation and availability, it is anticipated that approximately \$444,106 of Fiscal Year (FY) 2015 funds will be available for any resultant awards under this BAA Call. **The Government will reserve the right to incrementally fund any resultant contracts awarded from this BAA Call as provided by the FAR 52.232-22, "Limitation of Funds."** Contracts or other agreements that obligate funds will not have an initial period of performance that exceeds 18 months from the date of contract award. However, Offerors will be able to propose optional periods beyond the 18 month base period.
7. **Anticipated Award Type:** Award type is anticipated to be in the form of Cost Reimbursement type contracts. The Government reserves the right to award firm-fixed price contracts, cooperative agreements, Other Transactions (OTs) (if authorized by law at time of award), or interagency agreements to appropriate parties should the situation warrant.
- In the event an offeror or subcontractor is a Federally Funded Research and Development Center (FFRDC), Department of Energy National Laboratory, or other Federally funded entity, DHS/S&T will work with the appropriate sponsoring agency to issue an interagency agreement pursuant to the Economy Act (31 U.S.C. 1535) or other appropriate authority.
8. **Anticipated Award Dates:** The 3rd Quarter of Fiscal Year 2015 is when the government anticipates making any resultant contract awards under this Call for those Proposals are selected. However, the award date for any resultant contract award may vary based on the quality of the proposals received and the availability of funds.
9. **White Paper Instructions:** NA – No white papers are being requested in response to this solicitation.
10. **Full Proposal Instructions:** Offerors shall submit their Full Proposals in accordance with BAA 14-003, Section 5-Application and Submission Information. Please note the page limitations for technical and cost proposals.
11. **Evaluation Criteria:** The evaluation of Full Proposals will be accomplished through an independent technical review using the following criteria, which are listed in descending order of relative importance.

**Criterion I: Scientific Merit:** The Offeror must demonstrate understanding of the critical technology and scientific challenges required to achieve the desired performance metrics and strategy as described elsewhere within this announcement. The research approach should be scientifically sound, practical, and technically defensible. The

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technical approach is innovative and has advantages over other solutions, if successfully implemented. The work must contribute to scientific knowledge in the topic area and must enumerate potential benefits of the proposed research. The proposal shall demonstrate an awareness of the state-of-the-art.

**Criterion II: Sound Technical Approach:** Of importance is how the proposed technology will meet or exceed the performance requirements for this program and be commercially applicable (how the proposed technology will be transitioned into a sustainable commercial market and what the intended use, or concept of operations, would be). All critical scientific and technical issues and risks are clearly identified, and the planned development approach and risk mitigation efforts are clearly defined and feasible. The merit of the technical approach over other competing approaches should be clearly delineated.

**Criterion III: Sound Management Approach:** Presentation of a sound managerial approach to the proposed work, including a demonstrated understanding of the issues and challenges associated with achieving the goals of the topic, and a strategy to address those issues and challenges. A successful team will possess multidisciplinary expertise to address the complexity of the effort.

**Criterion IV: Capability to Perform and History of Performance:** Demonstration of a capability to perform the proposed work, including history of previous performance in developing related solutions and technologies. The Offeror should have a proven record of performance and experience, authorship on peer reviewed publications related to projects associated with the assessment of performance of detection assays for biothreat agents are helpful in this regard. Offeror’s knowledge of immune based biological detection systems. Offeror’s team is sufficiently complete and key personnel are identified with the required range of competencies to execute this effort and the team includes appropriate experience

**Criterion V: Cost Realism/Reasonableness:** Presentation of accurate, well-founded and reasonable estimates of all costs related to performance of the proposed effort, including an appropriate allocation of labor resources. Members of the Peer Review panel will be looking for overall best value to the government.

**12. Foreign Concerns:** Foreign persons are advised that their participation may be subject to Export Control restrictions. Any such restrictions shall be reviewed on an individual award basis.

**13. Questions:** Any questions concerning this call must be submitted via email to the Contract Specialist at [tanisha.walcott@hq.dhs.gov](mailto:tanisha.walcott@hq.dhs.gov) no later than **March 02, 2015 3:00 PM EST** in the following format:

Question #	Reference	Contractors’ Question
1	General (if there is no specific document reference)	
2	(Example) BAA 14-003, page 15, Section 5.2, first paragraph, second sentence	
3	(Example) BAA 14-003/Call 0005, page 2, Section 9, first sentence	

Please include “Questions for BAA 14-003/ Call 0005” in the subject line. All questions and responses will be posted on the Federal Business Opportunities website <http://www.fbo.gov> and <https://baa2.st.dhs.gov> . Questions will only be accepted or answered electronically.