**Broad Agency Announcement (BAA)**
**Call Solicitation HSHQDC-17-R-B0003 A000005**
**Call 1 under BAA HSHQDC-16-R-B0004**
**Project: Advanced X-ray Systems Development**

# 1. Introduction

**1.1.** This BAA Call solicitation (HSHQDC-17-R-B0003) is a call issued against Department of Homeland Security (DHS), Science & Technology (S&T), Explosives Division (EXD), 5-Year Broad Agency Announcement (BAA), HSHQDC-16-R-B0004 "Apex Screening at Speed Program (Apex SaS)." All terms and conditions of the DHS S&T EXD 5-Year BAA HSHQDC-16-R-B0004 apply to this solicitation unless otherwise noted herein.

**1.2.** The potential use of improvised explosive threats with homemade explosives (HME) by terrorists poses many challenges to the Transportation Security Administration (TSA) in conducting aviation security passenger screening. This problem is made increasingly difficult by the considerable complexity of contemporary items and materials found in checked and carry-on baggage screened at major airports in the United States. Maintaining a high threat detection posture in this operating environment can require screening operations to tolerate significant incidence of false alarms. Substantial Transportation Security Officer (TSO) resources must be used to adjudicate the false alarms in order to maintain normal checked baggage screening operations.

**1.3.** The screening of passenger baggage using traditional Explosives Detection Systems (EDS) for checked baggage and advanced technology (AT) X-ray systems for carry-on baggage has faced many challenges in developing a broadly applicable detection capability for explosive threats that addresses commercial, military and HME explosives threats. Established primary checked and carry-on baggage explosives detection technologies evolved from medical X-ray systems. These conventional transmission X-ray methods utilize two derived discriminating signatures: effective atomic number and density of screened objects. These discriminators perform well for identifying materials where variations in the chemical composition are minimal, such as commercial and military explosives. HMEs are usually formulated using numerous household ingredients; lacking tight quality control in their preparation, and they have high variations in their chemical composition. The detection of HMEs using these two discriminators requires expansion of the system detection windows, which can result in ambiguities with many common stream-of-commerce items (other items that may be found in checked and carry-on baggage). This leads to significantly higher primary screening false alarm rates generating a greater demand for TSO secondary screening to resolve false alarms. The net effect is increased TSO manpower requirements and reduced screening throughput, which results in higher screening costs to TSA and significant passenger inconvenience due to long screening delays.

**1.4.** Improvements to current checked and carry-on baggage screening system operating characteristics are needed that will provide an acceptable level of detection on all threats

but also significantly reduce primary screening false alarms and improve overall screening throughput. Enhancing the ability to reduce/resolve aviation security screening alarms is identified in the TSA Strategic Five-Year Technology Investment Plan (August 12, 2015) and by the Aviation Security Integrated Product Team as a priority capability gap. The TSA's Electronic Baggage Screening Program has established an operational performance objective to require checked baggage primary automated screening performance to demonstrate a net false alarm rate of less than 10%. In addition, the TSA's Passenger Screening Program (PSP) has identified the need for increasing checkpoint passenger screening throughput with the goal of 300 passengers per lane per hour. This will require primary checkpoint baggage screening systems to screen carry-on baggage in a similar manner as checked baggage, maintaining the checkpoint level of security without the need for divestiture, in order to increase passenger throughput at the checkpoint.

**1.5.** DHS S&T has a need to identify advanced technologies that could increase the measurement or mathematical discrimination between HMEs and stream-of-commerce clutter in checked baggage and carry-on items. Previous research and development (R&D) investments (such as Explosives Division (EXD) BAA13-05 "Advanced X-ray Material Discrimination") initiated efforts to explore additional signature methodologies to discriminate between HMEs and stream-of-commerce clutter, improve screening system detection capability, and reduce false alarm rates. In these R&D acquisition efforts, S&T made investments to prove the feasibility and effectiveness of many discriminating x-ray signature approaches within the context of the TSA CONOPS through development and testing of robust test bed hardware and software prototypes.

This R&D Acquisition will continue the development of advanced X-ray material discrimination methodologies proven out in previous work and mature testbed prototype technologies into full up Advanced X-ray System prototypes addressing these technical challenges. The efforts under this Call will endeavor to mature technology developments (similar to those of EXD BAA13-05) into full-up systems ready for developmental testing and evaluation (DT&E) at a government facility such as the Transportation Security Laboratory (TSL) under real world conditions. This BAA will focus on three specific topic areas:

- Advanced X-ray Systems Development – Development and testing of full-up system engineering design models (EDMs) (Technology Readiness Level (TRL) 6-7 level of maturity)

- Advanced Algorithms and System Integration – Development/maturation of threat detection and false alarm reduction algorithms, integration into operational/prototype systems and demonstration of real time operation.

- Supporting Component Technology Development – Development/maturation of system components and subsystems (such as X-ray Sources and Detectors) necessary to evolve laboratory and experimental prototypes into full up X-ray system designs able to meet the Advanced X-ray Systems requirements.

## 2. Project Description/Scope

**2.1.** BAA Call solicitation HSHQDC-17-R-B0003 will advance aviation security and improvised explosive threat detection by maturing enabling technologies and technology prototypes representative of those developed under Explosives Division (EXD) BAA 13-05 into TRL level 6-7 checked and checkpoint baggage screening EDMs. The EDMs developed will be demonstrated and tested at a Government test facility (most likely the TSL) under operationally realistic Stream of Commerce (SOC) screening conditions.

The primary technical focus is demonstrating full-up system capabilities that significantly enhance the capability to robustly detect improvised explosive threats, reduce primary baggage screening false alarm rates on all explosive threat classes, and increase passenger baggage screening throughput. This BAA Call is predominantly seeking responses offering ***significant*** enhancements to current passenger baggage screening system detection and false alarm capabilities. Minor improvements to existing capabilities are not of interest for this BAA Call. Incremental improvements to existing system capabilities are of interest under this BAA Call and will be evaluated in relation to the level of performance enhancement and/or significant cost savings that are anticipated. For incremental improvements to existing system capabilities the proposer must provide detailed analysis to substantiate the level of performance enhancement and/or cost savings claims.

The majority of efforts under this BAA Call are anticipated to be Type II efforts, 24 months in duration, as defined by BAA HSHQDC-16-R-B0004 paragraph 2.2. A transition of technology to TSA is anticipated to be in a period of 2-3 years; however S&T also has interest in Type III technology efforts as defined in EXD 5-Year BAA HSHQDC-16-R-B0004 (period of performance 12 months or less) that may offer nearer term retrofit capability into currently deployed EDS and AT platforms.

**2.2.** Achieving significant enhancements in passenger baggage screening for explosive threat detection requires mature systems using next generation techniques for distinguishing the complex stream-of-commerce bag clutter from explosive threats. This BAA Call solicits responses to the following three technical topic areas (TTA):

- Advanced X-ray Systems Development
- Advanced Algorithms and System Integration
- Supporting Component Technology Development

DHS S&T anticipates multiple awards for each TTA (Topic Areas 1-3) under this BAA Call pending the quality of proposals received and the availability of funds. S&T reserves the right to make none, one, or multiple awards from this BAA Call.

**2.3.** Central to this R&D acquisition will be the use of collaborative, multi-faceted research and development teams to achieve the desired end goals for the Department of Homeland Security (DHS) Science and Technology Directorate (S&T) and the Transportation Security Administration (TSA). Candidate team members may consist of, but are not limited to, original equipment manufacturers (OEMs), university researchers, national laboratories, third party innovators of algorithms, and component manufacturers in the

supply chain. The formation of strong systems development teams combining practical industry engineering experience with fundamental and applied research capabilities in multi-disciplinary fields including mathematics, x-ray physics, explosive/materials chemistry, and information science provides the greatest potential for developing and transitioning enhanced EDS and/or AT system capabilities to TSA for deployment in aviation security environments.

Each TTA is discussed in detail below and specific objectives for each TTA are also provided. Of particular note, it is anticipated that both metrics and analysis techniques to measure the development progress will evolve during the project.

# 3. Technical Topic Areas

## 3.1. TTA #1 Advanced X-ray Systems Development

The focus of this TTA is to continue to mature the advanced X-ray technologies for passenger X-ray baggage systems investigated in BAA-13-05 and other EXD development efforts. This effort will primarily be focused on maturing enabling technologies and technology prototypes representative of those developed under BAA 13-05 and other efforts into TRL level 6-7 checked and checkpoint baggage screening EDMs and demonstrating full-up system capabilities. These efforts are envisioned to be Type II efforts as defined in Section 2.2 of BAA HSHQDC-16-R-B0004 with a 24 month period of performance. The goal is to achieve a significantly enhanced capability to robustly detect explosive threats, reduce primary baggage screening false alarm rates on all explosive threat classes, and increase passenger baggage screening throughput under real life operating conditions. The EDMs developed under this TTA will be demonstrated and tested at a government test facility (such as the TSL) under operationally realistic Stream of Commerce (SOC) screening conditions. All parties that have advanced X-ray system concepts meeting the maturity level of this TTA are encouraged to propose regardless of whether they participated in BAA-13-05 or not.

The advanced technologies listed below are representative only of technologies in which EXD has made investments in the past:

- Multi-Energy Transmission X-ray Imaging
- Coded Aperture X-ray Imaging
- X-ray Diffraction Imaging
- Compton Scatter Imaging
- Phase Contrast Imaging

The above technologies are provided to help interested offerors understand potential program technical areas but are not meant to be inclusive for this BAA Call.

A secondary goal is to support integration of third party software components, such as those discussed in TTA #2, into OEM equipment with greater ease. Technology developed within this TTA will need to support an open architecture that will allow

technology partners (including those that may be performing under TTA #2) access to the raw measurement data and the data processing resource environment for the purpose of algorithm development, software integration and testing initiatives. The goal is to facilitate opportunities for innovation, especially for third party algorithms, and increase the ability for OEMs to better deliver needed capability through such partnerships. Recognizing the significant research and development under this TTA, the goal will be to provide a preliminary Interface Control Document (ICD) describing the data, metadata formats, and a CONOP document on how to interface to the system. Such a document should allow technology partners (including those that may be performing under TTA #2) to access required measurement data and processing resources for the purpose of algorithm integration and testing.

S&T will also entertain concepts for retrofitting In-Service EDS Systems to significantly improve false alarm rate performance. These are envisioned to be Type III efforts for hardware/software retrofit of in-service checked baggage EDS systems that will significantly enhance detection of improvised explosive threats, significantly reduce In-Service EDS false alarm rates, and improve system throughput. These efforts should give preference, where possible, to retrofit alternatives that can be integrated into the In-Service EDSs as field change kits, without the requirement for shipment of EDS equipment to the vendor factory.

Within the scope of this TTA, S&T is also interested in capabilities for advanced X-ray screening system solutions viable for the checkpoint environment that can screen carry-on baggage without any requirements for divestiture of items (i.e. no items (electronics, liquids, etc.) shall need to be removed from the bag prior to security screening). Computerized Tomography (CT) solutions as well as other technologies are welcomed, but solutions must include a significant unit cost reduction or capability improvement (lower probability of false alarm, higher probability of detection, greater scan rate) from current CT-based solutions. In addition to the requirements for explosives threat detection, enhanced detection capabilities for weapons, contraband and other prohibited items are of interest. The EDMs developed under this effort should be ready for developmental testing at the TSL within 24 months and ready for operational testing at the TSA Transportation Security Integration Facility (TSIF) within 30 months.

The development efforts under this TTA shall have formal design reviews such as System Concept Review (SCR), Preliminary Design Review (PDR), Critical Design Review (CDR), as well as test readiness and test results reviews. These reviews will act as key go-/no-go decision points and will be further defined if a request for full proposal is made by the Government. Section 5 of this BAA Call Solicitation shows notional schedules for TTA #1 efforts. Offerors should include a process for incorporating human factors and human performance design principles throughout the development of the equipment. SCR, PDR, and CDR should contain subject matter expert design inputs for Human Factors (HF) or Human Systems Integration (HSI). An initial project management plan will be due fifteen (15) days after award. Offerors must include personnel, test facilities & capabilities, and initial project timelines in the plan. Section 4.1 below identifies key deliverables for efforts under this TTA.

### 3.2. TTA #2 Advanced Algorithms and System Integration

Under EXD BAA-13-05 several advanced reconstruction and automated threat recognition (ATR) algorithm methodologies were explored and assessed for their feasibility and effectiveness to enhance the detection of explosives threats in checked and carry-on baggage screening. In this TTA, S&T is seeking to continue exploration and development of advanced reconstruction and ATR algorithm technologies for checked and carry-on baggage. A primary interest is in enhancing detection capabilities to cover a broader range of threat detection classes, significantly reduce primary screening false alarms and detect threats at TSA Tier levels higher than 2. This includes explosive and prohibited items that are listed for checked or carry-on baggage. The efforts proposed under this TTA section must demonstrate that the technique can rapidly reach TRL 6-7 maturity to enhance explosive threat detection capabilities in passenger baggage screening X-ray equipment within the Type II 24 month time frame. Algorithms should have the capability to adjust parameters affecting probability of false alarm, probability of detection, and screening speed in order to optimize the screening capability to passenger risk and the general threat environment.

Traditionally, OEMs have developed their own in-house detection algorithm methodologies. Since both third party (non-OEM developed) and OEM developed advanced ATR algorithms can be viable on an OEM platform, this TTA strongly encourages collaborative third party (non-OEM) and OEM algorithm development teams. These efforts are envisioned to be predominantly Type II efforts as defined in Section 2.2 of BAA HSHQDC-16-R-B0004 with a maximum 24 month period of performance.

Also of interest within the scope of this TTA are Type III efforts, as defined in Section 2.2 of BAA HSHQDC-16-R-B0004 (12 months or less), that focus on developing and transitioning advanced explosives detection algorithms to enhance the detection of improvised explosive threats and reduce the false alarm rates in deployed TSA EDS systems. These efforts should provide a threshold false alarm rate reduction by at least a factor of 2 while maintaining improvised explosive threat detection capabilities. OEMs are encouraged to work with academia and small business partners to develop feasible and effective algorithms to address the root causes of false alarms in deployed EDS. These efforts should provide algorithms that can be deployed with minimal field changeable modifications (for example, adding a processing sidecar) to the existing deployed EDS equipment. Efforts proposed under the Type III section of this TTA must demonstrate that the methodology can rapidly reach TRL 6-7 maturity to enhance explosive threat detection capabilities of passenger baggage screening X-ray equipment within the Type III 12 month time frame.

The advanced reconstruction and automated threat recognition (ATR) algorithm technologies developed under this TTA will be required to be integrated into an operationally viable X-ray platform such as a TTA #1 EDM or an existing OEM X-ray platform and to be demonstrated, tested and evaluated at a government test facility (such as the TSL) under operationally realistic Stream of Commerce (SOC) screening conditions.

In keeping with S&T's interest in maintaining open architecture standards for new

development efforts, the efforts in this TTA shall define and specify an application programming interface (API) that will be used for integrating the enhanced ATR algorithms into the EDM or existing OEM X-ray platform. The API specifications will be delivered to S&T to reflect the "to be built" state and updated with the "as built" and "delivered" states. Offerors should also use a process for incorporating human factors and human performance design principles, as necessary, throughout the development of the algorithm, the API, and the performance specifications.

The development efforts under this TTA shall have formal design reviews such as System Concept Review (SCR), Preliminary Design Review (PDR), Critical Design Review (CDR), as well as test readiness and test results reviews. These reviews will act as key go-/no-go decision points and will be further defined if a request for full proposal is made by the Government. Section 5 of this BAA Call solicitation shows notional schedules for TTA #2 efforts. Offerors should include a process for incorporating human factors and human performance design principles throughout the development of the equipment. SCR, PDR, and CDR should include subject matter experts in design for Human Factors (HF) or Human Systems Integration (HSI). An initial project management plan will be due fifteen (15) days after award. Offerors must include personnel, test facilities & capabilities, and initial project timelines in the plan. Section 4.2 below identifies key deliverables for efforts under this TTA.

### 3.3. TTA #3 Supporting Component Technology Development

Baggage screening X-ray equipment system performance is highly dependent upon the availability of mature X-ray component technologies (such as X-ray sources and detectors) used to acquire X-ray information from the stream-of-commerce objects. This TTA is focused on the development/maturation of X-ray system components that are necessary to evolve laboratory and experimental prototypes into full-up X-ray system designs able to meet the Advanced X-ray Systems requirements. In previous advanced material discrimination R&D efforts many compromises were required in the feasibility and effectiveness evaluation of advanced techniques due to the lack of adequately mature components to support the design concepts. A prime example was assessing the utility of multi-energy imaging in improving detection and reducing false alarms in EDS and Advanced Technology (AT) 2 systems. While multi-energy detector arrays for small scale laboratory use were available, the maturity of arrays with sizes and form factors (i.e. 3 side abuttable to form large arrays), resolution, linearity, dynamic range, uniformity, photon counting rate, and sensitivity to support many of the advance material discrimination design concepts were not available.

This TTA seeks to address these issues by focusing efforts to mature non-Commercial Off the Shelf (COTS) "long- lead" device technology, whose performance and enhanced characteristics are necessary to enable development of advanced X-ray baggage screening systems, such as those under TTA #1, to a TRL 6-7 maturity of systems development. These efforts are envisioned to be predominantly Type II efforts as defined in Section 2.2 of BAA HSHQDC-16-R-B0004 with a maximum 24 month period of performance.

DHS S&T will also consider development of near COTS devices that have clear immediate benefit to X-ray screening systems that are supportable by strong technical

analytical rationale with an accompanying business case. These efforts are envisioned to be Type III, as defined in Section 2.2 of BAA HSHQDC-16-R-B0004 with a maximum 12 months period of performance.

Proposers under this TTA will be required to develop detailed component specifications and provide them to DHS S&T and its stakeholders (such as BAA 13-05 and TTA #1 performers and/or EDS/AT equipment manufacturers) as part of the SCR, PDR and CDR material packages for review and comment. The component specification level of maturity shall be commensurate with the design level of maturity at the corresponding review, (i.e. Functional level of detail at SCR, Preliminary detailed design specifications at PDR, Final detailed design specifications at CDR). The performer will design, build, and test the components developed under this TTA, integrate the component with an operationally viable X-ray baggage screening platform such as a TTA #1 EDM or an existing OEM platform, and evaluate and demonstrate that the component specification requirements have been achieved.

Performers under this TTA will also develop and provide a commercialization plan that will fully describe a manufacturing plan, a quality assurance plan, and sales plan in order to assess the performer's ability to successfully bring the component into the market place. The commercialization plan shall provide an anticipated product cost structure with estimated volume assumptions and end user pricing.

The development efforts under this TTA shall have formal design reviews such as System Concept Review (SCR), Preliminary Design Review (PDR), Critical Design Review (CDR), as well as test, test readiness, and test results reviews. These reviews will act as key go-/no-go decision points and will be further defined if a request for full proposal is made by the Government. Section 5 of this BAA Call solicitation shows notional schedules for TTA #3 efforts. An initial project management plan will be due fifteen (15) days after award. Offerors must include personnel, test facilities & capabilities, and initial project timelines in the plan. Section 4.3 below identifies key deliverables for efforts under this TTA.

# 4. Project Structure

The Advanced X-ray Systems Development BAA Call is structured into three distinct TTAs that aim to 1) develop and demonstrate Advanced X-ray Systems for screening checked and carry-on baggage, 2) provide Advanced Algorithms and System Integration to enhance improvised explosive threat detection and reduce false alarms, and 3) develop and mature Component and Device Technologies necessary to develop TTA #1 Advanced X-ray Systems to TRL 6-7 maturity.

## 4.1 TTA #1 Key Deliverables

The key deliverables required for TTA #1 are:

| DELIVERABLES | DUE DATE |
|---|---|
| Project Management Plan | 15 days after award |

| | |
|---|---|
| Monthly Status Reports | Due monthly until end of project |
| System Performance and Design Specifications | At major milestones |
| Major milestone reviews and materials (SCR, PDR, CDR Test Readiness Reviews (TRR) and Quarterly Status Reviews (QSR), etc.) | Read ahead due 5 day prior to review<br>Final Due at Review meeting |
| Data Collection and Test Plans | Due 30 days prior to Test start |
| Data Collection and Test Reports | Due 15 days after Test Event end |
| Preliminary Interface Control Document (ICD) and a CONOP document | Not more than 24 months after award for Type II<br>N/A for Type I awards |
| Project Final Report – Including all analysis and raw data | Not more than 24 months after award for Type II and<br>Not more than 12 months after award for Type III |
| EDM System Delivery | Not more than 24 months after award for Type II and<br>Not more than 12 months after award for Type III |

### 4.2 TTA #2 Key Deliverables

The key deliverables required for TTA #2 are:

| **DELIVERABLES** | **DUE DATE** |
|---|---|
| Project Management Plan | 15 days after award |
| Monthly Status Reports | Due monthly until end of project |
| Major milestone reviews and materials (SCR, PDR, CDR Test Readiness Reviews (TRR) and Quarterly Status Reviews (QSR), etc.) | Read ahead due 5 day prior to review<br>Final Due at Review meeting |
| Data Collection and Test Plans | Due 30 days prior to Test start |
| Data Collection and Test Reports | Due 15 days after Test end |
| Project Final Report – Including all analysis and raw data | 24 months after award for Type II and<br>12 months after award for Type III |
| API Definition Document | Final due at CDR |
| Advanced Detection Software Algorithm Data Package | Not more than 24 months after award for Type II and<br>Not more than 12 months after award for Type III |

### 4. 3 TTA #3 Key Deliverables

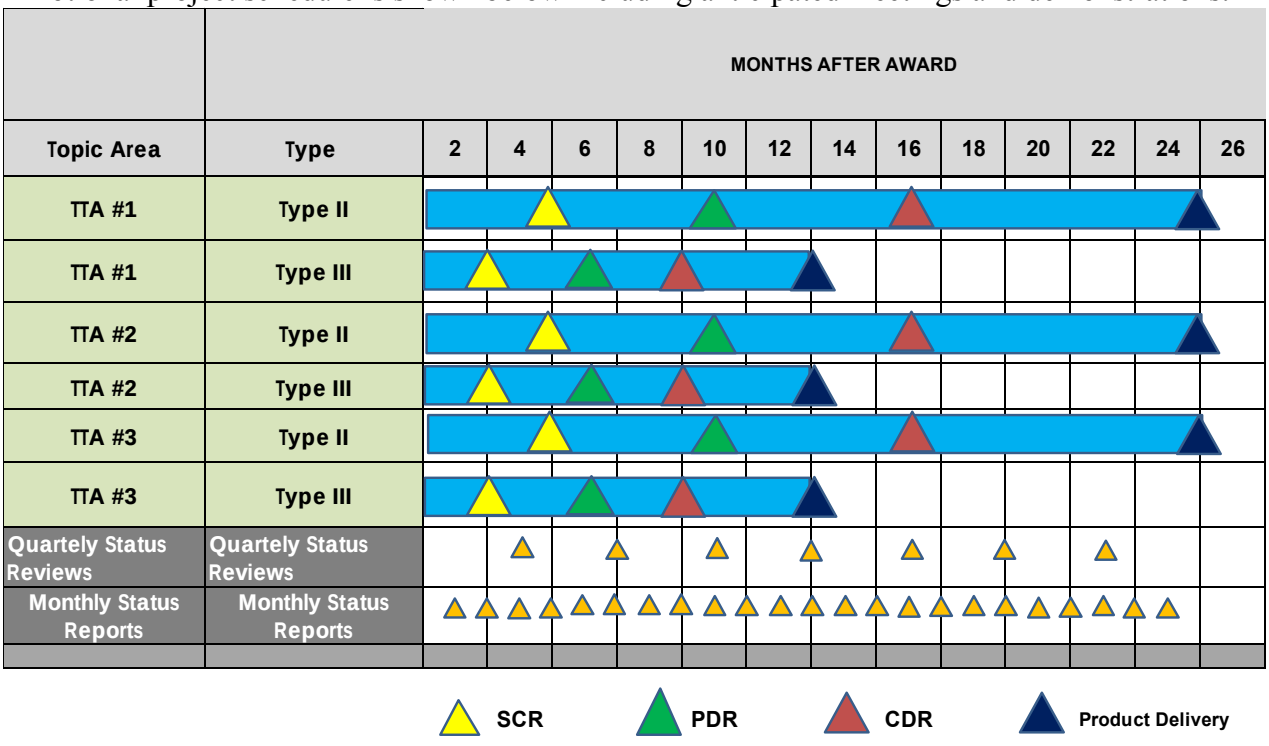
The key deliverables required for TTA #3 are:

| **DELIVERABLES** | **DUE DATE** |
|---|---|
| Project Management Plan | 15 days after award |

| | |
|---|---|
| Monthly Status Reports | Due monthly until end of project |
| Major milestone reviews and materials (SCR, PDR, CDR Test Readiness Reviews (TRR) and Quarterly Status Reviews (QSR), etc.) | Read ahead due 5 day prior to review<br>Final Due at Review meeting |
| Test Reports | Due 15 days after Test end |
| Project Final Report – Including all analysis, raw data, and commercialization plan | Not more than 24 months after award for Type II and<br>Not more than 12 months after award for Type III |
| Component Hardware Delivery | Not more than 24 months after award for Type II and<br>Not more than 12 months after award for Type III |

## 5. Project Schedule/Milestones

A notional project schedule is shown below including anticipated meetings and demonstrations.




## 6. Special Instructions/Notifications

### 6.1 Response Dates

| Event | Time Due | Date or Date Due |
|---|---|---|
| White Papers Due | 12:00 PM Eastern Time | February 13, 2017 |
| Notification of White Paper Evaluation Results | N/A | Approximately 60 days after release of Call |

| | | |
|---|---|---|
| Proposals Due | 12:00 PM Eastern Time | 30 days after notification of white paper evaluation results |
| Notification of Proposal Evaluation Results | | Approximately 90 days after notification of white paper evaluation results |

## 6.2 General Instructions and Information

**6.2.1.** This BAA Call solicitation (HSHQDC-17-R-0003) is only seeking the submission of white papers at this time, subject to the date identified in the "Response Dates" table above. **Full proposals are not being requested at this time.** Invitations to submit full proposals will be extended based on white paper evaluation results in accordance with the date identified in the "Response Dates" table above. Full proposals must be received by the due date identified in the "Response Dates" table above. This Call is open to all responsible sources and is considered to be full and open competition.

**6.2.2.** Procedures for submission of white papers to the DHS S&T Portal are provided in paragraph 8 of BAA HSHQDC-16-R-B0004. Note that offerors must complete the company/organization portal registration PRIOR to submitting a white paper for the first time. Ensure adequate time to complete the company/organization registration as delays in this process will not be authorization for late submissions of white papers.

Company/organization registration information is located in paragraph 10.1 of BAA HSHQDC-16-R-B0004. In addition, each subsequent white paper requires registration in the portal. Information regarding white paper registration is located in paragraph 10.2 of BAA HSHQDC-16-R-B0004. White papers also must comply with the information in BAA HSHQDC-16-R-B00004 paragraph 11.4 regarding Company to Company Agreements.

**6.2.3.** Procedures for submission of invited proposals can be found in paragraph 9 of BAA HSHQDC-16-R-B0004. **Full proposals are not being requested at this time. In accordance with paragraph 8.4 of BAA HSHQDC-16-R-B0004, offerors must submit a white paper that can be evaluated in order to be considered for participation in the submission of proposals.**

**6.2.4.** Offerors may provide multiple white paper submissions; however, each submission must address only one TTA and must be distinct and self-contained without any dependencies on other work of any kind. Each submission must clearly state which TTA is being addressed. All software developed and delivered is required to be subject to security auditing; therefore, the offeror's technical approach must identify how security auditing will occur. DHS expects offerors to follow industry best practices on software design

**6.2.5.** DHS has a strong preference for open source licensing of software for all software developed and delivered, and the licenses for all proposed software deliverables will have to be identified in all submitted full proposals. However, as an alternative to open source release, offerors may also offer a strong technical transition plan for deployment of the technologies developed.

**6.2.6.** As stated in BAA HSHQDC-16-R-B0004, DHS S&T reserves the right to select for award and to fund all, some, or none of the proposals received in response to this BAA Call solicitation.

**6.2.7.** The Evaluation Criteria in BAA HSHQDC-16-R-B0004, Section 11 "EVALUATION OF WHITE PAPERS AND PROPOSALS" apply to this Call.

### 6.3. Foreign Participation

Offerors are reminded that foreign participation may occur as defined in BAA HSHQDC-16-R-B0004, Section 1.3. Offerors, including those located outside the continental United States, should provide full costs (delivery costs included) for any deliverables not anticipated for delivery in a softcopy format. All materials submitted in response to this solicitation shall be in the English language. White papers, and later proposals, received in other than English shall be rejected. Offerors invited to submit proposals shall do so only in terms of U.S. dollars. Proposals received in other than U.S. dollars shall be rejected.

### 6.4. Export Control Requirements

Offerors are reminded of the export control markings required by BAA HSHQDC-16-R-B0004, Section 12.5

### 6.5. Type Classification Ceilings

BAA HSHQDC-16-R-B0004, describes the Type Classifications for proposals. Specific to this call, the ceiling values for each type are as follows:

**6.5.1.** Type I – Type I awards are limited to a total contract value not to exceed $2,000,000.00, not including operational evaluation, pilot, and/or transition options.

**6.5.2.** Type II – Type II awards are limited to a total contract value not to exceed $2,500,000.00, not including operational evaluation, pilot, and/or transition options.

**6.5.3.** Type III – Type III awards are limited to a total contract value not to exceed $1,500,00.00, not including operational evaluation, pilot, and/or transition options.

### 6.6. Travel

For purposes of estimating costs for full proposals, offerors should anticipate travel to three (3) project meetings per year at DHS S&T Headquarters in Washington DC. Travel will be reimbursed in accordance with the limitations set forth in FAR 31.205-46, Travel Costs, and the Federal Travel Regulation. Local travel within a 50-mile radius from the Contractor's facility or the Contractor's assigned duty station will not be reimbursed. This includes travel, subsistence, and associated labor charges for travel time. Travel performed for personal convenience or daily travel to and from work at the Contractor's facility or local Government facility (i.e., designated work site) shall not be reimbursed hereunder. The Contractor shall not be reimbursed for moving or relocation expenses for the Contractor or Contractor employees, and/or subcontractors.

### 6.7 White Paper Requirements

To be considered for award, offerors **MUST** submit white papers and Company to Company Agreements with Noblis, Inc. compliant with the response dates listed in 6.1, in accordance with the requirements in DHS BAA HSHQDC-16-R-B0004. Submissions not in compliance with BAA HSHQDC-16-R-B0004 may be rejected (note: the cover page created by the DHS S&T BAA Portal must be included, but does not count against the page count). White papers will only be accepted via the portal. No emailed white paper submissions will be accepted for review. No classified white papers will be accepted.

### 6.8 Proposal Requirements

Proposals are not being requested under this Open BAA Call.

### 6.9 Contractual or Technical Inquiries

All contractual or technical questions regarding this BAA Call solicitation (HSHQDC-17-R-0003) must be emailed to BAA16-B0004@hq.dhs.gov no later than 12:00 PM Eastern Time on January 18, 2017. Emails submitting questions are to include "Questions for Advanced X-ray System Development BAA Call Solicitation" in the subject line. All questions and responses will be posted as an amendment to this solicitation on Federal Business Opportunities (FBO). Questions will only be accepted and answered electronically.

### 6.10 Order of Precedence

In the event that any of the terms and conditions contained in this solicitation conflict with terms and conditions included in BAA HSHQDC-16-R-B0004, the terms and conditions in HSHQDC-16-R-B0004 shall take precedence.

### 6.11 Sensitive Information

Depending on an offeror's specific proposal and the TTA proposed under, offerors may have access to sensitive information in awards under this BAA Call. DHS S&T will comply with the requirements of HSAR Class Deviation 15-01 and the HSAM Appendix G Sensitive Information Checklist for individual awards under this BAA. Offerors should be aware that complying with

DHS S&T requirements for sensitive information may require developing an IT Security Plan in coordination with DHS CIO. Additionally, HSAR 3052.204-70 (Jun 2006), HSAR 3052.204-71 (SEP 2012), DHS Special Clause Safeguarding of Sensitive Information (MAR 2015) (found in Deviation 15-01), and DHS Special Clause Information Technology Security and Privacy Training (MAR 2015) (found in Deviation 15-01) may be included in any awards under this Call with applicable access to sensitive information.

DHS has and will exercise full control over granting, denying, withholding, or terminating unescorted Government facility, Government systems and/or sensitive Government information access for Contractor employees, based upon the results of a DHS fitness (suitability) investigation. DHS may, as it deems appropriate, authorize and make a favorable entry of duty (EOD) decision based on preliminary security checks. The favorable EOD decision would allow the contactor to commence work temporarily prior to the completion of the full investigation. The granting of a favorable EOD decision shall not be considered as assurance that a full employment contractor fitness (suitability) authorization will follow as a result thereof. The granting of a favorable EOD decision or a full contractor fitness (suitability) authorization determination shall in no way prevent, preclude, or bar the withdrawal or termination of any such access by DHS, at any time during the term of the task order. No employee of the contractor shall be allowed unescorted access to a Government facility, access to any sensitive information or access to DHS Systems without a favorable EOD decision or contractor fitness (suitability) determination by the DHS Office of Security. Contract employees assigned to the task order not needing access to sensitive DHS information, DHS systems or access to DHS facilities will not be subject to security contractor fitness (suitability) screening. Contract employees awaiting an EOD decision may not begin work on the task order. Limited access to Government buildings is allowable prior to the EOD decision if the contractor is escorted by a Government employee. This limited access is to allow contractors to attend briefings, nonrecurring meetings, and begin transition work. Classified information is Government information which requires protection in accordance with Executive Order 13526, National Security Information (NSI) as amended and supplemental directives. If the contractor has access to classified information at a DHS owned or leased facility, it shall comply with the security requirements of DHS and the facility. If the contractor is required to have access to classified information at another Government Facility, it shall abide by the requirements set forth by the agency.