



Homeland Security

Science and Technology

The Department of the Interior, Interior Business Center,
Acquisition Services Directorate releases

**Broad Agency Announcement (BAA) 13-015:
Sustainable, Low-Cost Approaches to Environmental
Monitoring**

on behalf of

**Department of Homeland Security
Science and Technology (S&T) Directorate**

Industry Day: 9/24/2013

White Papers Due: 10/18/2013

Full Proposals Due: 12/13/2013

For Questions Regarding This Solicitation Contact:

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1. GENERAL INFORMATION

1.1. Introduction

This solicitation is a Broad Agency Announcement (BAA) as contemplated in Federal Acquisition Regulation (FAR) 6.102(d)(2) and 35.016 to provide for competitive selection of research proposals. A formal Request for Proposals (RFP), solicitation or additional information regarding this announcement will not be issued. This BAA is issued by the Department of the Interior, Interior Business Center (DOI/IBC), Acquisition Services Directorate on behalf of the Department of Homeland Security (DHS) Science & Technology (S&T) Directorate.

DOI/IBC will not issue paper copies of this announcement. White paper, technical and cost proposals (or any other material) submitted in response to this BAA will not be returned. All white papers/proposals will be treated as sensitive competitive information and their contents will be disclosed only for the purpose of evaluation.

The Department of Homeland Security, Science & Technology Directorate, Chemical and Biological Defense Division is the responsible agency for review/selection of White Papers and/or Full Proposals.

1.2. Agency Name

Department of the Interior
Interior Business Center
Acquisition Services Directorate
Division III
P.O. Box 1420
Sierra Vista, AZ 85636

1.3. Research Opportunity Title

Sustainable, Low-Cost Approaches to Environmental Monitoring

1.4. Program Name

Chemical and Biological Research and Development Branch, Chemical and Biological Defense Division, Science and Technology Directorate, Department of Homeland Security

1.5. Research Opportunity Number and Title

BAA 13-015 – Sustainable, Low-Cost Approaches to Environmental Monitoring

1.6. Solicitation and Response Approach

The Department of the Interior, Interior Business Center will not issue paper copies of this announcement. The Government reserves the right to select for award and fund all, some, or none of the Full Proposals received in response to this solicitation. No funding for direct reimbursement of proposal development costs will be allowed. White Papers, Technical and Cost Proposals (or any other material) submitted in response to this BAA will not be returned. However, depending on the markings on the proposal, the Government will adhere to FAR policy on handling source selection information and proprietary proposals. All white paper/proposals will be treated as sensitive competitive information and their contents will be disclosed only for the purpose of evaluation. Offerors are to provide unclassified proposals. Documents containing sensitive information that are not suitable for uncontrolled public dissemination should be marked "For Official Use Only" (FOUO). When transmitted electronically, FOUO proposals should be sent with password protection.

Awards will take the form of contracts. 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. Depending on the nature of the Full Proposals received, DHS S&T will also consider awarding a grant or Cooperative Agreement. Therefore, the applicable laws and regulations governing the legal vehicle used for award will depend on the legal vehicle chosen by DHS S&T. In this regard, Offerors should propose a preferred vehicle type for DHS S&T to consider for award.

A two-phased proposal selection process will be used for this solicitation to minimize the cost and effort for prospective Offerors. Phase 1 will consist of the solicitation, receipt, and evaluation of White Papers from potential performers. Entries in the various sections of the White Papers should be concise and conform to the specified formatting and word count limitations. No formal transmittal letter is required for the Phase 1 responses.

A down-selection process will be conducted by the DHS and those Phase 1 white paper proposals selected will be invited to participate in Phase 2, which will consist of the solicitation, receipt, and evaluation of a Full Proposal, limited to 30 pages, excluding the Formal Transmittal Letter, Cover Page, Phase 2 Summary of Costs and Related Information, Table of Contents and resumes/biographical information for proposed performers.

1.7. Response Dates

Industry Day
Sept 24, 2013

White Papers
Due: October 18, 2013

1.8. Research Opportunity Description

1.8.1 DHS Environmental Monitoring 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. 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 is working toward developing and transitioning technologies that **dramatically reduce** the time interval from threat release to incident response.

To meet this need, CBD is investigating a radically new architecture for real-time situational awareness of an aerosol release of material that would inform public safety actions to mitigate consequences. The goals of the architecture are to alert authorities as quickly as possible, to map contamination in real-time, to convey information to multiple layers of decision makers, and to operate in a cost effective manner. In order to accomplish these goals, the sensors must be deployed in a high density or be able to rapidly scan large volumes, the data must be transmissible in standard formats to enable signal integration and data fusion (e.g. through cloud computing), and the overall system must be low cost or value-creating in the intended use.

The architecture is envisioned to be a multi-tiered and multi-component system, where biological and chemical detection systems integrate with new commercial systems being developed in the emerging markets around the "Internet of Things"¹ (e.g., personal apps, building health, air quality, heart rate monitors, local environmental monitoring systems), see Figure 1 below. Greater situational awareness about the source location, aerosol dispersion, and extent of contamination from a release will be possible by integrating and

¹ McKinsey Global Institute. (2013). *Disruptive Technologies: Advances that will Transform Life, Business, and the Global Economy*.

fusing information from these types of real-time data streams, ultimately resulting in increased confidence in response actions.

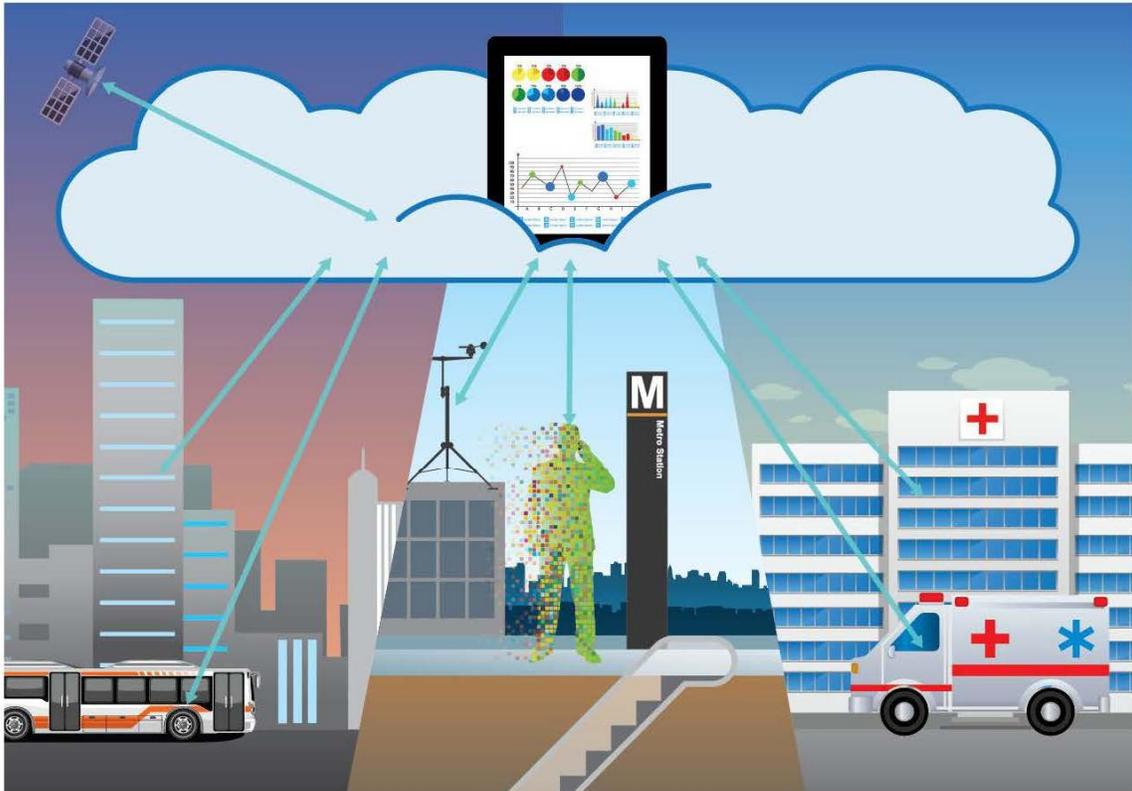


Figure 1. Operational View of an Integrated Sustainable Environmental Monitoring System.

Figure 2 depicts a notional tiered structure of sensor types, information flows, and decision options during an indoor release, for illustrative purposes only. The Figure begins with routine surveillance activities, where multiple systems can provide valuable data and response options for the citizen and local communities on routine matters, including monitoring for environmental causes of disease and stress. In the event of a release, as more information is gathered from the systems, there can be many levels of response actions with different impacts to the community ranging from low-impact and localized (e.g., redirecting airflows and shutting building air intakes) that building owners can execute, up to sample collection and transport to a laboratory for high impact decisions from the public health department. This BAA is focused on the types of technologies and architecture configurations of sensors to provide rapid situational awareness in the Pre-Event through the first hour of responses shown in Figure 2.

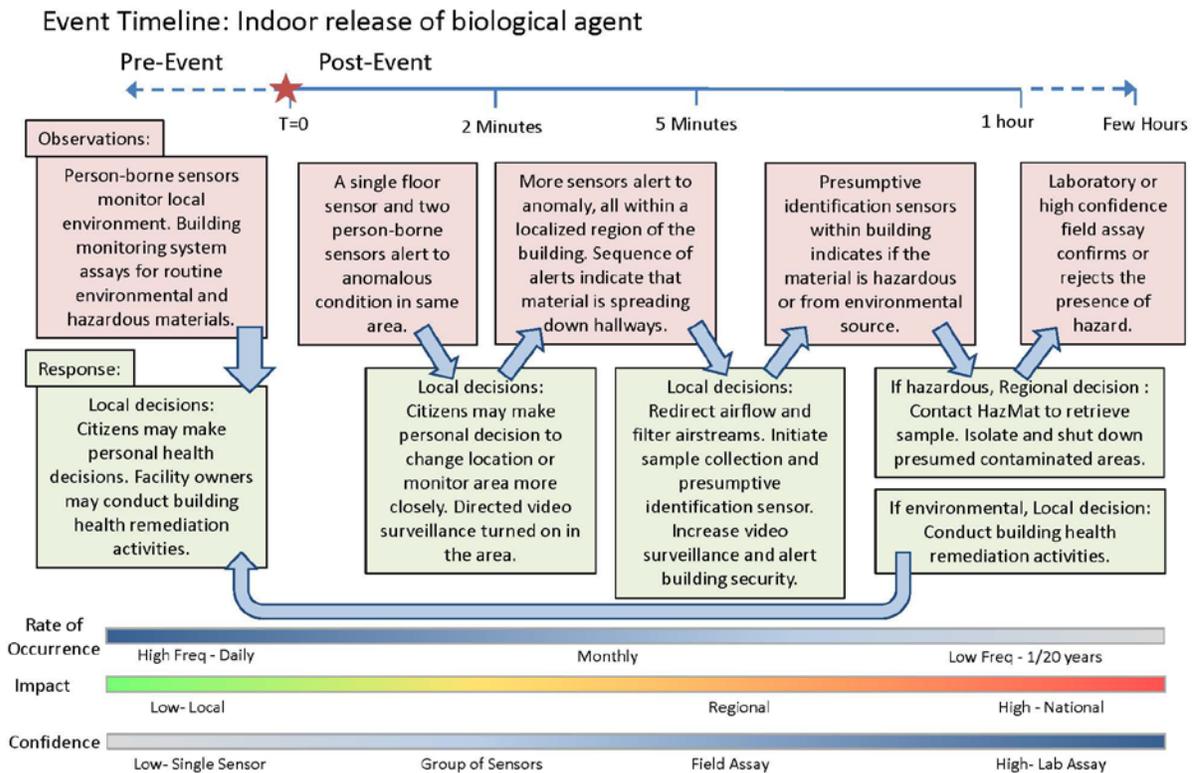


Figure 2. Notional Example of Decision Points and Response Actions to a Release of Material.

To ensure the successful development and transition of rapid awareness and characterization technologies, potential solutions must be cost effective, preferably with a viable commercial market independent of the Federal government defense sector (e.g., human health monitoring or protection, environmental protection, energy efficiency). Therefore, data from any monitoring system must be delivered to the primary commercial end-user in the form and schedule promised, and transmitted to local, state, and/or Federal authorities routinely. All data relevant to forming a detection decision must communicate easily with a Government cloud infrastructure, in an open architecture format, in order to be fused with additional information streams (e.g., weather, human health surveillance data, veterinary surveillance data, human diagnostic data) to create a complete surveillance capability (these additional data sources are not required for this BAA).

In summary, DHS CBD is looking for architectures that meet our goal of a SURE detection system:

- **Sustainable:** Technologies which deliver daily benefit and create value to the community, preferably through a commercial application. For example, a system which also monitors for environmental causes of disease (e.g., mold, fungus, allergens), or integrates into energy efficiency initiatives.
- **Useful:** Technologies which provide sufficiently detailed information to influence tactical decision making. For example, a system that provides high resolution data to determine extent of contamination in real-time.

- **Rapid:** A system which provides data within the timescale during which low-impact actions are still effective. For example, a system which is integrated within a building control network in order to slow or stop the spread of material through a facility.
- **Effective:** Technologies that work together as a system to provide confidence to a decision maker to positively improve outcomes. This requires that the information from the system be able to reliably discriminate between attacks and natural events, as well as provide information back to the commercial end-user.

1.8.2. Description of Technical Topic Areas

The focus of this BAA is in the area of rapidly detecting intentional or accidental aerosol releases of biological or chemical agents which present a threat against the Nation’s human population. The detection of biological agents is required, with a higher priority on solutions that can also detect chemical agents. All selected solutions will undergo a four phase developmental approach described in detail in section 1.8.2.3 (Project Structure) below, with Phase I focusing on both the theoretical feasibility of the technology as well as commercial viability independent of the Federal government defense sector, Phase II assessing functionality and cost effectiveness for environmental monitoring of biological and chemical materials and integration with data processing efforts, Phase III for participation in pilot demonstrations with integrated systems in real-world environments, and Phase IV for initial production and transition of concept to commercial and Government use. Figure 3 below shows the minimum Technology Readiness Levels (TRL) and Manufacturing Readiness Levels (MRL) at the conclusion of each Phase, measured for the full system concepts. Individual system components can be at a higher TRL or MRL, see Appendices B and C for definitions.

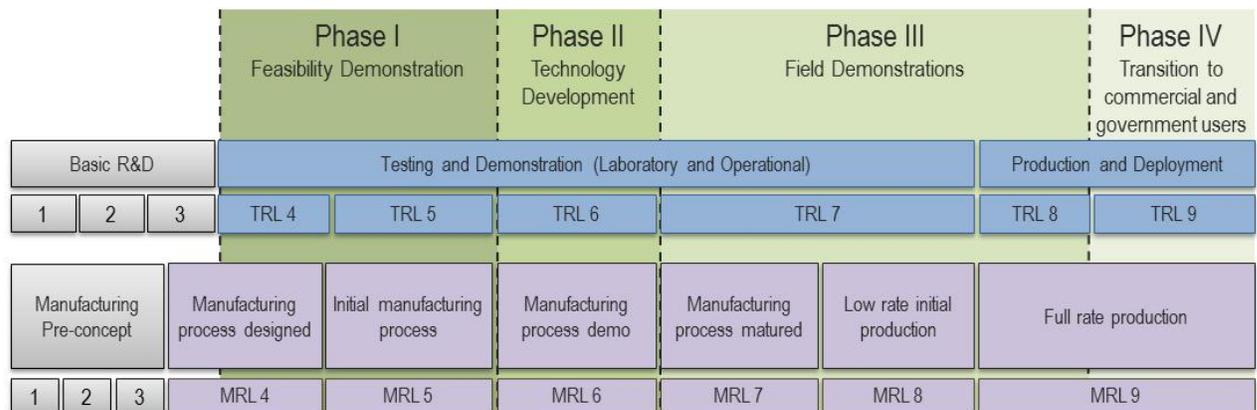


Figure 3. Project Structure and TRL/MRL levels for each Phase. See Appendices B and C for definitions.

Technical topic areas to be addressed under this BAA include the following two scenarios: Indoor Detection and Outdoor Detection. A White Paper/Full Proposal may address one complete topic area, a portion of a topic area, or both topic areas. If only a portion of a

topic is addressed, then the White Paper/Full Proposal must include a discussion of the other components which would be necessary to achieve full performance. All White Papers/Full Proposals should discuss the commercial market potential of any proposed concept.

1.8.2.1 Technical Topic Area 1: Indoor Detection

DHS has a need to detect the burst release of 1 gram of a hazardous biological or chemical agent within an indoor environment rapidly enough to initiate protective actions (see Figure 2 for an example). Near the point of release, there will be a transient peak of a high concentration of the material, which will be distributed into an equilibrium concentration throughout the building, typically within about an hour depending on airflows. The proposed system architecture and sensor density will dictate what concentration levels will be experienced at each sensor node. Appendix D provides a notional example of the particle concentration distribution of a biological aerosol within a large office building space. The system can integrate and fuse information gathered from both installed building operated systems as well as systems carried by citizens within the building. The system false alarm rate, defined as the initiation of high impact decisions such as contacting HazMat and/or evacuating the facility, must be less than once per 20 years. The proposed commercial application may demand more stringent requirement for the sensitivity of the overall system than the 1 gram burst release, in which case the proposed system will be tested to those requirements.

For purposes of providing metrics and system-level component discussions, indoor detection scenarios should consider involving a large convention center, mid-rise office building, mass transit center, airport, and/or shopping mall. The proposed concept must be configurable as a retrofit package into existing buildings as well as new construction. System components must be low cost or value creating, preferably with a commercial market independent of the Federal governmental defense sector.

An example of potential system components (**for illustrative purposes only**):

An example indoor detection solution for development by this project could be an improved biological point detection or identification system integrated into building controls, can be widely deployed in public spaces, and provides a multi-use, daily benefit to the users and the community. For example, in this scenario a fire detection system could be coupled with a biological particle detection and collection network that monitors for many public health concerns.

1.8.2.2 Technical Topic Area 2: Outdoor Detection

DHS has a need to detect the burst release of 100 grams of a hazardous biological or chemical agent in an outdoor environment rapidly enough to initiate low impact responses (e.g., closing building air intakes), triangulate the location of the release, characterize the extent of contamination, and identify those potentially exposed before symptoms emerge. Near the point of release, there will be a transient peak of a high concentration of the material, which will disperse throughout the environment and into neighboring buildings

depending on weather conditions. The proposed system architecture and sensor density will dictate what concentration levels will be experienced at each sensor node. The system can integrate and fuse information gathered from both installed building operated systems as well as systems carried by citizens outdoors. The system false alarm rate, defined as the initiation of high impact decisions such as alerting HazMat and restricting movement of people, must be less than once per year. The proposed commercial application may demand more stringent requirement for the sensitivity of the overall system than the 100 gram burst release, in which case the proposed system will be tested to those requirements.

For the purposes of providing metrics and system-level component discussions, outdoor detection scenarios should consider involving a city center, outdoor shopping mall, outdoor concert arena, parade, and/or outdoor sporting event. System components must be low cost or value creating, preferably with a commercial market independent of the Federal governmental defense sector.

An example of potential system components (**for illustrative purposes only**):

An example outdoor detection technology for development by this project could be personal micro-environment monitors carried by some people to monitor health data such as daily activity, which could be coupled to imaging systems that can detect biological particle clouds, and analyzed with local weather data for wide-event triggering.

1.8.2.3 Project Structure

Phase I – Feasibility Demonstration and Commercial Application (estimate 12 months):

This phase will consist of a feasibility analysis with both an initial concept demonstration of the proposed detection system as well as an analysis of the commercial market and sustainability of the proposed solution. The technical feasibility should be comprised of individual component laboratory evaluations of performance metrics such as those listed below (or others as appropriate to the proposed solution), a description of the fully assembled architecture, and the decision and response actions that will be enabled with the anticipated alarm rates for each (see Figure 2 for an example, but alternative concepts are encouraged).

The cost analysis must separately address the acquisition, operating, and IP rights costs (see Assertion of Data Rights in Section 4.5) for each component, specifying whether these costs are based on a commercial market for non-defense applications or if an architecture component would have to be maintained solely through Government funding. In addition, a letter of intent from a manufacturing partner for the technology that states their interest, current manufacturing capacity for similar items, and feasibility of establishing production line for new technology must also be in place by the end of Phase I.

All design and experimental considerations should be thoroughly reported to justify the feasibility of the approach, including any calculations and assumptions made by the Performers in the analysis of their proposed solutions. The Government will conduct an

independent assessment of proposed solutions based on the information in the feasibility assessment.

A “Performance and Cost Metrics Report”, with metrics from the lists below as well as any additional metrics specific to the proposed solution, will be a deliverable of the Phase I effort to identify the component and system metrics necessary to meet the project goals. These metrics will form the basis for the laboratory and field test and evaluation plans in Phase II. For each metric, a threshold and objective value should be provided, where the threshold represents the minimum performance that will result in a useful solution (for both DHS and commercial applications), and the objective value represents the performance determined to be feasible with development in a Phase II effort.

Individual Component Metrics

- Time required to analyze and report result
- Cost of each component
- Type, amount, and cost of consumables required for each component
- Storage requirements and shelf-life of consumables
- Annual operation and maintenance cost per component
- Number and type of biological materials detected or analyzed (spores, fungi, viruses, and proteins)
- Number and type of chemical materials detected or identified (chemical warfare agents and toxic industrial chemicals), if applicable
- Sensitivity of detection
- Specificity of detection
- Human safety controls when near and interacting with deployed system
- Skill level needed to operate components with description of training methods
- Environmental impact of system (e.g., power, waste products)
- Range of environments system can operate within (e.g., temperature, humidity, dust levels)
- Power requirements for each component
- Approximate size (footprint, volume, and weight) of each component
- On-board and remote data processing with open architecture cloud infrastructure

System Level Metrics

- Number of components required for aerosol release detection, tracking, and contamination mapping
- Degree of characterization of agent and attack location
- Number and types of components incorporated into each system
- Additional infrastructure required for full system operations
- Time for system level alert at each decision point
- Probability of detecting and tracking large (kilograms) and/or small (grams) scale intentional agent releases
- False alarm rate at each decision point – maximum false alarm rate to initiate HazMat or public health response of 1 instance/20 years for a building or 1 instance/year for an outdoor event

- Data analysis requirements for system
- Cost-benefit assessment of full configuration, indicating which costs must be borne solely through the Government
- Communication interoperability and data type and standards for transmitting results to cloud infrastructure for further analytic analysis
- Operation and maintenance costs for full system
- Frequency of sustainment maintenance for system operation

Phase I metrics for success:

- Feasibility of detecting signature of material in aerosol form from the proposed technical solution
- Non-biodefense application and sustainable commercial market identified
- Letter of intent from a manufacturing partner

Phase I Deliverables:

- Monthly Technical and Cost Reports
- Quarterly Program Review Reports and Presentations
- Feasibility Research Report
- Performance and Cost Metrics Report specific to the proposed solution to meet the overall project goals
- Full Phase II Proposal. The proposal and project plan should describe development efforts required to meet all of these metrics for a fully functional prototype system.

DHS S&T may choose to fund only Phase I. Upon completion of Phase I, performers may be selected to enter Phase II.

Phase II – Technology Development (estimate 24 months):

This phase will consist of the development and independent laboratory testing of the proposed systems selected during Phase I to achieve a pre-production prototype with performance demonstrated to meet the detection and sustainability goals of the project. The appropriate metrics for the specific technical approach will be defined by the end of the Phase I effort, and may vary between performers depending on the overall architecture of each solution proposed. Potential solutions can provide multiple uses, be cost effective, preferably with a commercial market independent of the Federal government defense sector. Following successful selection to Phase II, performers will proceed with system development, testing and evaluation, and Critical Design Review (CDR).

- Phase II metrics for success:
 - Able to detect aerosol biological threat material in laboratory setting
 - Data analyzed for decision points in the minutes to 1 hour timeframe
 - Plumes of aerosol biological or chemical material can be tracked
 - Monitoring data can be transmitted automatically
 - Instrumentation operates with low maintenance requirements
 - System is reliable in laboratory setting (e.g., reproducible results and low false alarm rates)

- System is accurate and precise in laboratory setting (e.g., achieves limits of detection for biological or chemical threats [L_D] to be specified in Phase I)
- Operation and maintenance (O&M) costs/requirements defined for intended commercial application
- Phase II Deliverables:
 - Monthly Technical and Cost Reports
 - Quarterly Reports and Presentation Reviews
 - Pre-production prototype system(s) for Phase II laboratory testing
 - Critical Design Review and accompanying report for prototype system
 - Phase III Proposal

DHS S&T may choose to fund only Phase II. Upon completion of Phase II, performers may be selected to enter Phase III.

Phase III – Field Demonstrations (estimate 18 months):

This phase will consist of testing of the prototype systems within a DHS specified location. Following a successful CDR in Phase II, performers will deliver a pre-production prototype for field testing. DHS S&T will make available appropriate test and evaluation facilities to support this program, and will have both indoor and outdoor environments available for technology testing and evaluation.

Each system will be assessed against its set of Performance and Cost Metrics identified in Phase I. Any updates to the identified Performance and Cost Metrics and any specific requirements needed for test and evaluation of the proposed concept should be identified and discussed in the CDR, and included in the performer's Phase III Proposal.

- Phase III metrics for success:
 - Able to detect aerosol biological threat material within setting of intended commercial application identified in Phase I
 - Data is analyzed on the minutes to 1 hour timeframe
 - Monitoring data transmitted automatically to decision makers
 - Instrumentation requiring minimal to low frequency of maintenance
 - System is reliable, accurate, and precise in setting of intended commercial application
 - Acquisition costs/requirements defined for commercial application
 - O&M costs/requirements are within the O&M budget for this application for at least 25% of the potential customer base
- Phase III Deliverables:
 - Monthly Technical and Cost Reports
 - Quarterly Reports and Presentation Reviews
 - Pre-production prototype system(s) for Phase III field demonstration
 - Phase IV Proposal

DHS S&T may choose to fund only Phase III. Upon completion of Phase III, performers may be selected to enter Phase IV.

Phase IV –Transition for Commercial and Government Use (estimate 12 months):

This phase will consist of initial production of a transition ready concept to government and commercial non-defense applications. Following a successful field demonstration in Phase III, performers will deliver a Low Rate Initial Production (LRIP) version of their system concept for demonstration.

- Phase IV metrics for success:
 - Commercial production of technology still meets all of the Phase III metrics for success
 - Acquisition costs provide a demonstrated 5 year return on investment for commercial users
 - Commercial production of technology concept with manufacturing partner

- Phase IV Deliverables:
 - Monthly Technical and Cost Reports
 - Quarterly Reports and Presentation Reviews
 - Technical Data Package
 - LRIP systems
 - Final Report

1.9. Government Representatives

Science and Technology:

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Acquisition Services Directorate
Division III
P.O. Box 1420
Sierra Vista, AZ 85636

2. AWARD INFORMATION

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2.1. Available Amount of Funding Expected to be Awarded Through this BAA

Although subject to official fiscal appropriation and availability, it is anticipated that approximately \$5.4 million of Fiscal Year (FY) 2013 funds are available for Phase I awards under this BAA. Future phases are contingent upon funding availability, and are expected to have about \$9 million for Phase II, \$17 million for Phase III, and \$8 million for Phase IV awards.

2.2. Limitation of Funds

The Government reserves the right to incrementally fund contracts awarded from this BAA 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 12 months from the date of contract award. However, Offerors can propose a base year effort with additional option years.

2.3. Anticipated Number of Awards

DHS S&T expects to make six (6) to twelve (12) Phase I awards using its FY 2013 funds.

2.4. Anticipated Award Types

Award type is anticipated to be in the form of Cost Reimbursement type contracts. However, the Government reserves the right to award Fixed Price or Interagency Agreements (IAs) to appropriate parties should the situation warrant.

2.5. Anticipated Period of Performance for New Awards

The period of performance for the Phase I research efforts and studies proposed should be for a single period not exceeding one year, with future phases as optional years. If a multi-year project is proposed, something of tangible value must be provided in the first funding year. Funding in the first year cannot be used for planning purposes, with the actual execution of the task to be performed in the subsequent year. Multi-year proposals should make recommendations and present a plan that sets forth the follow-on effort in the subsequent option years. Consideration of the funding of follow-on work in a subsequent year will be contingent upon the value of the product(s) produced by the first-year effort. The period of performance shall commence at the date of award. Proposals that build on current or previous work are encouraged. If Offerors are extending work performed under other DHS projects or projects for other sponsors, the proposal must clearly identify the point of departure and what existing work will be brought forward and what new effort will be performed under this BAA. The final deliverable for an effort should be a final report or a publishable journal article manuscript that can be peer-reviewed, along with any prototype systems and relevant testing data.

3. ELIGIBILITY INFORMATION

This BAA is open to **ALL** responsible sources.

Offerors may include single entities or teams from academia, private sector organizations, Government laboratories, and Federally Funded Research and Development Centers (FFRDCs), including Department of Energy National Laboratories and Centers.

3.1. Federally Funded Research & Development Centers

FFRDCs, including Department of Energy National Laboratories and Centers, are eligible to respond to this BAA, individually or as a team member of an eligible principal Offeror, so long as they are permitted under a sponsoring agreement between the Government and the specific FFRDC.

3.2. Nonprofit Organizations, Educational Institutions and Small Business Set Aside

The Government encourages nonprofit organizations, educational institutions, small businesses, small minority disadvantaged business (SDB) concerns, Historically Black Colleges and Universities (HBCU), Minority Institutions (MI) (HBCU/MIs), women-owned businesses (WB), and Historically Underutilized Business (HUB) zone enterprises as well as large businesses, academic institutions, and Government laboratories to submit research proposals for consideration and/or to join others in submitting proposals; however, no portion of the BAA will be set-aside for these special entities pursuant to FAR Part 19.502-2, because of the impracticality of reserving discrete or severable areas of research and development in any specific requirement area.

To ensure full consideration in these programs, registration in the <https://baa2.st.dhs.gov/> website, described later in this document, requires the appropriate business type selection as well as accurate up-to-date information.

3.3. Organizational Conflict of Interest

Organizational Conflict of Interest issues will be evaluated on a case-by-case basis; as outlined below. Offers who have existing contract(s) to provide scientific, engineering, technical and/or administrative support directly to the DHS S&T will receive particular scrutiny.

(a) Determination. The Government has determined that this effort may result in an actual or potential conflict of interest, or may provide one or more Offerors with the potential to attain an unfair competitive advantage.

(b) Process. If any such conflict of interest is found to exist, the Contracting Officer may (1) disqualify the Offeror, or (2) determine that it is otherwise in the best interest of the United States to contract with the Offeror and include the appropriate provisions to mitigate or avoid such conflict in the contract awarded. After discussion with the Offeror, the Contracting Officer may determine that the actual conflict cannot be avoided, neutralized, mitigated, or otherwise resolved to the satisfaction of the Government, and the Offeror may be found ineligible for award.

(c) Disclosure: The Offeror must represent, as part of its proposal and to the best of its knowledge that: (1) It is not aware of any facts which create any actual or potential organizational conflicts of interest relating to the award of this contract; or (2) It has included information in its proposal, providing all current information bearing on the existence of any actual or potential organizational conflicts of interest, and has included the mitigation plan in accordance with paragraph (d) of this provision.

(d) Mitigation/Waiver. If an Offeror with a potential or actual conflict of interest or unfair competitive advantage believes it can be mitigated, neutralized, or avoided, the Offeror shall submit a mitigation plan to the Contracting Officer for review. Award of a contract where an actual or potential conflict of interest exists shall not occur before Government approval of the mitigation plan.

(e) Other Relevant Information: In addition to the mitigation plan, the Contracting Officer may require further relevant information from the Offeror. The Contracting Officer will use all information submitted by the Offeror, and any other relevant information known to DHS, to determine whether an award to the Offeror may take place, and whether the mitigation plan adequately neutralizes or mitigates the conflict.

(f) Corporation Change. The successful Offeror shall inform the Contracting Officer within thirty (30) calendar days of the effective date of any corporate mergers, acquisitions, and/or divestures that may affect this provision.

(g) Flow-down. The contractor shall insert the substance of this clause in each first tier subcontract that exceeds the simplified acquisition threshold.

4. APPLICATION AND SUBMISSION INFORMATION

4.1. BAA Package Download

This BAA package may be downloaded in its entirety from the Federal Business Opportunities website <https://www.fbo.gov> or from <https://baa2.st.dhs.gov>.

Registration is not required to download the BAA package; however, a registration in <https://baa2.st.dhs.gov/> is required to upload a response to the BAA.

4.2. Industry Day

DHS will host an Industry Day on September 24, 2013 in the Washington DC area and on a concurrent webinar to present an overview of the project. All information and questions from the Industry Day will be posted online around September 30, 2013.

For more information and to register to attend, contact Lauren Van Roon (Lauren.VanRoon@associates.hq.dhs.gov, 202-254-6494) by 4PM on September 20, 2013.

For registration, please include the following information:

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Name:

Affiliation:

Phone:

Email:

Optional: 1-2 sentences on your company's capabilities and/or opportunities for collaboration (will be included in Attendees List handout to facilitate networking)

Attendance: Whether you will be attending in person, or via webinar

4.3. Application and Submission Process

Submissions will not be accepted from organizations that have not registered. The application process will occur in a two stage process: White Paper submission followed by invitations for Full Proposals. Any organization that wishes to participate in this solicitation must register at: <https://baa2.st.dhs.gov/>.

(a) Submitting a Response to this BAA:

1. To begin the process, go to <https://baa2.st.dhs.gov/>, and select *Submissions* link from the side menu. Note users will need their respective company's Tax Identification Number (TIN) or Employee Identification Number (EIN) to complete registration.
2. After logon, click on *Start New Proposal* from the side menu to initiate a new white paper registration, and fill in the requisite fields, including selecting the Solicitation (BAA13-015) and specific Technical Topic Area (TTA) to be addressed by the proposed technology. For additional information download the Submissions training guide that can be found from the upper right hand corner of the FAQs.
3. White Papers are required to respond to this solicitation. To submit your White Paper, select the appropriate submission button, fill out the requested fields, upload your files, and then submit. Offerors will receive confirmation of their submission via e-mail. If you do not receive this confirmation email, then your submission was not complete. You may revise your White Paper submission up until the deadline for White Paper submission.
4. If encouraged to submit a full proposal, select the appropriate submission button, fill out the requested fields, upload your files, and then submit. Offerors will receive confirmation of their submission via e-mail. You may revise your Full Proposal submission up until the deadline for Full Proposal submission.
5. No Classified White Papers or Proposals (or portions of proposals) will be accepted.

6. The Government may use selected support contractor personnel to assist as technical advisors during the evaluation process and to support administrative functions pertaining to the receipt and evaluation of any ensuing white papers, presentations, and proposals from this announcement. These support contractors will be bound by appropriate non-disclosure agreements to protect proprietary and source-selection information. They will not be permitted to release any source-selection information to third parties, including others in their organization.

Full Proposals shall be delivered via upload in accordance with instructions provided during registration.

The proposal submissions will be protected from unauthorized disclosure in accordance with FAR 15.207, applicable law, and DHS regulations. Offerors are expected to appropriately mark each page of their submission that contains proprietary information.

The DHS BAA website at <https://baa2.st.dhs.gov> offers electronic access to BAA solicitations, frequently asked questions (FAQs), answers to FAQs, abstracts of previously funded projects, and hyperlinks to other useful information.

For step-by-step instructions for registering your company and submitting your proposal, please refer to the “Registrations and Submissions Training Guide” which can be accessed by clicking the link at the top right corner of the Frequently Asked Questions (FAQs) page at https://baa2.st.dhs.gov/portal/public/Menu.action?page=baa_faq.

IMPORTANT: Before submitting a proposal for the first time, you must first register your company and user account in the system. It is recommended that the Business Official or an authorized representative designed by the Business Official be the first person to register for your company. Your company’s Taxpayer Identification Number (TIN) is required during registration. (If your company is registered, other new users may register and associated their information with the company’s existing record.) When registration is completed, users can submit and manage their proposals.

NOTE: User registration is not sufficient for registering the White Paper. To register your White Paper, you must log on with your credentials. Click the “Start New Proposal” button. When the Start the New Proposal page displays, pick the solicitation and topic, and then enter the title of the White Paper/Proposal that you are submitting. When you have entered the title, click the “Add Proposal to Activity Worksheet” button. The Proposal Activity worksheet page lists your proposal in the Proposals in progress section of the page. Your White Paper is registered at this point. Repeat this step before the White Paper registration deadline for every White Paper you wish to register.

After you have completed the Coversheets and uploaded your White Paper document, you must click on the “Submit White Paper” button to submit the White Paper; simply uploading the document is not sufficient. After you have uploaded your Full Proposal

documents, you must click on the “Submit Proposal” button to submit the Full Proposal; simply uploading the documents is not sufficient.

4.4. Format and Content of White Paper

White papers are required prior to submitting a full proposal.

The due date for white papers is no later than 4:30 P.M. (Local Eastern Time) on October 18, 2013. A two-stage source selection process will be used. It is required that a white paper be submitted prior to the due date to determine the acceptability of the proposed concept to the BAA. The evaluation of the white papers will be issued via e-mail notification on or about November 15, 2013. Any Offeror who submits a white paper may submit a full proposal regardless of the white paper feedback. Awards will be made based only on the full proposals.

White papers should be concise and limited to **10** pages. All pages shall be printed single-spaced on 8-1/2 by 11 inch paper with type not smaller than 12 point font. The page limitation for white papers includes all figures, tables, and charts. No formal transmittal letter is required. The white paper should contain the following sections:

- Cover Sheet (must be clearly marked "White Paper"): must include the Technical Point of Contact's information (name, address, phone, fax, email, lead organization and business type), the title of the proposed work, the estimated cost, and the duration (in months) of the proposed work. (Note: cover sheet does not count towards page limit.)
- Executive Summary: Briefly define the problem that this white paper will address and the effort's technical goals. Succinctly describe the uniqueness and benefits of the proposed approach.
- Proposed Technical Approach and Research Plan: This section is the centerpiece of the white paper. It should describe the research areas relevant to achieving program goals, detailed technical rationale, technical approach, commercial applications, and constructive plan for accomplishment of technical goals in support of program objectives, milestones and deliverables.
- Team Expertise and Management Plan: A summary of expertise of the key personnel on the project relevant to the program goals. If the team is multi-organizational, a proposed management structure should also be included.
- Cost Estimates: A cost estimate for resources over the proposed timeline. This cost estimate should include both labor and materials costs.

4.5. Format and Content of Full Proposals

Full Proposals

The due date for receipt of Full Proposals is 4:30 P.M. (Local Eastern Time) on December 13, 2013. Full Proposals WILL NOT BE ACCEPTED after the published due date. It is anticipated that negotiations for award will commence on or about January 17, 2014. As soon as the final proposal evaluation process is complete, the Offeror will be notified via e-mail of its selection or non-selection for an award. Full Proposals exceeding the page limit will not be evaluated.

Full Proposal Format: Volume 1 - Technical Proposal; and Volume 2 - Cost Proposal

Only Offerors who submit a White Paper will be considered for full proposals.

Full proposals will consist of two volumes: a Technical Proposal volume and a Cost Proposal volume.

- Paper Size – 8.5-by-11-inch paper
- Margins – 1 inch
- Spacing – Single- or double-spaced
- Font – Times New Roman, 12 point. Text embedded within graphics or tables in the body of the Project Description Form should be legible and not smaller than 8 point.
- Number of Pages –
 - Volume 1 (Technical Proposal): No more than 30 single-sided pages. Full proposals exceeding the page limit will not be evaluated. The Official Transmittal Letter, as well as the cover page, table of contents and resumes/biographical information about potential performers in the Full Proposal are not subject to the page limitation.
 - Volume 2: (Cost Proposal): No page limitation.
- Copies – A proposal shall consist of one electronic file for the Technical Proposal volume and one electronic volume for Cost proposal volume. Electronic files will be in portable document format (PDF), readable by IBM-compatible PCs. Each file size must be no more than 10 MB.

Full Proposal Content

Volume 1: Technical Proposal

Volume I of the Full Proposal shall be in the form of a Technical Proposal volume. Responsiveness to the order and content of sections listed in Volume I is important to assure thorough and fair evaluation of proposals. Nonconforming proposals may be

rejected without review. The Technical Proposal shall cover all of the elements of the White Paper that was submitted. In particular, the Technical Proposal must cover the following points in more detail:

- **Official Transmittal Letter**: This is an official transmittal letter with authorizing official signature. For an electronic submission, the letter can be scanned into the electronic proposal. The letter of transmittal shall state whether this proposal has been submitted to another government agency, other than DHS S&T, and if so, which one and when.
- **Cover Page**: This should include the words “Technical Proposal” and the following:
 - 1) BAA number;
 - 2) Title of Proposal;
 - 3) Identity of prime Offeror and complete list of subcontractors, if applicable;
 - 4) Technical contact (name, address, phone/fax, electronic mail address);
 - 5) Administrative/business contact (name, address, phone/fax, electronic mail address); and,
 - 6) Duration of effort (separately identify the basic effort and any options)
- **Table of Contents**
- **Executive Summary**: Summarize the Proposal and the expected benefits of the solution.
- **Proposal**: Describe the proposed work and the associated technical and management issues.
- **Performance Goals**: Describe the overall methodology and how it will meet the environmental monitoring objectives specified in the technical description Section 1.8.2.
- **Detailed Technical Approach**: Describe the proposed technical issues and methodology to address the stated program objectives.
- **Statement of Work (SOW), Schedule, and Milestones**: Provide an integrated display for the proposed research, showing each task with major milestones. Include a proposed schedule for the effort (estimated dates of tasks, milestones and deliverables). Describe how each task will be performed and identify sub-tasks, if appropriate. Include a section clearly marked as the SOW you propose to undertake. It is anticipated that the proposed SOW will be incorporated as an attachment to the resultant award instrument. To this end, such proposals must include a severable self-standing SOW without any proprietary restrictions, which can be attached to the contract or agreement award.

- **Deliverables:** Provide a brief summary of all deliverables proposed under this effort, including data, and reports consistent with the objectives of the work; along with suggested due dates (calendar days after the effective date of award). This section shall be severable, i.e., it will begin on a new page and the following section shall begin on a new page. It is anticipated that the proposed detailed list and description of all deliverables will be incorporated as an attachment to the resultant award instrument. To this end, such proposals must include a severable self-standing detailed list and description of all deliverables without any proprietary restrictions, which can be attached to the contract or agreement award.
- **Management Plan:** Provide a brief summary of the management plan, including an explicit description of what role each participant or team member will play in the project, and their past experience in technical areas related to this proposal.
- **Facilities:** List the location(s) where the work will be performed, and the facilities to be used. Describe any specialized or unique facilities which directly affect the effort.
- **Government-Furnished Resources:** Provide a brief summary of required information and data which must be provided by the Government to support the proposed work, if any.
- **Cost Summary:** Summarize the projected total costs for each task in the initial period of performance and any proposed option year of the effort, including a summary of subcontracts, man hours, and consumables.
- **Resumes for Key Personnel:** In Appendix A, provide resumes and *curriculum vitae* (CVs) for each of the key personnel. These resumes do not count toward the 30-page limit.
- **Other DHS Support:** As an appendix, provide a list of any current or pending awards or proposals with DHS that pertain to the proposed effort. This section will not count towards the 30-page limit.
- **Assertion of Data Rights:** Due to the nature of this research and development project, the Government will need to evaluate the deliverable in a field prototype evaluation scenario with Government and emergency management personnel. Therefore, include here a summary of any assertions to any technical data or computer software that will be developed or delivered under any resultant award. This includes any assertions to pre-existing results, prototypes, or systems supporting and/or necessary for the use of the research, results, and/or prototype. Any rights asserted in other parts of the proposal that would impact the rights in this section must be cross-referenced. If less than unlimited rights in any data delivered under the resultant award are asserted, the Offeror must explain how these rights in the data will affect its ability to deliver research data, subsystems, and toolkits for integration as set forth below. Additionally, the Offeror must explain how the

program goals are achievable in light of these proprietary and/or restrictive limitations. If there are no claims of proprietary rights in pre-existing data, this section shall consist of a statement to that effect.

Proposals submitted in response to this solicitation shall identify all technical data or computer software that the Offeror asserts will be furnished to the Government with restrictions on access, use, modification, reproduction, release, performance, display, or disclosure. Offeror's pre-award identification shall be submitted as an attachment to its offer and shall contain the following information:

Statement of Assertion. Include the following statement: "The Offeror asserts for itself, or the persons identified below, that the Government's rights to access, use, modify, reproduce, release, perform, display, or disclose only the following technical data or computer software should be restricted:"

Identification of the technical data or computer software to be furnished with restrictions. For technical data (other than computer software documentation) pertaining to items, components, or processes developed at private expense, identify both the deliverable technical data and each such item, component, or process as specifically as possible (e.g., by referencing specific sections of the proposal or specific technology or components). For computer software or computer software documentation, identify the software or documentation by specific name or module or item number.

Detailed description of the asserted restrictions. For each of the technical data or computer software identified above in paragraph (2), identify the following information:

(i) Asserted rights. Identify the asserted rights for the technical data or computer software.

(ii) Copies of negotiated, commercial, and other non-standard licenses. Offeror shall attach to its offer for each listed item copies of all proposed negotiated license(s), Offeror's standard commercial license(s), and any other asserted restrictions other than Government purpose rights; limited rights; restricted rights; rights under prior government contracts, including SBIR data rights for which the protection period has not expired; or government's minimum rights.

(iii) Specific basis for assertion. Identify the specific basis for the assertion. For example:

(A) Development at private expense, either exclusively or partially. For technical data, development refers to development of the item, component, or process to which the data pertains. For computer software, development refers to the development of the software. Indicate whether development was accomplished exclusively or partially at private expense.

(B) Rights under a prior government contract, including SBIR data rights for which the protection period has not expired.

(C) Standard commercial license customarily provided to the public.

(D) Negotiated license rights.

(iv) Entity asserting restrictions. Identify the corporation, partnership, individual, or other person, as appropriate, asserting the restrictions.

Previously delivered technical data or computer software. The Offeror shall identify the technical data or computer software that are identical or substantially similar to technical data or computer software that the Offeror has produced for, delivered to, or is obligated to deliver to the Government under any contract or subcontract. The Offeror need not identify commercial technical data or computer software delivered subject to a standard commercial license.

Estimated Cost of Development. The estimated cost of development for that technical data or computer software to be delivered with less than Unlimited Rights.

Supplemental information. When requested by the Contracting Officer, the Offeror shall provide sufficient information to enable the Contracting Officer to evaluate the Offeror's assertions. Sufficient information must include, but is not limited to, the following:

- (1) The contract number under which the data or software were produced;
- (2) The contract number under which, and the name and address of the organization to whom, the data or software were most recently delivered or will be delivered; and
- (3) Identification of the expiration date for any limitations on the Government's rights to access, use, modify, reproduce, release, perform, display, or disclose the data or software, when applicable.

Ineligibility for award. An Offeror's failure to submit or complete the identifications and assertions required by this provision with its offer may render the offer ineligible for award.

This section must be severable, i.e., it will begin on a new page and the following section shall begin on a new page. It is anticipated that the proposed Assertion of Data Rights will be incorporated as an attachment to the resultant award instrument. To this end, proposals must include a severable self-standing Assertion of Data Rights without any proprietary restrictions, which can be attached to the contract or agreement award.

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The Cost Proposal shall consist of a cover page and three parts, Part 1, 2, and 3. Part 1 will provide a detailed cost breakdown of all costs by cost category, Part 2 will provide a Cost breakdown by task/sub-task using the same task numbers in the Statement of Work, and Part 3 is an overview chart provided in Section 8.5 Appendix E. Options must be separately priced. The cost proposal in the full proposal phase should not significantly exceed the cost estimate provided in the White Paper phase. Those full proposals that have a cost that is significantly higher than was previously provided in the white paper phase will be subjected to additional scrutiny and critical review to determine why the original estimate of cost was exceeded.

Cover Page: The use of the SF 1411 is optional. The words “Cost Proposal” should appear on the cover page in addition to the following information:

- BAA number;
- Title of Proposal;
- Identity of prime Offeror and complete list of subcontractors, if applicable;
- Technical contact (name, address, phone/fax, electronic mail address)
- Administrative/business contact (name, address, phone/fax, electronic mail address) and;
- Duration of effort (separately price out the basic effort and any options)

Part 1: Detailed breakdown of all costs by cost category. The Offeror should provide a total estimated price for major demonstrations and other activities associated with the program, including cost sharing, if any. The Offeror should state whether any Independent Research and Development (IR&D) program is or will be dedicated to this effort, or if IR&D is being pursued to benefit related programs as well. Any cost sharing estimates should include the type of cost share, i.e. cash or in-kind. If in-kind is proposed, the Offeror should provide a discussion of how the cost share was valued.

- **Direct Labor** – Individual labor category or person, with associated labor hours and *unburdened* direct labor rates;
- **Indirect Costs** – Fringe Benefits, Overhead, G&A, COM, etc. (*Must show base amount and rate*)
- **Travel** – Number of trips, destinations, durations, etc.
- **Subcontract** – A cost proposal *as detailed as the Offeror’s cost proposal* will be required to be submitted by the subcontractor. The subcontractor’s cost proposal can be provided in a sealed envelope with the Offeror’s cost proposal or will be requested from the subcontractor at a later date;
- **Consultant** – Provide consultant agreement or other document which verifies the proposed loaded daily/hourly rate;
- **Materials**--Materials should be specifically itemized with costs or estimated costs. Where possible, indicate purchasing method, (Competition, engineering estimate, market survey, etc.)
- **Other Directs Costs**, particularly any proposed items of equipment or facilities. Equipment and facilities generally must be furnished by the contractor/recipient.

Justifications must be provided when Government funding for such items is sought.

- **Fee/Profit** including fee percentage.

Part 2: Cost breakdown by task/sub-task using the same task numbers in the Statement of Work.

Part 3: Full Proposal Summary of Costs and Related Information Form (See Section 8.2 – Attachment B of this BAA). Please complete this form and provide it as an attachment to the Cost Proposal. Certified cost and/or pricing data may be required.

The Cost Proposal should be consistent with your proposed SOW. Activities such as demonstrations required to reduce the various technical risks should be identified in the SOW and reflected in the Cost Proposal. The Offeror should provide a total estimated price for the major Research, Development, Test, and Evaluation (RDT&E) activities associated with the program.

For the Cost Proposal, the DHS BAA website system has a web form where the Offeror may enter data regarding the cost proposal. The system does not allow the Full Proposal to be submitted without completing this Cost Proposal web form. Offerors may choose to not enter information in the Cost Proposal web form since the Cost Proposal cover page, Part 1, Part 2, and Part 3 will be uploaded separately. However, Offerors will still need to go to the last page of the Cost Proposal web form and hit the confirmation button noting that the Offeror has reviewed the empty web form and is submitting the web form blank.

4.6. Protection of Information Uploaded to BAA Website

All data uploaded to <https://baa2.st.dhs.gov/> is protected from public view or download. All submissions will be considered proprietary/source selection sensitive and protected accordingly. Documents may only be reviewed by the registrant, authorized Government representatives, and assigned evaluators.

4.7. Significant Dates and Times

DHS S&T plans to review all as White Papers on the website and subsequent Full Proposals in accordance with the “Anticipated Schedule of Events” set forth in the table in this section, using the evaluation criteria described in Section 5.1. After the White Papers are reviewed, DHS S&T will notify Offerors electronically of the comments from the review panel. A Peer Review Panel will evaluate the Full Proposals using the criteria specified under the evaluation criteria set forth in Section 5.1. Following that review, Offerors will be notified whether or not their proposal has been selected for negotiation. It is anticipated that multiple awards may be made under this BAA.

The Government reserves the right to fund none, some, or all of the proposals received. It is the intention upon completion of proposal evaluation to notify Offerors of an initiation of

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negotiation for awards or rejection of their proposal. Awards will be made based on the evaluation, funds availability, and other programmatic considerations. If requested, feedback will be provided via teleconference for those Full Proposals that are not selected.

Anticipated Schedule of Events*

Anticipated Schedule of Events *		
Event	Due Date	Time (Local Eastern Time)
BAA Posted to Website/FBO	26 August 2013	N/A
Industry Day	24 September 2013	10:00 AM – 3:00 PM
White Paper Website Registration deadline – White Paper Due Date	18 October 2013	4:30 PM
Invitations to submit Full Proposals Sent	15 November 2013	N/A
Full Proposal Website Registration deadline - Full Proposal Due Date	13 December 2013	4:30 PM
Notification of Selection for Award Negotiations	17 January 2014	N/A
Contract Award	TBD	N/A
Kickoff Meetings	TBD	TBD

* These dates are estimates as of the date of this announcement.

4.8. Submission of Late White Papers and Full Proposals

White Papers and Full Proposals **WILL NOT BE ACCEPTED** after the published due dates.

4.9. Further Assistance Needed for this BAA

The applicable electronic address for all correspondence for this BAA is:
Russell_Choate@ibc.doi.gov.

For technical assistance with using the <https://baa2.st.dhs.gov/> website, submit questions to the administrators at dhsbaa@reisystems.com, phone (703) 480-7676.

4.10. BAA Contractual and Technical Questions

All contractual and technical questions regarding this BAA including the published requirements and instructions must be directed to the Contracting Officer at Russell_Choate@ibc.doi.gov. The program and technical staff will not acknowledge, forward, or respond to any inquiries received in any other manner concerning this BAA. Contractual questions and answers will be posted periodically under the Frequently Asked Questions (FAQs) section on the <https://fbo.gov> and <https://baa2.st.dhs.gov> websites.

5. EVALUATION INFORMATION

5.1. Evaluation Criteria

The evaluation of White Papers and 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 address the desired system parameters and strategy as described elsewhere within the announcement. The research approach should be scientifically sound, practical, and technically defensible. The technical approach is innovative and has advantages over other solutions, if successfully implemented. The research must contribute to scientific knowledge in the topic area and the research must enumerate potential benefits of the proposed research. The proposal shall demonstrate an awareness of the state-of-the-art. The proposal should be well-prepared with supportive information that is self-explanatory. 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.

Criterion II: Commercial Applicability: The proposed concept and methodology is clearly described and includes a discussion or teaming agreement with a commercial entity with an established or emerging market for the proposed technology. Of importance is how the proposed technology will be transitioned into a sustainable commercial market and what the intended use would be.

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. Proposals that utilize industry-academic partnering or utilize industry-Government partnering which enhances the development of novel S&T advances will be given favorable consideration.

Criterion V: Cost Realism: 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.

Evaluation of White Papers and Full Proposals will be based on an assessment of the overall best value to the government based on the aforementioned criteria. Awards will be made based upon Full Proposal evaluation, funds availability, and other programmatic considerations, including awards to lesser rated proposals where orthogonal or alternative approaches and technologies are deemed to be more technically advantageous.

NOTE: DHS S&T reserves the right to select for award and fund all, some, or none of the Full Proposals received in response to this announcement.

5.2. Evaluation Panel

S&T's policy is to ensure an impartial, equitable, and comprehensive evaluation of all proposals and to select the source (or combination of sources) whose offer is most advantageous to the government. All properly submitted White Papers and Full Proposals that conform to the BAA requirements will be evaluated by a review panel comprised of Government and non-Government technical experts drawn from staff within DHS S&T, other DHS components, other Federal agencies, and subject matter experts from Contractor support personnel. All Government personnel are bound by public law to protect proprietary information. Further, Contractor personnel will be used to handle the submissions administratively and may serve as non-voting technical advisors. Contractor personnel who will have access to any proprietary data will be bound by appropriate non-disclosure agreements to protect proprietary and source-selection information and shall certify that they have no financial interest in any submissions evaluated. They will not be permitted to release any source-selection information to third parties, including others in their organization. Contractors will serve as non-voting members of the Peer Review Board. Submissions and information received in response to this BAA constitute permission to disclose that information to certified evaluators under these conditions.

6. AWARD ADMINISTRATION INFORMATION

6.1. Comments or Concerns about Solicitation

If Offerors have any comments or concerns about this solicitation, the Contracting Officer can be contacted at:

Russell Choate
Department of the Interior
Interior Business Center
Acquisition Services Directorate
Division III
P.O. Box 1420
Sierra Vista, AZ 85636
Russell_Choate@ibc.doi.gov

7. OTHER INFORMATION

7.1. Government Property, Government Furnished Equipment (GFE) and Facilities

The Government may provide government-furnished equipment (GFE), resources (GFR), information (GFI), or services (GFS) under the terms of each negotiated contract or agreement. GFE, GFR, GFI, or GFS requested by an Offeror must be factored into the Offeror's project cost. Each Offeror must provide a very specific description of any equipment or hardware it needs to acquire to perform the work. This description should indicate whether or not each particular piece of equipment or hardware will be included as part of a deliverable item under the resulting award.

In addition, this description should identify the component, nomenclature, and configuration of the equipment or hardware that it proposes to purchase for this effort. The Government wants to have the contractor purchase the equipment or hardware for deliverable items under its contract. It will evaluate case-by-case the purchase, on a direct reimbursement basis, of special test equipment or other equipment, not included in a deliverable item will be evaluated for allowability on a case-by-case basis. Maximum use of Government integration, test, and experiment facilities is encouraged in each of the Offeror's proposals.

Government research facilities may be available, and should be considered as potential GFE. These facilities and resources are of high value, and some are in constant demand by multiple programs. The use of these facilities and resources will be negotiated as the program unfolds. Offerors should explain which of these facilities they recommend and why.

If any prototype, instrument or device that is produced during the period of performance of a funded project, a sample shall be delivered to DHS S&T CBD before the end of the period of performance for demonstration purposes. More specific information about the provision of a sample(s) will be incorporated in the Statement of Work.

7.2. SAFETY Act

As part of the Homeland Security Act of 2002, Congress enacted the Support Anti-Terrorism by Fostering Effective Technologies Act of 2002 (the "SAFETY Act"). The SAFETY Act puts limitations on the potential liability of firms that develop and provide qualified anti-terrorism technologies. DHS S&T, acting through its Office of SAFETY Act Implementation (OSAI), encourages the development and deployment of anti-terrorism technologies by making available the SAFETY Act's system of "risk management" and "liability management." Offerors submitting proposals in response to this BAA are encouraged to submit SAFETY Act applications for their existing technologies. They are invited to contact OSAI for more information, at 1-866-788-9318 or helpdesk@safetyact.gov. They also can visit OSAI's Web site at www.safetyact.gov.

7.3. Chemical and Biological Weapons Convention (CWC or BWC) Compliance Documentation

Those Offerors whose full proposals are selected for funding, will be provided two forms which will need to be completed and expeditiously returned to the DHS S&T Project Office. Blank forms will be provided with the letter confirming selection of the proposal. These forms consist of the following:

- CWC or BWC Treaty Compliance Project Summary Form
- CWC or BWC Checklist

7.4. Export Control Considerations

International Traffic in Arms Regulations (ITAR) may apply to one or more of the topics in this BAA. Foreign nationals must meet the requirements for participation set by those regulations, if required.

7.5. Security Classification

No Classified Project Description Forms or Full Proposals (or portions of proposals) will be accepted.

7.6. Information for White Paper and Full Proposal Respondents

This BAA seeks to solicit sound scientific studies and techniques to address the DHS Environmental Monitoring Project objectives set forth in Section 1.8.2. It will not be construed as an obligation on the part of the Government to acquire any products or services. No entitlement to payment of direct or indirect costs or charges by the Government will arise as a result of submission of responses to this BAA and the Government's use of such information. Respondents to this BAA may be requested to provide additional information based on their submittals. Unnecessarily elaborate responses containing extensive marketing materials are not desired.

7.7. Subcontracting Plan

Successful contract proposals that exceed \$650,000.00, submitted by all but small business concerns, will be required to submit a Small Business Subcontracting Plan in accordance with FAR 52.219-9, prior to award.

7.8. Additional Deliverables

Performers should define additional program-specific deliverables as appropriate for the proposed approach. The Government may describe additional deliverables at the time full proposals are requested.

It is desired, whenever possible, that final reports be in a format that is publishable in appropriate scientific journals so that peer review can be conducted.

7.9. Reporting

The following *minimum* deliverables will be required under traditional procurement Contracts awarded to those Offerors whose Full Proposals are selected for award.

Monthly Project Status Reports

Reports of project status will be solicited on a monthly basis from all performers. These reports will be electronically submitted to the Program Manager within fifteen days after the last day of each month. The Monthly Project Status Report should be in a standardized format to collect the following information:

Static Information (Information that does not change monthly over the project):

- Project Title
- DHS Project Control #
- Period of Performance
- Principal Investigator's Name, Telephone Number, E-mail and Unclassified/Secure Facsimile Number(s)
- Performer's Financial Contact Name and Telephone Number

Monthly Update Information To Be Provided in Bulleted or Short Narrative Format:

- Activity During the Past Reporting Period (month)
- Progress Achieved Against Deliverable(s) During Reporting Period
- Progress Achieved Against Project Milestones and Tasks During Reporting Period
- Deliverables Submitted This Period
- Milestones Reached/Achieved This Period
- Other Noteworthy Accomplishments (Meetings, Presentations, Publications, etc.)
- Topics of Concern/Slippage (Technical, Schedule and/or Cost)
- Recovery Plan (if needed)
- Explicit Plans for Next Month
- Project Budget Information (Amount Spent During Reporting Period, Cumulative Amount Spent Since Project Inception, and Amount of Funding Remaining)

Performers are requested to provide monthly update information only in those sections of the form that are applicable to the activities performed during the reporting period. If there is no updated information to report in a section, it can be marked "N/A" for Not Applicable, or left blank.

The following deliverables, primarily in contractor format, are anticipated as necessary. However, specific deliverables should be proposed by each Offeror and finalized with the contracting agent:

- Monthly Progress Status Reports
- Presentation Materials
- Other Documents or Reports

- Prototype Systems
- Testing Data
- Final Report (suitable for publishing and peer review)

7.10. Project Conferences, Meetings and Reviews

Program status reviews will be held on a quarterly basis in person or by phone to provide a forum for reviews of the latest results from experiments and any other incremental progress towards the deliverables and major demonstrations. For costing purposes, Offerors should assume that each year of the contract one of these one-day meetings will be at or near DHS S&T, Washington D.C., one meeting will be held at the contractor's facility or a near-by government facility, and two meetings will be held by phone.

DHS S&T intends to host an annual conference for all performers to present their project progress. The conference will likely be in the Washington, DC area. Offerors should assume include the cost of attending this conference each year of the contract period.

7.11. Certificate of Current Cost or Pricing Data

Successful contract proposals that exceed \$700,000.00 may require the submission of a Certificate of Current Cost or Pricing Data in accordance with FAR 15.403-4(b)(2), prior to award.

7.12. Test and Evaluation Facilities

Department of Homeland Security Science & Technology Directorate may make available appropriate test and evaluation facilities to support this program. Offerors should provide any specific requirements needed for test and evaluation of their proposed concept in their white papers and proposals.

7.13. Hazardous Materials

Depending on the topic, Offeror may choose to or be required to utilize hazardous materials during the course of the project development effort. If the government provides hazardous samples as part of the developmental and operational testing, information on the samples will be provided to the successful Offerors requiring such samples.

Hazardous material, as used here, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract). If the successful Offerors choose to use their own hazardous samples, Offerors must meet the requirements for the identification and material safety as follows:

HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SECURITY DATA

- (a) "Hazardous material," as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract).
- (b) The Offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material (*If none, insert "None"*) Identification No.

- (c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.
- (d) The apparently successful Offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful Offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful Offeror being considered nonresponsible and ineligible for award.
- (e) If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.
- (f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.
- (g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.
- (h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:
 - (1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to—
 - (i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;

- (ii) Obtain medical treatment for those affected by the material; and
 - (iii) Have others use, duplicate, and disclose the data for the Government for these purposes.
- (2) To use, duplicate, and disclose data furnished under this clause, in accordance with paragraph (h) (1) of this clause, in precedence over any other clause of this contract providing for rights in data.
- (3) The Government is not precluded from using similar or identical data acquired from other sources.
- (i) Except as provided in paragraph (i)(2), the Contractor shall prepare and submit a sufficient number of Material Safety Data Sheets (MSDS's), meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous materials identified in paragraph (b) of this clause.
- (1) For items shipped to consignees, the Contractor shall include a copy of the MSDS's with the packing list or other suitable shipping document which accompanies each shipment. Alternatively, the Contractor is permitted to transmit MSDS's to consignees in advance of receipt of shipments by consignees, if authorized in writing by the Contracting Officer.
- (2) For items shipped to consignees identified by mailing address as agency depots, distribution centers or customer supply centers, the Contractor shall provide one copy of the MSDS's in or on each shipping container. If affixed to the outside of each container, the MSDS's must be placed in a weather resistant envelope.

8. APPENDICES

- 8.1. Appendix A – List of Acronyms
- 8.2. Appendix B – Definition of Technology Readiness Levels (TRLs)
- 8.3. Appendix C – Definition of Manufacturing Readiness Levels (MRLs)
- 8.4. Appendix D – Notional aerosol concentration profiles for release scenarios
- 8.5. Appendix E – “Full Proposal Summary of Costs and Related Information”

8.1. Appendix A – List of Acronyms

ACPLA	Agent Containing Particle per Liter of Air
BAA	Broad Agency Announcement
CA	Cooperative Agreement
CBD	Chemical and Biological Division
DHS	Department of Homeland Security
DOE	Department of Energy
FAQs	Frequently Asked Questions
FAR	Federal Acquisition Regulations
FedBizOps	Federal Business Opportunities (www.fbo.gov)
FOUO	For Official Use Only
FFRDC	Federally Funded Research and Development Center
G&A	General and Administrative
GFE	Government-Furnished Equipment
GFI	Government-Furnished Information
GFR	Government-Furnished Resources
GFS	Government-Furnished Services
HBCU	Historically Black Colleges and Universities
HSPD	Homeland Security Presidential Directive
HUB	Historically Underutilized Businesses
IA	Interagency Agreement
IR&D	Independent Research and Development
LRIP	Low-Rate Initial Production
MI	Minority Institutions
MRL	Manufacturing Readiness Level
OSAI	Office of SAFETY Act Implementation (DHS)
PDF	Portable Document Format
PL	Public Law
RFP	Request for Proposal
RDT&E	Research, Development, Test and Evaluation
S&T	Science and Technology
SAFETY Act	Support Anti-Terrorism by Fostering Effective Technologies Act 20
SDB	Small Disadvantaged Businesses
TRL	Technology Readiness Level

8.2. Appendix B – Definition of Technology Readiness Levels (TRLs)

	Level	TRL Definitions	DHS TRL Descriptions
Research and Development	1	Basic principles observed and reported	Scientific research begins the first steps toward applied research and development. Examples include paper studies of a technology’s basic properties, exploration of a technical phenomenon, and definition of a technical concept. This level represents the origin of technology readiness.
	2	Technology concept and/or application formulated	Once basic principles are observed and proven repeatable, practical applications can be formulated. Applications are speculative and there may be no proof or detailed analysis to support the assumptions. Examples are limited to analytic studies, device phenomenology, and experimentation.
	3	Analytical and experimental critical function and/or characteristic proof-of-concept	Active research and development is initiated. This includes analytical and laboratory studies to physically validate analytical predications of separate elements of the technology. Examples include components that are not yet integrated.
Testing and Demonstration	4	Component and/or breadboard validation in laboratory environment	Basic technological components are integrated to establish that they will work together. Examples include integration of modules and components in the laboratory.
	5	Component and/or breadboard validation in relevant environment	The basic technological components are integrated with reasonably realistic supporting elements so it can be tested in simulated environment. Examples include “high-fidelity” laboratory integration of components and software.
	6	System/subsystem model or prototype demonstration in a relevant environment	Representative model or prototype system is tested in a relevant environment. Represents a major step up in a technology’s demonstrated readiness. Examples include testing a prototype in a high-fidelity laboratory environment or in a simulated operational environment.
	7	System prototype demonstration in an operational environment	Prototype near, or at, planned operational system level. Represents a major step up from TRL 6, requiring demonstration of an actual system prototype in an operational environment.
Production and Deployment	8	Actual system completed and qualified through test and demonstration	Technology had been proven to work in its final form and under expected operational deployment conditions. In almost all cases, this TRL represents completion of system development. Examples include test and evaluation of the system in its intended system configuration and operational requirement.
	9	Actual system proven through successful mission operations	Actual application of the technology in its final form and under mission conditions, in accordance with the user’s Concept of Operations.

8.3. Appendix C – Definition of Manufacturing Readiness Levels (MRLs)

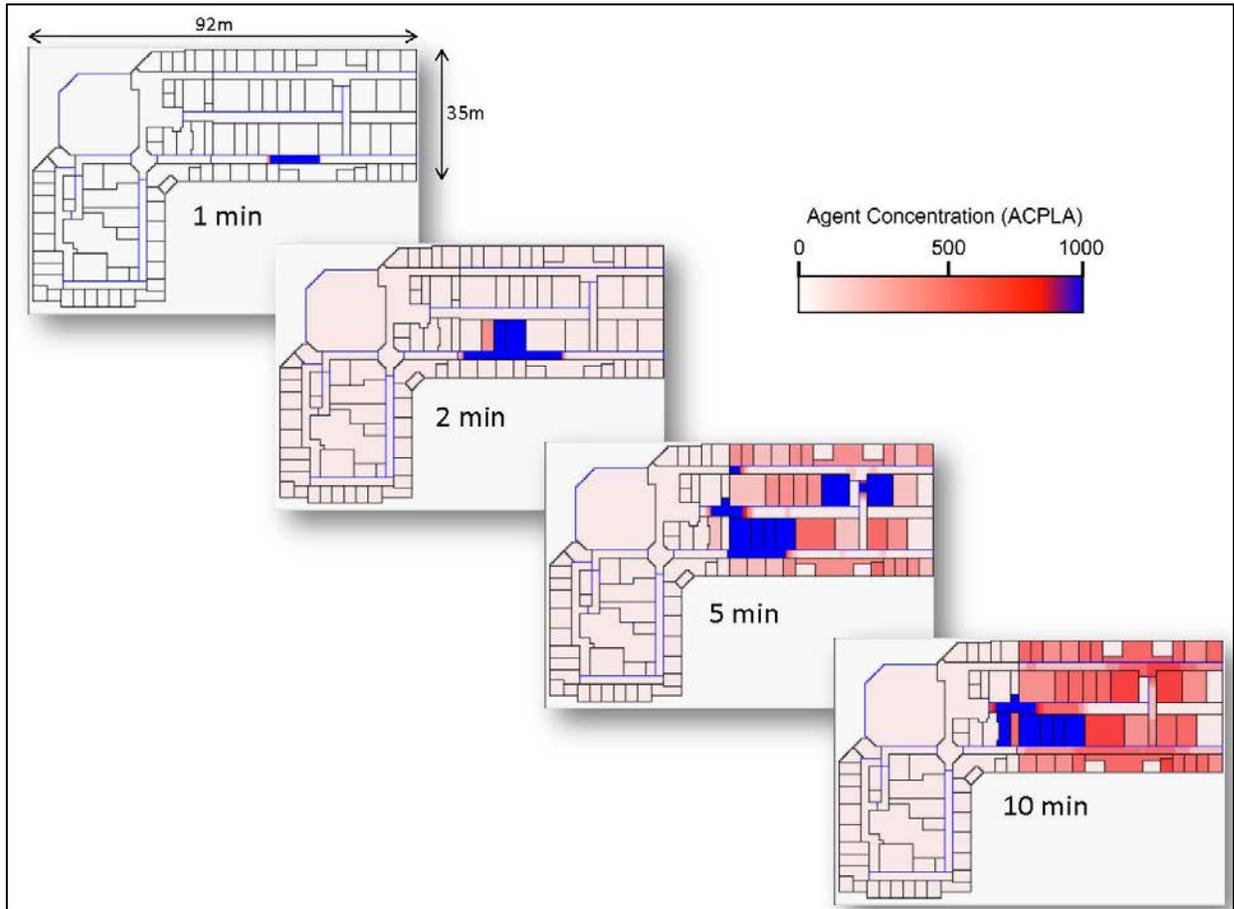
* MRL 1 and 2: The lowest MRL a user can achieve or begin to address readiness is 3, since it is assumed that a technology or system at a TRL 1 or 2 does not allow for a meaningful ability to address manufacturability.

	Level	MRL Definition	DHS MRL Descriptions
Research and Development	1	Manufacturing feasibility assessed	n/a *
	2	Manufacturing concepts defined	n/a *
	3	Manufacturing process development	This begins the first real demonstrations of the manufacturing concepts. Identification of current manufacturing concepts or producibility has occurred and is based on laboratory studies. Key components needed for breadboards can be produced.
Testing and Demonstration	4	Critical manufacturing processes designed	Technologies have matured sufficiently to determine required manufacturing technology development investments; processes to ensure manufacturability, producibility and quality are in place; and manufacturing risks have been identified for prototype build. Key manufacturing processes have been identified, assessed in the laboratory and potential manufacturing problems have been documents.
	5	Initial manufacturing system in place	The Industrial Base has been assessed to identify potential manufacturing sources and yields. Identification of enabling/critical technologies and components is complete and prototypes have been created. Producibility assessments of key technologies and components are ongoing and tooling and machines have been demonstrated in the lab. A manufacturing strategy has been refined and a risk management plan has been incorporated. A cost model has been constructed.
	6	Manufacturing process demonstrated	An initial manufacturing approach has been developed. The majority of manufacturing processes have been defined, characterized and are available, but there are still significant engineering and/or design changes. Producibility assessments of key technologies are complete. Production demonstrations on systems/subsystems in a relevant environment are complete to include prototype materials, tooling and test equipment, and personnel skills.
	7	Manufacturing process matured	System detailed design activity is underway. Material specifications have been approved and materials are available. Few design changes are occurring. Production planning is complete and prototypes represent actual form, fit and function. Production tooling and test equipment design and development have been initiated. Low-rate initial production is ready. The cost model has been updated.
Production and Deployment	8	Low rate initial production	Detailed system design is essentially complete and sufficiently stable to enter low-rate initial production. All materials are available to meet this planned production schedule. Manufacturing and quality processes and procedures have been proven in a pilot line environment. Manufacturing processes demonstrate acceptable yield and producibility levels. The Cost Model is stable and is validated.
	9	Full rate production	The system, component or item has been previously produced, is in production, or has successfully achieved low rate initial production. There are minimal design changes and design goals have been met. Materials are available to meet planned rate production schedules. Manufacturing processes and procedures are established and controlled in the production environment to meet appropriate quality level. Production risk monitoring is ongoing. Actual cost model has been developed with possible evolutionary acquisition.

8.4. Appendix D – Notional aerosol concentration profile for indoor building release scenario

Simulation result for burst release of 1 gram of bacterial agent within the hallway of a standard office building floor. Initial concentration of material (at several thousands of particles per liter of air) is localized near the point of release, but the contamination quickly expands within the space as several additional hot spots develop and a low level of contamination is seen moving through the entire floor. Past the 10 minute time point, the material further distributes throughout the space and an equilibrium concentration is reached.

ACPLA = Agent Containing Particle per Liter of Air



8.5. Appendix E – Full Proposal Summary of Costs and Related Information Form

Full Proposal (Phase 2) Summary of Costs and Related Information

(Add additional rows, as required. Submit as attachment to Cost Proposal)

TASK INFORMATION

Project Title:
 Total Cost of Base Year Effort: \$
 Total Cost of Base + Option Year Efforts: \$
 Base Year Fixed Fee (Amount & % of cost): \$ (%)
 Base Year Period of Performance (mos): months
 # Option Years Proposed (if any):

TASK INFORMATION

Base Year Tasks: (Add additional rows, if needed)

Task #1: (Amount & Task Title) \$
 Task #2: (Amount & Task Title) \$
 Task #3: (Amount & Task Title) \$
 Task #n: (Amount & Task Title) \$
 Base Year Total (Amount) \$

Option Year #1 Tasks (if any):

Task #1: (Amount & Task Title) \$
 Task #2: (Amount & Task Title) \$
 Task #3: (Amount & Task Title) \$
 Task #n: (Amount & Task Title) \$
 Option Year #1 Total: \$

Option Year #n Tasks (if any):

Task #1: (Amount & Task Title) \$
 Task #2: (Amount & Task Title) \$
 Task #3: (Amount & Task Title) \$
 Task #n: (Amount & Task Title) \$
 Option Year #2 Total: \$

LABOR HOURS AND COSTS

Total Number of Base Year Labor Hours: hrs.
 Total Cost of Base Year Direct Labor: \$
 Average Cost of Base Year Labor Hours: \$ per hr.
 Fringe Burden (Amount & %): \$ (%)
 Overhead (Amount & %): \$ (%)
 G&A (Amount & %): \$ (%)
 Consultant(s) Fees Amount: \$

MATERIALS COSTS

Total Cost of Materials for Base Year: \$

Types of Materials:

Shipping Costs: \$

SUBCONTRACTING COSTS (If any):

Cost of Base Year Subcontract Effort: \$

TRAVEL COSTS

Total Cost of Base Year Travel: \$

Cost & Description of Trip #1 (# of
travelers, duration & Locations) \$

Cost & Description of Trip #2 (# of
travelers, duration & Locations) \$