

DEPARTMENT OF THE ARMY
US ARMY CONTRACTING COMMAND – ABERDEEN PROVING GROUND
EDGEWOOD CONTRACTING DIVISION
E4215 AUSTIN ROAD
ABERDEEN PROVING GROUND, MD 21010-5401

Hereby Issues A

Request for Research Project Proposals

Supporting

United States of America, hereinafter called the Government

Through

The Minority Serving Institutions Science, Technology, Engineering & Mathematics
Research & Development Consortium (MSRDC)

Fiscal Year 19

Number: W911SR-14-2-0001 RPP-1914

Date Issued: 26 June 2019

Proposals Due: 30 July 2019

Part 1	Executive Summary
Part 2	Research Area
Part 3	Proposal Submission
Part 4	Basis for Selection
Attachment I	Subrecipient Information Sheet
Attachment II	Statement of Work Template
Attachment III	Excel Spreadsheet (Sample)
Attachment IV	Format for Cost Proposals

Issued by: USA Contracting Command – APG
Edgewood Contracting Division
Aberdeen Proving Ground, MD 21010-5400

PART 1: EXECUTIVE SUMMARY

1.0. Overview: Funds are available to support the Minority Serving Institutions Science, Technology, Engineering, and Mathematics Research & Development Consortium (MSRDC) basic, applied and advanced research program outlined herein. Funding in support of the main STEM thrusts is such that certain proposal types are ideal. An ideal proposal would consist of a single phase of no more than twelve (12) months in duration in which the program objectives would be met. The Government reserves the right to award one, multiple or no awards.

1.0.1 Background: The MSRDC, hereinafter called the Recipient, has been established for the US Army Edgewood Chemical Biological Center (ECBC) to support and implement 10 USC 2362 Research and Education Programs and Activities: historically black colleges and universities and minority serving institutions of higher education, a minority STEM Program for institutions of higher education.

1.1. Funding is available to support the research projects proposals. The Government reserves the right to adjust this distribution in accordance with proposals received. In submitting a proposal, you do so solely at your own risk and are under no circumstances entitled to any reimbursement by the Government for any costs related to preparing, submitting and/or pursuing such proposals. By submitting a proposal, you agree to these terms.

1.2. Each Research Project Proposal will be assigned merit ratings: high merit for feasible, medium merit for feasible after modifications, and low merit for proposals that are not feasible or not relevant to the RFP. Awards will be made from the highest rating to the medium rating until such point as anticipated funds are exhausted. All projects regarded to be medium merit or higher that fell below the funding cutoff line will be placed in an electronic "basket" file for two full years and as customer funding is received, the Government may select the submitted proposal(s) that best match the customer's requirements for possible award. The Government may make no awards if that is in its best interest.

1.3. The Government does not intend to use Contractor Support Personnel (CSP) to assist in the administrative tasks of this Request for Project Proposals (RPP) preparation and the submitted Project Proposal evaluations. If for some reason CSP were used, the CSP would be required to execute a Non-Disclosure Statement provided by the Recipient reflecting the effort they will supply to support this RPP. The Recipient's submission of a proposal under this RPP indicates concurrence with aforementioned CSP practices.

1.4. All proprietary/Limited Rights data shall be clearly identified in the Recipient's Project Proposal as per Article VII of the Cooperative Agreement/Other Transactions Agreement for Research.

1.5. The Recipient shall assure that those members of the Consortium who have executed (signed) the Consortium Member Agreement (CMA) prior to the due date and are in good standing will be eligible to have their submitted proposal evaluated. For information on joining the Consortium, please contact Mr. Michael Hester at michael.hester@msrdconsortium.org.

1.6. Each project proposal must include a Technical Section and Cost Section as described in Part 3. Project proposals shall contain the following:

1.6.1 Cover page with Attachment 1, Subrecipient Information Sheet

1.6.2 Technical Section with Attachment II, Statement of Work (SOW)

1.6.3 Cost Section with Attachment III, an Excel spread sheet with all formulas intact

1.6.4 Attachment IV, Format for Cost Proposals

1.7. If the offer is based on a collaboration among members, the SOW document shall include a summary section that states the portion of the effort that each member will be conducting and a schedule indicating when each member will participate in the SOW effort.

1.8. The Agreements Officer should receive project proposals by the Proposal Response Date on the first page of this RPP, unless changed in an amendment to this RPP. Proposals received after that date will not be considered for evaluation.

1.9. For proposal submission and costing purposes, the Recipient should plan on a period of performance starting on or about August 19, 2019. To expedite the award process, all cost proposals should remain valid through July 30, 2020. (See 3.1.10 for additional validity requirements).

PART 2: RESEARCH AREA

2.1 GOVERNMENT

2.1.1 Summary. This Technology Objectives (TO) describes the objectives of the project and is provided in lieu of a Government written Statement of Work (SOW). This acquisition approach allows the Government the opportunity to assess the Recipient's understanding of the TO by evaluating their approach to the effort. The Recipient using this TO and their unique knowledge, skills and abilities shall provide a detailed proposal, to include the SOW. The proposal shall address the deliverables that are required to meet the program objectives. Each project must also describe how it serves the objectives of 10 USC 2362. Level of Technical Innovation (diversity, risk/reward) will be the overarching factor that will guide a successful project proposal.

2.1.1.1 Technical Details of Project. See Statement of Work.

2.1.2 Proprietary Data/Data Rights Assertions. The proposals shall identify any proprietary information or intellectual property associated with this research area. The proposal should discuss data rights associated with each protected item and possible approaches for the Government to gain Government purpose data rights or unlimited data rights. (See Paragraph 3.2.3 for additional information regarding this requirement)

2.1.3 Teleconferences. Monthly (at a minimum) telephone conferences are recommended to keep all interested parties informed of progress or problems during the course of the transaction.

2.1.4 Programmatic Reviews. The Recipient and subrecipients shall jointly perform a formal technical and programmatic review to be held at ECBC at the end of the transaction. Recipient format is acceptable.

2.1.5 Data Items. Deliverables. Summary reports shall be submitted quarterly, and at the end of each year if multiyear. A final report is due at the end of the effort. Concept drawings, if appropriate, shall be submitted as generated. A formal program review shall be held at the end of the effort. Appropriate analyses and documentation of Research shall be included in the final report.

2.3. SPECIFIC INSTRUCTIONS FOR RECIPIENT

2.3.1 The Recipient shall describe in sufficient detail, without reference to cost, a complete and accurate description of how they propose to accomplish the goals of this program strictly from a technical standpoint. Include DD Form 1423.

PART 3 PROPOSAL SUBMISSIONS

3.1. General Instructions for Proposal Submissions

3.1.1 The following documents and sections shall be submitted in the project proposals:

3.1.1.1 Cover Sheet with signatures of individual authorized to commit your organization

3.1.1.2 Subrecipient Information Sheet (reference Attachment 1)

3.1.1.3 Technical Section. This section may contain appropriately marked proprietary or otherwise restricted or sensitive material needed to ensure reviewer understanding. This section will not be released outside the Government. Technical proposals are limited to 20 pages.

3.1.1.4 Proposed SOW (reference Attachment II): This section is releasable under a Freedom of Information Act (FOIA) request and therefore should contain nothing proprietary or restricted.

3.1.1.5 Cost Section: Sufficient information shall be provided in supporting documents to allow the Government to evaluate the reasonableness of the proposed cost. In a summary paragraph provide a brief explanation of the effort that will be accomplished for each labor category proposed and a brief explanation of the purpose for the material proposed and justification for equipment to be purchased. Material items should be proposed as Subrecipient Furnished Material (SFM) and that Cost included in the Recipient's Cost segments. (NOTE: Provide the cognizant administrative points of contact such as DCMA or Department of Health and Human Services. The Office of Naval Research is responsible for audits; state whether a recent audit has been performed. This section shall include all applicable elements in accordance with Attachment IV, Format for Cost.

3.1.1.5.1 Provide Payment Schedule for SOW. (Not more frequent than twice monthly.)

3.1.1.5.2 F&A and Overhead (where applicable).

3.1.1.6 Cost Summary Template (Reference Attachment III Excel Spreadsheet)

3.1.1.7 Project Proposals are deemed valid for a period of two years unless otherwise specified by the Recipient. Each Project Proposal shall be clearly marked "Submitted in Response to RPP R&D Effort for Solicitation # **W911SR-14-2-0001 RPP-1914**."

3.2. PROPOSAL SUBMISSION REQUIREMENT

3.2. 1. Electronic Submission of Proposal

All proposals shall be submitted in digitized format using direct transmission via electronic mail.

All material must be submitted in Microsoft Office format. Please identify the format in your transmittal. You must scan your electronic submissions with the most up-to-date virus definitions for the antivirus software of your choice. The Government servers will block all messages that are infected with a virus.

DO NOT include executable file(s) as a part of your submission.

Recipient is responsible to follow-up with the Agreements Officer to assure that the electronic proposal submitted has, in fact, been received by the Agreements Officer. This must be done by the date/time set in the solicitation for "receipt of offers."

3.3 PROPOSAL PREPARATION:

Follow the proposal preparation instructions as given in this Solicitation.

3.3.1 BASIC INFORMATION: Each proposal must be submitted in its own envelop binder and each segment of the proposal shall be clearly marked with the solicitation number, research area, and Recipient's name. The proposal cover page shall include the following:

- a. Name and address of Consortium
- b. Title of proposal (objective area)
- c. Duration of the proposed effort
- d. Roll-up of funding
- e. Names and telephone numbers of technical and business personnel who may be connected for clarification and/or authorized to negotiate.
- f. Date of submission and signature(s) of official(s) authorized to obligate the Recipient contractually.

3.3.2. If proprietary rights are involved, then the Recipient shall provide their position as follows:

Technical Data			Name of Person
To be Furnished	Basis for	Asserted Rights	Asserting
With Restrictions	Assertion	Category	Restrictions
(LIST)	(LIST)	(LIST)	(LIST)

3.3.3. Each proposal submitted must include, in addition to that which is requested in the preparation guidance below, the following:

- a. Executive Summary: 3 pages maximum
- b. Collaboration: A description with details of proposed collaboration relationships. If a teaming arrangement is proposed, a description of the arrangement shall be provided.

3.4 GENERAL INSTRUCTIONS:

The Recipient's proposal shall be submitted in two parts. All the information pertaining to each specific area will be confined to the appropriate part. The Technical Proposal is limited to 20 pages. There is no page limit for the Cost Section.

Part I – Technical

Part II – Cost

3.4.1 SPECIFIC INSTRUCTIONS:

Part I – Technical

The Recipient shall describe in sufficient detail, without reference to Cost, a complete and accurate description of how they propose to accomplish the goals of this program strictly from a technical standpoint, include DD Form 1423. The technical section is to include a discussion of the technical approach, level of innovation, technology barriers, etc. The complete list of technical evaluation criteria is described in Section 4.3.3 Technical Evaluation Criteria.

Part I shall not contain any references to costs, however, information concerning labor hours and labor categories, consultants, travel, materials, equipment, etc. shall be included in sufficient detail so the Government may evaluate the Recipient's technical approach.

Part 2 – Cost

3.4.2. Recipient shall provide their proposals on a cost reimbursable basis and provide a breakdown of the cost for each project. The Cost Summary (Attachment III) or documentation (Attachment IV) shall be supplied by the Recipient. This section shall include all of the proposed costs to the Government; no fee or profit is allowed. The cost shall be broken down on a task-by-task basis, for the Statement of Work (SOW) in the proposed period of performance. Include applicable elements of, e.g. labor (category, hours, rate, overhead), material (description, quantity, unit cost, bill of material) travel (origin and destination of trip, duration, number of travelers, mode(s) of transportation, per diem, purpose) direct costs (category, quantity, unit cost) and indirect cost. Sufficient information shall be provided in supporting documents to allow the Government to evaluate the reasonableness of the cost. In a summary paragraph provide a brief explanation of the effort that will be accomplished for each labor category proposed, a brief explanation of the purpose for the material proposed and justification for equipment to be purchased.

3.4.2.1 The Recipient shall provide a reimbursement payment schedule for the proposed SOW. Payments to the Recipient shall not exceed twice per month.

3.4.2.2 Any inconsistency, whether real or apparent, between the proposed performance, and cost, should be explained in the Project Proposal. Any significant inconsistencies, if unexplained, raised a fundamental issue of the Recipient's understanding of the nature and scope of the work required and of their financial ability to perform if selected and may be grounds for adjusting the cost to the Government. The burden of proof as to Cost credibility rests with the Recipient.

PART 4: BASIS FOR RANKING

4.1 Ratings are to be assigned to each criterion, listed as follows:

Technical: Each technical criterion listed below will be given a category one, two or three with ratings assigned as follows: Category One – High Merit, Category Two – Medium Merit, Category Three – Low Merit or Not Relevant.

Cost: The cost will not be rated. While cost is important, it is evaluated and negotiated. If technical merit of competitors is the same, cost will be the deciding factor.

4.2. All projects not selected for an award at this time which received a score other than Low Merit in the technical area shall be regarded as “acceptable” and placed into the electronic “basket” for potential award for two full years in the event that additional funding becomes available.

4.3. Cost

4.3.1. Cost evaluation will focus on the appropriateness and the relevance of the proposed labor, material, travel and other direct costs in relation to the Recipient's approach. Cost should not exceed \$333,980.00.

4.3.2. The Recipient's proposed costs will be evaluated for magnitude and realism with appropriate consideration of support costs. Cost will be evaluated, using cost realism, to determine the probable cost to the Government. Cost realism will determine what the Government should realistically expect to pay for the proposed effort, the Recipient's understanding of the work, and the Recipient's ability to perform the project. The evaluation will include analysis of all costs proposed, together with all supporting cost information/data. Cost analysis will be conducted to determine Cost deemed necessary by the Agreement Officer, to include but not limited to, such items as Government securing unlimited data rights, and use of Government furnished Material or Property. This may include information from the cognizant Audit Agency, Government technical personnel and other sources. The adjusted cost represents the most probable cost to the Government at completion.

4.3.3. Technical Evaluation Criteria

Category One (High Merit)	Category Two (Medium Merit)	Category Three (Low Merit/Not Relevant)
<ul style="list-style-type: none"> • Proposal fully addresses TO* • Solution has high feasibility • High Merit rating from Technical Review Committee 	<ul style="list-style-type: none"> • Proposal addresses TO* but has gaps. • Solution leaves some questions on feasibility • Medium Merit rating from Technical Review Committee. Deficiencies require negotiations. 	<ul style="list-style-type: none"> • Proposal doesn't address TO*, or • Doesn't appear feasible • Low Merit rating from Technical Review Committee
*Technology Objectives		

ATTACHMENT 1

SUBRECIPIENT INFORMATION SHEET

ORGANIZATION PROPOSAL #

SUBRECIPIENT NAME AND ADDRESS

TITLE OF PROPOSED EFFORT

ACKNOWLEDGEMENT OF AMENDMENTS RECEIVED

DUNS #

CAGE CODE

TAXPAYER ID # (TINS)

BUSINESS SIZE/TYPE

PROPOSAL VALID FOR TWO YEARS: DATE TBD

U.S. WHOLLY OWNED INSTITUTIONS YES OR NO

SUBRECIPIENT HAS SECRET CLEARANCE YES OR NO

PROPOSED PERIOD OF PERFORMANCE

PAYMENT SCHEDULE (PROPOSAL PAGE #) (NOT MORE FREQUENTLY THAN TWICE MONTHLY)

DATA RIGHTS: (PROPOSAL PAGE #)

GOVERNMENT FURNISHED PROPERTY, MATERIAL OR EQUIPMENT (PROPOSAL PAGE#, IF APPLICABLE):

SUBAGREEMENT (PROPOSAL PAGE #, IF APPLICABLE)

SUBAGREEMENT/NEGOTIATION CONTACT (NAME, ADDRESS, PHONE #, E-MAIL)

TECHNICAL CONTACT (NAME, ADDRESS, PHONE #, E-MAIL)

COST CONTACT (NAME, ADDRESS, PHONE #, E-MAIL)

ADMINISTRATIVE OFFICE (IF KNOWN)

AUDIT OFFICE (IF KNOWN)

DATE OF LAST AUDIT

ATTACHMENT II

STATEMENT OF WORK TEMPLATE

Submitted under Request for Project Proposal **W911SR-14-2-0001 RPP-1914** for:

Cooperative Agreement/Other Transaction Agreement for Research Project Award

Name: All MSRDC Members

Project Title: United States Customs and Boarder Protection (CBP) – Utilizing Forecasting Models for Pest or Agricultural Quarantine Smuggling Trends

1. Introduction/Background

The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) Office of University Programs (OUP) is requesting applications exclusively from the members of the Minority Serving Institutions Science, Technology, Engineering & Mathematics Research & Development Consortium (MSRDC) (hereinafter called the recipient) to serve as a researcher for a CBP project on Utilizing Forecasting Models for Pest or Agriculture Quarantine Smuggling Trends.

The Science and Technology Directorate (S&T) is DHS's primary research and development (R&D) arm. S&T manages science and technology research, from development through transition, for the department's operational components and the nation's first responders. S&T's engineers, scientists and researchers work closely with industry and academic partners to ensure R&D investments address the high-priority needs of today and the growing demands of the future.

Animal agriculture hazards include, but are not limited to, foot and mouth disease, avian influenza, and classical swine fever. Plant pests include foreign noxious weeds such as hogweed and insects such as long-horned beetles related to the Asian long-horned beetle that has caused millions of dollars in losses in numerous communities in the United States. Fruit flies, such as the Mediterranean fruit fly, if introduced, would cause significant direct damage to U.S. fruit crops and have major impacts on export markets. CBP seeks innovative uses of the data they collect during port-of-entry inspections to better predict and mitigate pest threats approaching our shores.

Time series data is available (though mock data may need to be used if participants are not vetted) that shows the rate of specific pest interceptions or interdictions of prohibited items; in both cargo and passenger pathways. CBP seeks research that applies data-analytic predictive and forecasting techniques to identify and flag high-risk cargo shipments. Selected institution will conduct research to assess the capability to utilize forecasting models for pest or agriculture quarantine smuggling trends.

Successful research results will strengthen CBP ability to exclude pests, focus resources on the highest risks, safeguard our Nation's agriculture security, and speed commerce. Results will also support targeted inspections, help to zero in on incoming shipments that are likely to present the greatest risk. Not only does this approach keep harmful pests out, but also allows for better use of resources. Ultimately, the research results should lead to development of tools that allow CBP to achieve higher rates of interception for prohibited and restricted products.

Representative research questions of interest to CBP (not listed in priority order):

- Can price-forecasting models (e.g. Box Jenkins method) be used to anticipate seasonal/situational increases (or decreases) in pest or prohibited item encounters?
- What other techniques can be applied to support CBP resource allocation decisions that will improve current operations, both in terms of increased interceptions while lowering the operating cost to both government and industry?

2. Scope/Program Objective.

The DHS university researchers must work closely with DHS Offices and Components and their partners to conduct research, develop and transition mission-relevant science and technology, educate the next generation of homeland security technical experts, and train the current workforce in the latest scientific applications. DHS funded researchers operate using a unique research management approach where researchers work alongside operational and decision-making personnel to explore opportunities to use science and technology to enhance capabilities in line with DHS' mission. The skill sets required to make a project successful are more extensive than research expertise alone. Project researchers need to have the ability and commitment to communicate frequently with a variety of actors from federal staff, to attorneys, to university administrators. Research teams should include experts in finance, project management, education, training, outreach and marketing, intellectual property management, technology development, and technology transfer. Applicants should also have an understanding of how to translate research to practice including licensing, the ability to work with transition partners, and an understanding of federal acquisition. The researcher must demonstrate their commitment to develop a trust-based partnership between university and federal agencies; to do that, this wide range of skills is essential.

The researcher will be expected to construct a plan and schedule to identify data needs and the acquisition of such data, establish intellectual property sharing agreements, and engage customers to refine proposals into a work plan. **The researcher will be required to have these elements in place within 6 months following award.**

DHS will fund this project through an interagency agreement. On a regular basis, OUP facilitates interactions between researchers, DHS SMEs, and customers from the public and private sectors (i.e., homeland security practitioners). The goal of this hands-on management is to develop a trusting, sustained relationship between researcher and homeland security operational agencies.

The researcher is expected to develop relationships and partnerships with DHS Components for respective project topic. Only academic institutions that can embrace this type of close working relationship should apply for this funding opportunity.

The DHS mission requires that its operational Components [e.g., U.S. Transportation Security Administration (TSA), U.S. Customs and Border Protection (CBP), Federal Emergency Management Agency (FEMA), Immigration and Customs Enforcement (ICE), U.S. Coast Guard (USCG), U.S. Secret Service (USSS)] be responsive to a wide range of constantly evolving homeland security challenges and threats, both natural and manmade. As a result, DHS priorities and operational challenges may change over the course of a researcher's performance period. Therefore, researchers should be flexible enough to adapt to changes in the project's challenges, while at the same time maintaining focus on their core research areas.

2.1 DHS's Approach to Researchers

There are important elements to addressing a DHS project challenge that every applicant should understand prior to applying:

1. The overarching research areas that are the focus of all projects are driven by DHS's critical needs and enduring missions.
2. The research topics and questions contained in the RPP are developed by the DHS Component agencies that have to implement those difficult missions.
3. DHS needs use-inspired results-focused research that generates customized and innovative solutions.
4. DHS's expectations for researchers requires university faculty to spend time working with customers in the field to better understand their needs, execute the work necessary to protect intellectual property, and assess current technology and business markets.

Generated research-based solutions must be innovative and well positioned to be transitioned into use by DHS customers. Research will be based on the HSE needs expressed by HSE practitioners in this RPP. Research outcomes will include analytical tools, technologies, and knowledge products, e.g., best practices, resource guides, and case studies, which can be transitioned to the HSE workforce. DHS-sponsored researchers will produce new capabilities, and work with partners and stakeholders at all levels to test these capabilities in operational settings, and then take steps to make these solutions available and useful to agencies at all levels.

2.2 Technology Transfer and Transition

As a mission agency, DHS funds projects with the ultimate goal of making homeland security practitioners more effective and efficient. Therefore, researchers are expected to have concrete objectives for how their research efforts will improve processes (e.g.,

operations, policies, decision-making), as well as impact homeland security (e.g., protect lives, property, and economies).

Transferring and transitioning research into the market requires a systematic understanding of customer needs, process and product design, and product and service development. The success of a researcher depends on the ability to identify the needs of customers and quickly develop products and solutions that meet those needs. Delivering value to the customer is not simply a scientific problem, a design problem, or a market problem; it involves specific attention to each of the three general areas noted above.

DHS OUP utilizes a form of the stage-gate methodology to evaluate the performance of the researchers and their respective projects. The stage-gate methodology, known as the industry and government standard, allows for reviewers to conduct evidence-based decision making that mitigates programmatic risk and enables program managers to monitor progress and make decisions. At each stage, the researcher and program managers evaluate the project status and ensure specific criteria such as the following: strategic fit, technical feasibility, customer acceptance, market opportunity, and financial opportunity are met before proceeding to the next stage of investment. Figure 2 below is a depiction of a generic form of the stage-gate process.

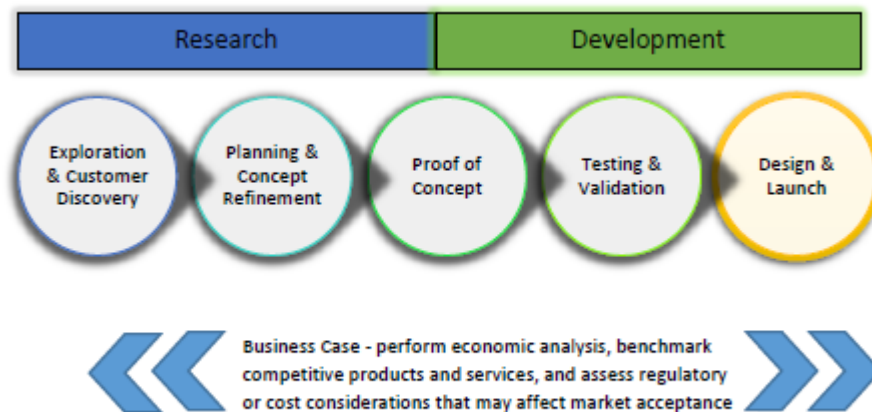


Figure 2

The researcher's strategy and each project must propose and adhere to this stage-gate methodology shown in Figure 2, and as described in further detail below. The applicant must use this framework to describe the planning and execution of studies and developmental steps and the corresponding market and business steps necessary to complete the effort and transfer program outcomes into use. As a result of using this framework, each performing institution should be able to characterize the proposed research as a function of its technical maturity and market readiness at any given time.

Applicants are required to submit a detailed proposal addressing the overall purpose of the project, an assessment of the state of the art, a description of the current operational environment, the scientific hypothesis and methodology for the study, data acquisition

methods, advanced test and evaluation future needs, intellectual property management approach, and customer involvement in the project. Not all projects will result in commercial outputs; however, at a minimum, all teams should describe how customers can access the program outputs, how the team will protect intellectual property, and what laws and regulations could affect the use of the program outputs.

2.3 Application Project Narrative

Project proposals should provide a summary of the applicant's vision, timeframe, research and education outcomes, technology transfer or transition pathway, and potential real-world applications.

Applicants must also summarize a results' communication and transition plan that outlines how the researcher will implement its project(s) and how they will be transitioned to user groups. Elements of the plan may include: project milestones; career development programs for research staff and students; identification of potential user groups; and a description of how the research results will be transitioned to DHS and other federal and state agencies.

Note: While not all projects will result in a final product that transitions to actual use by an end user, even earlier phase or exploratory research should still include a plan for disseminating results to end users/stakeholders in a form that enables end users/stakeholders to understand the potential applicability of the work and leverage outcomes to the maximum extent possible.

2.4 Research Project (10 pages)

Applicants should identify multidisciplinary, comprehensive approaches to address the project theme and research questions outlined below in Section III "Research Theme Areas". Applicants should explain why they selected these topics or questions, and describe a proposed method, metrics and outcomes to answer the relevant questions.

Applicants should consider the maturity and state-of-the-art of the respective theories, technologies, and applications of the proposed areas of study when formulating their research question answers.

Applicants must include the following elements for the proposed project:

- Title
- Principal investigator (name, title, school)
- Other key technical and project personnel supporting intellectual property and administrative tasks (name, title, school)
- Project abstract
- Goals and objectives of the research
- Significant partners and their roles (if applicable)

- How the work builds upon the state-of-the-art of the respective theories, technologies, and applications of the proposed areas of study
- How the work represents an improvement (incremental or fundamental change) to the current operational posture being used
- Theoretical approach, hypothesis to be tested
- Methods for data collection and analysis
- Methods section including study design
- Data access plans should data be needed to execute the project
- Technical technology performance metrics being tested (e.g. specificity, sensitivity, cost, etc.)
- A quarterly description of key milestones for the project period of performance to include cost and schedule
- Expected outputs and outcomes and how those outputs would be used
- Transition pathway from lab to field to include identifying the key technical scientific and development steps necessary to transfer the technology to customers or commercialization partners.
- Total projected costs
- Relevant citations

2.4.1 Quad Chart Submission (1 page)

A Quad Chart conveys the essence of the proposed solution for a single requirement. When preparing a submission, the applicant shall ensure they address the specific criteria of the requirement, the solution is clear, and project achievement is possible with the proposed technology, cost, and schedule. The Quad Chart includes a document header and four quadrants. Applicants shall prepare and upload a one-page (8 ½ by 11 inches) Quad Chart in response to this RPP. Use font sizes of 10 point or greater. Only one page is will be considered for evaluation. The quadrants of the Quad Chart shall be composed of the following:

Top Left Quadrant, Graphical Depiction.

The top left quadrant is a graphical depiction, photograph, or artist's concept of the proposed solution or prototype. Include labels or brief descriptive text as needed for clarification. Ideally, this will convey the prototype concept, use, capability, and any relevant size or weight relationships based on the published requirement.

Top Right Quadrant, Operational and Performance Capabilities.

The top right quadrant contains the operational and performance capabilities summary. Describe any basic, new, or enhanced capabilities the system will provide to meet the published requirement. In bullet form, list key aspects of performance, capability, operational use, relevant software or hardware specifications, and planned interface and/or compatibility.

Bottom Left Quadrant, Technical Approach.

The bottom left quadrant contains the proposed technical approach. Specifically, describe the technology involved, how it will be used to solve the problem, actions done to date,

and any related ongoing efforts. Briefly describe the tasks to be performed for each phase. A bullet list is acceptable.

Bottom Right Quadrant, Cost and Schedule.

The bottom right quadrant contains the Rough Order of Magnitude (ROM) and Schedule, Products and Deliverables. ROM and Schedule shall be proposed by phase and include the cost, Period of Performance (POP), and exit criteria for each phase. A total cost and POP that combines all phases shall also be included. Products and Deliverables shall include, by phase, a list of all prototype hardware and software along with the required data as described in “Product and Deliverable Requirements” in section 5 of this document.

2.4.2 Additional Supporting Documentation (5 pages)

Offers may provide supporting documentation not to exceed three pages. Supporting documentation may be background information on faculty PIs, collaboration partners, capabilities, students, facilities, project relevant publication references, and past experience with DHS components, to name a few.

3.0 References.

The following list of publications is provided as a resource for applicants. While this list is not exhaustive, it does represent key policy documents and reports used in the development of these research questions. Applicants are expected to be aware of the diversity of available studies, policy documents, and findings relevant to this project.

- Quadrennial Homeland Security Review (QHSR):
<https://www.dhs.gov/sites/default/files/publications/2014-qhsr-final-508.pdf>
- DHS S&T Strategic Plan FY 2015 – 2019:
https://www.dhs.gov/sites/default/files/publications/ST_Strategic_Plan_2015_508.pdf
- United States Department of Agriculture, Animal and Plant Health Inspection Service. March 2017. *Plant Protection and Quarantine: Helping U.S. Agriculture Thrive – Across the Country and Around the World*.
https://www.aphis.usda.gov/publications/plant_health/report-ppq-2016.pdf
- United States Department of Agriculture, Animal and Plant Health Inspection Service. October 2015. *User Fees for Agricultural Quarantine and Inspection Services*. https://www.aphis.usda.gov/publications/plant_health/report-ppq-2016.pdf

4.0 Deliverables.

4.1 Quarterly Reports. Deliverables include quarterly reports, format determined by the recipient in accordance with Exhibit Line Item Number (ELIN) A0001 of the Contract Data Requirements List (CDRL). (Reference Attachment V) Applicants shall be required to submit quarterly reports detailing the following: summary report on the progress of the research project, along with explanations of any changes from the initially approved work

plan; budget expenditures and changes; and unanticipated problems. Recipient will determine the format of report.

4.2 Final Reports. An annual report at the conclusion of each year of performance shall be submitted in accordance with ELIN A002. The Final Report shall include all experimental data, procedures, and processing parameters. Within 90 days after the end of the period of performance, or after an amendment has been issued to close out the project, whichever comes first, recipient must submit a final financial report and final progress detailing all accomplishments throughout the period of performance. Final report shall also include the nature and results of the research, development, test, and evaluation effort.

4.3 All reports shall be submitted via the MSI STEM Research and Development Consortium program office or project portal as assigned. MSRDC will ensure reports are provided to universityprograms@hq.dhs.gov.

5.0 Project Schedule. Period of performance is twelve (12) Months from the Date of Award. Option Period is twenty-four (24) Months from the Date of Award.

6.0 Shipping Provisions.

- Small experimental samples may be shipped using an approved shipping container IAW Department of Transportation Exemption 8451 (DOT-E-8451). (If applicable)
- The Recipient shall be responsible for obtaining all packaging materials, which are IAW DOT packaging 49CFR 173.62 requirements and applicable interim hazard classification (IHC). (If applicable)
- Shipping: Equipment, hardware or material may be shipped to a location(s) duly authorized by CCDC-CBC (if applicable)

7.0 Data and Reporting

Final Technical Report – At the completion of this project, the Recipient shall submit a final report describing the nature and results of the research, development, and test and evaluation effort. The report shall include subrecipient’s final report. Recipient format is acceptable. All raw and processed data from the testing in Task 1 and 2.

Safety

Accident/Incident Report. The Recipient shall report immediately any major accident/incident (including fire) resulting in any one or more of the following causing one or more fatalities or one or more disabling injuries: damage of Government property exceeding \$10,000; affecting program planning; degrading the safety of equipment under the project, such as personal injury or property damage may be involved or identifying a

potential hazard requiring corrective action. The Recipient shall prepare the report (DI-SAFT-81563) for each accident or incident.

General Safety Criteria: These criteria will be tailored to the specific technology being pursued under the Research Project. The Recipient must meet all Federal, State and Local statutory and regulatory requirements.

Environmental Requirements

Pollution Prevention: Consideration should be given to alternative materials and processes in order to eliminate, reduce or minimize hazardous waste being generated. This is to be accomplished while minimizing item cost and risk to item performance.

Environmental Compliance

All activities must be in compliance with Federal, State, and local environmental laws and regulations, Executive orders, treaties and agreements. The Recipient shall evaluate the environmental consequences and identify the specific types and amount of hazardous waste being generated during the conduct of efforts undertaken under this Agreement (DI-MGMT-80899).

Hazardous Waste Report

The Recipient shall evaluate the environmental consequences and identify the specific types and amounts of hazardous waste being generated during this Agreement.

Disposal Instructions for the Residual/Scrap Materials: The Recipient shall dispose of all residual and scrap materials generated from this Agreement. The Recipient shall specify the anticipated quantities, methods, and disposal costs.

Security

As currently outlined, this effort described herein does not anticipate the generation, collection, processing or safeguarding of classified information. In the event the Recipient's proposal deviates from the situation, Recipient will provide evidence that they possess the requisite security clearances. Classified information will be safeguarded in accordance with the National Industrial Security Program Operation Manual (DoD 5220.22-M)

ATTACHMENT III

COST SUMMARY TEMPLATE

TITLE OF PROJECT:

COST VOLUME

COST REIMBURSABLE PROPOSAL

DIRECT LABOR						
<u>FUNCTION</u>	<u>CATEGORY</u>	<u>CODE</u>	<u>HOURS</u>	<u>RATE</u>	<u>COST</u>	
						\$0
						\$0
						\$0
						\$0
TOTAL DIRECT LABOR COST						\$0
INDIRECT LABOR						
<u>FUNCTION</u>	<u>CATEGORY</u>	<u>CODE</u>	<u>HOURS</u>	<u>RATE</u>	<u>COST</u>	
						\$0
						\$0
						\$0
						\$0
TOTAL INDIRECT LABOR COST						\$0
NON-LABOR COST – INDIRECT						<u>COST</u>
						\$0
						\$0
						\$0
						\$0

TOTAL COST

\$0

ATTACHMENT IV

FORMAT FOR COST PROPOSALS

The Recipient shall submit a clear, concise and accurate cost proposal that reflects the Recipient's financial plan for accomplishing the effort contained in the technical proposal. The Recipient shall plan to submit an invoice for fifty-five percent (55%) of the total dollar value received for this action within 30 days after date of award.

As a part of its cost proposal, the Recipient shall submit other than cost or pricing data in the format suggested by FAR 15 403-5(b)(1), or in Recipient format containing the information outlined below, together with supporting breakdowns. All direct costs (labor, material, travel, computer, etc.) as well as labor and overhead rates should be provided by Government Fiscal Year (GFY, i.e., 1 Oct – 30 Sep). Following this narrative is an example of pricing information that may be required. The supporting schedules may include summary level estimating rationale used to generate the proposed costs. Information such as historical cost information, judgment, analogy to other similar efforts, etc. is generally accepted methods of projecting labor expenditures. Purchase order history, catalog costs, vendor quotations, firm negotiated values, engineering estimates, etc. are generally accepted methods of projecting material requirements. The cost element breakdown(s) may include the following.

1. Direct Costs. For direct inputs such as labor hours, material dollars, non-factored travel costs, computer usage, etc. provide supporting documentation by Government fiscal year (1 Oct through 30 Sep) such as:

Labor Hours by Category of Labor (by GFY by year)

Labor Overhead Rates by Category (by GFY by year)

Overhead/Factor Base Identification

Breakout of Travel Computations

Kinds, Types and Detailed Pricing of Materials

Amount and Kind of Computer Usage and How Costs are derived

Direct labor hours, with their applicable rates, must be broken out by Government fiscal year and the bases used clearly identified. For material costs identify what will be purchased and the basis for the estimated cost e.g. vendor quote, engineering estimate, etc.

2. Labor and Overhead Rates. This source of labor and overhead rates and all pricing factors should be identified. For instance, if a Forward Pricing Rate, Agreement (FPRA) is in existence, that should be noted, along with the Administrative Contracting Officer's (ACO's) name and telephone number. If the rates are based on current experience in your organization, provide the history base used and clearly identify all escalation by year, applied to derive the proposed rates. If the computer usage is determined by a rate, identify the basis used and rationale used to derive the rate.

3. **Material/Equipment.** List all material/equipment items with associated costs and advise if the costs are based on vendor quotes, data and/or engineering estimates, provide copies of vendor quotes and/or catalog pricing data.
4. **Subrecipient Costs:** Submit all subrecipient (member) proposals and analyses with your cost proposal. If the Subrecipient will not submit cost and pricing information to the Recipient, this information must be submitted directly to the Government for analysis. On all subagreements and interdivisional transfers, provide the method of selection used to determine the prospective subrecipient. An explanation shall be provided if the Recipient proposes a different amount than that quoted by the prospective subrecipient.
5. **Instrumentation and Test Equipment.** When instrumentation and/or test equipment are proposed, attach a brief description of the items and indicate if they are solely for the performance of this particular project award and if they are or are not already available in the Recipient's or subrecipient's existing facilities. Indicate quantities, unit cost, whether items are to be purchased or fabricated, whether items are of a severable nature and the basis of the cost. These items may be included under Direct Material in the summary format.
6. **Consultants.** When consultants are proposed to be used in the performance of the project, indicate the specific area in which such services are to be used. Identify each consultant, number of hours or days to be used and the consultant's rate per hour or day. State the basis of said rate and give your analysis of the acceptability of the consultant's rate.

ATTACHMENT V

CONTRACT DATA REQUIREMENTS LIST (2 Data Items)					FORM APPROVED OMB No. 0704-0188			
Public reporting burden for this collection is estimated to average 220 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to DoD, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government issuing Contracting Officer for the Contract/PR No. Listed in Block E.								
A. CONTRACT LINE ITEM NO		B. EXHIBIT A		C. CATEGORY TDP _____ TM _____ OTHER <u>General Data</u>				
D. SYSTEM/ITEM MSRDC			E. CONTRACT/PR NO. W911SR-14-2-0001; RPP-1914		F. CONTRACTOR			
1. DATA ITEM NO. A001	2. TITLE OF DATA ITEM Contractor's Progress, Status, and Management Report			3. SUBTITLE Quarterly Summary Reports				
4. AUTHORITY (Data Acquisition Document No.) DI-MGMT-80227			5. CONTRACT REFERENCE Part 2, Paragraph 2.1.5		6. REQUIRING OFFICE ECBC Associate Director			
7. DD 250 REQ NO	9. DIST STATEMENT REQUIRED C	10. FREQUENCY QTRLY	12. DATE OF FIRST SUBMISSION 45 CDAC		14. DISTRIBUTION			
8. APP CODE NA		11. AS OF DATE 0	13. DATE OF SUBSEQUENT SUBMISSION		a. Addressee	b. COPIES FINAL		
						D r a f t	R e g u l a r	R e p r o d u c e d
16. REMARKS. 4. The Data item Description (DID) may be obtained at: http://quicksearch.dla.mil/ . Paragraph 10.3.I does not apply. Submit concept drawings (if applicable) as an appendix. 9. Distribution guidance is included in DOD Instruction 5230.24 (http://www.dtic.mil/whs/directives/corres/ins1.html). 12. CDAC: calendar days after award of contract. 14. Submit in electronic format in Microsoft Office (Word, Excel & PowerPoint) or in another format approved by the Government to: Mr. Adam Seiple (adam.d.seiple.civ@mail.mil) and the Contract Specialist (CCAP-SCE).					ECBC Associate Director	0	1	0
					CCAP-SCE	0	1	0
					15. TOTAL	0	2	0
17. PRICE GROUP				18. ESTIMATED TOTAL PRICE				
1. DATA ITEM NO. A002	2. TITLE OF DATA ITEM Scientific and Technical Reports			3. SUBTITLE Final Comprehensive Report				
4. AUTHORITY (Data Acquisition Document No.) DI-MISC-80711A			5. CONTRACT REFERENCE Part 2, Paragraph 2.1.5		6. REQUIRING OFFICE ECBC Associate Director			
7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED C	10. FREQUENCY ONE/R	12. DATE OF FIRST SUBMISSION 395 CDAC*		14. DISTRIBUTION			
8. APP CODE A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION 15 calendar days after receipt of Government comments		a. Addressee	b. COPIES FINAL		
						D r a f t	R e g u l a r	R e p r o d u c e d
16. REMARKS. 4. DID may be obtained at: http://quicksearch.dla.mil/ . 8. The Government will respond with comments or approval within 15 calendar days after receipt of draft report (first submission). 9. Distribution guidance is included in DOD Instruction 5230.24 (http://www.dtic.mil/whs/directives/corres/ins1.html). *12. Submit annually if multiyear. 14. Submit in electronic format in Microsoft Office (Word, Excel & PowerPoint) or in another format approved by the Government to: Mr. Adam Seiple (adam.d.seiple.civ@mail.mil) and the Contract Specialist (CCAP-SCE). LT – Letter of Transmittal submitted electronically.					ECBC Associate Director	1	1	0
					CCAP-SCE	LT	1	0
					15. TOTAL	1	2	0
17. PRICE GROUP				18. ESTIMATED TOTAL PRICE				
G. PREPARED BY Adam D. Seiple			H. DATE 15 AUGUST 2018	I. APPROVED BY Pamela J. Serra		J. DATE 15 AUGUST 2018		