



Homeland Security

Science and Technology

**Wireless Broadband Technology Demonstrator
Broad Agency Announcement (BAA) 12-10**

Table of Contents

I. INTRODUCTION.....	3
II. GENERAL INFORMATION.....	4
III. RESEARCH OPPORTUNITY DESCRIPTION	5
IV. TEST AND EVALUATION FACILITIES	6
V. TEST RESULTS.....	7
VI. ELIGIBILITY INFORMATION	7
VII. INFORMATION REGARDING RESULTANT AWARDS.....	8
VIII. WHITE PAPER SUBMISSION REQUIREMENTS	9
IX. PROPOSAL SUBMISSION REQUIREMENTS	13
XI. BASIS OF WHITE PAPER AND PROPOSAL SELECTION	24
XII. NOTIFICATION TO OFFERORS OF EVALUATION FINDINGS	25
XIII. APPLICABLE SOLICITATION PROVISIONS AND CONTRACT CLAUSES	25
XIV. OTHER TERMS & CONDITIONS.....	25
XV. LIST OF APPENDICES.....	29
APPENDIX A – TECHNICAL TOPIC AREAS (TTAS)	30
APPENDIX B—APPLICABLE FAR AND HSAR PROVISIONS	41
APPENDIX C - LIST OF ACRONYMS AND ABBREVIATIONS	45
APPENDIX D – TACCOM 2 REQUIREMENTS DOCUMENTATION	46

I. INTRODUCTION.

- A. This solicitation is a Broad Agency Announcement (BAA), as contemplated in Federal Acquisition Regulations (FAR) 6.102(d)(2) and 35.016. A formal Request for Proposal (RFP) will not be issued in this matter.
- B. In support of the Department of Homeland Security (DHS) mission to ensure a homeland that is safe, secure, and resilient against terrorism and other hazards, DHS owns, operates, and maintains some of the largest tactical communications (TACCOM) infrastructures in the Federal government. However, much of the TACCOM equipment in use has surpassed its expected service life and does not provide sufficient coverage, capacity, or encryption to meet DHS mission needs. While several DHS components have been working to modernize TACCOM infrastructure and equipment, recent developments have prompted a reevaluation of the current modernization approach:
- **Expanded Wireless Mission Needs.** Existing systems provide narrowband¹ voice only; today's users require data and video in addition to mission critical voice.
 - **Spectrum Scarcity.** Very High Frequency (VHF) spectrum used in current TACCOM networks is already in short supply, and is expected to become even scarcer in the future.
 - **Interoperability Challenges.** Current approach of modernizing to the P25 standard provides limited interoperability improvements. True interoperability continues to elude us.
 - **Operational Challenges.** Subscriber radios have become increasingly complex for operational users, with potential for hundreds of channels and configuration options.
 - **Requirement for a Sustainable Cost Model.** The traditional model of owning and operating multiple private TACCOM systems carries a multi-billion dollar price tag across the department. This model must give way to a "game changing approach" that allows for cost sharing across a broader user base (i.e., DHS, other Federal and public safety users) targeting reduced capital investment and lifecycle costs by leveraging networks owned by others.
- C. DHS is focusing on developing and evaluating new technologies and capabilities that address the challenges identified above. DHS is seeking cost efficiencies that allow users to leverage existing and emerging Commercial and Public Safety networks (e.g., 4G LTE and public safety networks built by public safety waiver recipients) on a subscription basis. Use of a subscription model reduces the ownership and operating costs by sharing the network ownership costs across a wider user base.
- D. The DHS S&T mission is to conduct, for homeland security purposes, research, development, test and evaluation (RDT&E) and timely transition of tactical communications capabilities to operational units within DHS, as well as local, state, Federal and operational end users in critical infrastructure. DHS S&T invests in programs offering the potential for revolutionary changes in technologies that promote homeland

¹ Narrowband refers to a channel that is capable of carrying limited information in a narrow band of frequencies carries. CBP LMR systems provide only 25 kHz and 12.5 kHz channels for the analog legacy and P25 digital systems respectively. This limited bandwidth is primarily suited for voice communications.

security and accelerate the prototyping and demonstration in an operational environment of technologies that reduce homeland vulnerabilities. DHS S&T performs these functions in part by awarding procurement contracts, grants, cooperative agreements, or, if authorized by law at time of award, Other Transaction Agreements (OTAs) for research or prototypes to public or private entities, businesses, and federally funded research and development centers and universities. DHS bears the responsibility of helping to secure a substantial portion of our nation’s critical infrastructure, including information and telecommunications, transportation, postal and shipping, emergency services and government continuity. However, it does not own or control this infrastructure; according to estimates, the private sector owns and operates 85 percent of the nation’s critical infrastructure.

E. This BAA alerts potential offerors that S&T seeks DHS Enterprise-wide solutions that may address other Federal agencies in addition to local, state and tribal entities.

II. GENERAL INFORMATION.

A. Agency Name:

Department of Homeland Security
 Science & Technology Directorate
 Washington, DC 20528

B. Research Opportunity Title: Next Generation Tactical Wireless Broadband

C. Program Name: Wireless Broadband Technology Demonstrator

D. Research Opportunity Number: BAA 12-10

E. Response Dates:

Event	Time Due	Date Due	On-Line Location
Due Date for Vendor Questions	12:00 PM	August 17, 2012	N/A
White Paper Registration	4:30 pm EDT	September 26, 2012	https://baa2st.dhs.gov
White Papers Due	4:30pm EDT	September 26, 2012	https://baa2.st.dhs.gov *
Notification of White Paper Evaluation Results	N/A	November 19, 2012	N/A
Proposals due (from offerors whose white papers are deemed as being “of particular value”)	4:30pm EST	December 31, 2012	https://baa2.st.dhs.gov

***Note: Offerors must register by the white paper registration due date in order to submit a white paper in response to this BAA. Only offerors whose white papers are deemed as being “of particular value” to DHS S&T may submit a proposal in response to this BAA.**

F. Government Representatives:

1. Science and Technology.

Mr. Joseph Martin
Deputy Director
First Responder Group
Department of Homeland Security
Science and Technology (S&T) Directorate
Washington DC, 20528

2. Business.

Mr. Aaron H. Ford
Procuring Contracting Officer
Department of Homeland Security
Office of Procurement Operations
Science & Technology Acquisition Division
Washington, DC20528

G. Inquiries:

Submit any technical and/or contractual inquiries to this BAA to: BAA12-10@hq.dhs.gov. Also, submit your technical and/or contractual inquiries about the BAA to the Contracting Officer at Aaron.Ford@hq.dhs.gov

III. RESEARCH OPPORTUNITY DESCRIPTON.

A. Goals of the DHS Next Generation Tactical Wireless Broadband effort are:

1. LMR Over Broadband: Demonstrate capabilities performed today using LMR networks over broadband networks and demonstrate whether current industry solutions can meet law enforcement grade of service (e.g., low delay and high availability). This goal will also verify that devices' simplex (off infrastructure) direct mode communications capabilities are not affected.
2. Broadband Services to Tactical Users: Demonstrate data and video services to tactical users in the field. Services to be provided include biometric checks, database queries, image and file transfer, location based services, and streaming video.
3. Remote Radio Management: Demonstrate the ability to manage and configure devices through the broadband networks. Capabilities to be demonstrated include: Over-the-air programming (OTAP), Over-the-air rekey (OTAR), dynamic talk group management and the ability to push

applications and maintain configuration management of devices both LMR and broadband devices.

4. Interconnect public safety and commercial network: Demonstrate the ability to seamlessly roam from public safety networks, commercial networks and LMR networks. Additional capability to be demonstrated includes demonstrating interoperability by connecting users operating on different networks.

B. To achieve the above goals, BAA 12-10 calls for research and development in four Technical Topic Areas (TTAs) corresponding to each of the Goals identified above. Each TTA has two phases: (1) research and development leading to proof-of-concept demonstrations in controlled environments (i.e., laboratory); and (2) field demonstrations of capabilities with DHS users. Government will review the results of Phase 1 prior to awarding field demonstration phase.

Appendix A provides a detailed description of each of these four TTAs.

C. Offerors interested in this opportunity may submit a white paper and, if deemed of particular value, a proposal for one or more of the four TTAs in accordance with the procedures outlined herein. DHS encourages the formation of partnerships and teaming arrangements to propose solutions that address multiple (ideally all four) TTAs, to achieve more comprehensive technical solutions and/or more extensive end-to-end solutions.

Submitted white papers shall include research and development including a Proof of Concept with the field demonstrations in an operational. Proof of Concept phase will be conducted with technical personnel in various potential locations including Washington DC, Florida (Miami, National Law Enforcement Communications Center (NLECC) (Orlando)) and Colorado (NIST) facilities. Field demonstrations will be conducted with operational users located in various locations identified in the Proof of Concept phase and field locations on the northern and southern borders. For the field demonstration, scenarios will be established to cover a range of operating conditions including rural and urban settings, various terrain conditions, temperatures associated with Northern and Southern borders, and time of day.

D. The objective of the above identified structure is to support immediate technology transition wherever possible, and to create transition paths for new capabilities from the outset.

IV. TEST AND EVALUATION FACILITIES.

A. Performers in the Wireless Broadband Technology Demonstrator technical program will be required to test and evaluate their technologies with respect to system performance goals at appropriate government laboratory facilities. Those technologies that successfully complete the Proof of Concept phase and are awarded the Field Demonstration phase will have their technologies tested by operational users located at various field locations. For the field demonstration, scenarios will be established to cover a range of operating conditions including rural and urban settings, various terrain conditions, temperatures associated with Northern and Southern borders, and time of day.

B. NIST, through its PSCR program (a joint effort between NIST/OLES (National Institute of Standards and Technology/Office of Law Enforcement Standards) and NTIA/ITS (National Telecommunications and Information Administration/Institute for Telecommunication Sciences)), is building a 700-MHz Public Safety Broadband Demonstration Network to provide manufacturers and first responders a location for early deployment of their systems in a multi-vendor, neutral, host environment. Additional details regarding the NIST PSCR capability can be found at <http://www.pscr.gov>. The NIST 700MHz testbed provides the necessary infrastructure networks, tools, and supporting processes to examine capabilities and performance of proposed solutions on 4G LTE system.

C. NLECC is composed of several communications entities and programs:

- **Sector**, which is Customs' protected VHF radio network and tactical communications center;
- **Customs Over the Horizon Enforcement Network (COTHEN)**, which is Customs' High Frequency (HF) radio network, used primarily by U.S. Customs air and marine programs;
- **SIGNAL**, which handles all of Customs' classified messages;
- **COMSEC**, central office of record, which oversees all Customs communications security accounts; and
- **Wireless Programs Office**, which is responsible for the design, installation, and maintenance of the U.S. Customs radio networks, and for technical and administrative units to support all the communications networks.

V. TEST RESULTS.

A. Performers in the Wireless Broadband Technology Demonstrator technical program will be required to test and evaluate their technologies with respect to system performance goals as defined within the TTAs. The Government has the right to access all the data generated during testing and access to the testing results.

VI. ELIGIBILITY INFORMATION.

A. BAA 12-10 is open to **ALL** responsible sources. Foreign or foreign-owned offerors are advised that their participation is subject to the foreign disclosure review procedures, applicable export control laws, and other applicable federal laws, regulations, and policies pertaining to foreign entities. It is the intent of research and development contracting to obtain a broad base of the best contractor resources from the scientific and industrial community, to include small businesses and as a result, no portion of BAA 12-10 will be set aside pursuant to Federal Acquisition Regulation (FAR) Part 19.502-2. Offerors may include (but are not limited to):

1. Single entities or teams from private-sector organizations;
2. Government laboratories;

3. Federally Funded Research & Development Centers (FFRDCs), including Department of Energy national laboratories and centers and academic institutions as long as they are permitted under a sponsoring agreement between the Government and the specific FFRDC;

4. Historically Black Colleges and Universities (HBCU);

5. Minority Institutions (MI);

6. Small and Small Disadvantaged Business concerns, including Women-Owned Small Business concerns, Veteran-Owned Small Business concerns, Service-Disabled Veteran-Owned Small Business concerns, and Historically Underutilized Business Zone (HUBZone) Small Businesses concerns; and

7. Any academic institutions or non-profit organizations not included in the above categories.

B. Any offerors may join others as team members in submitting proposals.

VII. INFORMATION REGARDING RESULTANT AWARDS.

A. Funding:

1. Although subject to official fiscal appropriation, it is anticipated that the DHS S&T will have approximately \$7.527M to award BAA 12-10.

B. Anticipated Number of Awards: DHS S&T expects to make one or more awards for each Technical Topic Area (TTA) for the Proof of Concept. After the successful conclusion of the Proof of Concept, the Government will identify one or more awards for the Field Demonstrations. It is important to note that, as previously stated in this BAA, the Field Demonstration phase is an optional phase that may be exercised at the discretion of the Government upon completion of its review of the Phase 1 results.

C. Anticipated Award Types:

1. It is anticipated awards from BAA 12-10 to be in the form of cost reimbursement type contracts. However the Government reserves the right to award grants, cooperative agreements, OTAs (if authorized by law at time of award).
2. 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.

D. Expected Amounts of Individual Awards:

The Wireless Broadband Technology Demonstrator project under BAA 12-10 will not exceed \$7.527 Million.

E. Anticipated Periods of Performance for Individual Awards:

The anticipated period of performance for each award resulting from proposal will be 18 months for both the Proof of Concept and the Field Demonstration phases, including the system prototype demonstration in an operational environment phase.

VIII. WHITE PAPER SUBMISSION REQUIREMENTS.

A. **White Paper Format:** White papers may include narrative, pictures, figures, tables, and charts in a legible size, and must be accompanied by a one-page quad chart. Format details are:

1. **Paper Size:** 8.5-by-11-inch paper.
2. **Margins:** 1 inch.
3. **Spacing:** Single or double-spaced.
4. **Font:** Times New Roman, no smaller than 12 point. Text embedded within graphics or tables in the body of the white paper or the quad chart may not be smaller than 10 point.
5. **Number of Pages:** No more than ten single-sided pages consisting of the following shall be submitted:
 - a. A Cover Page (1 page);
 - b. Eight pages of technical content; and
 - c. A Quad Chart (1 page) (refer to paragraph VIII.A.8. below for quad chart format).
6. **Page Limit Restriction Warning.** ***WHITE PAPERS EXCEEDING THE ABOVE PAGE LIMIT WILL NOT BE EVALUATED.***
7. **Copies:** A white paper shall consist of ONE electronic file in portable document format (PDF), readable by Windows-compatible personal computers (PCs). The quad chart must be submitted in the same file as the white paper. The file size must be no more than 10 megabytes (MB). Refer to paragraph VIII.A.8 below for quad chart format.
8. **Quad Chart Format:** Quad charts will not use any font smaller than 12-point, except in graphics or tables, which may use 10-point fonts, and will be organized as follows:

BAA Number: Technology Demonstrator BAA 12-10

Offeror Name:

Title: *(Brief/Short Title to Describe Offeror's Proposed Effort)*

Date:

Photograph or artist's concept:

Provide a simple but sufficiently detailed graphic that will convey the main idea of the final capability/use/system prototype demonstration in an operational environment, and its technological methodology.

Operational Capability:

1. *Performance targets*
2. *Quantify performance for key parameters*
3. *Cost of ownership*
4. *Address how the proposed development addresses the goals in the BAA.*

Proposed Technical Approach:

1. *Explain how it would meet and/or exceed the requirement/goals detailed in the BAA.*
2. *Describe tasks to be performed for base period.*
3. *Describe current status of the proposed technology.*
4. *Describe any actions done to date.*
5. *Describe any related ongoing effort by the offeror.*

Schedule, Cost, Deliverables, & Contact Info:

Provide any milestone decision points that will be required. Describe period of performance and total costs. Include the base performance period cost and length, and estimates of cost and lengths of possible option.

Deliverables:

Include all hardware, software and data deliverables.

Corporate Information:

You must include Offeror Name, POC full name, address, phone numbers and e-mail.

9. Proprietary or Export Control Marking. Offerors are expected to appropriately mark proprietary and/or export controlled information contained in the white paper. For additional information regarding export controlled information, refer to paragraph VIII.B.3.g below.

B. White Paper Content:

The Government will evaluate white papers as described herein to determine those submittals deemed as being “of particular value” to DHS S&T. Submittals deemed as being “of particular value” will be invited to submit proposals. White papers shall be succinct and shall include, as a minimum, the following:

1. **Cover Page:** The cover page shall be labeled “Proposal White Paper”, and shall include the following:
 - a. BAA number, i.e., “BAA 12-10”;
 - b. Title of proposal
 - c. Name of offeror’s organization and offeror’s administrative and technical points of contact, including name, address, telephone and facsimile numbers, and email addresses. If multiple organizations are participating, identify the above information for each organization;

- d. Identify whether the offeror (and each organization participating) is a US or foreign owned entity;
 - e. The signature and title of an authorized representative of the entity submitting the white paper. If multiple organizations are participating, one signature from the principal/leading organization is acceptable.
2. **Quad Chart:** A quad chart shall be included and shall be in the format identified in paragraph VIII.A.8 above.
3. **Technical Content:** The remaining eight pages of the white paper shall consist of the following information:
- a. **Executive Summary:** An executive summary shall be provided containing a concise description of the scientific, technical, engineering, and management approach you propose to address through the TTA, a description of the various features of the proposed technology, and relevant details about how it will meet the requirements of the TTA(s).
 - b. **Utility to Department of Homeland Security:** The white paper shall describe the potential of the technology for meeting the desired topic attributes and requirements given in BAA 12-10.
 - c. **Technical Approach:**
 - (1) Provide a description of the basic scientific or technical concepts that comprise the proposed solution to the problem described in the TTA.
 - (2) Explain what is unique about the proposed solution and what advantages it might afford compared to other approaches that have been taken in this area. Illustrate the particular scientific, technical, or engineering issues that need to be addressed and resolved to demonstrate feasibility.
 - (3) Describe all required material, such as previously developed technology, test and evaluation facilities (e.g., NIST PSCR), or other information which must be provided by the Government to support the proposed work. If using a testbed other than NIST/PSCR or NLECC, show clearly how the proposed testbed will serve the program with respect to system performance goals. Not using the NIST/PSCR testbed facility will not negatively affect an offeror's submission.
 - d. **Personnel and Performer Qualifications and Experience:** Briefly describe the offeror's qualifications and experience in similar development efforts. Present the qualifications of the principal technical personnel. Submission shall include the identification of at least two key personnel who, if a resultant award is made, will be subject to any key personnel clauses included in the resultant award. Describe the extent of your team's past experience in working with or developing the technologies

comprising your solution. For submissions that include multiple organizations, all organizations must be identified. Include a description of what role each organization will play in the project; identify appropriate technical personnel for each organization, and each team member's past experience in technical areas related to the white paper.

e. **Commercialization Capabilities and Plan:** Provide a brief summary of the offeror's capabilities and experience in transitioning similar products to the marketplace, including previous business partnerships that can be leveraged. Describe the commercialization plan or other transition method for getting the technology into widespread use.

f. **Costs, Work, and Schedule:** Provide a brief summary of the planned work, costs, and schedule required to execute your project, summarized by major task.

g. **Classification and Control:** Potential offerors are reminded this BAA seeks unclassified technology solutions and that white papers may be shared with across DHS, U.S. government personnel and with other governments. As required by paragraph VIII.A.9 above, white paper submissions are to identify any items that are potentially export-controlled; such that dissemination to these foreign government personnel may be inhibited by United States federal laws, rules, or regulations.

C. White Paper Submissions:

1. Offerors must submit a white paper in order to be considered for participation in the submission of proposals. White paper submissions will not be accepted from organizations that have not registered by the due date outlined in paragraph II.E above.
2. Multiple white papers may be submitted in accordance with the terms outlined in paragraph VIII.A.3 above.
3. The due date for the submission of white papers is no later than 4:30 P.M. (Local Eastern Time) on **September 26, 2012**. White papers **WILL NOT BE ACCEPTED** after the established due date.
4. Procedures for submitting a white paper are as follows:
 - a. After logon to <https://baa2.st.dhs.gov>, click on "Start New Proposal" to initiate a new white paper.
 - b. Input the basic submission information - select BAA 12-10 from the *Solicitation* drop down. Select a topic area from the *Topic* drop down. Input a title and click "Add Proposal to Activity Worksheet". The white paper will be added to your proposal activity worksheet.
 - c. From the proposal activity worksheet, fill out the requisite fields, upload the white paper files, and then submit. Offerors submitting a white paper will receive confirmation

of the submission via e-mail. For additional information download the training guide that can be obtained from the upper left hand corner of the FAQs tab.

5. An offeror's white paper may be revised until the white paper submission deadline outlined in paragraph II.E above. Failure to submit a white paper will disqualify an offeror from consideration for submitting a proposal.
6. No classified white papers will be accepted.
7. In teaming situations, the lead/prime organization must remain the same on both the white paper and, if selected, the proposal.

IX. PROPOSAL SUBMISSION REQUIREMENTS.

A. Eligible Proposal Submissions:

Only offerors whose white papers are deemed as being "of particular value" to DHS S&T will be invited to submit proposals. The Government will advise, in writing, those offerors whose white papers are deemed as being "of particular value". For those offerors who submitted multiple white papers, the Government will provide notification regarding whether the white paper is "of particular value" for each individual white paper submitted. ***PROPOSALS WILL NOT BE ACCEPTED FROM ANY OFFERORS OTHER THAN THOSE INVITED TO SUBMIT PROPOSALS.***

B. Proposal Format:

1. **General.** Proposal submitted under BAA 12-10 will consist of two volumes:

Volume 1 – Technical Proposal
Volume 2 – Cost Proposal

2. **Guidance.** For each volume, the following format shall apply.

a. **Paper Size:** 8.5-by-11-inch paper.

b. **Margins:** 1 inch.

c. **Spacing:** Single or double-spaced.

d. **Font:** Times New Roman, no smaller than 12 point. Text embedded within graphics or tables in the body of the white paper or the quad chart may not be smaller than 10 point.

e. **Number of Pages:**

(1) **Volume 1:** No more than 40 single-sided pages. Proposals exceeding the page limit may not be evaluated. The cover page, table of contents, and any authorized appendices, as outlined herein (i.e., proposed option to utilize NIST/PSCR as a secondary testbed, resumes for key personnel, and list of any current or pending awards or proposals with DHS), submitted by the offeror are excluded from the page limitation.

(2) **Volume 2:** No page limitations.

f. **Proprietary or Export Control Marking.** Offerors are expected to appropriately mark proprietary and/or export controlled information contained in the proposals. For additional information regarding export controlled information, refer to paragraph IX.C.1.r below.

g. **Copies:**

(1) For **Volume 1, Technical Proposal**, the submission shall consist of ONE electronic file in PDF, readable by Windows-compatible PCs and must be no larger than 10 MB.

(2) For **Volume 2, Cost Proposal**, the submission shall consist of one electronic file in PDF, readable by Windows-compatible PCs and must be no larger than 10 MB.

C. **Proposal Content:**

1. **Volume 1, Technical Proposal.** Volume 1 of the proposal shall be in the form of a technical volume, not to exceed 40 pages, and a cost proposal overview. Compliance with the order and content of sections listed in Volume I is important to assure thorough and fair evaluation of proposals. The submission of other supporting materials with the proposal is strongly discouraged and, if submitted, will not be reviewed. Nonconforming proposals may be rejected without review. The technical proposal shall cover all elements addressed in the white paper. The technical proposal shall include the following:

a. **Cover Page.** Title the cover page "Volume 1 - Technical Proposal" and also ensure the following information is included:

- (1) BAA number, i.e., "BAA 12-10";
- (2) Title of proposal;
- (3) Name of offeror's organization and offeror's administrative and technical points of contact, including name, address, telephone and facsimile numbers, and email addresses. If multiple organizations are participating, identify the above information for each organization;
- (4) Identify whether the offeror (and each organization participating) is a US or foreign-owned entity;
- (5) Identity of prime offeror and complete list of subcontractors, if applicable;

- (6) Identify which of the TTAs are being addressed by the offeror and should mirror white paper submission;
- (7) Duration of effort. Separately identify the basic effort and any options. Ensure the total duration does not exceed the timeframe identified in paragraph VII.E;
- (8) In accordance with FAR 4.1201, prospective offerors for contracts and for OTAs involving prototypes (Section 845), shall state the certifications in the Online Representations and Certifications Application (ORCA) at <http://orca.bpn.gov> have been completed and shall provide the Certification Validity period; and
- (9) The signature and title of an authorized representative of the entity submitting the proposal. If multiple organizations are participating, one signature from the principal/leading organization is acceptable.

b. **Table of Contents.**

c. **Official Transmittal Letter.** Provide an official transmittal letter with authorizing official signature. For the electronic submission, the letter can be scanned into the electronic proposal. The letter of transmittal shall include, at a minimum, the following:

- (1) Whether the proposal has been submitted to a Government agency other than DHS and, if so, shall specify which agency and the date it was submitted.
- (2) The preferred vehicle type for DHS S&T to consider for award. For a list of possible vehicles to be awarded as a result of BAA 12-10, refer to paragraph VII.C.1 above.
- (3) The required disclosure regarding organizational conflict of interest identified in paragraph XIV.F below.
- (4) A statement that the offeror's proposal is available for award 12 months from the closing date for receipt of proposals.

d. **Quad Chart.** A quad chart shall be included and shall be in the format identified in paragraph VIII.A.8 above. This chart should be similar to that provided with the white paper; however, minor changes are allowed.

e. **Executive Summary.** Provide a one-page synopsis of the entire proposal, including a listing of total anticipated costs. This page should include the proposal title and offeror name, along with a description of the scientific, technical, engineering, and management approach being proposed to address the goals of the TTA. It also should describe how the approach is unique, and provide a brief summary of the technology's anticipated performance relative to the TTA goals. This section shall be separable, i.e., it will begin on a new page and the following section shall begin on a new page.

f. **Performance Goals:** Describe the overall methodology and how it will meet the goals specified in the TTA.

g. **Detailed Technical Approach (no more than 15 pages):** Describe the proposed design and technical issues. Identify the critical technical issues in the design and concept.

h. **Statement of Work (SOW), Schedule, and Milestones:** Provide an integrated display for the proposed research, showing each task with major milestones. 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, proposals must include a severable SOW (i.e., it will begin on a new page and the following section shall begin on a new page) without any proprietary restrictions, which can be removed from the proposal and attached to the contract or agreement award. Task identified herein must correlate to the tasks identified in the cost proposal submission.

i. **Testing and Evaluation.** As stated in paragraph IV above, performers in the Wireless Broadband Technology Demonstrator technical program will be required to test and evaluate their technologies with respect to system performance goals. Accordingly, offerors should consider the specific test and evaluation requirements of the proposed technical solutions. Identify in the proposal the primary test environment to be used to conduct testing and evaluation including the use of the NIST PSCR, if applicable. Not using the NIST testbed facility will not negatively affect a proposal. When proposing the use of NIST, define in as much detail as possible in a separate appendix to the technical proposal, a description of the test and evaluation requirements, plans for facility usage, such as expected hypotheses, testing parameters, test duration, support requirements and experiment types.

j. **Deliverables:**

(1) Provide a detailed list and description of all deliverables proposed under this effort, including data, software, and reports consistent with the objectives of the work; along with suggested due dates (calendar days after the effective date of award). The detailed list of deliverables shall include the required deliverables identified in paragraph XIV.H.

(2) 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, proposals must include a severable detailed list and description of all deliverables (i.e., it will begin on a new page and the following section shall begin on a new page) without any proprietary restrictions, which can be removed from the proposal and attached to the contract or agreement award.

k. **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 each participant's or team member's past experience in technical areas related to this proposal.

l. **Commercialization Plan:** Offerors must also include a description in the proposal of their plan for commercializing the technology, or other plans for getting the technology into established transition paths. Technology transition plans that include commercial partnerships are preferred, but transition into the open source community is also acceptable. This request does not entail providing a full business plan, nor does it imply that DHS views commercialization activities as in the scope of this solicitation. The intent is for offerors to provide evidence that, as part of the technical plan development, consideration has been given to the ultimate commercialization of the outputs of DHS-funded programs. Such considerations would include expected user base, how the technology will be used, and how it will transition in to broad use. Of key importance are the identification of technology diffusion paths that are appropriate for the type and maturity of the technology involved, and any additional factors that might increase the likelihood of it being commercialized. Proposals will be evaluated with other proposals that are submitted to the same TTA (#1 and #4).

m. **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 Property, Government Furnished Equipment (GFE), and Facilities.

1. The Government may provide Government-Furnished Equipment (GFE), Government-Furnished Resources (GFR), Government Furnished Information (GFI), or Government-Furnished 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.

2. In addition, this description should identify the component, nomenclature, and configuration of the equipment or hardware that it is proposed 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 on a case-by-case basis. Maximum use of Government integration, test, and experiment facilities is encouraged in each of the offeror's proposals.

3. 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.

n. **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.

o. **Cost Summary:** For each year of effort, provide the following:

- Direct Labor (prime only) – total man-hours
- Direct Labor (prime only) – total costs
- Direct Material/Equipment Costs (prime only) (including cost of test articles and devices)
- Total Travel Costs (prime only)
- Total Other Direct Costs (prime only)
- Subcontractor (if applicable) – total man-hours (if applicable)
- Subcontractor (if applicable) – total of all costs (i.e., one total amount that includes direct labor, material/equipment, travel, other direct costs, indirect costs, fees/profit, etc)
- Total Indirect Costs (prime only)
- Total Overhead Costs (prime only)
- Total G&A (if applicable) (prime only)
- Fees or Profit (if applicable) (prime only)
- Grand total of all above costs

p. **Resumes for Key Personnel:** As an appendix, provide resumes and curriculum vitae (CVs) for each of the key personnel proposed. A minimum of two key personnel must be identified.

q. **Other DHS Support:** As an appendix, provide a list of any current or pending awards or proposals with DHS that pertain to this work, submitted either as a prime contractor, subcontractor/consultant, or teaming partner.

r. **Classification:** Potential offerors are reminded this BAA seeks unclassified technology solutions and that proposals may be shared with other government agencies.

s. **Assertion of Data Rights:** 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 Assertion of Data Rights will be incorporated as an attachment to the resultant award instrument. To this end, proposals must include a severable Assertion of Data Rights (i.e., it will begin on a new page and the following section shall begin on a new page) without any proprietary restrictions, which can be removed from the proposal and attached to the contract or agreement award.

(1) Provide 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, offerors 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.

(2) 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:

(a) 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:"

(b) 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.

(c) 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:
 - 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.

- Rights under a prior government contract, including SBIR data rights for which the protection period has not expired.
- Standard commercial license customarily provided to the public.
- Negotiated license rights.

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

(3) 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.

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

(5) 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 should include, but is not limited to, the following:

- (a) The contract number under which the data or software were produced;
- (b) 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
- (c) 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.

(6) Ineligibility for award. An Offeror's failure to submit or complete the identifications and assertions required above with its offer may render the offer ineligible for award.

2. **Volume 2, Cost Proposal.** Pursuant to FAR 15.403, certified cost and pricing data will be required prior to contract award. The Cost Proposal shall consist of the following:

a. **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:

- (1) BAA number, i.e., "BAA 12-10";
- (2) Title of proposal;
- (3) Name of offeror's organization and offeror's administrative and technical points of contact, including name, address, telephone and facsimile numbers, and email addresses;
- (4) Identify whether offeror is US or foreign owned entity;
- (5) Identity of prime offeror and complete list of subcontractors, if applicable;
- (6) Identify which of the TTAs are being addressed by the offeror and should mirror white paper submission;
- (7) Duration of effort. Separately identify the basic effort and any options. Ensure the total duration does not exceed the timeframe identified in paragraph VII.E. for the Type classification assigned to the proposed technology.
- (8) In accordance with FAR 4.1201, prospective offerors for contracts and for OTAs involving prototypes (Section 845), shall state the certifications in the Online Representations and Certifications Application (ORCA) at <http://orca.bpn.gov> have been completed and shall provide the Certification Validity period; and
- (9) The signature and title of an authorized representative of the entity submitting the proposal.

b. Provide a cost breakdown by task/sub-task using the same tasks identified in the Statement of Work. This part 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 this part as well.

- (1) For each task/sub-task identified, provide a detailed breakdown of costs by year. The cost breakdown should include, at a minimum, the cost categories identified below.

(a) **Direct Labor.** Individual labor category or person, with associated labor hours and *unburdened* direct labor rates.

(b) **Indirect Costs. Fringe Benefits, Overhead, General & Administrative (Expenses), Cost of Money, etc. (NOTE: The Offeror must show base amount and rate for each element.)**

(c) **Travel.** Number of trips, destinations, durations, etc. Ensure submission include the anticipated travel identified in paragraph XIV.G.3. below.

(d) **Materials.** Total direct material that will be acquired and/or consumed during the period of performance should be specifically itemized with costs or estimated costs. Where possible, indicate purchasing method, (e.g., competition, engineering estimate, market survey, etc.). Limit this information to only major

items of material (>\$25,000) and how the estimated expense was derived. Include major facility requirements such as test ranges or live fire demonstrations. These requirements may address specific facilities, but should also provide details of facility capability requirements and estimates of total facility occupancy and test time. At its discretion, DHS S&T may choose to make bulk purchases of facility time in one or more major test facilities and apportion that test time to program participants.

(e) **Other Directs Costs.** Any direct costs not included elsewhere, particularly any proposed items of equipment or facilities. List the item, the estimated cost, and basis for the estimate. Equipment and facilities generally must be furnished by the contractor/recipient. Justifications must be provided when Government funding for such items is sought.

(f) **Fee/Profit including fee percentage.**

(2) **Subcontracts.** Include subcontractor cost in the detailed breakdown identified in paragraph IX.C.2.b.1 above. Costs should be clearly marked as “prime” or “subcontractor” costs. If the subcontractor costs cannot be included with the above detailed cost breakdown, then the prime contractor must stipulate on the detailed cost breakdown that the costs presented only represent those from the prime and the subcontractor’s costs are provided separately in a sealed envelope. The separate subcontractor cost proposal must be as detailed as the offerors’ cost proposal and must be submitted with the offeror’s proposal. Offers who elect to the NIST as a testbed shall include these costs as an appendix to the cost proposal. The cost breakdown shall be as detailed as the cost breakdown identified in paragraph IX.C.2.b.1 above.

(3) For proposed technology, include the cost for the option to conduct technology demonstrations in an operational environment effort separately from the remainder of the effort. The cost breakdown for this effort shall be provided as detailed as the cost breakdown identified in paragraph IX.C.2.b.1 above.

(4) **Consultant.** Provide consultant agreement or other document which verifies the proposed loaded daily/hourly rate.

D. **Proposal Submissions:**

1. Proposals will not be accepted from any offerors other than those invited to submit proposals. Proposal submissions will not be accepted if the organization has not registered by the due date outlined in paragraph II.E. above.

2. **The due date for the submission of proposals is no later than 4:30 P.M. (Local Eastern Time) on December 31, 2012.** Proposals **WILL NOT BE ACCEPTED** after the established due date.

3. Procedures for submitting a proposal are as follows:

- a. After logon to <https://baa2.st.dhs.gov>, find previous white paper submission in the proposal activity worksheet.
- b. Click on the "Create Full Proposal" link within the white paper record, enter a proposal title and add the proposal to the activity worksheet.
- c. From the proposal activity worksheet, fill out the requisite fields, upload the proposal files, and then submit. Offerors submitting a proposal will receive confirmation of the submission via e-mail. For additional information download the training guide that can be obtained from the upper left hand corner of the FAQs tab on the logon site.
- d. An offeror's proposal submission may be revised until the proposal submission deadline outlined in paragraph II.E above.

4. No classified proposals (or portions of proposals) will be accepted.

5. In teaming situations, the lead/prime organization must remain the same as what was submitted on the white paper. Any proposal submitted by any organization that was not the lead organization for the white paper submission will not be considered.

6. Proposal submissions will be protected from unauthorized disclosure in accordance with FAR 15.207, applicable law, and DHS regulations. By submission of a white paper and/or subsequent proposal, offerors are hereby consenting access to financial, confidential, proprietary, and/or trade secret marked information in the white paper and/or subsequent proposal to government personnel.

X. EVALUATION OF WHITE PAPERS AND PROPOSALS.

A. **Evaluation Criteria.** The evaluation of white papers and proposals will be accomplished through a Peer or Scientific review panel using the following criteria, which are listed in descending order of relative importance.

1. **Criterion I**--Sound technical and managerial approach to the proposed work, including a demonstrated understanding of the critical technology or engineering challenges required for achieving the goals of the TTA.
2. **Criterion II**--Potential of the technology/solution for meeting the TTA goals provided in BAA 12-10 resulting in the best ideas and concepts.
3. **Criterion III**--Qualitative assessment of the commercialization experience and strategy to determine the likelihood that the offeror will be able to deploy a technology and/or solution(s) that can be transitioned effectively to the user community either through commercialization of the technology or through other means.

4. **Criterion IV**--Capability to perform proposed work and history of performance of the Team in developing related technologies.

5. **Criterion V**--Each offeror's cost/price proposal will be evaluated for reasonableness and completeness of the proposed contract cost.

B. Evaluation Panel.

1. **NOTICE TO PROSPECTIVE VENDORS: The Government may perform a preliminary evaluation of the white papers and proposals to identify any white papers and proposals that are not compliant with the requirements of the BAA. A white paper or proposal can be evaluation as not compliant if it either disregards the administrative procedures or is proposing work unrelated to the TTAs of BAA 12-10. Should that white paper or proposal be determined to be not compliant, the Government will not review the submission. Therefore, all prospective vendors are strongly encouraged to read the BAA and follow/comply with the submission requirements identified in the said document.**

2. All properly submitted white papers and proposals that conform to the BAA requirements will be evaluated by a scientific review panel comprised of government technical experts drawn from staff within DHS S&T and other Federal agencies. All government personnel are bound by public law to protect proprietary information.

3. The Government may use selected support contractor personnel to provide administrative assistance to federal employees regarding all aspects of any actions ensuing from this announcement, including supporting federal employees involved in the evaluation of white papers and subsequent proposals. However federal employees will be responsible for actual reviews and evaluations. These support contractors will be bound by appropriate non-disclosure agreements to protect proprietary and source-selection information and are not be permitted to release any source-selection information to third parties, including others in their organization. By submission of a White Paper and/or subsequent Proposal, offerors are hereby consenting access to financial, confidential, proprietary, and/or trade secret markings in the White Paper and/or subsequent Proposal to support contractor personnel.

XI. BASIS OF WHITE PAPER AND PROPOSAL SELECTION.

A. The primary basis for selecting white papers for participation in the proposal phase and selecting proposals for award shall be technical, importance to agency programs, and funding availability. Cost reasonableness and completeness will also be considered to the extent appropriate for white paper submissions and proposals.

B. DHS S&T reserves the right to select for award and to fund all, some, or none of the proposals received in response to BAA 12-10.

XII. NOTIFICATION TO OFFERORS OF EVALUATION FINDINGS.

1. Once the white paper evaluation process is complete:
 - a. Offerors will be notified via e-mail, or in writing, whether the white paper submission is deemed as being “of particular value” to DHS S&T.
 - b. Offerors who are not invited to submit proposals may request feedback regarding the evaluation findings of submitted white papers. A written request to the Contracting Officer must be received within 3 calendar days of notification of non-selection.

c. For those offerors whose white papers are deemed to be “of particular value” to DHS S&T, the Government’s notification will provide an invitation to submit proposals. IMPORTANT NOTE: for those offerors who elected to submit white papers to multiple Technical Topic Areas (TTAs), the Government, as part of the official notification process, will provide written instructions to those offerors whose submissions were deemed to have “particular value” to provide to the Government one full proposal. Only offerors whose white papers are deemed as being “of particular value” to DHS S&T will be invited to submit proposals. PROPOSALS WILL NOT BE ACCEPTED FROM ANY OFFERORS OTHER THAN THOSE INVITED TO SUBMIT PROPOSALS.

2. Once the proposal evaluation process is complete, offerors will be notified via e-mail, or in writing, of selection or non-selection for an award. Offerors not selected for an award may request feedback regarding the evaluation findings of submitted proposals. A written request to the Contracting Officer must be received within 3 calendar days of notification of non-selection.

XIII. APPLICABLE SOLICITATION PROVISIONS AND CONTRACT CLAUSES

In addition to providing the provisions applicable to BAA 12-10, Appendix B identifies the contract clauses that will be pursuant to any resultant award from BAA 12-10. However, the clauses in addition to those included in Appendix B may be applicable and added at the time any resultant award is executed, excluding grants and OTAs.

XIV. OTHER TERMS & CONDITIONS

A. **NAICS.** The North American Industry Classification System (NAICS) code for this announcement is 541712, with a small business size standard of 500 employees.

B. **Central Contractor Registry (CCR).** Successful offerors not already registered in the CCR will be required to register in the CCR prior to award of any grant, contract, cooperative agreement, or, if authorized by law at time of award, OTA. Information regarding CCR registration is available at <http://www.ccr.gov/>.

C. **Certifications.** As required by paragraph IX.C.1.a.(7), prospective offerors for contracts and, if authorized by law, for OTAs involving prototypes (Section 845), shall complete the Online Representations and Certifications Application (ORCA) at <http://orca.bpn.gov> and reflect this completion in the proposal submission. Successful offerors will be provided additional information with regards to certification for grants and cooperative agreements proposals.

D. **Subcontracting Plans.** Successful contractor proposals that exceed \$650,000, 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.

E. **Certificate of Current Cost or Pricing Data.** Successful contract proposals that exceed \$700,000 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.

F. **Adequate Accounting System.** Vendors are hereby warned that they will be required to have an adequate accounting system in order to receive a cost-reimbursement type contract under this BAA.

G. Information for White Paper and Proposal Respondents.

1. No entitlement to payment of direct or indirect costs or charges by the Government will arise as a result of submission of responses to BAA 12-10 and the Government's use of such information. Respondents to BAA 12-10 may be requested to provide additional information based on their submittals. Unnecessarily elaborate responses containing extensive marketing materials are not desired.

2. Technical and cost proposals, or any other material, submitted in response to BAA 12-10 will not be returned. However, depending on the markings on the proposal, DHS S&T will adhere to FAR policy on handling source selection information and proprietary proposals. It is the policy of DHS S&T to treat all proposals as sensitive competitive information, and to disclose their contents only for the purpose of evaluation.

H. Organizational Conflict of Interest.

1. Offerors who have existing or pending contract(s) to provide scientific, engineering, technical and/or administrative support directly to DHS S&T may be considered to have actual or potential conflict of interest, resulting in the one or more offerors with the potential to attain an unfair competitive advantage.

2. 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.

3. **Disclosure.** Each offeror will be required to 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.

4. **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.

5. **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.

6. **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.

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

I. Required Deliverables Applicable to Any Award Resulting From BAA 12-10. The following *minimum* deliverables will be required in all awards resulting from BAA 12-10:

1. **Monthly Program Report.** A brief narrative report (not more than two pages) will be electronically submitted to the Program Manager within one week after the last day of each month throughout the performance period of the contract. The monthly report will describe:

- a. The previous calendar month's activity;
- b. The technical progress achieved against goals;
- c. The difficulties encountered;
- d. Recovery plans (if needed);
- e. Explicit plans for the next calendar month; and,
- f. Financial expenditures (including expenditures during the past calendar month period plus cumulative expenditures, and projected expenditures for the coming calendar month).

2. **Final Technical Report.**

- a. For a final report, the contractor shall provide a technical report of work performed during the period of performance, delivered no later than the last day of the period of performance. The final report shall be a cumulative, stand-alone document that describes the work of the entire test and evaluation period leading up to it.
- b. It shall detail how the design prototype was refined or otherwise prepared for the test and evaluation program and, if applicable, why such refinements or preparations were undertaken. It must include any technical data gathered, such as measurements taken, models developed, simulation results, and formulations developed.
- c. The final report shall include a summary of all performance goals versus performance achieved during the program, either measured or otherwise substantiated. The final report shall discuss all variances from the performance goals versus performance achieved, including reasons or theories for variances.
- d. If applicable, it will provide a discussion of how the offeror might meet any unmet performance goals under a future effort.
- e. The final report is required to include “lessons learned” from the effort, and recommendations for future research, development, or testing that would lead to success in meeting the performance goals.
- f. The final report shall provide a comprehensive and detailed account of all funds expended.

3. Project Conferences, Meetings, and Reviews. A maximum of three program status reviews will be held annually to provide a forum for reviews of the latest results from experiments and any other incremental progress towards the major demonstrations. These meetings will be held at various sites throughout the country. For costing purposes, offerors should assume that one meeting will be held in Washington, D.C., and one meeting will be held at the awardees’ facility. Interim meetings are likely, but these will be accomplished via video telephone conferences, telephone conferences, or Web-based collaboration tools. It is important to note here that, due to recent events related to Government conferences, the Department of Homeland Security has implemented procedures whereby the Government will need to obtain appropriate review/approval (from the Deputy Secretary of DHS) in order to hold these events.

J. Security Classification. No Classified White Papers or Proposals (or portions of proposals) will be accepted.

K. 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 system prototype development in an operational environment of anti-terrorism technologies by making available the SAFETY Act’s

system of “risk management” and “liability management.” Offerors submitting proposals in response to BAA 12-10 are encouraged to consider submitting SAFETY Act applications for their existing technologies. Offerors are invited to contact OSAI for more information, at 1-866-788-9318 or helpdesk@safetyact.gov. Offerors also can visit OSAI’s Web site at www.safetyact.gov.

XV. LIST OF APPENDICES

Appendix A - Technical Topic Areas (TTAs)

Appendix B - Applicable FAR and HSAR Provisions

Appendix C – List of Acronyms and Abbreviations

Appendix D—TACCOM 2 Requirements Documentation

APPENDIX A – TECHNICAL TOPIC AREAS (TTAs)

TTA Overview:

This section provides a high level description of the TTAs. A proposed Operational View is also provided to illustrate the relation between the TTAs and the Demonstrator system. A more comprehensive list of requirements for each TTAs is provided following the operational view. NOTE: Some of the requirements are repeated across TTAs.

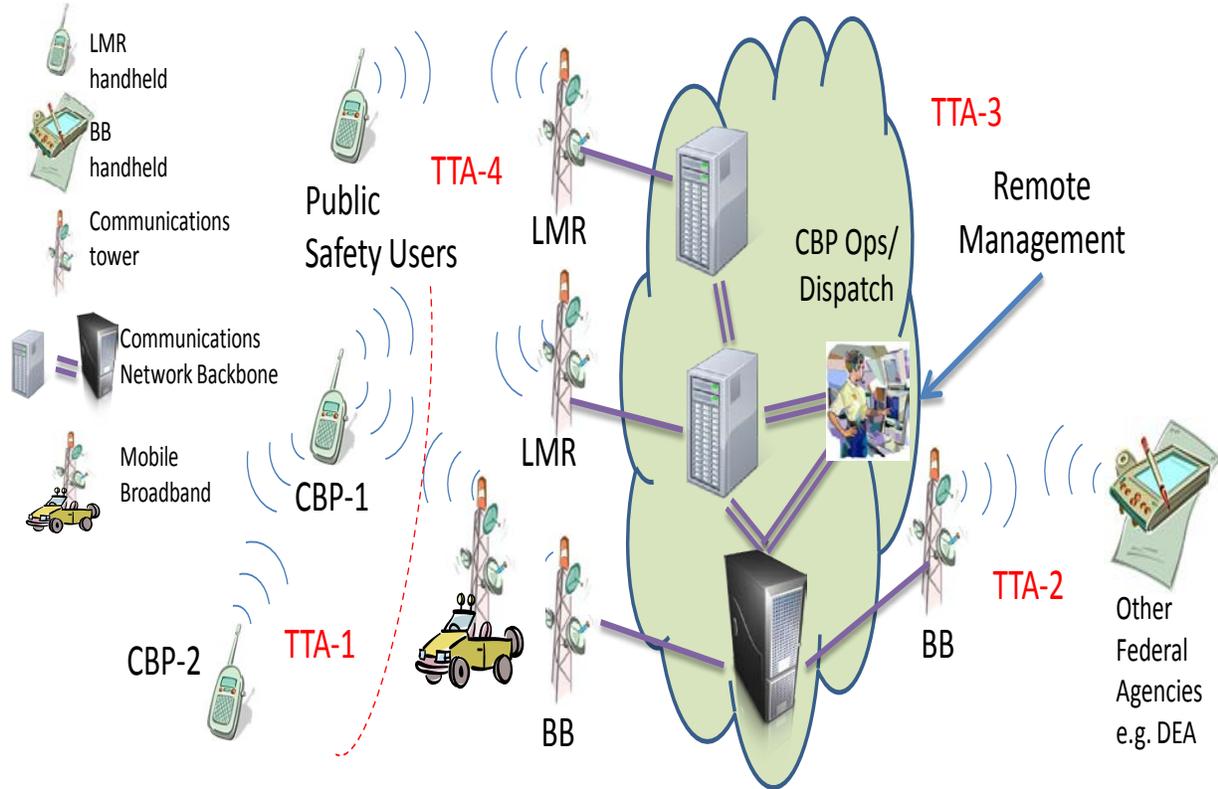
TTA #1 LMR Voice over Broadband: Proposals under this TTA should describe a solution that provides mission critical voice connectivity to tactical DHS operators using any and all available wireless networks (public safety, commercial and LMR). Proposed solutions should use existing DHS LMR radios inventory as much as technically possible.

TTA #2 Video and Data to Tactical User Devices: Proposals under this TTA should describe a solution that provides broadband data and video to tactical users. This may include, but is not limited to, commercially available devices, technologies, networks (e.g., smart phones operating on 3G/4G networks), and may include DHS developed applications and tools such as biometric devices, license plate readers, and sensors.

TTA #3 Remote Management: Proposals under this TTA should describe a solution that efficiently manages large numbers of devices (LMR and commercial) from a central location. This management includes Over the Air Rekeying, Over the Air Reprogramming and the ability to zero, or wipe, a device.

TTA #4 Network Integration: Proposals under this TTA should focuses on creating a seamless nationwide footprint with high Grade of Service to meet mission requirements. This grade of service includes low latency and high availability including access to network resources even during periods of high network congestion.

Wireless Broadband Technology Demonstrator Operational Vision



- **CBP-1 talks to public safety users, other Agencies, and CBP-2**
 - Communications initiated from either end
 - Communications connect over LMR or BB
 - CBP-1 talks to CBP- 2 without infrastructure
- **CBP-1 automatically switches between LMR and BB without losing connection to police or DEA**
- **Ops/Dispatch controls OTAP and OTAR across all CBP devices**
 - Talk groups include non-CBP devices
 - Coordinates encryption and talk groups with other agencies
 - Manages application deployment

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Revised Through Amendment 00006

TTA #1: LMR over Broadband

- a. **Current Mission Need:** U.S. Customs and Border Protection (CBP) is responsible for securing the nation's borders against illegal entry of people and goods while managing legitimate travel and trade. To support this mission, CBP must provide its agent and officer connectivity and interoperability that allow all users and mission partners to share the information they need, when they need it. This relies on the ability to provide secure and robust voice communications at all times. To provide this robust voice capability, CBP owns and operates one of the largest systems spanning well over 1,000 towers and associated infrastructure and equipment. Much of this equipment must be replaced due to equipment obsolescence, the need to meet federal narrowband mandates and lack of support for secure communications (i.e., AES encryption).
- b. **Problem Statement:** The current business model CBP uses for tactical radio networks has become outdated and unaffordable going forward. The traditional model has resulted in a privately owned and operated system with a very limited user base for cost sharing and cost distribution. Similarly, other DHS components maintain and operate their own systems resulting in stove-pipe private networks requiring substantial capital investment and unsustainable lifecycle operating costs.
- c. **New Capability:** S&T is seeking an alternative approach to deliver secure and highly reliable and available voice capability in a cost effective manner. S&T seeks a new approach to deliver converged mission critical voice, over broadband networks at the device level.
- d. **Operational Requirements:** These devices must be capable of operating over standard commercial technologies including LTE networks and traditional LMR infrastructure (could be provided by traditional LMR handset), as well as via off network radio-to-radio for emergency operations when infrastructure is unavailable. The radio-to-radio mode is a high-power, long-range capability that enables communications in propagation-challenged situations (e.g., basements, mountainous terrain). Use of device that enables legacy LMR device(s) to operate on multiple platforms can also facilitate the graceful transition from LMR-only networks to a common broadband voice and data network.
- e. Solutions for LMR/broadband radios shall address as many of the requirements listed below: see reference [1] for a complete list of requirements:
 - Demonstrate P25 standard traditional LMR capabilities such as direct radio-to-radio talk around capabilities for emergency operations when network infrastructure is not available. (Performance of direct talk around capabilities including range, power levels, battery life should be similar to that provided today on portables)
 - Operate on private, commercial and public safety networks including LMR and 2.5G/3G/4G networks
 - Provide high grade of service for mission critical voice:
 - Exceed low-latency requirement (250ms) for voice and push-to-talk (PTT) connection times of less than 500msec; performance limits are target values

- Premium levels of service for access to networks—higher grade of service (target 99% availability) at all times
- Support communications with other devices (interoperability) such as commercial mobile devices (e.g., blackberry, cellular devices)
- Support communications with dispatch
- Enable devices to seamlessly roam across commercial, public safety and LMR networks and switch networks based on availability without user intervention; devices have the capability to scan multiple channels simultaneously
- Enable interoperable communications with other LMR systems operating in other bands (i.e., 700/800 MHz)
- Enable programming (over-the-air programming), configuration, and key management (over-the-air rekey) of devices through broadband network (commercial or public safety) interface
- Leverage and adapt existing radio inventory (i.e., 42,000 Motorola XTS 5000) with a broadband interface
- Ensure that programming or key management of radios does not affect the voice communications
- Provide end-to-end encryption of voice traffic
- Provide the ability to authenticate users; only authenticated users can access networks
- Provide the capability to remotely wipe out a device
- Operate in intended environments
 - Northern border with temperatures down to -40 degrees F
 - Southern border with temperatures up to 125 degrees F

This TTA has two phases: (1) research and development leading to proof-of-concept demonstrations in controlled environments (i.e., laboratory); and (2) field demonstrations of capabilities with DHS users. The Government will review the results of Phase 1 prior to awarding the field demonstration phase.

References for TTA #1:

1. TACCOM 2 Requirements Documentation (**See Appendix D to this BAA**)
2. P25 Statement of Requirements (SoR), version dated March 3rd 2010
<http://tsiec.region49.org/SOR-2010.pdf>
3. National Public Safety Telecommunications Council (NPSTC) Mission Critical Voice (MVC) Statement of Requirements (SoR)
4. Public Safety 700MHz Broadband Statement of Requirements, Version 6, dated November 8th 2007; <http://www.npstc.org/>

5. 700 MHz Broadband Public Safety Applications and Spectrum Requirements, February 2010;
<http://andrewseybold.com/wp-content/uploads/2010/03/700MHz-Whitepaper-on-Spectrum-Feb-2010-FINAL.pdf>
6. Technology Day Presentation Information
http://www.cbp.gov/linkhandler/cgov/border_security/tacom/2011_techday_slides.pdf

Revised Through Amendment 00006

TTA #2: Broadband Services to Tactical Users

- a. **Problem Statement:** DHS must provide interoperable tactical communications that allow all users and mission partners to share the information they need, when they need it, in a form they can understand and act on with confidence, and protect information from those who should not have it. This requires a network that provides secure voice, data and video communications and supports current, emerging and future requirements.
- b. **New Capability:** S&T plans on demonstrating the ability of these devices to operate on both public safety and commercial networks (2.5G/3G/4G). Providing this capability will allow the CBP/DHS users to assess how they will use data and video capabilities in the field and allow users to develop new Concept of Operations (CONOPS) using these capabilities.
- c. **Operational Requirements:** Data. DHS's mission requires the ability to transmit/receive data. This capability is not only required for operations internal to DHS, but it is also required for interoperability with all of DHS's partners. Examples of data applications include:
 - i. Be On the Look Out (BOLO) alert with a photo and information related to a suspect they are attempting to apprehend
 - ii. Images and access to Federal and State records on wanted persons, stolen vehicles, vessels or firearms, license information, and criminal histories
 - iii. Precise location, heading, time and course corrections of fellow officers and agents for situational awareness, allowing agents and officers to request help or direct resources
 - iv. Transfer of data from biometric devices and license plate readers and access to database queries from remote locations
- d. **Operational Requirements:** Video. CBP also requires the capability to transmit/receive real-time, streaming video. CBP and the Federal government currently have multiple assets that can generate video via fixed or mobile image capturing and /or generating devices. It is critical that agents and officers can access this information in the course of their operations. This capability supports remote, real-time decision making and increased situational awareness. DHS may also use video for evidence in court proceedings. Examples of sources of video include unmanned aircraft systems, rotary and fixed wing aircraft, sensor equipped marine vessels, surveillance cameras, tethered blimps, and agents/officers on the ground.
- e. Solutions for LMR/broadband radios shall address as many of the requirements listed below (see reference [1] for a complete list of requirements):
 - Support data and video on private, commercial and public safety networks including LMR and 2.5G/3G/4G networks
 - Provide the ability to roam across commercial, and public safety networks; switch networks based on availability without user intervention; devices have the capability to scan multiple channels simultaneously
 - Provide the ability to authenticate users; only authenticated users can access networks
 - Provide end-to-end encryption(AES 256)

- Transmit and receive data and streaming video to support the following services: database queries, streaming video, email, file transfer, location based services (e.g., GPS), messaging short message service and multimedia messaging service, sensor feeds
- Provide higher grade of service including:
 - Provide data latency of less than 150 milliseconds for transaction data such as database queries and 1 second for file transfer and emails- (delays are target values)
 - Provide video latency and jitter of 2 seconds (delays are target values)
 - Provide premium levels of service for access to networks—higher grade of service (target 99% availability for data and 95% for video)
 - Provide sufficient capacity to deliver 256 kbps uplink (from mobile device) and 768 downlink (to mobile device)- (data rates are target values)

This TTA has two phases: (1) research and development leading to proof-of-concept demonstrations in controlled environments (i.e., laboratory); and (2) field testing with CBP/DHS users. Government will award Phase 2 (Field demonstrations) after analysis of results of Phase I.

References for TTA #2:

1. TACCOM 2 Requirements Documentation (**See Appendix D to this BAA**)
2. Public Safety 700MHz Broadband Statement of Requirements, Version 6, dated November 8th 2007; <http://www.npstc.org/>
3. 700 MHz Broadband Public Safety Applications and Spectrum Requirements, February 2010; <http://andrewseybold.com/wp-content/uploads/2010/03/700MHz-Whitepaper-on-Spectrum-Feb-2010-FINAL.pdf>
4. Technology Day Presentation, May 24, 2011, Developed by DHS, http://www.cbp.gov/linkhandler/cgov/border_security/tacom/2011_techday_slides.pdf

TTA #3: Remote Radio Management

- a. **Problem Statement:** To support operations, CBP needs to manage (program, configure, maintain) devices with encryption keys and code plugs. Although CBP has the ability to program and rekey devices remotely (i.e. over the air), it often has to manage these devices manually due to lack of bandwidth in current narrowband LMR systems. Frequently, voice communications on the P25 channel interrupts data transfer, especially, for large files such as radio code plugs. CBP is seeking applications and management tools to manage devices remotely
- b. **New Capability:** S&T seeks an alternative method to manage radio devices (both LMR and commercial devices) through the use of broadband interfaces to LMR and commercial devices. This eliminates the problem of interruptions to data transfer and OTAP.
- c. **Operational Requirements:** Solutions for remote radio management shall address as many of the requirements listed below (see reference [1] for a complete list of requirements):
 - Remotely rekey LMR and broadband devices through the broadband interface (2.5G/3G/4G)
 - Remotely program LMR (OTAP) and broadband devices through the use of broadband interface (2.5G/3G/4G). Broadband devices will be programmed using the open mobile alliance (OMA) standards
 - Upgrade operating software, software clients
 - Clear user data and disable device
 - Remotely manage the devices (OTAR/OTAP) without interrupting communications
 - Dynamically create, modify and delete talkgroups, including talk groups amongst DHS users and interoperable talk groups with users belonging to DHS partners. Users from talk groups may be on disparate networks and radio frequencies (i.e., 700MHz, 800MHz, and Commercial (2.5G/3G/4G))
 - Remotely program radios (devices) within talk group
 - Provide and send keys for OTAR to support these dynamic talk groups
 - Provide End-to-End monitoring of devices (individually and as a group) including;
 - Status of device (keys, codeplug status, list of applications on the device)
 - Maintain presence and location (i.e., track connectivity status whether on line/off line, broadband or narrowband)

This TTA has two phases: (1) research and development leading to proof of concept demonstrations in controlled environments (i.e., laboratory); and (2) field demonstrations with CBP/DHS users. Government will award Phase 2 (Field demonstrations) after analysis of results of Phase I.

References for TTA #3:

1. TACCOM 2 Requirements Documentation (See Appendix D to this BAA)

2. Public Safety 700MHz Broadband Statement of Requirements, Version 6, dated November 8th 2007; <http://www.npstc.org/>
3. 700 MHz Broadband Public Safety Applications and Spectrum Requirements, February 2010; <http://andrewseybold.com/wp-content/uploads/2010/03/700MHz-Whitepaper-on-Spectrum-Feb-2010-FINAL.pdf>
4. Technology Day Presentation, May 24, 2011, Developed by DHS, http://www.cbp.gov/linkhandler.cgov/border_security/tacom/2011_techday_slides.pdf

TTA #4: Interconnect public safety and commercial network:

- a. **New Capability:** S&T is exploring enabling roaming across all available networks by creating a seamless coverage footprint through agreements and partnerships. Implementation also requires that broadband and LMR devices configured with broadband interfaces are able to operate over multiple networks (e.g., 2.5G/3G/4G) and over multiple frequency bands.
- b. **Operational Requirements:** Solutions for Interconnecting public safety and commercial network shall address as many of the requirements listed below (see reference [1] for a complete list of requirements):
 - Roam between Public safety broadband to commercial networks
 - Provide the capability to connect disparate networks including LMR networks
 - Roam between 2.5G/3G/4G networks
 - Support communication between any set of personal communication devices including smart phones, Blackberry, tablet, laptop devices and LMR
 - Devices switch networks without user intervention
 - Provide Session persistence across multiple broadband networks including private, commercial, and government networks.
 - Provide mission critical grade of service across multiple networks; prioritization of access for mission critical voice capability (even under network congestion) and high availability greater than 95% (target value)

This TTA has two phases: (1) research and development leading to proof of concept demonstrations in controlled environments (i.e., laboratory); and (2) field demonstrations with CBP/DHS users. Government will award Phase 2 (Field demonstrations) after analysis of results of Phase I.

References for TTA #4:

1. TACCOM 2 Requirements Documentation (**See Appendix D to this BAA**)
2. Public Safety 700MHz Broadband Statement of Requirements, Version 6, dated November 8th 2007; <http://www.npstc.org/>
3. 700 MHz Broadband Public Safety Applications and Spectrum Requirements, February 2010; <http://andrewseybold.com/wp-content/uploads/2010/03/700MHz-Whitepaper-on-Spectrum-Feb-2010-FINAL.pdf>
4. Technology Day Presentation, May 24, 2011, Developed by DHS, http://www.cbp.gov/linkhandler.cgov/border_security/taccomm/2011_techday_slides.pdf

APPENDIX B—Applicable FAR and HSAR Provisions

FAR 52.252-1 Solicitation Provisions Incorporated by Reference (Feb 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address:

<http://farsite.hill.af.mil/vffara.htm>

FEDERAL ACQUISITION REGULATION (48 CFR Chapter 1) PROVISIONS:

NUMBER	TITLE	DATE
52.209-2	Prohibition on Contracting with Inverted Domestic Corporations--Representation	JUL 2009
52.209-5	Certification Regarding Responsibility Matters	APR 2010
52.209-7	Information Regarding Responsibility Matters	FEB 2012

HOMELAND SECURITY ACQUISITION REGULATION (48 CFR CHAPTER 30) PROVISIONS:

HSAR 3052.209-70 PROHIBITION ON CONTRACTS WITH CORPORATE EXPATRIATES (JUN 2006)

(a) Prohibitions.

Section 835 of the Homeland Security Act, 6 U.S.C. 395, prohibits the Department of Homeland Security from entering into any contract with a foreign incorporated entity which is treated as an inverted domestic corporation as defined in this clause, or with any subsidiary of such an entity. The Secretary shall waive the prohibition with respect to any specific contract if the Secretary determines that the waiver is required in the interest of national security.

(b) Definitions. As used in this clause:

Expanded Affiliated Group means an affiliated group as defined in section 1504(a) of the Internal Revenue Code of 1986 (without regard to section 1504(b) of such Code), except that

section 1504 of such Code shall be applied by substituting 'more than 50 percent' for 'at least 80 percent' each place it appears.

Foreign Incorporated Entity means any entity which is, or but for subsection (b) of section 835 of the Homeland Security Act, 6 U.S.C. 395, would be, treated as a foreign corporation for purposes of the Internal Revenue Code of 1986.

Inverted Domestic Corporation. A foreign incorporated entity shall be treated as an inverted domestic corporation if, pursuant to a plan (or a series of related transactions)—

(1) The entity completes the direct or indirect acquisition of substantially all of the properties held directly or indirectly by a domestic corporation or substantially all of the properties constituting a trade or business of a domestic partnership;

(2) After the acquisition at least 80 percent of the stock (by vote or value) of the entity is held—

(i) In the case of an acquisition with respect to a domestic corporation, by former shareholders of the domestic corporation by reason of holding stock in the domestic corporation; or

(ii) In the case of an acquisition with respect to a domestic partnership, by former partners of the domestic partnership by reason of holding a capital or profits interest in the domestic partnership; and

(3) The expanded affiliated group which after the acquisition includes the entity does not have substantial business activities in the foreign country in which or under the law of which the entity is created or organized when compared to the total business activities of such expanded affiliated group.

Person, domestic, and foreign have the meanings given such terms by paragraphs (1), (4), and (5) of section 7701(a) of the Internal Revenue Code of 1986, respectively.

(c) **Special rules.** The following definitions and special rules shall apply when determining whether a foreign incorporated entity should be treated as an inverted domestic corporation.

(1) *Certain stock disregarded.* For the purpose of treating a foreign incorporated entity as an inverted domestic corporation these shall not be taken into account in determining ownership:

(i) Stock held by members of the expanded affiliated group which includes the foreign incorporated entity; or

(ii) Stock of such entity which is sold in a public offering related to an acquisition described in section 835(b)(1) of the Homeland Security Act, 6 U.S.C. 395(b)(1).

(2) *Plan deemed in certain cases.* If a foreign incorporated entity acquires directly or indirectly substantially all of the properties of a domestic corporation or partnership during the 4-year period beginning on the date which is 2 years before the ownership requirements of subsection (b)(2) are met, such actions shall be treated as pursuant to a plan.

(3) *Certain transfers disregarded.* The transfer of properties or liabilities (including by contribution or distribution) shall be disregarded if such transfers are part of a plan a principal purpose of which is to avoid the purposes of this section.

(d) *Special rule for related partnerships.* For purposes of applying section 835(b) of the Homeland Security Act, 6 U.S.C. 395(b) to the acquisition of a domestic partnership, except as provided in regulations, all domestic partnerships which are under common control (within the meaning of section 482 of the Internal Revenue Code of 1986) shall be treated as a partnership.

(e) Treatment of Certain Rights.

(1) Certain rights shall be treated as stocks to the extent necessary to reflect the present value of all equitable interests incident to the transaction, as follows:

- (i) warrants;
- (ii) options;
- (iii) contracts to acquire stock;
- (iv) convertible debt instruments; and
- (v) others similar interests.

(2) Rights labeled as stocks shall not be treated as stocks whenever it is deemed appropriate to do so to reflect the present value of the transaction or to disregard transactions whose recognition would defeat the purpose of Section 835.

(f) **Disclosure.** The offeror under this solicitation represents that [Check one]:

it is not a foreign incorporated entity that should be treated as an inverted domestic corporation pursuant to the criteria of (HSAR) 48 CFR 3009.108-7001 through 3009.108-7003;

it is a foreign incorporated entity that should be treated as an inverted domestic corporation pursuant to the criteria of (HSAR) 48 CFR 3009.108-7001 through 3009.108-7003, but it has submitted a request for waiver pursuant to 3009.108-7004, which has not been denied; or

[] it is a foreign incorporated entity that should be treated as an inverted domestic corporation pursuant to the criteria of (HSAR) 48 CFR 3009.108-7001 through 3009.108-7003, but it plans to submit a request for waiver pursuant to 3009.108-7004.

(g) A copy of the approved waiver, if a waiver has already been granted, or the waiver request, if a waiver has been applied for, shall be attached to the bid or proposal.

(End of provision)

CONTRACT AWARDS BY AGENCIES OTHER THAN DHS (using potential DFARS clauses)

DHS/S&T has issued this BAA and shall evaluate White Papers and Full Proposals in accordance with the solicitation's terms and conditions. That said, potential offerors are put on notice that the DHS may elect to have other United States' federal agencies negotiate and ultimately award funding instruments under this BAA (which DHS/S&T evaluated and selected for negotiation). These other federal entities may include the: Department of Interior – National Business Center; Air Force Research Laboratory (AFRL), and/or Space and Naval Warfare Systems Command (SPAWAR). Consequently, resultant funding instruments may deviate from the anticipated FAR clauses noted immediately above by substituting applicable Defense FAR Supplement (DFARS) clauses.

Appendix C - List of Acronyms and Abbreviations

AES	Advanced Encryption Standard
AFRL	Air Force Research Laboratory
BAA	Broad Agency Announcement
CBP	Customs and Border Protection
CCR	Central Contractor Registry
COB	Close of Business
CONOPS	Concept of Operations
COTR	Contracting Officer Technical Representative
CS&C	Cyber Security and Communications
DFARS	Defense FAR Supplement
DHS	Department of Homeland Security
EST	Eastern Standard Time
FAR	Federal Acquisition Regulation
FedBizOpps	Federal Business Opportunities (www.FedBizOpps.gov)
GAO	General Accounting Office
GFE	Government Furnished Equipment
GFI	Government Furnished Information
GFS	Government Furnished Services
GPS	Global Positioning System
HBCU	Historically Black Colleges and Universities
HUBZone	Historically Underutilized Business Zone
ICE	Immigration and Customs Enforcement
IP	Internet Protocol
LCCE	Life Cycle Cost Estimate
LMR	Land Mobile Radio
LTE	Long Term Evolution
MHz	Megahertz
NIST	National Institute of Science and Technology
NLECC	National Law Enforcement Communications Center
R&D	Research and Development
RCMP	Royal Canadian Mounted Police
RFI	Request for Information
SPAWAR	Space and Naval Warfare Systems Command
S&T	Science and Technology Directorate
TACCOM	Tactical Communications
TTA	Technical Topic Areas

Appendix D – TACCOM 2 Requirements Documentation

The following files make up Appendix D:

- a. **TACCOM DEMO REQ.png**
- b. **TACCOM Sys REQ.png**
- c. **6-21 TACCOM Requirements Listing_June 21.rtf**

NOTE: The TACCOM 2 Requirements Documentation (found under this Appendix of BAA 12-10) is in draft form and is subject to change since the purpose of the Technology Demonstrator is to help define the final requirements of the Operational Requirements Documentation (ORD).