Department of Defense Distribution Research and Development Broad Agency Announcement (BAA)

The United States Transportation Command (USTRANSCOM), Scott AFB, Illinois, as the DOD's Distribution Process Owner (DPO), is soliciting proposals for innovative and transformational research and development of new joint concepts, prototypes, and studies, demonstrations, and experiments on technologies with strong potential to increase the responsiveness, efficiency, and effectiveness of DOD joint distribution and transportation operations, in support of the full spectrum of joint global military operations. Funding for these efforts will commence with receipt of USTRANSCOM Research, Development, Test and Evaluation funds.

This is a two-phase selection process. Phase I requires submittal of white papers of 5 pages. Successful offerors from Phase II will be required to complete a full 25-page proposal to inform the final selection process (formats for both phases' submittals is described below).

The *Top Three Operational Challenges* (Attachment 1) and the DPO *Capability Gaps and Process Opportunities* (Attachment 2) describe priority needs of the DOD distribution system. They should be used to choose proposal topics. Proposals addressing the Operational Challenges and the higher DPO Capability priorities will possess a competitive advantage during the Government's selection process. However, proposals addressing lower-ranked gaps may also compete if they possess many of the other suitability characteristics listed below.

Approximately $6-10M total in FY08 and $15-20M total in each year from FY09-FY13 is anticipated to be available for award. Typical projects in the RDT&E portfolio are in the $2-5M range.

Proposals should specify single- or multi-year efforts suitable for DOD Research, Development, Test and Evaluation (RDT&E) funding, beginning in FY08. Proposals should clearly describe the intended level of technological maturity at project start and end using the Technology Readiness Level descriptions at Attachment 3.

In recognition that customer-identified "requirements pull" needs are not the sole driver of innovation, offerors may choose to submit wholly new technology concepts for consideration; however, such "technology push" proposals must convincingly show how further development can be expected reveal a new, scientifically sound, and practical approach to fulfilling the DPO gaps.

Offerors may submit proposals for *multi-year programs* of research and development focused on exploration of capabilities for the DPO gap areas listed below. If multi-year/multi-project efforts are proposed, offerors should identify a baseline project, (including, if appropriate, a start-up scientifically/engineering-based study) with optional follow-on efforts to be selected by the Government, based on the Government's

assessment of the success of earlier segments, continued interest in proposed capability, and the availability of funding.

Offerors may also submit *project-level efforts* for research and development of individual applications, techniques, procedures, or tools to address a specific need. Examples include investigating the feasibility of applying a commercially-available technology to a specific DOD distribution need.

The offeror must describe how these programs or projects, if executed, will prove the feasibility of addressing the DPO gaps and show positive return on investment of the selected concept

At the discretion of the Government, follow-on efforts may be selected to more fully develop or acquire/integrate the capability or tool into DOD distribution operations.

A competitive process will be conducted by the Government to determine which proposals are most advantageous and therefore worthy of funding.

Proposals most likely to be chosen by the government will demonstrate a significant number of these suitability characteristics. See the project selection criteria at Attachment 4 for additional details:

- Addressing joint warfighting capability needs, enhancing DOD operations requiring situational awareness and synchronization of multiple Service/Agency organizations (not Service-specific capability or end-items);

- Focused on highest-priority DPO gaps;

- Enhancing performance of the distribution system (its reliability, responsiveness, efficiency, flexibility, visibility, security) in service to multiple distribution customers;

- Demonstrating an excellent understanding of the state-of-the-art of the chosen technology and an equally strong understanding of DOD/USTRANSCOM operations and shortfalls in capability;

- Utilizing or studying technology starting between Technology Readiness Levels (TRL) 4 and 6 (a description of TRLs is at Attachment 3.) Proposals will also describe the intended ending TRL and a proposed System of Record in which the new capability will be integrated.

- Delivering a significant positive Return on Investment, if put into use

If an offerors' conference is required to facilitate the prioritization/selection process, a separate announcement will be issued.

Total funding available for this BAA is estimated to be $10 million in FY08 and $15 million in subsequent fiscal years. Awards may take the form of procurement contracts, grants, cooperative agreements, or other transactions as appropriate. The Government reserves the right to fund all, any, none, or part of the proposals received under this BAA. The Government provides no funding for direct reimbursement of white paper or proposal development costs.

Proposal submittal instructions are at [Attachment 5, or Insert link] (from 61-1)

Additional information on the USTRANSCOM RDT&E program is available at http://rdte.transcom.mil.

All responsible sources capable of satisfying the Government's needs may submit a proposal. Historically Black Colleges and Universities (HBCU) and Minority Institutions (MI) are encouraged to submit proposals and join others in submitting; however, no portion of this BAA will be set aside for HBCU and MI participation due to the impracticality of reserving discrete or severable areas of research for exclusive competition among these entities.

Questions of a contractual nature should be directed to XXXXXXX. Questions of a technical nature should be directed to XXXXXXX.

Attachment 1.

Top Three Operational/Technical Challenges

1. C4IO (global C3 to include en route comms that support JDDOC/JTF-PO/DM4/DV aircraft/etc.; requirements visibility, assessment, & planning; true E2E TAV/ITV {facilitating container management/movement control/etc.})

2. MAF All Weather Capability (next-generation JPADS {i.e., laser-guided, longer range chute systems, use of optics/terrain image vice GPS}, autonomous landing & refueling, etc.)

3. Defensive Systems (including mobility assets, CBRNE, etc.)

Attachment 2.

Capability Gaps and Process Opportunities
***USTRANSCOM TCJ5-A's top priority**

1 Intransit Visibility
2 Distribution Planning and Forecasting
3 Joint Transportation Interface
4 Requisition Priorities
5 Joint Logistician
6 Supply Chain Sustainment Simulation Tools
7 Defense Transportation System (DTS) Expansion
8 Container Management
9 Cargo Booking
10 DoD Activity Address Codes (DODAAC) Management

11 Receipts & Accountability
12 Distribution Performance Metrics Strategy
13 Commercial Cargo Integration
14 Movement of Non-DoD Goods
15 Joint Retail Inventory Interoperability
16 Exercising Joint and Interagency Capabilities
17 Carrier Performance and Availability
18 Tracking of Consolidated Orders
19 Retrograde Scheduling and Preparation
20 Customer Service

21 Heavy Weight Commercial Tender
22 Class III Transportation Responsibility
23 Determine and Coordinate Convoy Security
24 Mail Delivery
25 Predictive Forecasting for Equipment Failures
26 Class VIII Materiel Handling
27 Pallet Build Business Rules
28 Legal and Regulatory Updates
29 Customer Returns

Detailed descriptions of each of these gap areas may be found at [insert link to DPO Gaps list]

Attachment 3.

Technology Readiness Levels[1]

Most likely entry TRLs for USTRANSCOM RDT&E funding are TRL 4-6. Work beginning in TRL 7 generally falls in the area of system acquisition, not science and technology.

Some projects at TRL 3 may compete well for funding; for example, scientifically based studies to refine needs or explore the potential (the possible envelope of performance) for new technologies.

Lower TRL entry levels suggest follow-on efforts will be additional laboratory work to mature the technology.

Higher TRL entry levels suggest follow-on work will be in system program offices for integration, test, and operational qualification.

Highest likely exit TRL for USTRANSCOM RDT&E funding is TRL 7. Work beyond TRL 7 generally falls in system program offices.

TRL Levels Defined:

TRL 1. Basic principles observed and reported. Lowest level of technology readiness. Scientific research begins to be translated into applied research and development. Examples might include paper studies of a technology's basic properties.

TRL 2. Technology concept and/or application formulated. Invention begins. Once basic principles are observed, practical applications can be invented. The application is speculative and there is no proof or detailed analysis to support the assumption. Examples are still limited to paper studies.

TRL 3. Analytical and experimental critical function and/or characteristic proof of concept. Active research and development is initiated. This includes analytical studies and laboratory studies to physically validate analytical predictions of separate elements of the technology. Examples include components that are not yet integrated or representative.

(continued)

[1] Adapted from GAO/NSIAD-99-162 Best Practices Appendix I Technology Readiness Level Descriptions

TRL 4. Component and/or breadboard validation in laboratory environment. Basic technological components are integrated to establish that the pieces will work together. This is relatively "low fidelity" compared to the eventual system. Examples include integration of "ad hoc" hardware in a laboratory.

TRL 5. Component and/or breadboard validation in relevant environment. Fidelity of breadboard technology increases significantly. The basic technological components are integrated with reasonably realistic supporting elements so that the technology can be tested in a simulated environment. Examples include "high fidelity" laboratory integration of components.

TRL 6. System/subsystem model or prototype demonstration in a relevant environment. Representative model or prototype system, which is well beyond the breadboard tested for TRL 5, is tested in a relevant environment. Represents a major step up in a technology's demonstrated readiness. Examples include testing a prototype in a high fidelity laboratory environment or in simulated operational environment.

TRL 7. System prototype demonstration in an operational environment. Prototype near or at planned operational system. Represents a major step up from TRL 6, requiring the demonstration of an actual system prototype in an operational environment with representatives of the intended user organization(s). Examples include testing the prototype in structured or actual field use.

TRL 8. Actual system completed and operationally qualified through test and demonstration. Technology has been proven to work in its final form and under expected operational conditions. In almost all cases, this TRL represents the end of true system development. Examples include developmental test and evaluation of the system in its intended or pre-production configuration to determine if it meets design specifications and operational suitability.

TRL 9. Actual system, proven through successful mission operations. Actual application of the technology in its production configuration and under mission conditions, such as those encountered in operational test and evaluation. In almost all cases, this is the end of the last "bug fixing" aspects of true system development. Examples include using the system by operational users under operational mission conditions.

Attachment 4.

USTRANSCOM Research, Development, Test and Evaluation Program
Project Selection Criteria

1. Traceability to Requirements
    a. Mission Area ICD/ICD/CDD/DOTMLPF Change Recommendation package
    b. Functional Area/Needs Analysis (FAA/FNA)
    c. Lessons Learned
    d. Joint Concept Development document (JOpsC/JOC/JFC/JIC)
    e. Wargaming/Joint Experimentation results

2. Applicability to Joint Deployment Distribution Enterprise
    a. Transformational potential (versus "modernization")
    b. Joint capability crucial to DOD supply chain
    c. Not associated with major weapon system or end item acquisition program

3. Potential ROI and Affordability
    a. Shows significant positive ROI in lifecycle of application
    b. Demonstrates a compelling business case for use

4. Technical Merit
    a. Utilizes sound scientific/engineering principles, as assessed by experts in pertinent disciplines

5. Technical Maturity
    a. Project demonstrates Technology Readiness Level 4-6 at startup
    b. Project demonstrates TRL advancement commensurate with funded level of effort, but not beyond TRL 8 at conclusion

6. Programmatics
    a. Project plan demonstrates well-defined, defendable, and properly interrelated cost, schedule, and performance objectives
    b. Project is structured in achievable phases or spirals with clear deliverables
    c. Project demonstrates well-defined exit criteria, performance goals, and well-defined deliverables (studies, hardware or software prototypes, experimentation results, etc.

7. Technology Transition Potential
    a. Project has committed transition/integration agency, defined by provision of project manager or owning agency and identifies committed funding for next steps or transition to further development work
    b. Project plan demonstrates adequate understanding of integration requirements if intended to transition to operational use, or presents clear methodology for determining those requirements during the course of research