

BAA 08-36
Urban Leader Tactical Response, Awareness &
Visualization
(ULTRA-Vis)

Broad Agency Announcement (BAA)

for

Information Processing Techniques Office (IPTO)
Defense Advanced Research Projects Agency (DARPA)

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Part One: Overview Information

- **Federal Agency Name** – Defense Advanced Research Projects Agency (DARPA), Information Processing Techniques Office (IPTO)
- **Funding Opportunity Title** – Urban Leader Tactical Response, Awareness & Visualization (ULTRA-Vis)
- **Announcement Type** – Initial Broad Agency Announcement (BAA)
- **Funding Opportunity Number** – BAA 08-36
- **Catalog of Federal Domestic Assistance Numbers (CFDA)** - N/A
- **Key Dates**
 - Proposal Due Date
 - 1200 noon (ET), 16 June 2008
 - Industry Day – 12 May 2008
- **Multiple awards are anticipated.**
- **Types of instruments that may be awarded - Procurement Contracts and Other Transaction Agreements. Offerors should note that Grants and Cooperative Agreements will not be available under this solicitation.**
- **Technical POC:**
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Part Two: Full Text of Announcement

DARPA often selects its research efforts through the Broad Agency Announcement (BAA) process. The BAA will appear first on the FedBizOpps website, <http://www.fedbizopps.gov>. The following information is for those wishing to respond to the BAA.

DARPA is seeking innovative proposals from well-qualified sources for a new technology program called Urban Leader Tactical Response, Awareness & Visualization (ULTRA-Vis). ULTRA-Vis will build a soldier worn system that provides non-line-of-sight (NLOS) command and control (C2) in distributed urban operations for dismounted warfighters.

I. FUNDING OPPORTUNITY DESCRIPTION

BACKGROUND

Current military operations are focusing efforts on urban and asymmetric warfare, as well as distributed operations, but small unit leaders lack the capability to issue commands and share mission-relevant information in an urban environment non-line-of-sight. Various factors that can impact mission effectiveness and tempo of operations are:

- leaders communicate by shouting and hand signals,
- teams operate within earshot and line-of-sight,
- intra-squad radios are hard to hear, and
- leaders must stop to use handheld displays.

Military operations in the urban terrain (extensive areas with hostile forces, non-combatant populations, and complex infrastructure) require special capabilities and agility to conduct close-combat operations under highly dynamic, adverse conditions. In short, tactical leaders need the ability to adapt on the move, coordinate small unit actions and execute commands across a wider area of engagement. Significant tactical advantages could be realized through the small unit leader's ability to intuitively generate/route commands and timely actionable combat information to the appropriate team or individual warfighter in a readily understood format that avoids information overload.

Thus, the goal of the ULTRA-Vis program is to enable the small unit commander to disseminate commands and *actionable combat information* over a wider area to support distributed, non-linear, operations. To accomplish this goal, the ULTRA-Vis program will be focused on:

- developing information processing techniques to recognize/interpret a small unit leader's gesture/ voice commands,
- develop techniques to create/disseminate/display geo-registered icons and actionable combat information for Fire Team Leaders/Dismount Warfighters in real time over an existing soldier radio network, and
- developing/integrating the necessary critical enabling technologies, such as 1) a low profile, see-through display, and 2) demonstrating multi-modal iconic C2 in a NLOS, urban environment with prototype systems.

PROGRAM OVERVIEW

- ULTRA-Vis consists of critical technology components that provide the platoon or squad leader with the ability to issue commands and tactical information to the squad or individual fire teams (as depicted in the example shown in Figure 1 below). ULTRA-Vis will develop the key technologies that allow unit leaders and members to selectively transmit critical combat information in the form of icons using low bandwidth soldier voice and data radios.



Figure 1. ULTRA-Vis Operational Scenario (Example)

The key technology areas to be developed include:

- A multi-modal interface to recognize the leader's hand and arm signals (gestures) and voice commands. This interface will have the capability to recognize gesture, voice and tactile commands simultaneously for accurate interpretation.
- An information management engine to interpret the command and convert it to a standard, geo-registered icon or symbol for dissemination. The information management engine will not only convert the commands to standard iconic forms, but also will merge data from other contextual and off-board sources into the data packet to be transmitted to the team or individual intended to receive the command.
- A see-through display to overlay the icon on the battlefield as seen from each warfighter's own perspective. The small unit will be outfitted with low-profile, non-occluding head-mounted displays for overlay of geo-registered icons on the real world environment. A head-tracking navigation unit will serve to align and display the icon from each warfighter's perspective.

The advanced system will give each member of the unit the actionable combat information needed to increase awareness and enable dismounted units to be more effective in a distributed battle space. The system architecture shown below in Figure 2 is a notional concept describing functional capabilities and information flow for the ULTRA-Vis system. Offerors are encouraged to propose innovative approaches to achieve the highest level of overall system effectiveness, meeting or exceeding the program goals as outlined in this BAA. The proposed

concepts will be refined through preliminary design trades to define the system architecture and the performance characteristics.

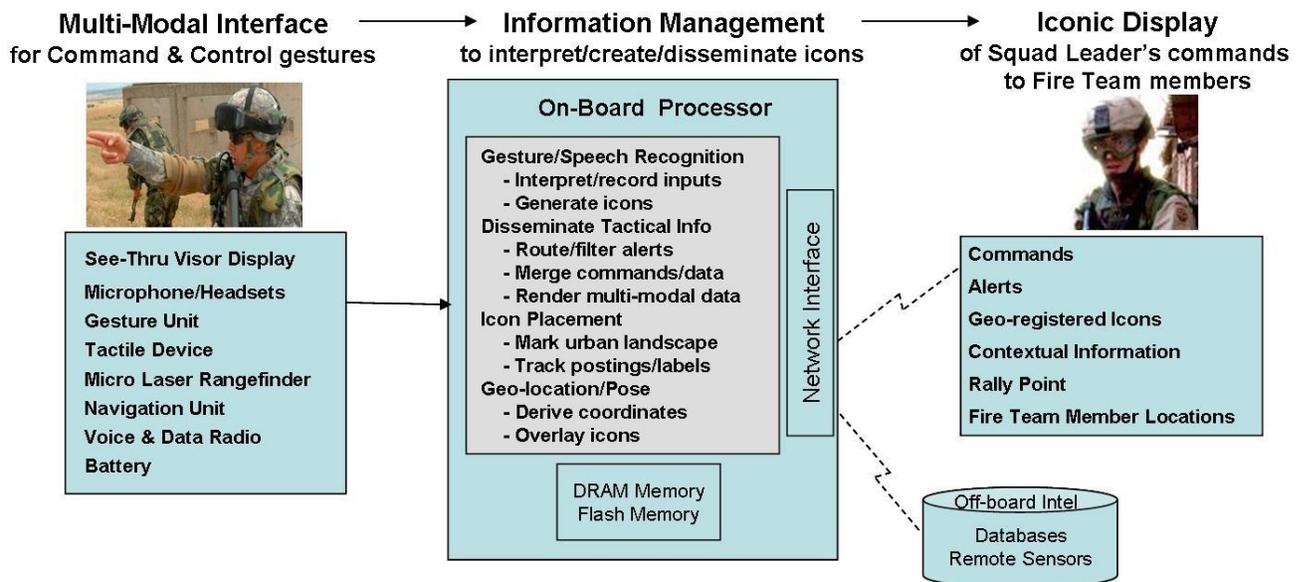


Figure 2. Notional System Architecture and Information Flow

As stated above, the ULTRA-Vis program will develop and integrate the hardware components and software elements needed to create, disseminate and display the commands/alerts/tactical information for command and control of a networked squad of dismounted warfighters. These components and elements may incorporate a mix of commercial and developmental units that provide intuitive and accurate recognition of gestures and pointing actions. The multi-modal interface will interpret the input from the audio/visual/tactile devices and convert the actionable combat information into symbology (geo-registered icons) for transmission through the existing low bandwidth dismount soldier network. An information management engine will use a combination of cognitive tools, intelligent filtering methods, and other relevant techniques to enable real time distribution of tactical information to the intended recipients. The interface will provide methodology for timely determination of location and identity of networked entities and the capability to affix/overlay 3D geo-registered icons on the battlespace for accurate viewing by distributed units from their perspective. The geo-registered icons will be also be used to label and track friendly positions as required. The critical command/alert/tactical information will be disseminated to specific team members in such a way as to avoid information overload. ULTRA-Vis should enable small unit leaders to graphically annotate the real world (as seen through their display/goggles) and enable warfighters, to whom the commands are sent, to view (from their vantage point) the geo-located, iconic representations accurately overlaid on the battlespace.

In short, ULTRA-Vis will provide a soldier-worn system that allows the small unit *leader* to:

- generate iconic representations of hand/ arm signals and transmit the iconic commands to a networked squad,

- display geo-registered icons to the battlefield that are visible on a see-through head-mounted display from each warfighter’s perspective, and
- conduct NLOS combat operations using hands-free, iconic C2 while on the move.

PROGRAM SCOPE

This BAA seeks proposals that address the multi-phase ULTRA-Vis program. Proposed research should investigate innovative approaches and techniques that lead to or enable revolutionary advances in the state of the art. Proposals should address research that substantially contributes toward the goals stated and should be organized to fall within the tasks for each phase (which are described in detail below). Proposals shall provide detailed descriptions of the offeror’s technical approach for each phase and task of the development program.

Phase 1: Critical Technology Demonstrations

- Task a: Recognize hand and arm signals (gestures)
- Task b: Create/display geo-registered icons from different perspectives
- Task c: See icons in full sunlight conditions on see-through display
- Task d: Conduct system design trade study and CONOPS development

Phase 2: Multi-Modal Testbed Demonstrations

- Task a: Display icons in 3 colors (R-G-B)
- Task b: Integrate multi-modal testbeds for test and evaluation
- Task c: Support system test and evaluation

Phase 3: System Prototypes for Evaluation/Transition

- Task a: Fabricate/test/demonstrate prototype units for transition
- Task b: Support Service field evaluation

Offerors must clearly demonstrate their team’s ability to perform the multidisciplinary tasks of the ULTRA-Vis system development effort.

In this BAA, DARPA seeks proposals for the ULTRA-Vis program culminating in prototype units for transition to military end-users. Proposals shall address the full system solution that incorporates the tasks of each of the three phases of the program. Funding for subsequent phases will be contingent upon satisfactorily meeting the operational metrics (Go/No-Go criteria) of the previously completed phase and the availability of funds, among other program considerations.

PROGRAM STRUCTURE (Phase and Task Descriptions)

The envisioned ULTRA-Vis program has three phases as described below and consisting of the following tasks.

Phase I: Critical Technology Demonstrations

Phase I will focus on developing the key technologies for the various ULTRA-Vis core capabilities and functional components. There are three key technology areas to be demonstrated within Phase I:

- a. the ability to recognize standard hand and arm signals as used by small unit leaders in close range combat operations,

- b. the capability to create geo-registered icons (from the leader's pointing action), and affix the icons with high placement accuracy to the environment on the receiver's display (from his perspective), and
- c. an advanced see-through display based on a low-profile, non-occluding configuration.

Individual gate metrics apply to each technology component that will be integrated into a testbed system in Phase II (see Figure 3 in the Metrics Section below). As stated above, these components and elements may incorporate a mix of commercial and developmental units that provide intuitive and accurate recognition of gestures and pointing actions. However, offerors should be sure to pay particular attention to the Intellectual Property information in Section VI.B.2 below. Each component must be tested and evaluated individually to verify that the operational metrics (Go/No-Go) have been satisfactorily met. A rigorous system design trade analysis must be conducted to define the system architecture and to identify potential integration challenges leading to an integrated design concept. In addition to the tests to meet the Go/No-Go Gate criteria at the conclusion of Phase I, the offeror must conduct interim tests and demonstrations to evaluate progress during the technology development effort. These interim tests will serve to confirm that each technology is on track to meet the Phase I Gate metrics.

Additionally, a detailed Concept of Operations (CONOPS) will be developed in cooperation with potential Service transition partners to provide a description of the how the ULTRA-Vis capabilities will serve to meet specific military objectives.

The following tasks describe the technical areas to be addressed in Phase I.

Task a: Gesture Recognition:

An important component of the multi-modal interface is the gesture recognition unit. The gesture recognition unit will provide the leader with the capability to convey standard hand and arm signals and affix icons to the battlespace through pointing actions. The task will show that hand and arm motions are distinctly recognizable through interpretation of data inputs from one or more sensors and clearly distinguishable from other gestures or actions. At least 10 standard visual signals (hand and arm gestures) must be used to demonstrate the functionality and accuracy of this system component. The gesture recognition unit will be capable of achieving at least 99% probability of recognition during testing procedures that will be clearly defined in the proposal.

To demonstrate the gesture recognition unit and verify its performance, hardware components will be integrated, algorithms will be developed and procedures will be defined to meet the stated goals of the task as specified in the Gate metrics.

Task b: Geo-registration of Icons:

A critical capability of the ULTRA-Vis system is the creation of icons which are affixed to the battle space, i.e., three dimensionally (3-D) geo-registered, by a pointing action of the leader and to hand off the information to other squad members who will see that geo-registered icon accurately positioned on the battle space *from each warfighter's viewing perspective*. This task will include the integration of hardware and software elements that are needed to accurately mark an object or target location in three dimensions and relay the geo-spatial information to a

recipient (i.e., overlay the icon accurately on the object/target as observed from the recipient's point of view). See-through displays will be used 1) by the leader (sender) to view the icon that is generated on the object/target being designated by their pointing action, and 2) by the squad member (receiver) to view the icon in their display, accurately affixed (geo-registered) to the designated object/target regardless of the receiver's viewing perspective.

As outlined in Figure 3 in the Metrics Section below, the two-dimensional angular positioning accuracy (azimuth and elevation) must be within 10 milliradians in each direction; the range uncertainty to the object/target should be less than 0.1 meters to specify the 3-D geolocation of the object/target. The viewing perspective of the recipient should be varied over a wide range of viewing angles and distances to the object/target to show broad operational capability. With the display stationary and operating at a 60 Hz frame rate, the icon jitter on the display must not exceed 0.5 milliradians. A test procedure must be described in the proposal that adequately demonstrates the process to be used to verify that these Gate metrics have been achieved.

Task c: See-through Display

In order to view icons overlaid on the battle space, an advanced, see-through display is needed that will ultimately be a lightweight, small-profile, non-occluding, head-mounted unit which will be acceptable to the end-user during combat operations. The display should not occlude any portion of the user's visibility of the battle space. As an example, a dust goggle configuration permits full visibility of the wearer's natural field of view. As outlined in Figure 3 in the Metrics Section below, this task must develop and demonstrate a monochrome see-through display that exhibits brightness of at least 2000 foot-Lamberts so that the displayed icons are visible on a background luminance of up to 10000 foot-Lamberts. The display will have the capability to project icons over a 40 degree field of view. These operational goals are required to meet the Gate metrics. A well defined test procedure shall be described in the proposal to validate that the Gate metrics are satisfactorily met.

A display having a large-exit pupil and eye relief (large eye box) is desirable so that a head mounted unit does not require precise alignment to be useable by dismounted warfighters on the move. Ultimately, user acceptability will be a key factor in the deployment of the ULTRA-Vis system, so a lightweight, low profile configuration will be preferable for comfort and ease-of-use of the head mounted display. The display developed for the prototypes in Phase III will exhibit no occlusion of the battle space as seen by the user. Therefore, the mounting structure must be minimal and the transmission must be optimal for the head mounted units.

Task d: System Design Concept:

A complete system design concept will be developed based on trade studies that support the component, interface and algorithm specifications that will be used to develop an integrated testbed in Phase II and show a clear development path for the prototypes to be built in Phase III. Design trades will result in analyses that support the selection and configuration of each hardware component of the multi-modal interface, and support the specification of the processes and algorithms employed by an information management engine. Design criteria should also

address any system engineering issues (e.g., interfacing, timing, processing, interoperability, critical ergonomic factors), and delineate a path to resolve any such issues.

A CONOPS must also be developed to provide a description of how the ULTRA-Vis system capabilities will be employed to support small unit tactical combat missions in an urban environment. The CONOPS will provide realistic example scenarios of urban combat situations for which the ULTRA-Vis system provides increased situational awareness, greater mission effectiveness and/or higher operational tempo than current operations.

Phase 2: Multi-Modal Testbed Demonstrations

In Phase II, ULTRA-Vis will be focused on integrating these key technologies into a fully functional testbed system that will be self-contained and wearable. Phase II will focus on providing 3-color capability for the head-mounted, see-through display and combining the Phase I components into a functional, integrated testbed system. Two integrated testbeds will be developed that are completely self-contained and man-wearable; each testbed will meet or exceed the metrics as defined in Phase I. In order to support multiple input/output modalities (audio/visual/tactile), it is envisioned that each testbed will consist of a see-through head mounted display, an audio interface (microphone & headset), a hand/arm gesture interface, navigation unit for head tracking, a tactile device for cueing, voice/data radio for iconic command transmission, all of which is controlled by a digital processor and powered by a portable power unit.

The following tasks are to be addressed in Phase II.

Task a: Multi-color See-Through Display:

An important Phase II goal is the further development of the see-through display to achieve 3-color (red-green-blue) display capability in a head-mountable configuration for integration into the Phase II testbed. The ability to display icons in three colors is needed to 1) differentiate combat information priorities (alerts from warnings), 2) designate known friendly positions from known enemy positions, and 3) to provide map information in a form that is easy to visualize. Each color must individually meet the Phase II Gate metrics of 2000 foot-Lambert brightness and 40 degree field of view capability.

Task b: Testbed Integration:

In this task, the technologies developed in Phase I will be integrated into a fully functional testbed that will demonstrate the operational capabilities of the ULTRA-Vis system. Two (2) equivalent man-wearable testbeds will be assembled in Phase II to demonstrate real time, networked NLOS interaction. In addition to the hardware component integration, a major effort within this task will be the development of the software for the control system, the multi-mode interfaces, the information management processing, and the network interface. A high-speed processor will handle the general/special purpose processing, data storage/retrieval, data acquisition/dissemination, and power management functions as needed.

The testbed units will include, but are not limited to, components and software that support each of the ULTRA-Vis capabilities designed to create and disseminate actionable combat information. These may include:

- the 3-color head-mounted, see-through display,
- a high-speed processor,
- a microphone/headset unit,
- the hand/arm gesture unit,
- a tactile cueing device,
- navigation units,
- a voice/data radio and
- a battery with power distribution unit.

The testbeds shall be networked using existing ground soldier voice/data communication units. The testbed units shall be configured to support two-way communications over a wireless network.

A high-speed processor will manage all system operations; an on-board processor is preferred but not required for the testbed. The system processing capabilities will include algorithms to 1) control and read out data from all input devices, 2) interpret and render command inputs (gestures, voice, tactile), and 3) generate geo-registered icons to be merged with contextual information from on-board or remote sensors and/or databases. The system will provide simultaneous interpretation of the different command modalities. The combined information will be appropriately filtered and routed to the proper units, teams, or warfighters for either visual (iconic display), audio (verbal cue, directional sound), or tactile (vibrational stimulus) communication with their ULTRA-Vis system.

These components will be configured into a man-wearable system that will achieve the operational performance goals (metrics) of Phase II in addition to those that were established in the Phase I technology development.

Task c: System test and evaluation

A test plan must be developed in Phase II that will describe test scenarios and specify quantitative measurements, analysis and evaluation procedures that will provide certification that the Phase I and Phase II metrics has been achieved using the testbeds.

The Phase II testbeds shall undergo limited field tests to evaluate all system functions and demonstrate effective system performance. The testing will also serve to identify any limitations or deficiencies that need to be modified and upgraded early in Phase III prior to fabrication of the ULTRA-Vis prototypes.

Phase III: System Prototypes for Evaluation/Transition

The objective of Phase III is to leverage the system integration achievements, the lessons learned and the design refinements realized within Phase II to fabricate fully functional, wearable prototypes that meet system weight and power goals.. Phase III will focus on the fabrication of fully functional prototypes, wearable by a dismounted warfighter outfitted for urban operations,

that address stringent weight and power consumption limits. In this phase, fifteen (15) equivalent prototypes will be built that meet the overall performance requirements of the program with all software/algorithms running on a low-power, high-speed processor, and connected to a voice/data radio and battery pack. The prototype units will undergo field testing and evaluation to demonstrate that each unit meets or exceeds the functionality required by the operational (Go-No-Go) metrics and that an urban squad team equipped with these units can achieve the program vision stated above in the BACKGROUND section of this solicitation.

Ergonomics (comfort, ease of use, etc.) will be an important part of the ULTRA-Vis systems. Offerors will need to give these factors significant consideration at each phase of the program development and the system design.

Task a: Prototype unit fabrication

The prototypes units will be configured giving consideration to human factors of form/fit/function and ergonomics for comfort and ease-of-use in realistic duration scenarios. It is important that the prototypes be modular in design allowing component interchangeability, be compatible with existing military equipment (combat helmet, soldier radios, equipment pack), allow for adjustment, and not limit individual movement techniques. Prototypes will support the ability to tailor the system functions to the role of the warfighter within the unit.

Fifteen (15) equivalent prototype units will be built to outfit a complete Army or Marine Corps squad plus spares. Each prototype unit will include an equipment pack for the radio, battery and other components as needed. The prototypes will be demonstrated using existing soldier radios for networked connectivity.

Task b: Field evaluation

The Phase III prototypes shall undergo limited field exercises with the Transition Partners to demonstrate all system functions and effective system performance prior to transition. The field exercises will be conducted with small units to evaluate mission effectiveness of military operations with and without the ULTRA-Vis system.

A test plan must be developed in Phase III in cooperation with the Service Agent on the ULTRA-Vis program that will define limited exercises for small units at a specified Military Operations on Urban Terrain (MOUT) site. The exercises will involve one or more military units to compare effectiveness of distributed operations conducted with and without the ULTRA-Vis prototypes. Offerors shall provide support for the exercises through proper training on the prototype units, conduct evaluations of the exercises and prepare a report of the results.

ULTRA-VIS GO/NO-GO GATE METRICS

Each of the operational metrics has specific criteria that the technologies, testbeds and prototypes must satisfy. Proposals must reflect a quantitative understanding of the performance Go/No-Go

metrics and the statistical confidence with which they may be measured, as well as their relationship to the concept of operations.

The ULTRA-Vis program will be reviewed by DARPA at the end of each phase to determine that the Go/No-Go criteria have been satisfactorily achieved. The DARPA Go/No-Go reviews will be the basis for continuation of funding for the next program phase. In the proposal, offerors must provide a thorough explanation of how each of these gate metrics will be met by discussing each test to be employed, the standards used for comparison, describing the measurements to be made, the data analysis to be performed and the statistical analysis methods to be used. The results of each test will be provided to DARPA.

Figure 3 below defines the metrics that will be used to assess technical performance of the program for each phase:

Gate Rqmt	Operational Metric	Go/No-Go Criteria
Gesture Recognition	Recognize Leader's Standard Hand & Arm Signals	> 99% probability of correct recognition of at least 10 hand & arm signals < 1% False Alarms
Geo-Registered Icons	Create/display geo-registered icons from Leader's pointing action on two see-thru displays	Placement Accuracy: < 10 mrad, angular accuracy (1m @100 m) < 0.1 m, range accuracy < 0.5 mrad, jitter @ 60 Hz update
See-Thru Display	See icons (monochrome) in full sunlight	≥2000 Ft-L brightness (monochrome) 40° FOV
Integrated Multi-Modal Testbed	Create/disseminate command information using two, networked, Soldier-worn Testbeds with: - Head-Mounted Display - Nav units - Audio interface (mic/headset) - Voice/Data Radio - Hand/Arm gesture interface - Tactile Cueing device	- 3-color (R-G-B) icons, ≥2000 Ft-L, 40° FOV > 99% probability of correct recognition (sender) and representation (receiver) of multi-modal commands (hand/arm gestures + voice) < 1% False Alarms
Prototypes	Demonstrate system functionality with fifteen (15) prototypes for Transition	System weight (including batt.): < 3 lbs System power: < 6 W

Figure 3. Go/No-Go Gate Metrics for ULTRA-Vis program

II. AWARD INFORMATION

Multiple awards are anticipated. The amount of resources made available to this BAA will depend on the quality of the proposals received and the availability of funds.

The Government reserves the right to select for negotiation all, some, one, or none of the proposals received in response to this solicitation, and to make awards without discussions with offerors. The Government also reserves the right to conduct discussions if the Source Selection Authority later determines them to be necessary. If warranted, portions of resulting awards may be segregated into pre-priced options. Additionally, DARPA reserves the right to accept

proposals in their entirety or to select only portions of proposals for award. In the event that DARPA desires to award only portions of a proposal, negotiations may be opened with that offeror. The Government reserves the right to fund proposals in phases with options for continued work at the end of one or more of the phases.

Awards under this BAA will be made to offerors on the basis of the evaluation criteria listed below (see section V - Application Review Information) and program balance to provide best overall value to the Government. Proposals identified for negotiation may result in a procurement contract or Other Transaction Agreement, but the Government reserves the right to choose the appropriate instrument. Offerors should note that this program will be a 6.3-funded effort, and therefore grants and cooperative agreements will not be awarded under this solicitation.

III. ELIGIBILITY INFORMATION

A. Eligible Applicants

All responsible sources capable of satisfying the Government's needs may submit a proposal that shall be considered by DARPA. Historically Black Colleges and Universities (HBCUs), Small Disadvantaged Businesses and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals. However, no portion of this announcement will be set aside for Small Disadvantaged Business, HBCU and MI participation, due to the impracticality of reserving discrete or severable areas of this research for exclusive competition among these entities.

Proposals listing Government/National laboratories as primes or subs may be subject to applicable direct competition limitations, though certain Federally Funded Research and Development Centers are excepted per P.L. 103-337§ 217 and P.L 105-261 § 3136. Proposals from Government/ National Laboratories must include documentation establishing that they are eligible to propose and have unique capabilities not otherwise available in private industry.

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

1. Procurement Integrity, Standards of Conduct, Ethical Considerations, and Organizational Conflicts of Interest

Current federal employees are prohibited from participating in particular matters involving conflicting financial, employment, and representational interests (18 USC 203, 205, and 208.). The DARPA Program Manager for this BAA is Mr. Jeffrey Paul. As of the date of first publication of the BAA, the Government has not identified any potential conflicts of interest involving this program manager. Once the proposals have been received, and prior to the start of proposal evaluations, the Government will assess potential conflicts of interest and will promptly notify the offeror if any appear to exist. (Please note the Government assessment does NOT affect, offset, or mitigate the offeror's own duty to give full notice and planned mitigation for all potential organizational conflicts, as discussed below.) The Program Manager is required to

review and evaluate all proposals received under this BAA and to manage all selected efforts. Offerors should carefully consider the composition of their performer team before submitting a proposal to this BAA.

All offerors and proposed subcontractors must affirm whether they are providing scientific, engineering, and technical assistance (SETA) or similar support to any DARPA technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the offeror supports and identify the prime contract numbers. Affirmations shall be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest (FAR 9.5) must be disclosed. The disclosure shall include a description of the action the offeror has taken or proposes to take to avoid, neutralize, or mitigate such conflict. In accordance with FAR 9.503 and without prior approval or a waiver from the DARPA Director, a contractor cannot simultaneously be a SETA and a performer. **Proposals that fail to fully disclose potential conflicts of interests or do not have acceptable plans to mitigate identified conflicts will be returned without technical evaluation and withdrawn from further consideration for award.**

If a prospective offeror believes that any conflict of interest exists or may exist (whether organizational or otherwise), the offeror should promptly raise the issue with DARPA by sending his/her contact information and a summary of the potential conflict by email to the mailbox address for this BAA at BAA08-36@darpa.mil, before time and effort are expended in preparing a proposal and mitigation plan. If, in the sole opinion of the Government after full consideration of the circumstances, any conflict situation cannot be effectively mitigated, the proposal may be returned without technical evaluation and withdrawn from further consideration for award under this BAA.

B. Cost Sharing or Matching

Cost sharing is not required for this particular program.

C. Other Eligibility Requirements – N/A

IV. APPLICATION AND SUBMISSION INFORMATION

A. Address to Request Application Package

This announcement contains all information required to submit a proposal. No additional forms, kits, or other materials are needed. This notice constitutes the total BAA. No additional information is available, nor will a formal Request for Proposal (RFP) or additional solicitation regarding this announcement be issued. Requests for same will be disregarded.

B. Content and Form of Application Submission

1. Proposal Information

DARPA will employ an electronic upload submission system for all responses to this BAA. Responding to this announcement requires completion of an online cover sheet for each proposal prior to submission. To do so, the offeror must go to <https://csc-ballston.com/baa/index.asp?BAAid=08-36> and follow the instructions there. Upon completion of the online cover sheet, a Confirmation Sheet will appear along with instructions on uploading proposals. The Confirmation Sheet will be used as the Cover Sheet for the proposal and will contain the information outlined below in Proposal Section 1.1. If an offeror intends to submit more than one proposal, a unique UserId and password must be used in creating each cover sheet. **Since offerors may encounter heavy traffic on the web server, they SHOULD NOT wait until the day the proposal is due to fill out a coversheet and submit the proposal!**

2. Proposal Preparation and Format

The proposal shall be delivered in two volumes, Volume 1 (technical proposal) and Volume 2 (cost proposal). Proposals not meeting the format described in this BAA may not be reviewed.

All proposals must be zipped and encrypted using Winzip or PKZip with 256-bit AES encryption. Only one zipped/encrypted file will be accepted per proposal. Proposals which are not zipped/encrypted will be rejected by DARPA. An encryption password form must be completed and emailed to BAA08-36@darpa.mil at the time of proposal submission. See https://www.CSC-Ballston.com/baa/Encryption_Instructions.htm for the encryption password form and additional encryption information. Note: the word "PASSWORD" must appear in the subject line of the above email and there are minimum security requirements for establishing the encryption password. Failure to provide the encryption password may result in the proposal not being evaluated.

Volume 1 – Technical Proposal

The technical proposal shall include the following sections, each starting on a new page (where a "page" is 8-1/2 by 11 inches with type not smaller than 12 point, margins not smaller than 1 inch, and line spacing not smaller than single-spaced). All submissions must be in English. Individual elements of the proposal shall not exceed the total of the maximum page lengths for each section as shown in braces { } below.

Ensure that each section provides the detailed discussion of the proposed work necessary to enable an in-depth review of the specific technical and managerial issues. Specific attention must be given to addressing both risk and payoff of the proposed work that make it desirable to DARPA.

1.1 Confirmation Sheet/Cover Sheet

As described above, this cover sheet will contain the following information:

- BAA number;
- Proposal title;
- Contractor Reference Number;

- Technical point of contact including: name, telephone number, electronic mail address, fax (if available) and mailing address;
- Administrative point of contact including: name, telephone number, electronic mail address, fax (if available) and mailing address;
- Summary of the costs of the proposed research, including total base cost, estimates of base cost in each year of the effort, estimates of itemized options in each year of the effort, and cost sharing if relevant;
- Contractor's reference number (if any);
- Contractor's type of business, selected from among the following categories:
 - WOMEN-OWNED LARGE BUSINESS,
 - OTHER LARGE BUSINESS,
 - SMALL DISADVANTAGED BUSINESS [Identify ethnic group from among the following: Asian-Indian American, Asian-Pacific American, Black American, Hispanic American, Native American, or Other],
 - WOMEN-OWNED SMALL BUSINESS,
 - OTHER SMALL BUSINESS,
 - HBCU,
 - MI,
 - OTHER EDUCATIONAL,
 - OTHER NONPROFIT, OR
 - FOREIGN CONCERN/ENTITY.

1.2 Table of contents {No page limit}

1.3 PowerPoint summary chart {1 chart}:

Provide a one slide summary of the proposal in PowerPoint that effectively and succinctly conveys the main objective, key innovations, expected impact, and other unique aspects of the proposal.

1.4 Innovative claims for the proposed research {1 Page}:

This page is the centerpiece of the proposal and should succinctly describe the unique proposed approach and contributions. This section may also *briefly* address the following topics:

- a. Problem Description. Provide a concise description of the problem areas addressed. Make this specific to your approach.
- b. Research Goals. Identify specific research goals. Goals should address the technical challenges of the ULTRA-Vis effort.
- c. Expected Impact. Describe the expected impact of your research.

1.5 Proposal Roadmap {2 Pages}:

The roadmap provides a top-level view of the content and structure of the proposal. It contains a synopsis for each of the roadmap areas defined below, which should be elaborated elsewhere. It is important to make the synopses as explicit and informative as possible. The roadmap must also cross-reference the proposal page number(s) where each area is elaborated. The required roadmap areas are:

- a. Main goals of the proposed research.

- b. Tangible benefits to end users (i.e., benefits of the capabilities afforded if the proposed technology is successful).
- c. Critical technical barriers (i.e., technical limitations that have, in the past, prevented achieving the proposed results).
- d. Main elements of the proposed technical approach.
- e. Basis of confidence (i.e. rationale that builds confidence that the proposed approach will overcome the technical barriers).
- f. Nature and description of end results to be delivered to DARPA. In what form will results be developed and delivered to DARPA and the scientific community? Note that DARPA encourages experiments, simulations, specifications, proofs, etc. to be documented and published to promote progress in the field. Offerors should specify both final and intermediate products.
- g. Cost and schedule of the proposed effort.

1.6 Technical Approach {30 pages}:

Provide a detailed description of the technical approach. Approximately ten pages are allocated for each phase involved in ULTRA-Vis System Development. Teams may choose to allocate the pages among the program phases unequally; however, separate sections are required for each phase. This section will elaborate on many of the topics identified in the proposal roadmap and will serve as the primary expression of the offerors' scientific and technical ideas.

1.7 Comparison with Current Technology {2 Pages}:

Describe state of the art approaches and the limitations that relate to each particular ULTRA-Vis component addressed by the proposal. Describe and analyze state of the art results, approaches, and limitations within the context of the problem area addressed by this research. Demonstrating problem understanding requires not just the enumeration of related efforts; rather, related work must be compared and contrasted to the proposed approach.

1.8 Statement of Work (SOW) {5 pages}:

In plain English, clearly define the technical tasks/subtasks to be performed, their durations, and dependencies among them. For each task/subtask, provide:

- A general description of the objective (for each defined task/activity);
- A detailed description of the approach to be taken to accomplish each defined task/activity);
- Identification of the primary organization responsible for task execution (prime, sub, team member, by name, etc.);
- The exit criteria for each task/activity - a product, event or milestone that defines its completion.
- Define all deliverables (reporting, data, reports, software, etc.) to be provided to the Government in support of the proposed research tasks/activities.

Note: The SOW should be developed so that each Phase of the program is separately defined. Offerors should format their proposals for Phase I with Phases II and III tasks/subtasks as options. Do not include any proprietary information in the SOW. (See Appendix A for suggested format.)

1.9 Deliverables Description {2 Pages}:

List and provide by phase a detailed description for each proposed deliverable, including receiving organization and expected delivery date for each deliverable. Include in this section all proprietary claims to results, prototypes, or systems supporting and/or necessary for the use of the research, results, and/or prototype. If there are no proprietary claims, this should be stated. The offeror must submit a separate list of all technical data or computer software that will be furnished to the Government with other than unlimited rights. See section VI.B.2 below for more information. (See Appendix B for suggested format.)

1.10 Management Plan {3 Pages}:

Describe formal teaming agreements that are required to execute this program, a brief synopsis of all key personnel, and a clearly defined organization chart for the program team (prime contractor and subcontractors, if any). Provide an argument that the team size and composition are both necessary and sufficient to meet the program objectives. Provide detailed task descriptions, costs, and interdependencies for each individual effort and/or subcontractor. To the extent that graduate students and postdocs are involved in individual efforts, describe their role and contribution. Information in this section must cover the following information:

- a. Programmatic relationship of team members;
- b. Unique capabilities of team members;
- c. Task responsibilities of team members;
- d. Teaming strategy among the team members;
- e. Key personnel along with the amount of effort to be expended by each person during each year; and
- f. Government role in project, if any.

1.11 Schedule and Milestones:

This section should include:

- a. {1 Page} Schedule Graphic. Provide a graphic representation of project schedule including detail down to the individual effort level. This should include but not be limited to, a multi-phase development plan, which demonstrates a clear understanding of the proposed research; and a plan for periodic and increasingly robust tests over the project life that will show applicability to the overall program concept. Show all project milestones. Use “x months after contract award” designations for all dates.
- b. {3 Pages} Detailed Task Descriptions. Provide detailed task descriptions for each discrete work effort and/or subcontractor in schedule graphic.
- c. {1 Page} Project Management and Interaction Plan. Describe the project management and interaction plans for the proposed work. If proposal includes subcontractors that are geographically distributed, clearly specify working / meeting models. Items to include in this category include software/code repositories, physical and virtual meeting plans, and online communication systems that may be used.

1.12 Personnel, Qualifications, and Commitments {NO MORE THAN ONE PAGE PER KEY PERSON}:

List key personnel, showing a concise summary of their qualifications, discussion of offeror’s previous accomplishments, and work in this or closely related research areas. Indicate the level of effort in terms of hours to be expended by each person during each contract year and other

(current and proposed) major sources of support for them and/or commitments of their efforts. DARPA expects all key personnel associated with a proposal to make substantial time commitment to the proposed activity and the proposal will be evaluated accordingly. It is DARPA’s intention to put key personnel clauses into the contracts, so offerors should not bid personnel whom they do not intend to execute the contract.

Include a table of key individual time commitments as follows:

Key Individual	Project	Pending/Current	2008	2009	2010
Jane Doe	ULTRA-Vis	Proposed	ZZZ hours	UUU hours	WWW hours
	Project 1	Current	n/a	n/a	n/a
	Project 2	Pending	100 hours	n/a	n/a
John Deer	ULTRA-Vis	Proposed			

1.13 Cost Summaries {4 pages}:

This section shall contain two tables: the first table must summarize the proposed costs but break them down by project task, subtask, and phase, i.e., show the costs of each project task and subtask for each phase, by month, with the task and subtask labels on the y-axis and the three phases on the x-axis. It may be appropriate to create a subtotal under some closely related tasks. Table entries should contain the dollar figure and a percentage that specifies the percentage of that phase’s total costs that are allocated to said task.

The second table should show the costs broken down by prime/subcontractor by month, by phase, i.e., the labels of the prime/subcontractors should be on the y-axis and the three phases on the x-axis. Table entries should contain the dollar figure and a percentage that specifies the percentage of that phase’s total costs allocated to said prime or subcontractor. (See Appendix C for suggested format). Offerors should format their proposals for Phase I with Phases II and III priced as options.

1.14 Organizational Conflict of Interest Affirmations and Disclosure {No page limit}

Per the instructions in Section III.A.1 above, provide documentation on whether any team member is providing scientific, engineering, and technical assistance (SETA) or similar support to any DARPA technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the offeror supports and identify the prime contract numbers. This disclosure must include a description of the action the offeror has taken or proposes to take to avoid, neutralize, or mitigate such conflict. **Proposals that fail to fully disclose potential conflicts of interests or do not have acceptable plans to mitigate identified conflicts will be returned without technical evaluation and withdrawn from further consideration for award.** If the offeror is not currently providing SETA support as described, then the offeror should state “NONE.”

1.15 Intellectual Property {No page limit}

Per section VI.B.3 below, offerors responding to this BAA shall identify any intellectual property restrictions. If no restrictions are intended, then the offeror should state “NONE”.

1.16 Human use {No page limit}:

For all proposed research that will involve human subjects in the first year or phase of the project, the institution must provide evidence of or a plan for review by an Institutional Review Board (IRB) upon final proposal submission to DARPA. For further information on this subject, see Section VI.B.4 below. If human use is not a factor in a proposal, then the offeror should state “NONE.”

OPTIONAL Section 2 - Additional Information

Offerors may submit a bibliography and up to 3 papers showing previous work relevant to this BAA. Note: This section is optional and will be considered for the reviewer’s convenience only (i.e., will not be considered as part of the proposal for evaluation purposes).

Volume 2 – Cost Proposal

2. 1 Cover sheet

- BAA number;
- Technical area;
- Lead Organization Submitting proposal;
- Type of business, selected among the following categories: “LARGE BUSINESS”, “SMALL DISADVANTAGED BUSINESS”, “OTHER SMALL BUSINESS”, “HBCU”, “MI”, “OTHER EDUCATIONAL”, OR “OTHER NONPROFIT”;
- Contractor’s reference number (if any);
- Other team members (if applicable) and type of business for each;
- Proposal title;
- Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available);
- Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), and electronic mail (if available);
- Award instrument requested: cost-plus-fixed-fee (CPFF), cost-contract—no fee, cost sharing contract – no fee, or other type of procurement contract (*specify*), or other transaction;
- Place(s) and period(s) of performance;
- Total proposed cost separated by basic award and option(s) (if any);
- Name, address, and telephone number of the offeror’s cognizant Defense Contract Management Agency (DCMA) administration office (*if known*);
- Name, address, and telephone number of the offeror’s cognizant Defense Contract Audit Agency (DCAA) audit office (*if known*);
- Date proposal was prepared;
- DUNS number;
- TIN number; and
- Cage Code;
- Subcontractor Information; and
- Proposal validity period.

2.2 Detailed cost breakdown

Provide: (1) total program cost broken down by major cost items (direct labor, including labor categories; subcontracts; materials; other direct costs, overhead charges, etc.) and further broken down task and phase; (2) major program tasks by fiscal year; (3) an itemization of major subcontracts and equipment purchases; (4) an itemization of any information technology (IT) purchase¹; (5) a summary of projected funding requirements by month; and (6) the source, nature, and amount of any industry cost-sharing; and (7) identification of pricing assumptions of which may require incorporation into the resulting award instrument (e.g., use of Government Furnished Property/Facilities/Information, access to Government Subject Matter Expert/s, etc.). NOTE: for IT and equipment purchases, include a letter stating why the offeror cannot provide the requested resources from its own funding.

The prime contractor is responsible for compiling and providing all subcontractor proposals for the Procuring Contracting Officer (PCO). Subcontractor proposals should include Interdivisional Work Transfer Agreements (ITWA) or similar arrangements. Where the effort consists of multiple portions which could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each.

2.3 IT and Equipment Purchases

Contractors proposing the purchase of information technology (IT) resources and/or equipment MUST submit the following information:

- A letter on corporate letterhead signed by a senior corporate official and addressed to Mr. Jeffrey Paul, Program Manager, DARPA/IPTO, stating that you either can not or will not provide the information technology (IT) resources and/or equipment necessary to conduct the said research;
- An explanation of the method of competitive acquisition or a sole source justification, as appropriate, for each IT resource item;
- If the resource is leased, a lease/purchase analysis clearly showing the reason for the lease decision; and,
- The cost for each IT resource item.

• ¹ IT is defined as “any equipment, or interconnected system(s) or subsystem(s) of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the agency. (a) For purposes of this definition, equipment is used by an agency if the equipment is used by the agency directly or is used by a contractor under a contract with the agency which – (1) Requires the use of such equipment; or (2) Requires the use, to a significant extent, or such equipment in the performance of a service or the furnishing of a product. (b) The term “information technology” includes computers, ancillary, software, firmware and similar procedures, services (including support services), and related resources. (c) The term “information technology” does not include – (1) Any equipment that is acquired by a contractor incidental to a contract; or (2) Any equipment that contains imbedded information technology that is used as an integral part of the product, but the principal function of which is not the acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. For example, HVAC (heating, ventilation, and air conditioning) equipment such as thermostats or temperature control devices, and medical equipment where information technology is integral to its operation, are not information technology.”

Provide supporting cost and pricing information in sufficient detail to substantiate the summary cost estimates, above. Include a description of the method used to estimate costs and supporting documentation. Note: “cost or pricing data” as defined in FAR Subpart 15.4 shall be required if the offeror is seeking a procurement contract award of \$650,000 or greater unless the offeror request an exception from the requirement to submit cost of pricing data. “Cost or pricing data” are not required if the offeror proposes an award instrument other than a procurement contract (e.g., an other transaction.) All proprietary subcontractor proposal documentation (prepared at the same level of detail as that required of the prime) which cannot be included with the prime’s information, shall be made immediately available to the Government, upon request, under separate cover (i.e., mail, electronic/email, etc.), either by the Proposer or by the subcontractor organization.

All proposers requesting an 845 Other Transaction Agreement for Prototypes (OTA) must include a detailed list of payment milestones. Each such payment milestone must include the following: milestone description, exit criteria, due date, milestone payment amount (to include, if cost share is proposed, contractor and government share amounts). It is noted that, at a minimum, such payable milestones should relate directly to accomplishment of program technical go/no-go criteria as defined in the BAA and/or the offeror’s proposal. Agreement type, fixed price or expenditure based, will be subject to negotiation by the Agreements Officer; however, it is noted that the Government prefers use of fixed price payable milestones to the maximum extent possible. If the proposer requests award of an 845 OTA as a nontraditional defense contractor, as so defined in the OSD guide entitled “Other Transactions (OT) Guide For Prototype Projects” dated January 2001 (as amended) (http://www.dau.mil/pubs/Online_Pubs.asp), information must be included in the cost proposal to support the claim. Additionally, if the proposer plans requests award of an 845 OTA, without the required one-third (1/3) cost share, information must be included in the cost proposal supporting that there is at least one non-traditional defense contractor participating to a significant extent in the proposed prototype project.

C. Submission Dates and Times

The full proposal must be submitted per the instructions in Section IV.A above by 1200 noon (ET) on 16 June 2008 (initial closing), in order to be considered during the initial evaluation phase. While BAA 08-36 will remain open until 1200 noon (ET) 30 April 2009 (final closing date/BAA expiration), offerors are warned that the likelihood of funding is greatly reduced for proposals submitted after the initial closing date.

DARPA will acknowledge receipt of complete submissions via email and assign control numbers that should be used in all further correspondence regarding proposals.

D. Intergovernmental Review - N/A

E. Funding Restrictions – N/A

F. Other Submission Requirements

Proposals MUST NOT be submitted to DARPA in hard copy (see Submission instructions above in Section IV.B). Any so sent will not be reviewed.

V. APPLICATION REVIEW INFORMATION

A. Evaluation Criteria

Evaluation of proposals will be accomplished through a scientific/technical review of each proposal using the following criteria, which are listed in order of descending importance:

1. Ability to Meet Program Go/No-Go Metrics

The feasibility and likelihood of the proposed approach for satisfying the program go/no-go metrics are explicitly described and clearly substantiated. The proposal reflects a mature and quantitative understanding of the performance go/no-go metrics, the statistical confidence with which they may be measured, and their relationship to the concept of operations that will result from successful performance in the program.

2. Overall Scientific and Technical Merit

The overall scientific and technical merit must be clearly identifiable and compelling. The technical concepts should be clearly defined and developed. The technical approach must be sufficiently detailed to support the proposed concepts and technical claims. The proposed system architecture and methods of integration should be clearly defined. Proposals must conform to the program metrics and clearly define the evaluation plans. Offerors should apply new and/or existing technology in an innovative way that supports the objectives of the proposed effort. The proposed concepts and systems should show breadth of innovation across the scope of the proposed solution.

3. Potential Contribution and Relevance to the DARPA Mission

The potential contributions of the proposed effort with relevance to the national technology base will be evaluated. Specifically, DARPA's mission is to maintain the technological superiority of the U.S. military and prevent technological surprise from harming our national security by sponsoring revolutionary, high-payoff research that bridges the gap between fundamental discoveries and their military use.

4. Plans and Capability to Accomplish Technology Transition

Offerors should provide a clear explanation of how the technologies to be developed will be transitioned to capabilities for government use. Technology transition should be a major consideration in the design of experiments, particularly considering the potential for involving transition organizations in the experimentation process. The plan on how offeror intends to get developed technology and information to the user community will be considered. *Also considered will be impediments to future transition, including intellectual property restrictions and use limitations on any and all components and sub-components.*

5. Offeror's Capabilities and Related Experience

The qualifications, capabilities, project management plan, and demonstrated achievements of the proposed principals and other key personnel for the primary and subcontractor organizations must be clearly shown.

6. Realism of Proposed Schedule

The overall research agenda and timeline, including specific intermediate criteria, should clearly relate to theoretical obstacles that must be overcome.

7. Cost Realism

The objective of this criterion is to establish that the proposed costs are realistic for the technical and management approach offered, as well as to determine the offeror's practical understanding of the effort. This will be principally measured by cost per labor-hour and number of labor-hours proposed. The evaluation criterion recognize that undue emphasis on cost may motivate offerors to offer low-risk ideas with minimum uncertainty and to staff the effort with junior personnel in order to be in a more competitive posture. DARPA discourages such cost strategies. Cost reduction approaches that will be received favorably include innovative management concepts that maximize direct funding for technology and limit diversion of funds into overhead.

NOTE: OFFERORS ARE CAUTIONED THAT EVALUATION RATINGS MAY BE LOWERED AND/OR PROPOSALS REJECTED IF SUBMITTAL INSTRUCTIONS ARE NOT FOLLOWED.

B. Review and Recommendation Process

It is the policy of DARPA to ensure impartial, equitable, comprehensive proposal evaluations and to select the source (or sources) whose offer meets the Government's technical, policy, and programmatic goals. Pursuant to FAR 35.016, the primary basis for selecting proposals for acceptance shall be technical, importance to agency programs, and fund availability. In order to provide the desired evaluation, qualified Government personnel will conduct reviews and (if necessary) convene panels of experts in the appropriate areas.

Proposals will not be evaluated against each other, since they are not submitted in accordance with a common work statement. DARPA's intent is to review proposals as soon as possible after they arrive; however, proposals may be reviewed periodically for administrative reasons. For evaluation purposes, a proposal is the document described above in IV.B – Content and Form of Application Submission. Other supporting or background materials submitted with the proposal will be considered for the reviewer's convenience only and not considered as part of the proposal.

Award(s) will be made to offerors whose proposals are determined to be the most advantageous to the Government, all factors considered, including the potential contributions of the proposed work to the overall research program and the availability of funding for the effort. Award(s) may be made to any offeror(s) whose proposal(s) is determined selectable regardless of its overall rating.

Restrictive notices notwithstanding, proposals may be handled for administrative purposes by support contractors. These support contractors are prohibited from competition in DARPA technical research and are bound by appropriate non-disclosure requirements. Subject to the restrictions set forth in FAR 37.203(d), input on technical aspects of the proposals may be solicited by DARPA from non-Government consultants /experts who are strictly bound by the appropriate non-disclosure requirements.

Offerors are also advised that employees of commercial firms under contract to the Government may be used by DARPA agents to administratively process proposals, monitor contract performance, or perform other administrative duties requiring access to other contractors' proprietary information. These support contracts include nondisclosure agreements prohibiting their contractor employees from disclosing any information submitted by other contractors or using such information for any purpose other than that for which it was furnished. By submission of its proposal, each offeror agrees that proposal information may be disclosed to those non-Government personnel for the limited purposes stated above.

It is the policy of DARPA to treat all proposals as competitive information and to disclose their contents only for the purpose of evaluation. No proposals will be returned. Upon completion of the evaluation process, the original of each proposal received will be retained at DARPA and all other copies will be destroyed.

VI. AWARD ADMINISTRATION INFORMATION

A. Award Notices

As soon as the evaluation of a proposal is complete, the offeror will be notified that 1) the proposal has been selected for funding pending contract negotiations, or 2) the proposal has not been selected. These official notifications will be sent via US mail to the Technical POC identified on the proposal coversheet.

B. Administrative and National Policy Requirements

1. Security Classification

Security classification guidance on a DD Form 254 (DoD Contract Security Classification Specification) will not be provided at this time, since DARPA is soliciting ideas only and does not encourage classified proposals in response to this announcement. However, after reviewing incoming proposals, if a determination is made that contract award may result in access to classified information, a DD Form 254 will be issued upon contract award. *If you choose to submit a classified proposal you must first receive the permission of the Original Classification Authority to use its information in replying to this announcement.*

All proposals containing proprietary data should have the cover page and each page containing proprietary data clearly marked as containing proprietary data. It is the offeror's responsibility to clearly define to the Government what is considered proprietary data.

2. Intellectual Property

All hardware design and fabrication methods, processes and techniques, software, software documentation, source code, and technical data developed under ULTRA-Vis will be provided to the government with a minimum of Government Purpose Rights. Offerors expecting to utilize, but not to deliver, open source tools or other materials in implementing their approach must ensure that the government does not incur any legal obligation due to such utilization. All

references to "unlimited" or "government purpose rights" are intended to refer to the definitions of those terms as set forth in the Defense Federal Acquisition Regulation Supplement (DFARS) Part 227.

a. Procurement Contract Offerors
i. Noncommercial Items (Technical Data and Computer Software)

Offerors responding to this BAA requesting a procurement contract to be issued under the FAR/DFARS shall identify all noncommercial technical data and noncommercial computer software that it plans to generate, develop, and/or deliver under any proposed award instrument in which the Government will acquire less than unlimited rights, and to assert specific restrictions on those deliverables. Offerors shall follow the format under DFARS 252.227-7017 for this stated purpose. In the event that offerors do not submit the list, the Government will assume that it automatically has “unlimited rights” to all noncommercial technical data and noncommercial computer software generated, developed, and/or delivered under any award instrument, unless it is substantiated that development of the noncommercial technical data and noncommercial computer software occurred with mixed funding. If mixed funding is anticipated in the development of noncommercial technical data and noncommercial computer software generated, developed, and/or delivered under any award instrument, then offerors should identify the data and software in question, as subject to Government Purpose Rights (GPR). In accordance with DFARS 252.227-7013 Rights in Technical Data - Noncommercial Items, and DFARS 252.227-7014 Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation, the Government will automatically assume that any such GPR restriction is limited to a period of five (5) years in accordance with the applicable DFARS clauses, at which time the Government will acquire “unlimited rights” unless the parties agree otherwise. Offerors are admonished that the Government will use the list during the source selection evaluation process to evaluate the impact of any identified restrictions and may request additional information from the offeror, as may be necessary, to evaluate the offeror’s assertions. If no restrictions are intended, then the offeror should state “NONE.”

A sample list for complying with this request is as follows:

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

ii. Commercial Items (Technical Data and Computer Software)

Offerors responding to this BAA requesting a procurement contract to be issued under the FAR/DFARS shall identify all commercial technical data and commercial computer software that may be embedded in any noncommercial deliverables contemplated under the research effort, along with any applicable restrictions on the Government’s use of such commercial technical data and/or commercial computer software. In the event that offerors do not submit the

list, the Government will assume that there are no restrictions on the Government’s use of such commercial items. The Government may use the list during the source selection evaluation process to evaluate the impact of any identified restrictions and may request additional information from the offeror, as may be necessary, to evaluate the offeror’s assertions. If no restrictions are intended, then the offeror should state “NONE.”

A sample list for complying with this request is as follows:

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

b. Non-Procurement Contract Proposers – Noncommercial and Commercial Items (Technical Data and Computer Software)

Proposers responding to this BAA requesting an Other Transaction for Prototype shall follow the applicable rules and regulations governing these various award instruments, but in all cases should appropriately identify any potential restrictions on the Government’s use of any Intellectual Property contemplated under those award instruments in question. This includes both Noncommercial Items and Commercial Items. Although not required, proposers may use a format similar to that described in Paragraphs 1.a and 1.b above. The Government may use the list during the source selection evaluation process to evaluate the impact of any identified restrictions, and may request additional information from the proposer, as may be necessary, to evaluate the proposer’s assertions. If no restrictions are intended, then the proposer should state “NONE.”

c. All Offerors – Patents

Include documentation proving your ownership of or possession of appropriate licensing rights to all patented inventions (or inventions for which a patent application has been filed) that will be utilized under your proposal for the DARPA program. If a patent application has been filed for an invention that your proposal utilizes, but the application has not yet been made publicly available and contains proprietary information, you may provide only the patent number, inventor name(s), assignee names (if any), filing date, filing date of any related provisional application, and a summary of the patent title, together with either: 1) a representation that you own the invention, or 2) proof of possession of appropriate licensing rights in the invention.

d. All Offerors – Intellectual Property Representations

Provide a good faith representation that you either own or possess appropriate licensing rights to all other intellectual property that will be utilized under your proposal for the DARPA program. Additionally, offerors shall provide a short summary for each item asserted with less than unlimited rights that describes the nature of the restriction and the intended use of the intellectual property in the conduct of the proposed research.

3. Meeting and travel requirements

There will be a program kickoff meeting and PI meetings approximately twice every year that all key participants will be required to attend. Performers should also anticipate periodic site visits at the Program Manager's discretion. Contractors will be expected to participate in various technical exchanges and coordination and planning activities with DARPA and other participants. For budgetary purposes, sites should plan on sending representatives to two 3-day ULTRA-Vis workshops per year. These will be in addition to whatever travel is needed for collaboration within a research team.

4. Human use

All research involving human subjects, to include use of human biological specimens and human data, selected for funding must comply with the federal regulations for human subject protection. Further, research involving human subjects that is conducted or supported by the DoD must comply with 32 CFR 219, *Protection of Human Subjects* (<http://www.dtic.mil/biosys/downloads/32cfr219.pdf>), and DoD Directive 3216.02, *Protection of Human Subjects and Adherence to Ethical Standards in DoD-Supported Research* (<http://www.dtic.mil/whs/directives/corres/html2/d32162x.htm>).

Institutions awarded funding for research involving human subjects must provide documentation of a current Assurance of Compliance with Federal regulations for human subject protection, for example a Department of Health and Human Services, Office of Human Research Protection Federal Wide Assurance (<http://www.hhs.gov/ohrp>). 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.

For all proposed research that will involve human subjects in the first year or phase of the project, the institution must provide evidence of or a plan for review by an Institutional Review Board (IRB) upon final proposal submission to DARPA. The IRB conducting the review must be the IRB identified on the institution's Assurance. 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. Consult the designated IRB for guidance on writing the protocol. The informed consent document must comply with federal regulations (32 CFR 219.116). A valid Assurance, along with evidence of appropriate training for all investigators, should accompany the protocol for review by the IRB.

In addition to a local IRB approval, a headquarters-level human subjects regulatory review and approval is required for all research conducted or supported by the DoD. The Army, Navy, or Air Force office responsible for managing the award can provide guidance and information about their component's headquarters-level review process. Note that confirmation of a current Assurance and appropriate human subjects protection training is required before headquarters-level approval can be issued.

The amount of time required to complete the IRB review/approval process may vary depending on the complexity of the research and/or the level of risk to study participants. Ample time

should be allotted to complete the approval process. The IRB approval process can last for one to three months, followed by a DoD review that can last for three to six months. No DoD/DARPA funding can be used toward human subjects research until ALL approvals are granted.

5. Animal Use

Any Recipient performing research, experimentation, or testing involving the use of animals shall comply with the rules on animal acquisition, transport, care, handling, and use in: (i) 9 CFR parts 1-4, Department of Agriculture rules that implement the Laboratory Animal Welfare Act of 1966, as amended, (7 U.S.C. 2131-2159); and (ii) the guidelines described in National Institutes of Health Publication No. 86-23, "Guide for the Care and Use of Laboratory Animals."

6. Publication Approval

Since this program will be funded with 6.3 money, exemptions under the "Contracted Fundamental Research" rules do not apply. Therefore, any procurement contract or other transaction agreement will include the following requirement for DARPA permission before publishing any information or results on the program:

"When submitting material for written approval for open publication, the Contractor/Awardee must submit a request for public release to the DARPA TIO and include the following information: 1) Document Information: document title, document author, short plain-language description of technology discussed in the material (approx. 30 words), number of pages (or minutes of video) and document type (briefing, report, abstract, article, or paper); 2) Event Information: event type (conference, principle investigator meeting, article or paper), event date, desired date for DARPA's approval; 3) DARPA Sponsor: DARPA Program Manager, DARPA office, and contract number; and 4) Contractor/Awardee's Information: POC name, e-mail and phone. Allow four weeks for processing; due dates under four weeks require a justification. Unusual electronic file formats may require additional processing time. Requests can be sent either via e-mail to tio@darpa.mil or via 3701 North Fairfax Drive, Arlington VA 22203-1714, telephone (571) 218-4235. Refer to www.darpa.mil/tio for information about DARPA's public release process."

7. Export Control

This program will be funded with 6.3 funding. Thus, contracts will be negotiated containing terms addressing the following substantive conditions:

- The Contractor shall comply with all U. S. export control laws and regulations, including 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, in the performance of the contract or agreement. In the absence of available license exemptions/exceptions, the Contractor shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports (including deemed exports) of hardware, technical data, software, and the provision of technical assistance.

- The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including instances where the work is to be performed on-site at any Government installation (whether in or outside the United States), where the foreign person will have access to export-controlled technology.
- The Contractor shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.
- The Contractor shall be responsible for ensuring that the provisions of this clause apply to its subcontractors.

8. Subcontracting

Pursuant to Section 8(d) of the Small Business Act (15 U.S.C. 637(d)), it is the policy of the Government to enable small business and small disadvantaged business concerns to be considered fairly as subcontractors to contractors performing work or rendering services as prime contractors or subcontractors under Government contracts, and to assure that prime contractors and subcontractors carry out this policy. Each proposer who submits a contract proposal and includes subcontractors is required to submit a subcontracting plan in accordance with FAR 19.702(a) (1) and (2) should do so with their proposal. The plan format is outlined in FAR 19.704.

9. Central Contractor Registration (CCR)

Proposers selected, but not already registered in the Central Contractor Registry (CCR) will be required to register in CCR prior to any award under this BAA. Information on CCR registration is available at <http://www.ccr.gov>.

10. On-line Representations and Certifications (ORCA)

In accordance with FAR 4.1201, prospective proposers shall complete electronic annual representations and certifications at <http://orca.bpn.gov>.

11. 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 <http://wawf.eb.mil>. Registration to WAWF will be required prior to any award under this BAA.

C. Reporting Requirements

The number and types of reports will be specified in the award document, but will include as a minimum four DARPA/IPTO Quarterly Status Reports each year, one of which will be an annual project summary financial status reports. The reports shall be prepared and submitted in accordance with the procedures contained in the award document and mutually agreed on before award. Reports and briefing material will also be required as appropriate to document progress in accomplishing program metrics. A Final Report that summarizes the project and tasks will be required at the conclusion of the performance period for the award, notwithstanding the fact that the research may be continued under a follow-on vehicle. In addition, each performing contractor (including subs) on each team will be expected to provide monthly status reports to the Program Manager. There may also be additional reporting requirements for Other Transaction Agreements.

1. Technical – Financial Information Management System (T-FIMS)

The required reports may be electronically submitted by each awardee under this BAA via the DARPA Technical – Financial Information Management System (T-FIMS). The T-FIMS URL and instructions will be furnished by the contracting agent upon award.

2. I-Edison

All required reporting shall be accomplished, as applicable, using the i-Edison.gov reporting website at <http://s-edison.info.nih.gov/iEdison>.

VII. AGENCY CONTACTS

DARPA will use electronic mail for all technical and administrative correspondence regarding this BAA, with the exception of selected/not-selected notifications.

Administrative, technical or contractual questions should be sent via e-mail to BAA08-36@darpa.mil. If e-mail is not available, please fax questions to (703)741-3887, Attention: ULTRA-Vis Solicitation. All requests must include the name, email address, and phone number of a point of contact.

Solicitation Web site: <http://www.darpa.mil/ipto/solicit/solicit.asp>.

VIII. OTHER INFORMATION

The solicitation web page at <http://www.darpa.mil/ipto/solicit/solicit.asp> may have a Frequently Asked Questions (FAQ) list and links to information on teaming and the industry day.

A. Collaborative Efforts/Teaming

Offerors are encouraged to form strong, multidisciplinary teams. The goal of teaming is to achieve faster, stronger progress through critical mass efforts and address all aspects of this program to produce a complete system. Each team should submit a single, unified proposal from the prime contractor, i.e., subcontractors should not submit separate proposals. This also applies to consortiums submitting proposals.

A website (<http://csc-ballston.dmeid.org/baa/uvteaming.htm>) has been established to facilitate formation of teaming arrangements between interested parties. Specific content, communications, networking, and team formation are the sole responsibility of the participants. Neither DARPA nor the Department of Defense (DoD) endorses the destination web site or the information and organizations contained therein, nor does DARPA or the DoD exercise any responsibility at the destination. This website is provided consistent with the stated purpose of this BAA.

B. Industry Day

An industry day will be held as part of the ULTRA-Vis program on 12 May 2008 in Arlington, VA, to provide additional information and discussion. Time will be allowed during the industry day for potential offerors to mingle.

While the primary purpose of this briefing is to outline the envisioned ULTRA-Vis program to potential BAA 08-36 offerors, attendance is NOT required to propose. Similarly, attendance will have no direct bearing on proposal evaluations. Following the ULTRA-Vis Industry Day, all pertinent information and materials presented will be made available at <http://www.darpa.mil/ipto/solicit/solicit.asp>.

If you are interested in attending the Industry Day, please go to the following site, <http://www.dsic-web.net/meetings/qv3bai40/index.html>, for further information and registration.

APPENDIX A – SUGGESTED FORMAT FOR STATEMENT OF WORK

STATEMENT OF WORK FOR ULTRA-VIS PROGRAM

Contractor:

Proposal Name:

Proposal ID Number:

1. SCOPE

2. BACKGROUND

3. REQUIREMENTS: (WBS Level 1 "Total Contract Level") General Description (Phase I, Phase II "Option 1" & Phase III "Option 2")

3.1 Phase I- Base Contract (WBS Level 2) General Description Phase I

3.1.1 (WBS Level 3) Task Description

3.1.1.1 (WBS Level 4) Detail Task Description- include a 'name' and description of any deliverables

3.1.2 (WBS Level 3) Task Description

3.1.2.1 (WBS Level 4) Detail Task Description- include a 'name' and description of any deliverables

3.2 Phase II- Option 1 (WBS Level 2) General Description Phase II

3.2.1 (WBS Level 3) Task Description

3.2.1.1 (WBS Level 4) Detail Task Description- include a 'name' and description of any deliverables

3.2.2 (WBS Level 3) Task Description

3.2.2.1 (WBS Level 4) Detail Task Description- include a 'name' and description of any deliverables

3.3 Phase III- Option 2 (WBS Level 2) General Description Phase III

3.3.1 (WBS Level 3) Task Description

3.3.1.1 (WBS Level 4) Detail Task Description- include a 'name' and description of any deliverables

4. DELIVERABLES

Data: Reports (Final, Annual, Quarterly, Monthly, Special), SW & HW Manuals

Software items (list 'name' introduced above in task description; specify quantity)

Hardware items (list 'name' introduced above in task description; specify quantity)

APPENDIX B - SUGGESTED FORMAT FOR DELIVERABLES

DELIVERABLES		
Phase I- Base Contract		
Deliverables Title	Date (days after contract award)	Frequency (weekly, quarterly, annually, X times)
Phase II- Option 1		
Deliverables Title	Date (days after contract award)	Frequency (weekly, quarterly, annually, X times)
Phase III- Option 2		
Deliverables Title	Date (days after contract award)	Frequency (weekly, quarterly, annually, X times)

APPENDIX C - SUGGESTED FORMAT FOR COST SUMMARY TABLES

TABLE 1

	Fiscal Year 2007												Fiscal Year 2008												
	Mo. 1	%	Mo. 2	%	Mo. 3	%	Mo. 4	%	Mo. 5	%	Mo. 6	%	Mo. 7	%	Mo. 8	%	Mo. 9	%	Mo. 10	%	Mo. 11	%	Mo. 12	%	
Summary Total (Per Task and Subtask)																									
Task 1																									
VP - Tech	25.0	%																							
Sr. Engineer	30.0	%																							
Engineer	45.0	%																							
Admin	3.0	%																							
Management	1.0	%																							
Labor hours/units	104.0	100%																							
Total labor cost	\$XXX	%																							
Other costs	\$XXX	%																							
Grand Total Price	\$XXXXX	100%																							
Subtask 1.a																									
VP - Tech	25.0	%																							
Sr. Engineer	30.0	%																							
Engineer	45.0	%																							
Admin	3.0	%																							
Management	1.0	%																							
Labor hours/units	104.0	100%																							
Total labor cost	\$XXX	%																							
Other costs	\$XXX	%																							
Grand Total Price	\$XXXXX	100%																							

TABLE 2

Summary Total (Per Task)	Mo. 1	Fiscal Year 2007												Fiscal Year 2008											
		%	Mo. 2	%	Mo. 3	%	Mo. 4	%	Mo. 5	%	Mo. 6	%	Mo. 7	%	Mo. 8	%	Mo. 9	%	Mo. 10	%	Mo. 11	%	Mo. 12	%	
Task 1																									
ABC Tech	\$XXX	%																							
Subcontracts	\$XXX	%																							
* Econo Tech	\$XXX	%																							
* Star Corp	\$XXX	%																							
* Hangar Intel	\$XXX	%																							
* Emerald Inc.	\$XXX	%																							
Grand Total Price	\$XXXX	100%																							