Army Rapid Innovation Fund
Broad Agency Announcement

Announcement No.: W911NF-13-R-0011

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1.0 General Information

1.1 Introduction

This publication constitutes a Broad Agency Announcement as contemplated in Federal Acquisition Regulation (FAR) Part 35.016 and FAR 6.102(d)(2). A formal Request for Proposals (RFP), solicitation or additional information regarding this announcement will not be issued.

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

1.2 Federal Agency Name

Office of the Deputy Assistant of the Army for Research and Technology
ATTN: SAAL-ZT Room 2E525
103 Pentagon
Washington, DC 20310

1.3 Research Opportunity Title

Army FY 2013 Rapid Innovation Fund (RIF)

1.4 Announcement Type

Initial Broad Agency Announcement

1.5 Research Opportunity Number

W911NF-13-R-0011

1.6 Key Dates

Event	Date	Time
BAA is Released	21 August 2013	
BAA Closes for White Papers	Release + 60 days	4:00 a.m. ET
Full Proposals Due	30 calendar days after Invitation (NOTE: Please refer to the instructions included with the Invitation.)	

The final due date for white papers to be considered under this BAA is no later than 3:00 p.m. EST on 21 October, 2013. White paper packages are to be submitted electronically via the Internet only at the following website: www.dod.smallbusiness.com/ArmyFY2013RIF. It is anticipated that the white paper evaluation process will be completed within 10 weeks. Any offeror whose white paper technology is assessed as “not of particular value” to the Army is

ineligible to submit a full proposal under this BAA. The anticipated due date for full proposals is 30 calendar days after the invitation is issued. It is anticipated that final selections will be made within four weeks after full proposal submission. As soon as the final full proposal evaluation process is completed, organizations selected for funding will be notified via email by the Army organization that is managing the specific proposal. Information that provides links to additional FY 2013 RIF research opportunities, milestones for the FY 2013 source selection process, reference information for the FY 2011 and 2012 RIF awards, and RIF defense points of contact are provided at http://www.defenseinnovationmarketplace.mil/RIF2013.html.

1.7 Research Opportunity Description

Authorized by Congress in the Ike Skelton National Defense Authorization Act for Fiscal Year 2011 (Public Law 111–383), and funded for FY13 by the Consolidated and Further Continuing Appropriations Act, 2013 (Public Law 113-6), the Rapid Innovation Program (Fund) provides DoD with the authority to fund programs that facilitate the rapid insertion of innovative technologies into military systems or programs that meet critical national security needs.

This BAA is primarily for the transition of technologies developed by small businesses, including those resulting from the Small Business Innovation Research (SBIR) program and DoD reimbursed Independent Research and Development (IR&D). IR&D does not include R&D performed under a grant or contract from the Government. IR&D is defined in Federal Acquisition Regulation (FAR) 31.205-18(a).

The goals of the RIF reflect DoD's emphasis on rapid, responsive acquisition and the engagement of small, innovative businesses in solving defense needs. The RIF is seeking projects that address innovative technology that resolve operational challenges or other critical national security needs, and has a demonstration path into a defense acquisition program, including, but not limited to capabilities that:

- Accelerate or enhance a military capability;
- Reduce the development, acquisition, sustainment, or lifecycle costs of defense acquisition programs or fielded systems;
- Reduce technical risk;
- Improve the timeliness and thoroughness of test and evaluation outcomes.

The Army RIF is seeking solutions to Army topics specified in Section 10 of this BAA. Each white paper MUST address an Army challenge in Section 10 of this BAA. and submitted solutions MAY also involve one or more of the Defense research and development Rapid Innovation Program science and technology thrust areas specified in Section 11 of this BAA.

Technology maturity will be identified to assess technical risks for candidate proposals in direct support of major defense acquisition programs, programs of record, or the next phase of research and development. For purposes of this BAA, the Army seeks a Technology Readiness

Level (TRL) of at least 6 for the final product of proposed solution. In circumstances of exceptional technical merit, proposals with a lower TRL rating will be considered for award, as warranted by the Source Selection Authority.

2.0 Eligibility

2.1 Eligible Sources

Except as specified below, all responsible sources capable of satisfying the Government's needs may submit a white paper under this BAA. Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are encouraged to submit white papers and join others in submitting white papers; however, no portion of this announcement will be set aside for HBCU and MI participation. Federally Funded Research & Development Centers (FFRDCs) and National Laboratories are not eligible to receive awards under this BAA. However, FFRDCs and National Laboratories may be subcontractors under an award, so long as such is permitted under their Government sponsoring agreement. Further, Department of Defense and Civilian Laboratories are not eligible to receive awards under this BAA. However, such Laboratories may participate in an award, so long as such participation is authorized by their Laboratory.

2.2 Foreign Participants

Foreign participants and/or individuals may participate to the extent that such participants comply with any necessary Non-Disclosure Agreements, Security Regulations, and any other applicable statutes.

2.3 Export-Controlled Technologies

Some Army requirements included in Section 10.0 may cover export-controlled technologies. Research in these areas is limited to "U.S. persons" as defined in the International Traffic in Arms Regulations (ITAR), 22 CFR §120.15.

3.0 Agency Points of Contact

3.1 General BUSINESS questions related to this BAA shall be submitted to the email address listed below and must include a subject line of "BUSINESS QUESTION - ARMY RIF BAA" in order to ensure an answer is received. This email address is used ONLY for business questions related to the BAA and white paper submission. There are SEPARATE email addresses included in this BAA for general and specific technical questions. Emails asking technical questions, submitting white papers, requesting status of white paper receipt and evaluations and requesting status of full proposal invitations and evaluations will NOT be answered by submission to the address below.

Ernest Dixon III
US Army Contracting Command – Aberdeen Proving Ground
Research Triangle Park Division
Email: usarmy.rtp.aro.mbx.baa3qa@mail.mil

3.2 TECHNICAL questions of a general nature shall be addressed to: Robert Saunders, Office of the Assistant Secretary of the Army for Acquisition Logistics and Technology, (703)_ 617-0279, email: robert.m.saunders14.civ@mail.mil. Specific TECHNICAL questions must be addressed to the technical points of contact identified with each requirement in Section 10.0 in order to ensure an answer is received. Technical questions can be discussed with the technical points of contact either telephonically or via email (using the email addresses provided in Section 10.0) —if the question is via email the subject line of the email shall include the "ARMY RIF BAA" and the Army Requirement number. All email correspondence and conversations shall be unclassified.

4.0 Award Information

4.1 Funding

The Government reserves the right to fund all, some, or none of the proposals received under this BAA. The Government provides no funding for direct reimbursement of proposal development costs. Anticipated funds available for all awards under this BAA are approximately $45-65 million, contingent on the availability of funds and upon receipt of acceptable proposals. The Government may provide additional funds, but there is no commitment by the Government that the total amount of awards will exceed $45-65 million.

In addition, the Government reserves the right to request any additional, necessary documentation once it makes the award instrument determination and to remove offerors from award consideration should the parties fail to reach agreement on award terms, conditions and cost/price within a reasonable time, or the offeror fails to timely provide requested additional information.

4.2 Instrument Type

The type of funding instrument selected by the Government will be either a contract or an other transaction for prototype projects agreement. If a contract is selected as the funding instrument, a firm fixed price contract, or a cost type contract in accordance with FAR Part 16, Contract Types will be used. Other transactional authority will be in accordance with 10 U.S.C 2371 (Section 845), and an other transaction agreement may only be awarded if the use of a standard contract is not feasible or appropriate. Contract type and funding arrangements are at the discretion of the Government.

4.3 Award Value

The cost or price of an individual award will not exceed $3 million.

4.4 Period of Performance

The period of performance of an individual award shall not exceed 24 months.

5.0 White Paper Preparation & Submission Instructions

5.1 White Papers

White papers MUST address one of the requirements listed in Section 10.0 of this announcement. Each white paper MUST focus on ONE requirement per paper, although an offeror may submit multiple white papers under the same requirement and may submit white papers under more than one requirement. In these cases, an offeror must submit each individual white paper separately. Only unclassified white papers will be accepted. If an offeror does not submit a white paper before the specified closing date and time in Section 1.6, the offeror will not be eligible to submit a subsequent proposal. The Government's decision to invite a full proposal will be based upon the evaluation results of the white paper submission. Offerors that do not receive invitations from the Government to submit a proposal are not eligible to submit proposals. There is no limit on the number of white papers an offeror may submit in response to this BAA.

5.2 Format of White Papers

A complete white paper submission will consist of three volumes. The cover sheet is volume one, the white paper is volume two, and the quad chart is volume three.

5.2.1 Number of Pages: The white paper is limited to three pages. The white paper cover sheet and quad chart are not included in the page limit. Pages submitted in excess of the white paper page limit will not be read or evaluated.

5.2.2 Number of Copies & Format: One electronic copy of the coversheet entered using the Army RIF BAA website specified in this BAA. One electronic copy of the white paper, in Portable Document Format (PDF). One electronic copy of the quad chart in PDF Format. The white paper and quad chart shall be 2MB or less in size.

5.2.3 Text & Font Format: Text shall be at least single-spaced, on 8½ x 11 inch paper, with a minimum of one-inch margin all around. Pages shall be numbered consecutively. Font size shall be of minimum 10-point font. Bolding, underlining, and italics may be used to identify topic demarcations or points of emphasis. Graphic presentations, including tables, while not subject to the same font size and spacing requirements, shall have spacing and text that is easily readable.

5.2.4 Headers: The offeror's name, and Army requirement number (as specified in Section 10.0 of this BAA) shall be in the header of each page. The header may be included in the one-inch margins.

5.2.5 Virus Check: Perform a virus check before uploading the white paper. If a virus is detected, it may cause rejection of the file.

5.2.6 Security: Do not lock or encrypt any files uploaded as part of your white paper submission.

5.3 Content of White Papers

5.3.1 Volume One – Cover Sheet (Online Form)

The cover sheet must be prepared on the Army RIF submission website. Offerors shall be prepared to submit the following information on the coversheet form on the Army RIF submission website:

- Organization Information: Name, Mailing Address, Technical POC, Phone Number, E-mail address, and CAGE code
- Business POC, Phone Number, and E-mail Address
- Requirement Topic Number and Title as specified in Section 10.0 of this BAA. NOTE: Failure to specify a requirement may result in the white paper not being considered.
- Defense research and development Rapid Innovation Program science and technology thrust area involved in this submission as specified in Section 11.0 of this BAA, if applicable.
- Duration of Effort
- Estimated Cost of Effort
- Is the submitter a non-traditional defense contractor: (select Yes/No)
- Recommended Funding Instrument: (select one)
    - Contract
    - Other Transaction
- Self Certification of Applicant: (select one)
    - Small business
    - Large business
    - Academic institution
    - Other
- Does the proposed approach derive from, extend, or logically conclude efforts from prior DoD-funded SBIR or STTR projects? (select Yes/No)
    - If yes, identify the SBIR/STTR topic number and resulting contract number: _____
- Was DoD-reimbursed IR&D technology a foundation for the proposed approach? (select Yes/No)
- Are you proposing to use foreign participants for work under the proposed effort? (select Yes/No)
- Identify Defense research and development RIF science and technology thrust areas addressed by the white paper (if any)
- Identify the estimated percentage of effort to be performed by the Offeror and percentage of work by other team members (e.g. subcontractor/consultant):
    - Offeror: _____%
    - Team members: _____%
- Has this approach been proposed to or funded by the DoD or another

Federal Agency (including previous RIF BAAs) (select Yes/No)
- If yes, identify the agency, solicitation, and contract/grant number

5.3.2 Volume Two – White Paper (3-page PDF file)

The white paper shall be prepared outside of the Army RIF submission website and then uploaded to the submission site as a PDF attachment. The decision by the Army to request a proposal will be based upon the white paper submission. Ensure your white paper adequately describes the proposed approach and resulting contributions. The white paper shall include the following sections in the order given below, as applicable:

(1) Contribution to the Requirement: Provide a high-level project overview describing:
- How the technology meets and solves one of the requirements specified in Section 10.0 of this BAA.
- How and to what degree the technical approach is relevant to an Army acquisition programs including how the approach enhances the military capability; accelerates the development of military capability; reduces the development costs; and/or reduces the sustainment costs of fielding systems.
- The current Technology Readiness Level (TRL) of the technology and/or product and how will it transition to military systems or programs.

(2) Technical Approach: Describe how the proposed technical approach is innovative, feasible, achievable, and complete and supported by a technical team that has the expertise and experience to accomplish the proposed tasks, including:
- Project objectives and scope.
- Overview of tasks and methods planned to achieve each objective and the final product to be delivered.
- Key Personnel (including subcontractors and consultants).
- Facilities/Equipment necessary to carry out the proposed effort.
- Related Prior or Current Work, including SBIR/STTR contracts and IR&D Projects.

(3) Schedule: Describe how the proposed schedule is achievable for the proposed technical approach. Transition to military systems or programs is expected within 24 months of award. Discuss:
- Major activities/milestones.
- Deliverables.
- Metrics/measures of success.
- Potential risks and risk mitigation plans.

(4) Costs: Describe the estimated costs for the proposed technical approach.

5.3.3 Volume Three – Quad Chart (1-page PDF file upload)

The Quad Chart sheet must be prepared using the government provided template in PowerPoint Presentation (.pptx) Format (Army RIF BAA Volume 3 Template.pptx.) The template is located on the website where this BAA is posted. The unclassified Quad Chart shall be uploaded to the Army RIF submission website in PDF format. The Quad Chart should include the following information:

- **Heading (Arial 24pt Bold)**
  - Title of Project
  - Company
  - Requirement #
- **Upper Left Quadrant:**
  - Picture or graphic illustrating proposed technology development
- **Lower Left Quadrant** (Arial 12pt Normal):
  - Project objectives and scope
  - Key deliverables
  - Key participants
- **Upper Right Quadrant** (Arial 12pt Normal):
  - Technology description
    - Brief description
    - Technology readiness level; current and anticipated
  - The "So What"
    - Challenge Area addressed
    - Specific outcomes
    - Where it will be used
- **Lower Right Quadrant**: (Arial 12pt Normal):
  - Estimated costs
  - Major activities/milestones
  - Deliverables, metrics/measures of success
  - Potential risks

Heading: Title, Organization, Requirement Number	
Upper Left Quadrant: Picture or graphic illustrating proposed technology development.	**Upper Right Quadrant**: How the technology contributes and addresses the requirement, the technical maturity (current level and anticipated level at project completion), how the technology will transition to existing military systems or programs.
Lower Left Quadrant: Project objectives and scope, key personnel, facilities/equipment, related to prior or current work.	**Lower Right Quadrant**: Estimated costs, major activities/milestones, deliverables, metrics/measures of success, potential risks.

5.4 Submission of White Papers

Offerors must be registered on the Army RIF submission website to submit white paper packages. White paper packages sent by any other means (e.g. hand-carried, postal service mail, commercial carrier, fax or e-mail) will not be considered. Offerors that intend to submit multiple white paper packages must prepare a separate cover sheet for each package. Upon completion of the cover sheet, the Offeror will be instructed to upload the PDF white paper and quad chart, and then submit the white paper package. Offerors are responsible for ensuring that all volumes have been submitted and accepted by the website. Detailed submission instructions are available on the website.

5.5 Notification of White Paper Receipt

White paper packages will be considered "works in progress" until the Offeror submits the complete white paper package meeting the requirements in Section 5.3. The Army RIF submission website will provide Offerors a printable confirmation of successful white paper package submission upon upload completion. White paper packages in the system after the due date that have not been finalized will not be evaluated.

5.6 Submission of Late Proposals (Applicable to White Papers and Proposals)

Offerors are responsible for submitting electronic white papers and proposals so as to be received at the Government site indicated in this BAA (or in the Invitation to submit a proposal) no later than the date and time specified in the Section 1.6. When sending electronic files, the offeror shall account for potential delays in file transfer from the originator's computer server to the Government website/computer server. Offerors are encouraged to submit their responses early to avoid potential file transfer delays due to high demand or problems encountered in the course of the submission.

An Offeror should receive confirmation of delivery at the Government site, not just successful relay from the Offeror's system. Acceptable evidence to establish the time of receipt at the Government site includes documentary and electronic evidence of receipt maintained by the Government site. All submissions shall be submitted before the cut off time/date in order to be considered – No exceptions.

If an emergency or unanticipated event interrupts normal Government processes so that white papers and/or proposals cannot be received at the site designated for receipt by the date and time specified, then the date and time specified for receipt will be deemed to be extended to the same time of day specified in the BAA on the first work day on which normal Government processes resume.

Offerors agree to hold the terms of their white paper valid for 150 calendar days from the date of submission.

6.0 Proposal Preparation & Submission Instructions

6.1 Proposals

The Invitation Letter to submit a proposal will be sent by the Army Contracting Office that will be handling any subsequent contract award, which is NOT the business office that issued this BAA. Offerors that receive a request to submit proposals shall provide sufficient information to persuade the Government the proposed project represents an innovative approach to accelerating the transition of defense-related technologies. The following is an illustrative outline for proposal format and content. However, the instructions in the Invitation Letter may deviate from the proposal format and content described below. Offerors should follow the instructions provided in the Invitation Letter. Only unclassified proposals will be accepted.

6.2 Format of Proposals

6.2.1 Number of Pages: The technical proposal is limited to 25 pages. Pages submitted in excess of the page limit will not be read or evaluated. The cover sheet, cost/price proposal, and Performance Work Statement (PWS) are not included in the technical proposal page limit. The cost or price proposal does not have a page limit. There shall be no cost/price information in the technical proposal and no technical information in the cost/price proposal.

6.2.2 Number of Copies & Format: One electronic copy of the technical proposal, in Portable Document Format (PDF). The cost or price proposal and PWS shall also be uploaded in PDF format.

6.2.3 Text & Font Format: Text shall be at least single-spaced, on 8½ x 11 inch paper, with a minimum of one-inch margin all around. Pages shall be numbered consecutively. Font size shall be of minimum 10-point font. Bolding, underlining, and italics may be used to identify topic demarcations or points of emphasis. Graphic presentations, including tables, while not subject to the same font size and spacing requirements, shall have spacing and text that is easily readable.

6.2.4 Headers: The offeror's name, requirement number, and proposal number shall be included in the header of each page of the technical proposal. The header may be included in the one-inch margins.

6.2.5 Virus Check: Perform a virus check before uploading any files to as part of your proposal package. If a virus is detected, it may cause rejection of the file.

6.2.6 Security: Do not lock or encrypt any files uploaded as part of your proposal submission package.

6.3 Content of Proposals

A complete proposal submission will consist of four volumes. The cover sheet is volume one, the technical proposal is volume two, the cost/price proposal is volume three, and the PWS is volume four.

6.3.1 Volume One – Cover Sheet

6.3.2 Volume Two – Technical Proposal (25-page PDF file upload)

The technical proposal shall be prepared as a PDF attachment. The technical proposal shall include the following sections in the order given below:

(1) Contribution to the Requirement: Provide a project overview and description of benefits, as described below:

1.1 Project Overview: A brief statement describing the specific technology and/or product being proposed and how the technology and/or product will work.

1.2 Benefits: Describe how and to what degree the technical approach is relevant to a requirement identified in this announcement, including how the approach:

- Enhances the military capability, or
- Accelerates the development of military capability, or
- Reduces the development costs, or
- Reduces the sustainment costs of fielding systems.

1.3 Transition Strategy: Describe how the technology and/or product will transition to the Services, including insertion events into military systems or programs. Describe evidence to support stated TRL.

(2) Technical Approach: Describe how the proposed technical approach is innovative, feasible, achievable, complete and supported by a technical team that has the expertise and experience to accomplish the proposed tasks.

2.1 Objectives and Scope: Describe the specific objectives of what the project will achieve and any logical boundaries.

2.2 Work Plan: Provide an explicit, detailed description of tasks to be completed and deliverables.

2.3 Key Personnel: Describe the qualifications of the team and identify key personnel who will be involved in the effort including information directly related to education and experience. Identify any foreign citizens you expect to be involved as a direct employee, subcontractor, or

consultant. Key personnel resumes shall be provided in an attachment to the proposal and will not count toward the page limitations.

2.4 Facilities/Equipment: Describe available instrumentation and physical facilities necessary to carry out the proposed effort.

2.5 Related Work: Describe significant activities and/or previous work directly related to the proposed effort, including SBIR/STTR contracts and IR&D projects.

(3) Schedule: Describe how the proposed schedule is achievable for the proposed technical approach. Transition to military systems or programs is expected within 24 months of award.

3.1 Milestones & Deliverables: Show major activities/milestones and deliverables anticipated by date, including research and development, testing, integration, transition, and/or acquisition elements, as applicable.

3.2 Metrics/Measures of Success: Discuss what measurement criteria will be established to measure progress against stated objectives.

3.3 Risks: Describe anticipated risks and risk mitigation plans.

6.3.3 Volume Three – Cost or Price Proposal (PDF file)

The cost or price proposal shall be prepared as a PDF attachment. The cost/price proposal shall include a detailed breakdown of all costs by category. If a proposal is selected for award, the offeror shall be prepared to submit any further documentation to its Army Contracting Officer to substantiate costs. For more information about cost proposals and accounting standards, see the DCAA publication called "Information for Contractors" available at www.dcaa.mil. The following cost areas shall be included, if applicable:

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

(2) Indirect Costs: Fringe Benefits, Overhead, G&A, etc.

(3) Travel: Destination, number of trips, number of days per trip, departure and arrival destinations, number of people, etc.

(4) Subcontractor and Consultants: All subcontractor costs and consultant costs must be detailed at the same level as prime contractor costs in regards to labor, travel, equipment, etc. Provide detailed substantiation of subcontractor costs in your cost proposal. Provide consultant agreement or other document that verifies the proposed daily/hourly rate.

(5) Other Direct Costs (ODCs): ODCs shall be itemized with costs or estimated costs.

6.3.4 Volume Four – Performance Work Statement

A PWS clearly detailing the scope and objectives of the effort; tasks to be completed; the technical approach; and deliverables. It is anticipated that the proposed PWS will be incorporated as an attachment to the resultant award instrument. To this end, such proposals must include a PWS without any proprietary restrictions, which can be included in the award instrument.

6.4 Submission of Proposals

Offerors that receive an invitation to submit a proposal shall submit their proposal to the address included in the invitation in accordance with the instructions for submission provided in the invitation. Proposals sent by any other means will not be considered.

Offerors are responsible for ensuring compliant and final submission of their proposals..

6.5 Notification of Proposal Receipt

Offerors will receive email confirmation that their proposal has been received.

6.6 Validity of Proposals

The offeror agrees to hold prices, terms and conditions of their offer firm for 120 calendar days from the date of submission.

6.7 Marking of Proposals for Classified/Proprietary Information

Proposals submitted in response to this BAA are to be unclassified. The proposal submissions will be protected from unauthorized disclosure during the evaluation process in accordance with FAR 15.207(b), applicable law, and DoD regulations. Offerors are to appropriately mark each page of their submission that contains proprietary information. The proposal shall include a Performance Work Statement, which contains only unclassified information and does not include any proprietary restrictions.

7.0 Evaluation Information

The evaluation process will be conducted using a technical subject matter expert review as described in FAR 6.102(d)(2) and 35.016. Each white paper will be evaluated based on the merit and relevance of the specific white paper as it relates to the RIF program rather than against other white papers for requirements in the same general area. Each proposal will be evaluated based on the merit, relevance and cost of the specific proposal as it relates to the RIF program rather than against other proposals for requirements in the same general area. All documents necessary for the review and evaluation of white paper and proposal submissions shall be provided as described in this BAA.

7.1 White Paper Evaluations

7.1.1 Evaluation Criteria

White papers will be evaluated using four criteria. The non-price criteria will be evaluated using the following adjectival ratings: Outstanding (O), Good (G), Acceptable (A), Marginal (M), or Unacceptable (U). White papers that are deemed "Unacceptable" in either Factor #1 or Factor # 2 will not be considered for further review.

- **Factor #1 – Contribution to the Requirement**

  The degree to which the technical approach is relevant to an Army requirement as listed in Section 10.0. The degree the technical approach is relevant to an Army acquisition program or programs including how the approach enhances the military capability; accelerates the development of military capability; reduces the development costs; and/or reduces the sustainment costs of fielding systems.

- **Factor #2 – Technical Approach/Qualifications**

  The degree to which the technical approach is innovative, feasible, achievable, complete and supported by a technical team that has the expertise and experience to accomplish the proposed tasks. The probability for transition of this effort into an acquisition program.

- **Factor #3 – Schedule**

  The degree to which the proposed schedule is achievable within 24 months from award.

- **Factor #4 – Cost**

  The degree to which the proposed cost or price is realistic for the proposed technical approach and does not exceed $3 Million.

7.1.2 Order of Importance

Factor #1 and Factor #2 are equally important. Factor #3 and Factor #4 are equally important. Factors #1 and #2 are significantly more important than Factors #3 and #4. The government is more concerned with obtaining superior technical capabilities than with making awards at a lower cost to the government.

7.2 Proposal Evaluations

7.2.1 Evaluation Criteria

Proposals will be evaluated using four criteria. The non-price criteria will be evaluated using the following adjectival ratings: Outstanding (O), Good (G), Acceptable (A), Marginal (M), or Unacceptable (U). Proposals that are deemed "Unacceptable" in either Factor #1 or Factor # 2 will not be considered for further review.

- **Factor #1 – Contribution to the Requirement**

  The degree to which the technical approach is relevant to the Army requirements listed in Section 10.0. The degree the technical approach is relevant to an Army acquisition programs including how the approach enhances the military capability; accelerates the development of military capability; reduces the development costs; and/or reduces the sustainment costs of fielding systems.

  Factor #2 – Technical Approach/Qualifications

  The degree to which the technical approach is innovative, feasible, achievable, complete and supported by a technical team that has the expertise and experience to accomplish the proposed tasks. The probability for transition of this effort into an acquisition program.

- **Factor #3 – Schedule**

  The degree to which the proposed schedule is achievable within 24 months from award.

- **Factor #4 – Cost**

  Cost realism including the Project's cost effectiveness and ability to complete the total project for not more than $3 million.

  7.2.2 Order of Importance

  Factor #1 and Factor #2 are equally important. Factor #3 and Factor #4 are equally important. Factors #1 and #2 are significantly more important than Factors #3 and #4. The government is more concerned with obtaining superior technical capabilities than with making awards at a lower cost to the government.

7.3 Descriptions of Adjectival Ratings

The following adjectival ratings will be used for non-price factors during the evaluation of proposals.

- **Outstanding (O) –** The proposal meets requirements specified in Section 10.0 of this BAA, and indicates an exceptional approach and understanding of the requirements. Strengths far outweigh any weaknesses. Risk of unsuccessful performance is very low.

- **Good (G) –** The proposal meets requirements specified in Section 10.0 of this BAA, and indicates a thorough approach and understanding of the requirements. Proposal contains strengths which outweigh any weaknesses. Risk of unsuccessful performance is low.

- **Acceptable (A) –** The proposal meets requirements specified in Section 10.0 of this BAA, and indicates an adequate approach and understanding of the requirements. Strengths and weaknesses are offsetting or will have little or no impact on contract performance. Risk of unsuccessful performance is no worse than moderate.

- **Marginal (M) –** The proposal does not clearly meet requirements specified in Section 10.0 of this BAA, and has not demonstrated an adequate approach and understanding of

the requirements. The proposal has one or more weaknesses which are not offset by strengths. Risk of unsuccessful performance is high.

- **Unacceptable (U) –** The proposal does not meet requirements specified in Section 10.0 of this BAA and contains one or more significant weaknesses. Proposal is unawardable.

7.4 Selection Preferences

In addition to the evaluation criteria, when proposals are rated essentially equal, source selection authorities will use the following selection preferences:

- Can be transitioned directly to operational use or into a defense acquisition program within 12 months of project completion.

- Selection preference shall be given first to small business proposals then to other than small businesses that address above preference.

7.5 Selection

The Government intends to make awards resulting from this announcement. The awards will be made based on the best proposals that are determined to be most beneficial to the Government with appropriate consideration given to the evaluation factors, order of importance, and selection preferences. Awards will be made to the offerors whose offer is determined to provide the "best value" to the Government based on the factors/preferences, this may not necessarily be the proposal offering the lowest cost/price or receiving the highest evaluated rating.

7.6 Negotiation

The Government intends to award without discussions, however, reserves the right to conduct discussions if necessary. The Army Contracting Officer making the award will make the determination if discussions will be conducted.

8.0 Award Administration Information

8.1 Information on White Paper & Proposal Status

Evaluation of white papers and proposals will be expedited as specified in Section 1.6 of this BAA. Offerors that submitted white papers that are not selected for proposal submission will be notified of that decision after all white papers have been reviewed. The Army anticipates that the white paper review process will be complete 10 weeks after the BAA closes. . Offerors will be notified if their proposal has been selected for award or not selected for award by the contracting organization that requests the proposal. It is anticipated that notifications for award/non-award will be provided within 10 weeks of requests for proposal. However, Army Contracting Officers may contact any and all qualified offerors at any time. Notification of white paper and proposal selection is not an authorization to begin work.

8.2 Debriefs

Debriefings will not be provided.

8.3 Email Addresses

Offerors must be aware that it is their responsibility to ensure: (1) correct email addresses are provided at the time of submission, (2) email notifications reach the intended recipient(s), and (3) the email is not blocked by the use of 'spam blocker' software or other means that the recipient's Internet Service Provider may have implemented as a means to block the receipt of certain e-mail messages.

8.4 North American Industry Classification System (NAICS) Code

The NAICS codes for this announcement are 541712 and 541711. A small business under these NAICS codes is defined by a size standard of 500 employees.

8.5 Certifications Required for Contract Awards

Certifications and representations shall be completed by successful offerors prior to award. Federal Acquisition Regulation (FAR) Online Representations and Certifications are to be completed through SAM at website, which replaces Central Contractor Registration (CCR) and found at https://www.SAM.gov . Excluded Parties List (EPLS) can also be accessed at the SAM website hotlink above. Defense FAR Supplement and contract specific certification packages will be provided to the contractor for completion prior to award."

9.0 Other Information

Upon award of a funding instrument, the offeror will be required to make certain legal commitments through acceptance of a contract or other transaction. Below please find some of the terms and conditions that may be included in the resulting funding instrument. However, this is not a complete list of terms and conditions to be included in the funding instrument.

9.1 Organizational Conflicts of Interest (OCI)

9.1.1 Purpose: The primary purpose of this provision is to aid in ensuring that: the Contractor's objectivity and judgment are not biased because of its present, or currently planned interests (financial, contractual, organizational, or otherwise) which relate to work under a contract; the Contractor does not obtain an unfair competitive advantage by virtue of its access to non-public Government information regarding the Government's program plans and actual or anticipated resources; and the Contractor does not obtain any unfair competitive advantage by virtue of its access to proprietary information belonging to others.

9.1.2 Scope: The restrictions described herein shall apply to performance or participation by the Contractor and any of its affiliates or their successors in interest (hereinafter collectively

referred to as “Contractor”) in the activities covered by this clause as prime contractor, subcontractor, co-sponsor, joint venture, consultant, or in any similar capacity. The term “proprietary information” for the purposes of this clause is any information considered to be so valuable by its owner that it is held in secret by them and their licensees. Information furnished voluntarily by the owner without limitations on its use, or which is available without restrictions from other sources, is not considered proprietary.

9.1.2.1 Access To and Use of Government Information: If the Contractor, in the performance of this contract, obtains access to information such as plans, policies, reports, studies, financial plans, or data which has not been released or otherwise made available to the public, the Contractor agrees that without prior written approval of the Contracting Officer, it shall not: (a) use such information for any private purpose unless the information has been lawfully released or otherwise made available to the public, (b) compete for work based on such information after the completion of this contract, (c) submit an unsolicited proposal to the Government which is based on such information after such information is released, or (d) release such information unless such information has previously been lawfully released or otherwise made available to the public by the Government.

9.1.2.2 Access To and Protection of Propriety Information: The Contractor agrees that, to the extent it receives or is given access to proprietary data, trade secrets, or other confidential or privileged technical, business, or financial information (hereinafter referred to as “proprietary data”) under this contract, it shall treat such information in accordance with any restrictions imposed on such information. The Contractor further agrees to enter into a written agreement for the protection of the proprietary data of others and to exercise diligent effort to protect such proprietary data from unauthorized use or disclosure. In addition, the Contractor shall obtain from each employee who has access to proprietary data under this contract, a written agreement which shall in substance provide that such employee shall not, during his/her employment by the Contractor or thereafter, disclose to others or use for their benefit, proprietary data received in connection with the work under this contract. The Contractor will educate its employees regarding the philosophy of Part 9.505-4 of the Federal Acquisition Regulation so that they will not use or disclose proprietary information or data generated or acquired in the performance of this contract except as provided herein.

9.1.2.3 Subcontracts: The Contractor shall include this or substantially the same clause, including this paragraph, in consulting agreements and subcontracts of all tiers. The terms “Contract”, “Contractor”, and “Contracting Officer”, will be appropriately modified to preserve the Government’s rights.

9.1.2.4 Disclosures: If the Contractor discovers an organizational conflict of interest or potential conflict of interest after award, a prompt and full disclosure shall be made in writing to the Contracting Officer. This disclosure shall be made on the OCI Analysis/ Disclosure Form provided as an Attachment to this contract, and shall include a description of the action the Contractor has taken or proposes to take in order to avoid or mitigate such conflicts.

9.1.2.5 Remedies and Waiver: For breach of any of the above restrictions or for non-disclosure or misrepresentation of any relevant facts required to be disclosed concerning this contract, the Government may terminate this contract for default, disqualify the Contractor for subsequent related contractual efforts, and pursue such other remedies as may be permitted by law or the contract. If, however, in compliance with this clause, the Contractor discovers and promptly reports an organizational conflict of interest (or the potential thereof) subsequent to contract award, the Contracting Officer may terminate this contract for the convenience of the Government if such termination is deemed to be in the best interest of the Government.

9.1.2.6. Modifications: Prior to contract modification, when the Scope of Work is changed to add new work or the period of performance is significantly increased, the Contracting Officer may require the Contractor to submit either an organizational conflict of interest disclosure or an update of the previously submitted disclosure or representation.

9.2 Export Control

The International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799, will apply to all projects with military or dual-use applications that develop beyond fundamental research, which is basic and applied research ordinarily published and shared broadly within the scientific community. More information is available at **http://www.pmddtc.state.gov/regulations_laws/itar.html**.

9.3 Wide Area Work Flow (WAWF)

Unless using another approved electronic invoicing system, performers will be required to submit invoices for payment directly via the Internet/WAWF at https://wawf.eb.mil. Registration to WAWF will be required prior to any award under this BAA.

9.4 Employment Eligibility Verification

Recipients of FAR-based procurement contracts must enroll as Federal Contractors in E-verify and use E-Verify to verify employment eligibility of all employees assigned to the award. All resultant contracts from this announcement will include FAR 52.222-54, "Employment Eligibility Verification."

9.5 Security Classification

In order to facilitate intra-program collaboration and technology transfer, the Government will attempt to enable technology developers to work at the unclassified level to the maximum extent possible. If access to classified material will be required at any point during performance, the Offeror must clearly identify such need. (NOTE: Please keep in mind that all white papers and proposals must be unclassified.)

9.6 Use of Animals and Human Subjects in Research

All research, development, testing, experimentation, education or training involving the use of animals shall comply with the applicable federal and agency rules on animal acquisition, transport, care, handling, and use. For submissions containing animal use, proposals shall briefly describe plans for their Institutional Animal Care and Use Committee (IACUC) review and approval. All Recipients must receive their IACUC's approval as well as secondary or headquarters-level approval by a DoD veterinarian who is trained or experienced in laboratory animal medicine and science. No animal research may be conducted using DoD funding until all the appropriate DoD office(s) grant approval.

All research involving human subjects, to include use of human biological specimens and human data, shall comply with the applicable federal and state laws and agency policy/guidelines for human subject protection. Institutions to be awarded funding for research involving human subjects must provide documentation of a current Federal Assurance of Compliance with Federal regulations for human subject protection, for example a Department of Health and Human Services, Office for Human Research Protections Federalwide Assurance http://www.hhs.gov/ohrp. Additional Federal Assurance documentation may also be requested by the awarding DoD Component. All institutions engaged in human subject research, to include subcontractors, must also have a valid Assurance.

In addition, personnel involved in human subjects research must provide documentation of completing appropriate training for the protection of human subjects. Institutions proposing to conduct human subject research that meets one of the exemption criteria in 32 CFR 219.101 are not required to have a Federal Assurance of Compliance. If selected, institutions must also provide documentation of Institutional Review Board (IRB) approval or a determination from an appropriate official in the institution that the work meets one of the exemption criteria with 32 CFR 219. As part of the IRB review process, evidence of appropriate training for all investigators shall accompany the protocol. The protocol, separate from the proposal, must include a detailed description of the research plan, study population, risks and benefits of study participation, recruitment and consent process, data collection and data analysis. No funding can be used towards human subjects research until all approvals are granted.

9.7 Recombinant DNA

All research involving recombinant DNA must include documentation of compliance with Department of Human and Health Services (DHHS) recombinant DNA regulations, and shall comply with the applicable federal and state law, regulation and any additional agency guidance. Research must be approved by an Institutional Biosafety Committee (IBC).

9.8 Department of Defense High Performance Computing Program

The DoD High Performance Computing Program (HPCMP) furnishes the DoD S&T and DT&E communities with use-access to very powerful high performance computing systems. Awardees may be eligible to use HPCMP assets in support of their funded activities if Program

Office approval is obtained and if security/screening requirements are favorably completed. Additional information and an application may be found at http://www.hpcmo.hpc.mil/.

9.9 Executive Compensation and First-Tier Subcontract Reporting

Section 2(d) of the Federal Funding Accountability and Transparency Act of 2006 (Pub. L. No. 109-282), as amended by section 6202 of the Government Funding Transparency Act of 2008 (Pub. L. 110-252), requires the Contractor to report information on subcontract awards. The law requires all reported information be made public, therefore, the Contractor is responsible for notifying its subcontractors that the required information will be made public.

Unless otherwise directed by the Contracting Officer, by the end of the month following the month of award of a first-tier subcontract with a value of $25,000 or more, (and any modifications to these subcontracts that change previously reported data), the Contractor shall report the following information at http://www.fsrs.gov for each first-tier subcontract:

(a) Unique identifier (DUNS Number) for the subcontractor receiving the award and for the subcontractor's parent company, if the subcontractor has one.
(b) Name of the subcontractor.
(c) Amount of the subcontract award.
(d) Date of the subcontract award.
(e) A description of the products or services (including construction) being provided under the subcontract, including the overall purpose and expected outcomes or results of the subcontract.
(f) Subcontract number (the subcontract number assigned by the Contractor).
(g) Subcontractor's physical address including street address, city, state, and country. Also, include the nine-digit zip code and congressional district.
(h) Subcontractor's primary performance location including street address, city, state, and country. Also, include the nine-digit zip code and congressional district.
(i) The prime contract number, and order number if applicable.
(j) Awarding agency name and code.
(k) Funding agency name and code.
(l) Government contracting office code.
(m) Treasury account symbol (TAS) as reported in FPDS.
(n) The applicable NAICS code.

By the end of the month following the month of a contract award, and annually thereafter, the Contractor shall report the names and total compensation of each of the five most highly compensated executives for the Contractor's preceding completed fiscal year at https://www.SAM.gov, if –

(a) In the Contractor's preceding fiscal year, the Contractor received –

(i) 80 percent or more of its annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and
(ii) $25,000,000 or more in annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and

(b) The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at http://www.sec.gov/answers/execomp.htm.).

Unless otherwise directed by the Contracting Officer, by the end of the month following the month of a first-tier subcontract with a value of $25,000 or more, and annually thereafter, the Contractor shall report the names and total compensation of each of the five most highly compensated executives for each first-tier subcontractor for the subcontractor's preceding completed fiscal year at http://www.fsrs.gov, if –

(a) In the subcontractor's preceding fiscal year, the subcontractor received –

(i) 80 percent or more of its annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and
(ii) $25,000,000 or more in annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and

(b) The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at http://www.sec.gov/answers/execomp.htm.).

If the Contractor in the previous tax year had gross income, from all sources, under $300,000, the Contractor is exempt from the requirement to report subcontractor awards. Likewise, if a subcontractor in the previous tax year had gross income from all sources under $300,000, the Contractor does not need to report awards to that subcontractor.

9.10 Subcontracting

For proposed awards to be made as contracts (that exceed $650,000) to other than small businesses, the offeror is required to submit a Small Business Subcontracting Plan. As such, Subcontracting Plans will be evaluated to ensure that submissions are compliant with FAR Subpart 19.7. Further, Subcontracting Plans are to address the Army subcontracting goals as follows:

- 35% for Small Business,
- 7% for Small Disadvantaged Business
- 5% for Small Women-owned Business
- 3% for Veteran Owned-Business
- 3% for Service-Disabled Veteran-Owned Business
- 7% for HUBzone

For proposed awards made as contracts to small businesses at any value, the offeror shall provide a statement which demonstrates how it intends to provide meaningful subcontracting opportunities to support this policy.

9.11 Limitations on Other Transactions

Offerors are advised that an Other Transaction for Prototype Projects (10 U.S. Code § 2371, Section 845) may only be awarded if the use of a standard contract is not feasible or appropriate. Offerors are advised that an Other Transaction (OT) for Prototype Agreement (P.L. Law 103-160 § 845) may only be awarded if there is:

a. At least one nontraditional defense contractor participating to a significant extent in the prototype project, or

b. No nontraditional defense contractor is participating to a significant extent in the prototype project, but at least one of the following circumstances exists:

i. At least one third of the total cost of the prototype project is to be paid out of funds provided by the parties to the transaction other than the federal government. The cost share should generally consist of labor, materials, equipment, and facilities costs (including allocable indirect costs).

ii. Exceptional circumstances justify the use of a transaction that provides for innovative business arrangements or structures that would not be feasible or appropriate under a procurement contract.

c. Although use of one of these options is required to use an Other Transaction for Prototype agreement as the procurement vehicle, no single option is encouraged or desired over the others.

For purposes of determining whether or not a participant may be classified as a nontraditional defense contractor and whether or not such participation is determined to be participating to a significant extent in the prototype project, the following definitions are applicable:

"Nontraditional defense contractor" means a business unit that has not, for a period of at least one year prior to the date of the OT agreement, entered into or performed on:

i. any contract that is subject to full coverage under the cost accounting standards prescribed pursuant to section 26 of the Office of Federal Procurement Policy Act (41 U.S.C. 422) and the regulations implementing such section; or

ii. any other contract in excess of $500,000 to carry out prototype projects or to perform applied research or advanced development projects for a Federal agency that is subject to the Federal Acquisition Regulation.

"Participating to a significant extent in the prototype project" means that the nontraditional defense contractor is supplying a new key technology or product, is accomplishing a significant amount of the effort wherein the role played is more than a nominal or token role in the research effort, or in some other way plays a significant part in causing a material reduction in the cost or schedule of the effort or an increase in performance of the prototype in question.

Offerors are cautioned that if they are classified as a traditional defense contractor, and propose the use of an OT, the Government will require submittal of both a cost proposal under the guidelines of the FAR/DFARS, and a cost proposal under the proposed OT, so that an evaluation may be made with respect to the cost tradeoffs applicable under both situations. The Government reserves the right to negotiate either a FAR based procurement contract, or Other Transaction as it deems is warranted under the circumstances.

9.12 Technical and Administrative Support by Non-Government Personnel

The Army may use non-government personnel (e.g. contractor support personnel) in the review and administration of submittals for this BAA. Support contractor employees may have access to proposal information including information that may be considered proprietary. All contractor support personnel having access to any proprietary data are required to execute nondisclosure agreements certifying that they will not disclose any information pertaining to this solicitation including any proposal submittals, the identity of any submitters, or any other information relative to this BAA. The contracts for provision of support personnel contain Organizational Conflict of Interest provisions and include contractual requirements for non-disclosure of proprietary contractor information.

9.13 Foreign Participants (also known as Foreign Persons) means any person who is NOT:

a. a citizen or national of the United States; or
b. a lawful permanent resident; or
c. a protected individual as defined by 8 U.S.C. § 1324b(a)(3).

"Lawful permanent resident" is a person having the status of having been lawfully accorded the privilege of residing permanently in the United States as an immigrant in accordance with the immigration laws and such status not having changed.

"Protected individual" is an alien who is lawfully admitted for permanent residence, is granted the status of an alien lawfully admitted for temporary residence under 8 U.S.C.§ 1160(a) or 8 U.S.C. § 1255a(a)(1), is admitted as a refugee under 8 U.S.C. § 1157, or is granted asylum under Section 8 U.S.C. § 1158; but does not include (i) an alien who fails to apply for naturalization within six months of the date the alien first becomes eligible (by virtue of period of lawful permanent residence) to apply for naturalization or, if later, within six months after November 6, 1986, and (ii) an alien who has applied on a timely basis, but has not been naturalized as a citizen within 2 years after the date of the application, unless the alien can establish that the alien is actively pursuing naturalization, except that time consumed in the Service's processing the application shall not be counted toward the 2-year period.

10.0 Army Requirements

10.1 Introduction

The Army requirements for this BAA are contained in paragraph 10.2. These references will be used in conjunction with the selection preference described in paragraph 7.4.

10.2 Army Requirements

Army Topic Number and Title: 1a-Soldier Force Protection
Description: US Army has an interest in any Technologies / Processes / Products and Procedures that will protect the individual soldier from lethal and debilitating injuries. Soldier as a system includes any of the above that will ensure survivability and improve the soldier fighting capability and sustainability in the war fight.
Technical Point of Contact: Arnold Boucher 508-233-5431 arnold.c.boucher.civ@mail.mil

Army Topic Number and Title: 1b Vehicle Force Protection
Description: US Army has an interest in any Technologies / Processes / Products and Procedures that will protect vehicles which include Wheeled, Tracked, and Robotic. This includes all aspects of vehicle protection to ensure the survivability of crews and sustainment of vehicles in the war fight. **Technical Point of Contact:** Marcia Czar 586-282-8757 marcia.a.czar.civ@mail.mil

Army Topic Number and Title: 1c Base Force Protection
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures that will protect all types of bases to include facilities, forward operating bases etc. Base camp protection is multi-dynamical and interest extends to all aspects of protection, survivability and sustainment of the inhabitants of various types of Base configurations.
Technical Point of Contact: Arnold Boucher 508-233-5431 arnold.c.boucher.civ@mail.mil

Army Topic Number and Title: 1d Force Protection Sensor Performance/Planning
Description: Demonstrate an affordable capability for predicting force protection sensor performance and sensor planning, compliant with the Army Common Operating Environment (COE) and Computing Environments (CE), and compliant with the Army Geospatial Enterprise (AGE). Capability will be developed utilizing Government developed software Environmental Awareness for Sensor and Emitter Employment (EASEE), and support critical modalities (visible, IR, acoustic, seismic, RF) and emitter platforms (both air and ground, stationary and moving) within EASEE. The capability will utilize the AGE infrastructure for ingesting geospatial foundation data and forecast weather data (Air Force Weather Agency), and dissemination of sensor performance and planning products across the COE and appropriate CEs. User interfaces must be intuitive and robust for usage by non-experts, and provide capabilities for optimizing surveillance sensor layouts around combat outposts, and for providing force protection and covertness during small-unit maneuvers.
Technical Point of Contact: Dr. Keith Wilson (603)-646-4764 D.Keith.Wilson@usace.army.mil

Army Topic Number and Title: 1e Methodologies for Rapid Sexual Assault Forensic Evidence Screening
Description: Develop a device that allows for the rapid screening of multiple types of bodily fluids on large scale items (e.g. bed sheets). The technology must maintain the integrity of the

sample, provide discrimination of several bodily fluids (e.g. saliva, vaginal fluid, blood, semen), and analyze a full range of surfaces (e.g. dark, light, patterned, planar, curved, vertical). The system should help analysts locate and identify the most probative samples to process to full analysis.
Technical Point of Contact: Brigid O'Brien, Defense Forensic Science Center, 404.469.7237, brigid.f.obrien.civ@mail.mil

Army Topic Number and Title: 1f Enhanced Forensic Analysis Platforms
Description: Develop novel and/or enhance existing software to interpret forensic data derived from physical evidence, including an assessment of the significance of association. This may include software platforms that provide quantitative measures and statistical evaluations of forensic evidence and/or assists in the analysis of previously uninterruptable data. The system should focus on one of the following three areas of interest; a) extracting information from mixed DNA samples, b) source attribution of forensic samples (e.g. explosives), or c) tools for low quality latent prints analysis.
Technical Point of Contact: Brigid O'Brien, Defense Forensic Science Center, 404.469.7237, brigid.f.obrien.civ@mail.mil

Army Topic Number and Title: 2a Dismounted Soldier Load Reduction
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures that can reduce the weight currently sustained by the individual Dismounted Soldier.
Technical Point of Contact: Arnold Boucher 508-233-5431 arnold.c.boucher.civ@mail.mil

Army Topic Number and Title: 2b Improved Environmental Characterization and Control
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures Enhanced Capability of Improved Environmental Characterization and Control. Establish capability to utilize and aerial deliver a reliable and affordable measurement system for environmental conditions, which will include ground temperature, humidity and position, and wind magnitude and heading at altitudes from 0-2000 feet (T) (0-18Kft, (0)) at Forward Operating Bases, test facilities, and other installations. Sensor suite will be ruggedized, fit within a Container Delivery System (CDS, less than 3.5ft cube) and weigh under 500lbs. Seeking addition of secure transmit data via SATCOM to support cargo airdrop resupply accuracy enhancements, and/or to use in initial Global Response Force airdrops to minimize follow on aircraft element spacing and/or to utilize for other contingency basing mission needs (e.g. UAS/VTOL landings, aerostat operations, basing efficiency optimization, etc.). Demonstrate ability to be airdrop deployed from altitudes of up to 25kft with existing airdrop systems from common USAF cargo aircraft, autonomously assemble and configure for the mission, and adapt altitude and azimuth of wind measurement vector for wind measurements at any angle above the horizon. Measurement modality must be safe to nearby personnel and stealth to enemy detection while "enhancements" ust be ruggedized, continue to be air droppable in a CDS and not exceed 300lbs.
Technical Point of Contact: Arnold Boucher 508-233-5431 arnold.c.boucher.civ@mail.mil

Army Topic Number and Title: 2c Soldier Borne Weapon Weight Reduction
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures for Materials and Processes to Reduce Soldier Load of any weapons system to include individuals weapons, ammunition, or Soldier Portable Missile Systems

Technical Point of Contact: Alan Santucci 973-724-4737 alan.f.santucci.civ@mail.mil

Army Topic Number and Title: 3b Position/Navigation, Sensors, Sensor Processing
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures that assures positioning and Navigation - Mapping Generators for Ground Applications - Soldier Reduced Reliability on Military GPS Receivers - AJ GPS Antenna for Ground Vehicles - Short Range Detection of Radio Transceivers for Physical Security - Automated Target Tracking in Wide Area Motion Imagery - Hyper spectral Data Processing - LADAR through Foliage Data Processing
Technical Point of Contact: Richard Nabors 703-704-1768 richard.a.nabors.civ@mail.mil

Army Topic Number and Title: 3c Tactical Situation Awareness
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures that improves Tactical Situational Awareness System (TSAS) - Bio-Inspired Battlefield Environmental Situational Awareness - Tactical Sensor Aggregation, Triggering and Dissemination - Contextually Based Tactical Mission Monitoring - Development of a Two Color Polari metric Camera System - Federated Extensible Data Store and Management Services Across core enterprise services (CES).
Technical Point of Contact: Richard Nabors 703-704-1768 richard.a.nabors.civ@mail.mil

Army Topic Number and Title: 4a Fuel Delivery Conduit/Fuel Delivery
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures dealing with High Pressure Conduit for Fuel Delivery System - Automated Pump Station for Fuel Delivery System
Technical Point of Contact: Marcia Czar 586-282-8757 marcia.a.czar.civ@mail.mil

Army Topic Number and Title: 4b Sustainability/Sustainment Logistics
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures dealing with Sustainability/Sustainment Logistics: Water Recycling Technology for Field Kitchen Sanitation Centers - Integral Heating Technology for Meal, Cold Weather/Long Ration Patrol (MCW/LRP)
Technical Point of Contact: Arnold Boucher 508-233-5431 arnold.c.boucher.civ@mail.mil

Army Topic Number and Title: 4c Packaging/Distribution/Identification/Retrograde of Materiel
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures dealing with Lightweight/Biodegradable Packaging, Blocking and Bracing - Distribution and Retrograde of Materials - Distribution of Materials - DNA based bar-coding for identification of Army Materiel
Technical Point of Contact: Alan Santucci 973-724-4737 alan.f.santucci.civ@mail.mil

Army Topic Number and Title: 5a Improved Warheads
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures Structural Reactive Materials for Enhanced Blast and Low Collateral Damage Warhead - Containerized Weapon System Lethality Improvements
Technical Point of Contact: Alan Santucci 973-724-4737 alan.f.santucci.civ@mail.mil

Army Topic Number and Title: 5b Lethality System Sensors
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures that improves video quality and increases sensor performance in lethality systems
Technical Point of Contact: Richard Nabors 703-704-1768 richard.a.nabors.civ@mail.mil

Army Topic Number and Title: 5c Hostile Fire Detection
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures that are capable of detecting Hostile Fire. Additionally, GMLRS Enhanced Proximity Sensor and Enhanced Moving Target Indicator (MTI) sought.
Technical Point of Contact: Dawn Gratz 256-842-8769 dawn.m.gratz.civ@mail.mil

Army Topic Number and Title: 6a Maneuverability Prediction
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures that predict maneuverability of modern ground systems in all environments. Additionally the Army is looking for physics-based Modeling/Simulation/Visualization on an Advanced Computing Infrastructure for Ground Vehicle Mobility Assessment.
Technical Point of Contact: Marcia Czar 586-282-8757 marcia.a.czar.civ@mail.mil

Army Topic Number and Title: 6b Range Improvement
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures that increase Range: Rate Sensor Development and Integration - Informed Operational Adaptability - Automated Refueling modular refueling station (MFS) for Combat Vehicles
Technical Point of Contact: Dawn Gratz 256-842-8769 dawn.m.gratz.civ@mail.mil

Army Topic Number and Title: 6c Degraded Visual Environment
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures that process information for aviators and robotics in Degraded Visual Environments
Technical Point of Contact: Dawn Gratz 256-842-8769 dawn.m.gratz.civ@mail.mil

Army Topic Number and Title: 7a Vapor Monitoring
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures for Near Real Time (NRT) Monitoring of Vapor Off-gassing or Permeation. Demonstrate the capability to provide near real time (NRT) monitoring of vapor and liquid chemical threats encountered in a CBRN environment. NRT monitoring should provide data output during the threat encounter and be visible and decipherable to operators of the analytical equipmen**t.**
Technical Point of Contact: Mandi Yocum 410-436-5406 amanda.l.yocum@us.army.mil

Army Topic Number and Title: 7b VX detection
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures for Low Level Detection of VX Vapor for Rapid Screening. Demonstrate a lower level detection range for VX vapor than the current technologies used
Technical Point of Contact: Mandi Yocum 410-436-5406 amanda.l.yocum@us.army.mil

Army Topic Number and Title: 7c Modeling Insensitive Munitions
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures for Modeling Insensitive Munitions and Energetic Material Production: Mixing, Reaction Kinetics and Systems Scaling in the 21st Century. Examine unique problems for heterogeneous chemical reactions used to produce novel insensitive munitions and focus on the steps required to scale from Test Tube to Pilot Plant reactor to Batch and Continuous Stirred Tank Reactor. Ensure correct mixing, quantify the impacts on reaction kinetics and the essential parameters that make the difference between failed and successful system scale-up.
Technical Point of Contact: Mandi Yocum 410-436-5406 amanda.l.yocum@us.army.mil

Army Topic Number and Title: 8a Traumatic Brain Injury Assessment and Treatment
Description: Traumatic brain injury (TBI) continues to be a significant issue due to IEDs, blasts, and/or blunt trauma. The Army medical community needs to be able to promptly assess, diagnose, treat, and rehabilitate Warfighters who have been exposed to ballistic, blast, and blunt traumatic events. Develop tools for Combat Medics that accurately and objectively assess Soldiers with mild to moderate TBI up to 24 hours post injury improving Soldier diagnosis, treatment, rehabilitation, and return to duty without increasing personnel or administrative burden, achieving a biomedical TRL 6 or greater. Additionally, these tools will provide improved information for leaders regarding their Warfighter's diagnosis, prognosis and outlook for return to duty following exposure to ballistic, blast and/or blunt traumatic events. Rapidly conduct in-field screenings and assessments to ensure more rapid and appropriate treatment to improve short and long term outcomes of mild and moderate TBI. Conceptually, technologies are unlimited and can include but are not limited to ocular, vestibular, and cognitive modalities.
Technical Point of Contact: LTC Chessley R. Atchison, 301-619-2423
Chessley.R.Atchison.mil@mail.mil

Army Topic Number and Title: 9a Solar Powered Systems
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures for Solar Powered systems to include but not limited to Refrigerated Container. For refrigerated containers, demonstrate the capability for reducing operational energy for refrigeration units serving 20-foot containerized cold storage assets through the use of advance compressor, heat-exchanger, expansion valve, and control technologies. The objective is to reduce the amount of fuel used by refrigerated containers by 30% annually and 50% during the hot season, reduce the procurement cost of the refrigeration unit, dramatically enhancing reliability, and providing enhanced operational capability, especially in hot climates.
Technical Point of Contact: Arnold Boucher 508-233-5431 arnold.c.boucher.civ@mail.mil

Army Topic Number and Title: 9b Waste/Wastewater Remediation and Environmental Control

Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures for small-scale onsite waste remediation and energy recovery - Expeditionary wastewater Treatment - Improved Environmental Control. The target scale is small and/or extra small expeditionary bases with an estimated waste generation rate of up to 1 ton/day of mixed waste. The objectives are to reduce the solid waste mass and volume by 90% or more, require minimal manpower, improve operational efficiency and produce only benign residues and emissions. Hardware to be packaged for rapid deployment (e.g., 6.5'x8'x 8' triple container), and

be self-powered or better in terms of JP-8 fuel and electric power. For wastewater treatment, fabricate prototype and validate the capability for improved operational energy for efficient, novel, and non-biological expeditionary wastewater treatment technology enabling reuse of grey water or the treatment of black water for safe on-site disposal. For improved environmental control, potential examples include rapidly deployable floor-based heating systems and higher efficiency air conditioning technologies that outperform existing electrical environmental control units. The overall objective is a 10% to 30% improvement in operational efficiency will justify the return on investment. Improving comfort levels of War fighters deployed in austere environments will significantly improve operational readiness and effectiveness.
Technical Point of Contact: Arnold Boucher 508-233-5431 arnold.c.boucher.civ@mail.mil

Army Topic Number and Title: 9c Battery Improvement
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures that increase the life cycle of soldier transportable, vehicular or aerial platform batteries. The focus is to increase the power capabilities while reducing weight and configuration.
Technical Point of Contact: Richard Nabors 703-704-1768 richard.a.nabors.civ@mail.mil

Army Topic Number and Title: 10a Ground Soldier System Embedded Training Enhancement
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures for embedded Training Enhancement Support Devices for Ground Soldier Systems - Collective Training: Mission Command Staff Training - Predictive Technologies for Simulations and Training. Design/develop/demonstrate an innovative device that could provide Description Soldiers improved Live, Virtual, and Constructive Embedded Training support. The device should operate within Ground Soldiers Systems low cost, weight and power limitations. To fully utilize emerging predictive technology capabilities, design Description approaches to integrate or federate predictive technology with the One Semi-Automated Force Objective System (OneSAF) Objective System must be developed and evaluated. The development and fielding of predictive technologies (i .e., decision aides) and the associated training methods to increase their efficacy, are needed by the Warfighter community.
Technical Point of Contact: Arnold Boucher 508-233-5431 arnold.c.boucher.civ@mail.mil

Army Topic Number and Title: 10b Training System Attitude/Heading Measurement
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures for absolute Attitude and Heading Reference Measurement System. Develop/demonstrate a low cost live training tactical engagement Description simulation device that can measure absolute heading relative to the Earth's true north with an accuracy of3 mils or better without the use of pre-emplaced infrastructure and that does not rely on the use of magnetometer based referencing of the Earth's magnetic field.
Technical Point of Contact: Fran Rush, 301-394-4961 francis.e.rush.civ@mail.mil

Army Topic Number and Title: 10c Complex System Training
Description: Develop and validate technology solutions for training complex system tasks in ambiguous operational environments. Extend the reach of institutional training by providing networked training solutions to enhance operator and commander decision making, situation awareness and understanding, and supervisory control in the employment of new and evolving complex, highly automated systems, e.g., Patriot, Distributed Common Ground Station - Army.

Establish measures to quantify performance and provide tailored feedback at team/crew/staff and individual duty position levels.
Technical Point of Contact: Dr. M. Glenn Cobb (706)-545-2198 marshell.g.cobb.civ@mail.mil

Army Topic Number and Title: 10d Training Tactical Communications in Virtual Environments
Description: Demonstrate advanced technologies to assess and train tactical voice communications in realistic virtual training environments, e.g., with manned and unmanned Aviation simulations and simulators. Utilize automated speech recognition and natural language processing technologies to guide interactions in adaptive game-based and immersive training environments and to provide performance feedback on the accuracy of voice communications. Integrate voice communications technologies into existing and/or emerging Army training systems along with complementary training support materials and scenarios, and measures to assess effectiveness.
Technical Point of Contact: Dr. Martin Bink (706) 545-5513 martin.l.bink2.civ@mail.mil

Army Topic Number and Title: 10e Training Technology Solutions to Enhance Army Instructors
Description: Develop and validate advanced technology solutions to facilitate the development of the Army instructor knowledge and skills. Building from the current Army Basic Instructor Course (ABIC), develop technological solutions to provide follow-on training and education for instructors addressing topics such as instructional theory, instructional methods, formative and summary student assessment, and classroom management and administration. Extend instructor training to address instructors' effective integration of training technology and training devices into institutional training. Propose measures for assessing increases in instructor effectiveness.
Technical Point of Contact: Dr. William R. Bickley (706)-545-2532 william.r.bickley.civ@mail.mil

Army Topic Number and Title: 10f Training Technologies for High Cognitive-load Tasks
Description: Demonstrate advanced technologies to assess and optimize human cognitive load during training. Utilize cognitive-load assessment technologies to enhance training of tasks with high cognitive load such as in aviation operations, combined arms engagements, mission command, air and missile defense, or multiple intelligence sensor training. Integrate cognitive-load assessment and optimization technologies into existing and/or emerging Army training systems along with complementary training support materials and scenarios. Demonstrate training effectiveness of new technologies.
Technical Point of Contact: Dr. Martin Bink (706) 545-5513 martin.l.bink2.civ@mail.mil

Army Topic Number and Title: 11a Ease Mechanical lED Defeat Enabler Integration
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures that Ease Mechanical IED Defeat Enabler Integration. Develop the means to integrate control signals to operate Mechanical IED Defeat Enablers such as Rollers, Interrogation Arms, Blowers, Wire Neutralization Systems onto Armored platforms without penetrating the Armor protection. Utilizing Power Line Communications (PLC) enables the transmission of control signals through the vehicles inherent electrical system. Receiving the control signal through the NATO Power receptacle eliminates the need to penetrate the Armor with large cables; the signal would then be demodulated and used for system control inputs at the enabler itself

Technical Point of Contact: Marcia Czar 586-282-8757 marcia.a.czar.civ@mail.mil

Army Topic Number and Title: 11b Advanced Systems Engineering Capability (ASEC) Framework
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures for advanced Systems Engineering Capability (ASEC) Framework - Quantify decision interactions in support of early systems design trades. ASEC is an integrated Systems Engineering knowledge creation and capture framework built on a decision centric method with high quality data visualizations, intuitive navigation that enables continuous data traceability, real time collaboration and knowledge pattern leverage supporting the entire system lifecycle. The benefits of using ASEC are that it is a single framework for continuous knowledge and solution pull with full lifecycle traceability pattern leverage to reduce development time, reduce and manage technical risk, and improve the speed to market of our programs. Products would be integrated with the ASEC Framework.
Technical Point of Contact: Marcia Czar 586-282-8757 marcia.a.czar.civ@mail.mil

Army Topic Number and Title: 11c Maintenance Modeling for Reducing the Maintenance Footprint
Description: Develop and demonstrate a generalized maintenance modeling and simulation tool that factors in variability in the operational tempo (optempo), failure rates, age of equipment, battlefield damage, scheduled maintenance, cannibalization, technology enhancers, and human performance variables that affect maintenance performance (e.g., skill level, experience, training). Exan1ine the potential to incorporate advanced technologies in optimization, data mining, and data visualization to automatically characterize critical performance variables and optimize the maintenance process model to minimize the "Repair Cycle Time".
Technical Point of Contact: Marcia Czar 586-282-8757 marcia.a.czar.civ@mail.mil

Army Topic Number and Title: 11d Insensitive Munitions: Manufacturing of an Insensitive High-Output Melt Phase Energetic, DNMT
Description: US Army has an interest in any Technologies / Processes / Logistics / Products and Procedures for Insensitive Munitions: Manufacturing of an Insensitive High-Output Melt Phase Energetic DinitroMethyltriazole (DNMT). Optimize the production and manufacturing capability for DNMT, a Description sought after IM high-output energetic binder. The requirement to implement technologies to achieve IM properties has taken PMs down a path where some lethality and performance output is sacrificed. DNMT has been demonstrated as a HE main fill in the M67 grenade, where performance is not sacrificed.
Technical Point of Contact: Alan Santucci 973-724-4737 alan.f.santucci.civ@mail.mil

11.0 Defense research and development RIF science and technology thrust areas

- **Enhancing Energy Security and Independence**. For investment in technologies that will improve energy efficiency, enhance energy security, and reduce the Department's dependence on

fossil fuels through advances in traditional and alternative energy storage, power systems, renewable energy production and more energy efficient ground, air, and naval systems.

- **Developing, Utilizing & Maintaining Advanced Materials**. For a broad range of materials technologies that can provide: Enhanced performance in extreme environments; improved strength and reduced weight for the spectrum of applications ranging from aerospace to lighter soldier loads; greater survivability of ground, air, and naval systems; and reduced life cycle costs through better maintainability for a wide variety of the challenging environments and unique properties demanded of military systems. Such materials could include advanced composites and metals, nanomaterials, and rare-earth alternatives.

- **Improving Manufacturing Technologies and Capabilities.** For advanced and innovative manufacturing technologies across the spectrum of applications to significantly compress design to production time cycles, reduce cost, minimize waste and energy consumption, and improve product quality and reliability. Based on coordination with the Office of the Deputy Assistant Secretary of Defense for Manufacturing and Industrial Base Policy, needed manufacturing technology advances include: Advanced joining techniques (e.g., composite bonding, friction stir welding, and laser welding) for shipbuilding, aviation and combat vehicle programs; flexible automation and advanced robotics to improve the yield of critical parts; techniques for improving transparent ceramics that satisfies performance, cost, and weight goals for both Soldier and weapon system armor; additive manufacturing to fabricate parts in a layer-by-layer fashion directly from a digital design; manufacturing for portable power such as fuel cells; electronics manufacturing for short wave infrared, photonics / radio frequency components and three-dimensional chip stacking including thermal management; and secure network applications that provide for secure protocol transfer, integrated data sharing, and protection of intellectual property.

- **Advanced Microelectronics**. The development of resilient advanced microprocessors, application- specific integrated circuits, field programmable gate arrays, printed circuit boards, photonics devices, and other related electronics components for the next-generation of military and intelligence systems, including commercial-off-the-shelf (COTS) technologies or applications for the Advanced Components for Electronic Warfare (ACE) Program: Developing integrated photonic circuits (IPC); millimeter-wave source and receiver components for EW (MMW); reconfigurable and adaptive RF electronics (RARE); and heterogeneous integration for photonic sources (HIPS).

- **Developing Cybersecurity Tools**. Full-spectrum cyberspace operations require full situational awareness of the battlespace in the cyber domain that allow for complementary offensive and defensive actions. To support this requirement, develop and demonstrate capabilities to rapidly and thoroughly enumerate, characterize, and visualize friendly, neutral, and adversary networks down to the device level. Specific elements of interest include: Cooperative and non-cooperative mapping techniques/capabilities, including internet and network mapping; geo-location of network devices and nodes; techniques for inferring additional system details; techniques to increase the speed of mapping and discovery; software reverse engineering and vulnerability analysis; network

data collection and analysis; and new innovative defensive techniques against cyber-attacks—especially in virtual environments, and integrated cloud security capabilities.

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