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Knowledge Discovery and Dissemination (KDD) Broad Agency Announcement (BAA)

Solicitation Number: IARPA-BAA-09-10(baa)

Agency: Office of the Director of National Intelligence

Office: Intelligence Advanced Research Projects Activity

Location: IARPA1

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Dec 22, 2009

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Intelligence analysts must gather and analyze information from a wide variety of data sets that include: general references, news, technical journals and reports, geospatial data, entity databases, internal reports and more. The different terminologies, formats, data models, and contexts make it difficult to perform advanced analytic tasks across different data sets.

If there are only a small, fixed number of data sets involved in an intelligence problem, then it may be practical to map all of the data sets to a common data model and to develop specialized analytic tools tailored to the problem. However, if the problem changes over time, the data sets are large or numerous, or there are new data sets that need to be integrated with those already in use, then a new approach is required. The focus of the KDD program is to develop novel approaches that will enable the intelligence analyst to effectively derive actionable intelligence from multiple, large, disparate sources of information, to include newly available data sets previously unknown to the analyst.

The ability to quickly produce actionable intelligence from unanticipated, multiple, varied data sets require research advances in two key areas: (1) alignment of data models; and (2) advanced analytic algorithms. Making advances in these two research areas, and fully characterizing the performance of the research results using real Intelligence problems, is the focus of the IARPA Knowledge Discovery and Dissemination (KDD) Program.

Performers shall perform research in both areas and develop prototype systems that implement their techniques and research results. The KDD Program will provide data sets to support research and development in addition to extensive test and evaluation.

KDD test and evaluation will take place on an annual cycle, with each performer applying their prototype systems to challenge problems defined by the KDD Program. KDD evaluation of prototype systems will take place at government facilities and will use realistic Intelligence problems and real Intelligence data. The research supported by KDD will generally be unclassified, but the annual KDD evaluations will involve data sets classified no higher than SECRET//NOFORN.

The KDD Program requires a combination of innovative research and the capability to develop robust prototypes. Research goals should be set, and research plans should be made, to take full advantage of the length of the KDD Program. The KDD Program expects a staged approach to prototype development; each successive prototype will leverage research progress made since the previous prototype. IARPA encourages teaming between academic and commercial entities to leverage the strengths of both types of organization. KDD requires the prime contractor for each performer team to have personnel and a facility cleared at the SECRET//NOFORN

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BROAD AGENCY ANNOUNCEMENT
IARPA-BAA-09-10



I A R P A
BE THE FUTURE

KNOWLEDGE DISCOVERY AND DISSEMINATION
(KDD)

IARPA OFFICE OF INCISIVE ANALYSIS

IARPA-BAA-09-10

Release Date: [December 22, 2009](#)

IARPA

BROAD AGENCY ANNOUNCEMENT: IARPA-BAA-09-10 KNOWLEDGE DISCOVERY AND DISSEMINATION

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PART ONE: OVERVIEW INFORMATION

This publication constitutes a Broad Agency Announcement (BAA) and sets forth research areas of interest in the area of Knowledge Discovery. Awards based on responses to this BAA are considered to be the result of full and open competition.

- **Federal Agency Name** – Intelligence Advanced Research Projects Activity (IARPA), Incisive Analysis Office
- **Funding Opportunity Title** – KNOWLEDGE DISCOVERY AND DISSEMINATION (KDD)
- **Announcement Type** – Initial
- **Funding Opportunity Number** – IARPA-BAA-09-10
- **Catalog of Federal Domestic Assistance Numbers (CFDA)** – Not applicable
- **Dates** - Proposal Due Date: **February 16, 2010**
- **Anticipated individual awards** – Multiple awards are anticipated.
- **Types of instruments that may be awarded** – Procurement contract
- **Agency Points of contact**
 - Dr. Arthur H. Becker
 - IARPA, Incisive Analysis Office
 - ATTN: IARPA-BAA-09-10
 - Office of the Director of National Intelligence
 - Intelligence Advanced Research Projects Activity
 - Washington, DC 20511
 - Fax: 301-226-9137
 - Electronic mail: dni-iarpa-baa-09-10@ugov.gov
- **Program website:** http://www.iarpa.gov/solicitations_kdd.html
- **BAA Summary:** This BAA is soliciting innovative integrated solutions to two main challenges: (1) alignment of data models and (2) advanced analytic algorithms that process data sets with multiple formats/models.
- **Questions:** IARPA will accept questions about the BAA until **February 2 2010**. A consolidated Question and Answer response will be publicly posted every few days on the IARPA website (<http://www.iarpa.gov>); no answers will go directly to the submitter. Questions about administrative, technical or contractual issues must be submitted to the BAA e-mail address at dni-iarpa-baa-09-10@ugov.gov). If e-mail is not available, fax questions to 301-226-9137, Attention: IARPA-BAA-09-10. All requests must include the name, e-mail address (if available) and phone number of a point of contact for the requested information. Do not send questions with proprietary content.

PART TWO: FULL TEXT OF ANNOUNCEMENT

SECTION 1: FUNDING OPPORTUNITY DESCRIPTION

The Intelligence Advanced Research Projects Activity (IARPA) 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/>, then the IARPA website at <http://www.iarpa.gov>. The following information is for those wishing to respond to this Program BAA.

IARPA is seeking innovative solutions for the Knowledge Discovery and Dissemination (KDD) Program. The use of a BAA solicitation allows a wide range of innovative ideas and concepts. The Knowledge Discovery and Dissemination (KDD) Program is envisioned to begin **June 2010** and end by **October 2014**.

1. A. Program Overview

1. A.1. Background

Intelligence analysts must gather and analyze information from a wide variety of data sets that include: general references, news, technical journals and reports, geospatial data, entity databases, internal reports and more. The different terminologies, formats, data models, and contexts make it difficult to perform advanced analytic tasks across different data sets.

If there are only a small, fixed number of data sets involved in an intelligence problem, then it may be practical to map all of the data sets to a common data model and to develop specialized analytic tools tailored to the problem. However, if the problem changes over time, the data sets are large or numerous, or there are new data sets that need to be integrated with those already in use, then a new approach is required. The focus of the KDD program is to develop novel approaches that will enable the intelligence analyst to effectively derive actionable intelligence from multiple, large, disparate sources of information, to include newly available data sets previously unknown to the analyst.

1. A. 2. KDD Program Overview

The ability to quickly produce actionable intelligence from unanticipated, multiple, varied data sets require research advances in two key areas: (1) alignment of data models; and (2) advanced analytic algorithms. Making advances in these two research areas, and fully characterizing the performance of the research results using real Intelligence problems, is the focus of the IARPA Knowledge Discovery and Dissemination (KDD) Program.

Performers shall perform research in both areas and develop prototype systems that implement their techniques and research results. The KDD Program will provide data sets to support research and development in addition to extensive test and evaluation.

KDD test and evaluation will take place on an annual cycle, with each performer applying their prototype systems to challenge problems defined by the KDD Program. KDD evaluation of prototype systems will take place at government facilities and will use realistic Intelligence problems and real Intelligence data. The research supported by KDD will generally be unclassified, but the annual KDD evaluations will involve data sets classified no higher than SECRET//NOFORN.

The KDD Program requires a combination of innovative research and the capability to develop robust prototypes. Research goals should be set, and research plans should be made, to take full advantage of the length of the KDD Program. The KDD Program expects a staged approach to prototype development; each successive prototype will leverage research progress made since the previous prototype. IARPA encourages teaming between academic and commercial entities to leverage the strengths of both types of organization. KDD requires the prime contractor for each performer team to have personnel and a facility cleared at the SECRET//NOFORN level at the time their proposal is submitted.

KDD is planned as a 51-month program and anticipates making multiple awards.

1. A. 3. Description of Desired Research

Alignment of Data Models: No matter the structure, every data set conforms to a data model. This data model defines how the data is organized and labeled, as well as the appropriate use of terminology. Data set formats of interest include text documents, spreadsheets, flat files, and databases. While the data model may be implicit, often it is formally defined with an explicit ontology that may or may not be readily available. To make effective integrated use of multiple data sets, their respective data models must be aligned so that the data in one can be compared and correlated with information from another. Current practices for data model alignment are manually intensive, time-consuming processes that prevent analysts from making timely use of new data as it becomes available.

In simple cases, alignment amounts to finding synonymous terms used to describe the same objects in different data sets. For example, automobiles may be referred to as “automobiles” in one data set, “cars” in another and “vehicles” in yet another. Establishing the likeness of these terms allows the use of analytic tools to retrieve and analyze data from all three sets. In more complex scenarios, data set alignment is approximated or probability-based, and may involve subtle relationships based on elements unrelated to likeness. For example, “automobiles” could be further categorized by make and model in the first data set, whereas in the second data set “cars” could be further categorized as “full-size”, “mid-size” or “compact.” Alignment in this case requires mapping each make and model into the appropriate subcategory of “full-size,” “mid-size” and “compact.” With this mapping, analytic tools using the term “mid-size” would be applied to the appropriately mapped makes and models in the first data set.

The KDD Program seeks new and innovative research to significantly improve the alignment process. Improvements are sought on all aspects of the alignment problem, including level of automation and speed. Research is considered ‘innovative’ based on its potential to break new ground and significantly advance the state-of-the-art. Promising approaches include (but are not limited to): folksonomic approaches; machine

learning; and other techniques emerging from the ontology alignment research field. Activities that constitute minor enhancements to existing products or known techniques are **not** of interest.

Advanced Analytic Algorithms for Multiple Data Sets: The second research area of interest to KDD is advanced analytic algorithms that can work across multiple, diverse data sets. This section defines what advanced analytic tasks and algorithms mean.

An analyst may be given a very high level analytic problem such as “what are the intentions of this leader with respect to this issue?” Addressing this problem requires a great deal of interpretation and synthesis of information, a breakdown of the problem into specific analytic tasks, and a strategy of where and how to find the data to use to produce answers. This level of human cognition is not what we intend to address with advanced analytics. At the other extreme, an analyst may execute a direct query such as “find records with the character string XYZ.” This type of direct search or retrieval does not require advanced analytics.

Between the very high level analysis problems and the direct queries discussed above, are what we define as advanced analytic tasks. These tasks require some understanding of what the analyst would view as interesting, relevant, or important, but do not require the level of human cognition required to address high level analytic problems. Examples of analytic tasks include:

1. Who are the *key* players in this organization and what are their roles?
2. How large is the group?
3. What are the relationships between members of an organization?
4. Find documents *similar* to this or about this topic.
5. What is *near* the location that is significant to the problem?
6. What *significant* events have occurred near this location?
7. Have there been any *important* changes recently?
8. Who has done *something like this* in the past?
9. What is the age and skill of each member of the group?
10. Who are the *key* people in this facility?

Advanced analytic algorithms are needed to understand what is meant by “similar,” “key,” “significant,” “near”, etc., in the context of the analyst’s task without having the analyst develop direct queries.

Currently, there are advanced analytic algorithms that provide useful services such as sorting, topic clustering, example-based search and Social Network Analysis (SNA). However, these algorithms generally only work within a single data set or type of data. They make assumptions about the data that, while valid when applied to a single data set, are typically not valid when applied across multiple diverse data sets. For example, the mathematics behind many of the statistical methods to measure semantic distance between two records assumes that the records come from corpora with similar statistical properties. If they do not, then the performance can be poor. For instance, given a news article on a criminal event, an analyst can reliably use that article to search for similar news articles using a variety of semantic distance measures. However, those same techniques may not be effective when searching technical reports because of the

inherent differences in structure, tone and terminology between news articles and technical reports.

As another example, SNA algorithms are effective in finding and characterizing groups within large networks formed by a single type of relationship. However, current SNA algorithms often do not extend to multiple types of relationships as represented in data sets that have different data models.

The KDD Program seeks new and innovative research to produce advanced analytic algorithms providing accurate, complete, and reliable information when applied to multiple data sets. Research is considered innovative if it breaks new ground and significantly advances the state-of-the-art. Promising approaches include (but are not limited to): recent advances in the application of Latent Dirichlet Allocation and semantic labeling; search by example; search by relevant topic; topic clustering; applications involving semantic distance; graph portioning approaches for social networks with multiple types of nodes or relationships; and clustering algorithms for entity resolution. SNA algorithms that take advantage of multiple data sets and content are also of interest. Activities that constitute minor enhancements to existing products or known techniques are **not** of interest.

Research Areas Not of Interest: Areas that are **not** of interest to KDD include:

- 1) Studies of analyst behavior and analytic teaming or collaboration
- 2) Processing media formats (speech, video, images, etc.)
- 3) Hypothesis generation, hypothesis validation and sense making
- 4) Alternate report generation technologies such as storytelling or video generation
- 5) Machine translation and foreign language processing
- 6) Research in visualization technology
- 7) Specialized hardware for analytic processing
- 8) Computer architecture research for analytic processing
- 9) Natural language interfaces between the analyst and analytic tools
- 10) Research on Resource Description Framework (RDF) extraction.

1. A. 4. KDD Evaluation Overview

The KDD Program's notional timeline is shown in Figure 1. More details are provided in Table 2.

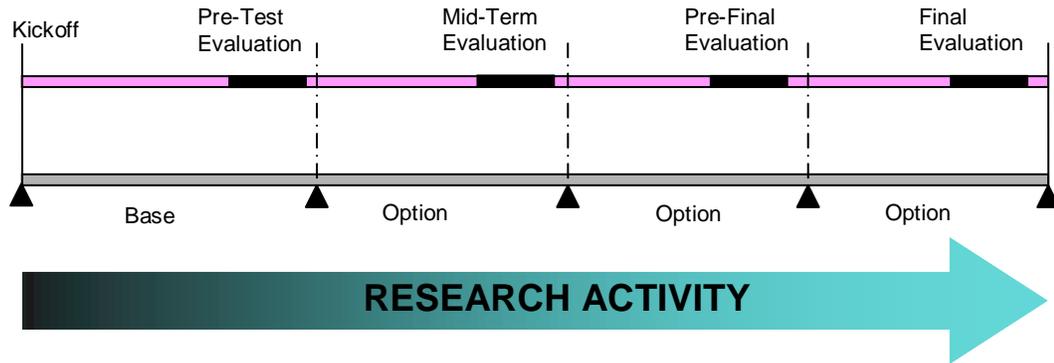


Figure 1 - KDD Program Notional Timeline

The KDD Program will conduct evaluation cycles; defined as Pre-Test, Mid-Term, Pre-Final and Final (See Figure 1). The program is structured so that the first cycle (Pre-Test) is 15 months in duration, with follow-on cycles each lasting 12 months. The performer's research will be evaluated within each cycle using challenge problems defined by the KDD Program. At the beginning of each cycle, the KDD Program will provide the description of the challenge problem to be used in the end-of-cycle KDD evaluation. The performer will also be given representative data sets to support their research and development.

Towards the end of each cycle, the performer will deliver two (2) prototypes to the KDD Program Manager (PM) for the KDD evaluation. One prototype will implement the performer's data model alignment techniques; the other prototype will implement the performer's advanced analytic techniques. The KDD Test and Evaluation (T&E) team will verify that the prototypes are compliant with the KDD evaluation arrangements. KDD evaluations will take place at facilities designated by the KDD Program and will be conducted at the SECRET//NOFORN level. The performer will have appropriately cleared team members present at the facility to support the KDD evaluation process.

At the start of the KDD evaluation of a performer's prototypes, the KDD T&E team will provide the performer with: (a) a complete description of the challenge problem; (b) the analytic tasks to be performed to address the challenge problem; (c) a number of data sets that are similar to those data sets provided at the start of the cycle; (d) a number of "surprise" data sets. The performer will then have a limited amount of time in which to align all of the data sets using their alignment prototype and to prepare their advanced analytic prototype for the specified analytic tasks. The Pre-Test evaluation cycle will allow flexibility in the time required for alignment and will provide the basis to establish an appropriate length of alignment time for future cycles.

When this time period is over, the alignment and preparation effort of the KDD evaluation is done and the results will be put to use by intelligence analysts working for the KDD T&E team, who will use the performer's advanced analytic prototype, and the

results of the performer's alignment prototype, to execute the specific analytic tasks required for the challenge problem. The overall KDD evaluation of the performer's prototypes will be based on the accuracy, completeness, and reliability of the results obtained by the analysts.

After the KDD evaluation, feedback will be provided to the performer regarding the performance of their two prototypes. There will also be a KDD Program workshop during which the performer will present their algorithms and evaluation results.

The following section describes the annual cycle, the KDD evaluation process and the prototypes in more detail.

1. A. 4.1. The KDD Cycle

At the beginning of the cycle:

1) The KDD Program will provide the performer with a description of the high-level challenge problem that will be used in the KDD evaluation in this cycle. The KDD Program will also provide a description of the types of analytic tasks needed to address the challenge problem. However, to prevent the performer from over-engineering their prototype, specific analytic tasks will not be provided until the start of the evaluation.

Example: The high-level challenge problem is to characterize a facility of interest located in a foreign country. Some key members of the organization managing the facility are known. The types of analytic tasks for this problem include (a) Find other key members of the organization, determine their roles and responsibilities, and provide key attributes of these members. (b) Determine other activities of the organization. The specific key attributes of interest will not be provided until the start of the evaluation. In this example, finding attributes about members is a type of task; finding *specific* attributes will define the specific analytic task.

2) The KDD Program will provide a small number (less than 10) of data sets to the performer, which can be used in research and development in this cycle. These data sets will be classified no higher than SECRET//NOFORN. They will be similar in content and format to data sets that will be used in the KDD evaluation at the end of the cycle. These data sets are for use in the research and development phase. More detailed information about the data sets used in the KDD program is provided in Section 1.B (Data Description) below.

3) The KDD Program will also provide a small number (less than 10) of surrogate data sets to each performer that are similar to the real data sets described in paragraph 2 above. These surrogate data sets will be unclassified and are provided for use by all of the performer's researchers. These unclassified surrogate data sets are for use in the research and development phase.

4) The KDD Program will also provide a description of the "surprise" data sets that will be provided for each KDD evaluation cycle. The description will tell the performer the general type of data to expect (e.g. biographical, free-form text, geospatial data...etc.) but will not provide detailed information about the content and format.

5) The performer will be provided access to the BLACKBOOK (see Appendix D) framework. BLACKBOOK is a semantic web-based framework for integrating data sets and analytic algorithms to solve analytic tasks. The performer will deliver their analytic prototype as a collection of analytic algorithms integrated with the version of BLACKBOOK provided for that cycle. The performer will be given access to the BLACKBOOK web site, which provides documentation and means for downloading the software. In addition, the performer will be provided up to 200 hours of BLACKBOOK technical assistance during the first year of the KDD Program. Making use of this technical assistance is at the sole discretion of the performer. Performers choosing to make use of this assistance assume any and all risk associated with such use, including potential impacts on contract performance.

Research and development phase of the cycle:

There will be two Technical Exchange Meetings (TEMs) at the performer's facility: one at approximately at the end of the first quarter of the cycle, and the second at approximately half way through the cycle. During the TEMs, the performer will present their technical status and plans. More details can be found in Section 1.C.2. (Research Milestones and Waypoints).

Prototype delivery phase of the cycle:

At approximately two-thirds through the cycle, the performer will deliver an alignment prototype and an advanced analytic prototype to the KDD Program. Prototypes will be checked for compliance (Section 1.A.5 Technical Description of the KDD Prototypes and Their Use). The performer will be required to make prototypes compliant before the prototypes are accepted for KDD evaluation. Prototypes that are not compliant by the start of the KDD evaluation will be determined to have failed the KDD evaluation.

Evaluation phase of the cycle:

The KDD evaluation of the performer's prototypes will be conducted at a secure facility selected by the KDD Program Manager. The evaluation period for each performer will be approximately one week. The KDD evaluation will be conducted at the SECRET//NOFORN level. The performer can have up to five appropriately cleared team members in the facility during the KDD evaluation.

When the KDD evaluation begins, the performer's two accepted prototypes will already be installed at the KDD evaluation facility. The performer will be provided with all of the data sets to be used in the KDD evaluation. Some of these data sets will be very similar to the data sets provided at the beginning of the cycle. The remaining data sets will be the "surprise data sets" that were described, but not provided, at the beginning of the cycle. The performer will also be provided with the complete description of the high-level analysis challenge problem and a breakdown of that problem into the specific analytic tasks in the KDD evaluation. Several of the analytic tasks will be designated as "probe" tasks, which can be performed automatically (without analyst interaction) using the BLACKBOOK workflow capability. Examples of probe tasks are tasks 2 and 9 in the list of advanced analytic tasks found above on page 6 (Section 1.A.3 Description of Desired Research). The other analytic tasks will require human analyst involvement.

KDD will evaluate the performer's alignment and advanced analytic prototypes using the high level challenge problem, the analytic tasks and the data sets. The KDD evaluation process will include the following activities by the performer's on-site personnel:

- 1) Use the alignment prototype to align the data sets. (Limited time allowed.)
- 2) Develop the BLACKBOOK workflows that use the advanced analytic prototype to execute the probe tasks. (Limited time allowed.)
- 3) Train and then provide technical support to the KDD-assigned analysts on the use of the advanced analytic prototype.

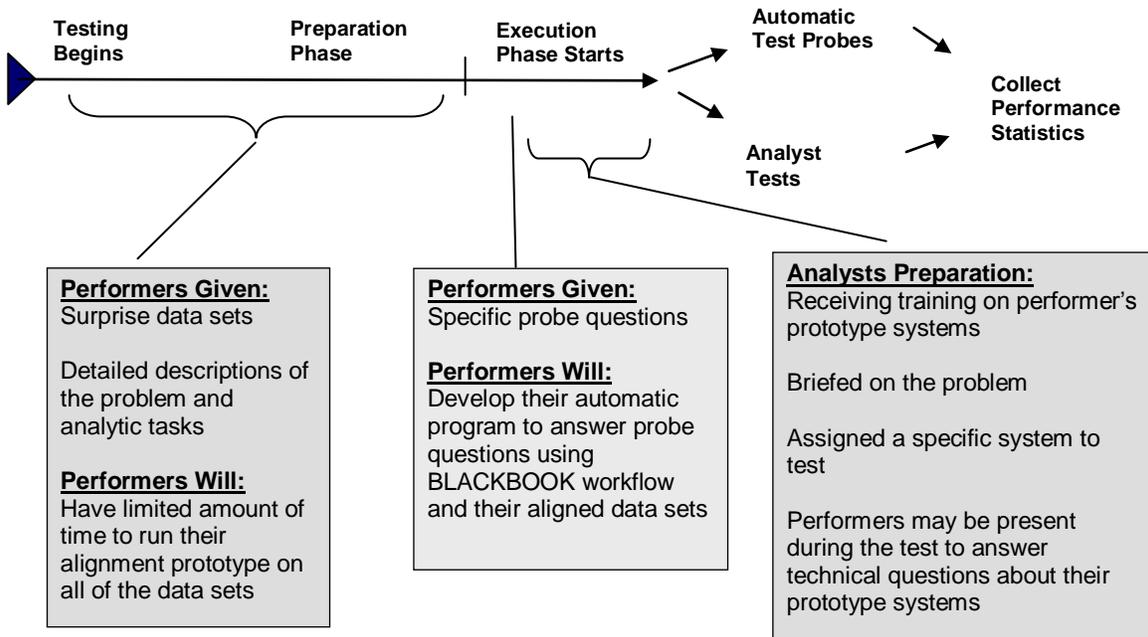


Figure 2 - Prototype Evaluations

In addition to evaluating the prototypes delivered by KDD performers, a baseline BLACKBOOK system will also be evaluated by the KDD Program. The baseline BLACKBOOK system will use the same BLACKBOOK framework provided to performers and will be augmented with analytic capabilities that are currently in use by IC analysts. A manual alignment process will be used to support the baseline BLACKBOOK evaluation. By comparing performance results of delivered prototypes with the baseline BLACKBOOK, KDD will assess improvement over today's capabilities.

Completion of the cycle:

The KDD PM will provide feedback directly to the performer. All KDD performers will attend and present their research and results at the annual KDD workshop. The workshop will include both unclassified and classified sessions. During the workshop, the performers and KDD Program team will discuss lessons learned during the evaluation and possible modifications to test procedures. At this time, the Government

team will outline the candidate challenge problem(s) and data sets to be used in the next evaluation cycle and solicit performer feedback. Following the workshop, Option Year decisions will be made, and the new challenge problem and data sets will be provided.

1. A. 5. Technical Description of the KDD Prototypes and Their Use

The performer's prototypes will be installed and run entirely on an isolated network dedicated to the KDD evaluation at the KDD test facility. The prototypes will not have access to the Internet or to any other network. The prototypes will not have access to software tools other than those that are included by the performer and those tools that are provided with BLACKBOOK.

The performer will deliver source code and the appropriate scripting, subordinate libraries, release notes, and other necessary components, data, and documentation to allow the KDD Program to inspect for compliance and to build the delivered software for use in the evaluation.

1. A. 5.1. Alignment Process and Alignment Prototype

- 1) It is not required that the alignment process be fully automatic.
- 2) The result of the alignment process must be a collection of OWL-2¹ statements that are compatible with the performer's advanced analytic prototype. The OWL-2 statements must be characterized as a standard profile (DL, EL, QL, or RL). TBox and ABox statements are permitted in the output OWL-2 collections. The OWL-2 statements are the only alignment results that will be used during the evaluation of the advanced analytic prototype. Complex statements, such as uncertainty, probabilistic relationships, confidence and provenance shall be expressed in OWL-2 through reification.
- 3) The alignment process must not modify the information content in the data sets that are provided. The alignment process may convert file formats (see Section 1.B for additional details).
- 4) The performer can identify supporting data (such as taxonomy or a thesaurus) for use during the alignment process. At the first TEM in each KDD cycle, the performer will identify all supporting data to be used in the KDD evaluation at the end of that cycle. The performer shall provide the

¹ A. OWL 2 Web Ontology Language: Direct Semantics Boris Motik, Peter F. Patel-Schneider, Bernardo Cuenca Grau, eds. W3C Working Draft, 08 October 2008, <http://www.w3.org/TR/2008/WD-owl2-semantic-20081008/>. Latest version available at <http://www.w3.org/TR/owl2-semantic/>.

B. OWL 2 Web Ontology Language: XML Serialization Boris Motik, Peter Patel-Schneider, eds. W3C Working Draft, 08 October 2008, <http://www.w3.org/TR/2008/WD-owl2-xml-serialization-20081008/>. Latest version available at <http://www.w3.org/TR/owl2-xml-serialization/>.

C. OWL 2 Web Ontology Language: Structural Specification and Functional-Style Syntax Boris Motik, Peter F. Patel-Schneider, Bijan Parsia, eds. W3C Working Draft, 08 October 2008, <http://www.w3.org/TR/2008/WD-owl2-syntax-20081008/>. Latest version available at <http://www.w3.org/TR/owl2-syntax/>.

D. OWL 2 Web Ontology Language: Structural Specification and Functional-Style Syntax Boris Motik, Peter F. Patel-Schneider, Bijan Parsia, eds. W3C Working Draft, 08 October 2008, <http://www.w3.org/TR/2008/WD-owl2-syntax-20081008/>. Latest version available at <http://www.w3.org/TR/owl2-syntax/>.

supporting data with their prototypes when the prototypes are submitted for the KDD evaluation. **The supporting data must be consistent with Section 6.B.13 Lawful Use and Privacy Protection Measures.** The data must also fit within the storage limitations of the performer's alignment prototype. If the supporting data are classified then they shall not be classified above SECRET//NOFORN.

- 5) The performer's alignment prototype may use feedback from the performer's advanced analytic prototype. The result of the alignment process is still as specified in bullet 2) above. Furthermore, if the performer adopts this feedback approach then the alignment prototype must accept this feedback in the form provided by the BLACKBOOK framework; the performer shall ensure compliance with BLACKBOOK specifications.
- 6) It is expected that performers will use the Government Furnished Equipment (GFE) (See Appendix E) for their alignment prototype. If an offeror wants to use a different system, they must provide a strong technical argument in their proposal as well as provide an explanation as to why such an approach is in the best interest of the Government. Offerors are reminded that their proposed approach to intellectual property rights is part of the evaluation process (See Section 5). Offerors should also see additional details provided in Section 4.D. Other Submission Requirements.

1. A. 5.2. Analysis Process and Advanced Analytic Prototype

- 1) The advanced analytic prototype must be delivered as BLACKBOOK-compliant services integrated in the BLACKBOOK framework and pre-tested on the GFE computer system (Appendix E).
- 2) Advanced analytic algorithms will be used across multiple disparate data sets after they have been aligned.
- 3) BLACKBOOK workflow tools will be used to automate the execution of probe tasks that use the prototypes.
- 4) Significant analytic tasks cannot be fully automated, and will require analyst interaction. The performer should make use of the BLACKBOOK interface and visualization tools whenever possible.
- 5) The BLACKBOOK framework will evolve incrementally over time, so the framework version will be specified at the beginning of each cycle. Requirements for BLACKBOOK compliance are described in Appendix D.

1. B. Data Description

Data sets will be provided to the performer for research and development activities and for use in the KDD evaluations. The data sets will be representative of the real data sets that are used by analysts to perform the types of analytic tasks of interest to the KDD Program. The size of the data sets will vary but will generally be in the range of tens of millions of records. The data sets used in the KDD evaluations can easily be stored on the hard drives of the KDD GFE computer system specified in Appendix E.

The data sets will have errors, omissions, conflicting information and all the usual imperfections associated with real data. The data sets will not require processing speech, video or images; Listed below are some of the characteristics the performer can expect to encounter with the KDD data sets:

- Data sets can be structured or unstructured; they can include data bases of different types, flat files, spreadsheets, and more
- Data models can be expressed explicitly, as a formal ontology, or implicitly; If formally expressed, the model or the ontology may or may not be known
- Data sets can have a high percentage of missing data, errors and duplications
- Data sets could be developed at different times
- Foreign language text will only be included as addresses, names, and locations. Column headers and spreadsheet items may contain foreign words
- The data sets may be a product of transcription or translation.

The data sets provided to the performers will include some that may be classified to the SECRET//NOFORN level. In order to support unclassified researchers in this effort, KDD will also provide unclassified surrogate data sets to the performer. The performer may provide these surrogate data sets to team members that do not have the clearances required to work with classified data. **At no time can unclassified performers be given access to classified data.**

IMPORTANT: Performers shall not generate their own or additional surrogate data by trying to declassify classified data provided by the KDD Program. Only the Government is authorized to declassify data.

The performers may use other data sets to assist in the development of their prototypes. The performers may also introduce additional examples or modify data sets to support their development. Should the performer choose to use other data sets or modify the data sets provided, the following applies:

IMPORTANT: All data used by KDD performers must be obtained in accordance with U.S. laws and in compliance with End User License Agreements, Copyright Laws, Terms of Service, and laws and policies regarding privacy protection of U.S. Persons. Before using data the performer must provide proof to the KDD Program that the data was acquired in accordance with U.S. laws and regulations. See Section 6.B.13.

For presentations, progress reports and demonstrations to the KDD Program and other KDD performers, the performer shall not include data that cannot be shared with others (e.g. proprietary data).

During KDD evaluations, the performer's prototypes shall not modify the content of any provided data set and shall not create a data warehouse that merges multiple data sets together. The prototypes can create a copy of a provided data set in another format. For example, if the original data set is in the format of a Microsoft Excel spreadsheet, the alignment prototype may create a new file in the form of RDF.

The performer can bring supporting data for the alignment process of a KDD evaluation. The computer system used by the performer's alignment prototype during the KDD evaluation will limit the maximum size of any supporting data set.

1. C. Milestones and Metrics

KDD performers are expected to engage in high-risk/high-payoff research, and it is expected that some research will not be ready to be integrated into the performer's prototypes in every KDD evaluation cycle. Offerors should include aggressive research in their proposed approach that can plausibly provide high-payoff within the period of the KDD Program. Offerors should pursue a staged approach, allowing for the pursuit of longer-term research as part of the overarching strategy of the offeror to provide, as an end result, a system that meets or exceeds the KDD Program's end-goals. It is expected that all of the performer's research will be incorporated for **initial** use into their prototypes no later than the third evaluation ("Pre-Final").

The KDD Program is interested in the overall performance of the performer's prototypes against analytic tasks. The KDD evaluations will not directly measure individual components or services that are part of the performer's advanced analytic prototype. The performer's alignment process and alignment prototype will not be directly assessed in the KDD evaluations, although they will be an important focus of the technical exchanges throughout the Program.

The detailed information captured by the BLACKBOOK instrumentation process will allow the KDD Program to measure performance. This instrumentation will capture every analytic tool the analyst used, how it was parameterized, which data sets it was applied to, and the results returned. This will allow the KDD Program to assess specific contributions, unique capabilities, strengths and weaknesses of each performer's prototype. Instrumentation results will be summarized in the evaluation report and provided to the performer as feedback to be used for self assessment and corrective action. In addition to the performer's own aggregate scores, the performer will also be informed of unique or exceptional performance on specific tasks.

1. C.1. Prototype Milestones and Metrics

The Government will use the following prototype milestones and metrics to evaluate the effectiveness of the solutions in achieving the stated Program objectives, and to determine whether satisfactory progress is being made.

The prototype metrics described below reference comparisons of the performance of the performer's analytic prototype against the baseline BLACKBOOK system. The baseline will be established via a manual alignment process and will be augmented with the same analytic capabilities of the BLACKBOOK system given to the performer. Table 1 provides the milestones and metrics for the performer's prototype in each KDD cycle. The timeline for the KDD evaluations is given in Table 2.

<p><u>Pre-Test Cycle Milestone</u></p> <p>Performer prototype successfully delivered, evaluated and compared against the baseline BLACKBOOK using the KDD evaluation process.</p>
<p><u>Mid-Term Cycle Milestone and Metrics</u></p> <ul style="list-style-type: none"> • Probe Performance (against baseline) <ul style="list-style-type: none"> ○ Overall error reduced by 50%

<ul style="list-style-type: none"> ○ Error on surprise data reduced by 50% ● Overall analytic prototype performance: <ul style="list-style-type: none"> ○ At least half way from baseline to perfect score ○ Exceeds baseline in half the elapsed time <p>* Alignment time allowed in the Mid Term evaluation is limited.</p>
<p><u>Final Cycle Milestone and Metrics</u></p> <ul style="list-style-type: none"> ● Probe Performance (against baseline): <ul style="list-style-type: none"> ○ Overall error reduced by 90% ○ Error on surprise data reduced by 90% ● Overall analytic prototype performance: <ul style="list-style-type: none"> ○ At least 75% from baseline to perfect score ○ Exceeds baseline in 25% the elapsed time <p>* Alignment time in the Final evaluation is reduced from Mid-Term.</p>

Table 1 - Metrics and Milestones

Definitions Associated with Table 1:

Overall Probe Error: Probes are analytic tasks conducted by an automatic workflow process within the performer’s advanced analytic prototype. Results from the probe will be compared to ground truth. Probe error will consist of the percentage of information that should have been retrieved by the probe but wasn’t (recall error), as well as the percentage of information retrieved by the probe that should not have been retrieved (precision error). A weighted combination of precision error and recall error will be the probe error for that probe task. The weights will be provided to the performer early in the development cycle. Generally, the weights will encourage better precision performance vs. recall performance. For a given evaluation cycle, multiple probe tasks will be conducted. The performer’s overall probe error will be an average of the weighted probe errors for all of the probe tasks in the evaluation.

Probe Error on Surprise Data: This measure is the same as overall probe error except that it is restricted to only information retrieved, or information that should have been retrieved from the surprise data sets.

Overall Performance: This measure refers to the performance on analytic tasks conducted by analysts using the performer’s analytic prototype. Analysts will use the performer’s prototype to provide the specific information required by analytic tasks. Each analyst’s results will be compared to ground truth and an overall score will be computed using similar recall and precision measures. Sufficient numbers of analysts will participate in the evaluation to make the tests statistically significant.

Measures Over Time: Because the BLACKBOOK framework will be instrumented, information compiled by analysts during the evaluation will be time stamped. The

performance of the performer's prototype will be computed at intermediate times of the test and compared to the performance of the baseline BLACKBOOK system at the conclusion of the test.

1. C. 2. Research Milestones and Waypoints

In addition to the Program milestones described above, the KDD Program will use research milestones to determine if a performer is making sufficient progress to warrant continued participation in the program.

Offerors are expected to propose research milestones that demonstrate how they will ensure that their longer-term research is incorporated into their prototypes. Specifically, for each proposed research activity, there are two required milestones:

- 1) A laboratory demonstration of the research in the performer's facility that shows the potential value of the research. This demonstration can be made on any computer system that the proposer chooses, using whatever data is sufficient to demonstrate the capability and potential of the research.
- 2) A pre-prototype demonstration of the research at the performer's facility that shows that the research is likely to be effective on KDD data sets and is possible to be transitioned into the performer's prototype. The pre-prototype demonstration needs to use some relevant portion of the KDD data to show effectiveness. Issues such as speed and scalability need to be addressed to show that it is progressing towards prototype integration.

Offerors are expected to provide details of their proposed milestones to include quantitative metrics associated with each milestone, and the proposed schedule to achieve them.

Waypoints are intermediate stages of research that the KDD Program will use to evaluate performer progress between research milestones and prototype evaluation. Since each research activity is different, each offeror shall propose their own waypoints for each of their research activities.

Within each cycle, the KDD Program will have two project TEMs at the performer's facility. The offeror's proposed research waypoints and milestones should coincide with these reviews.

Example:

The proposed research activity is to automatically extract and label relationships between entities in free form text and then use the multiple relationships to improve group detection in social network analysis.

Proposed Milestones:

The performer projects that a laboratory demonstration will be available in 8 months and a pre-prototype demonstration will be available in 16 months. (Quantitative metrics should also be proposed for each.)

Proposed Waypoints:

In 4 months the research will develop and compare various methods for extracting and labeling relationships. The research will also develop categorizations of relationships. (Quantitative metric(s) should also be proposed.)

In 12 Months the research will refine categorization and labeling of relationships. Results from limited offline testing of the group detection algorithm against free form text will be available. (Quantitative metric(s) should also be proposed.)

1. C. 3. KDD Program Timeline

Table 2 provides the KDD Program timeline for the base cycle of 15 months and the three one-year option cycles

Date	Event	Description	Other Information/Purpose
Month 1	Kickoff Meeting In The Washington D.C. Area Attendance by Principal Investigators & Key Personnel	Communicate KDD vision and expectations Provide challenge problem, analytic task descriptions and data sets	Pre-Test Cycle
Month 4	Site Visit (TEM) Attendance By Principal Investigator & Key Personnel	Review research Milestones and Waypoints	Assess the performer's understanding of KDD Program goals and their research progress
Month 8	Site Visit (TEM) Attendance by Principal Investigator & Key Personnel	Review research Milestones and Waypoints	Assess research progress
Month 10	Prototype delivery	Prototype compliance check	Preparation for Pre-Test evaluation
Month 12-13	Pre-Test Evaluation	Evaluation at government facility of all prototypes KDD PM provides feedback to performers	Assess KDD test process and initial assessment of performer prototypes
Month 14	Program Workshop Attendance by Principal Investigators & Key Personnel	Performers present their research, test results, and research plans for next cycle Discuss challenge problem and data sets for next cycle	Review progress and critique prototype systems Review test procedures
Month 14-15	Distribute Challenge Problem	Complete delivery of challenge problem, analytic task descriptions and data sets for next cycle	
Month 15	Start Cycle	Exercise Options	Mid-Term Cycle
Month 18	Site Visit (TEM)	Review research Milestones and Waypoints	Assess research progress

	Attendance By Principal Investigator & Key Personnel		
Month 21	Site Visit (TEM) Attendance By Principal Investigator & Key Personnel	Review research Milestones and Waypoints	Assess research progress
Month 23	Prototype Delivery	Prototype compliance check	Preparation for evaluation
Month 24-25	Mid-Term Evaluation	Evaluation at government facility of all prototypes KDD PM provides feedback to performers	Formal test
Month 26	Program Workshop Attendance By Principal Investigators & Key Personnel	Performers present their research, test results, and research plans for next cycle Discuss challenge problem and data sets for next cycle	Review progress and critique prototype systems Review test procedures
Month 26-27	Distribute Challenge Problem	Complete delivery of challenge problem, analytic task descriptions and data sets for next cycle	
Month 27	Start Cycle	Exercise Options	Pre-Final Cycle
Month 30	Site Visit (Tem) Attendance By Principal Investigator & Key Personnel	Review research Milestones and Waypoints	Assess research progress
Month 33	Site Visit (Tem) Attendance By Principal Investigator & Key Personnel	Review research Milestones and Waypoints	Assess research progress
Month 35	Prototype Delivery	Prototype compliance check	Preparation for evaluation
Month 36-37	Pre-Final Evaluation	Evaluation at government facility of all prototypes. KDD PM provides feedback to performers	Formal test

Month 38	Program Workshop Attendance By Principal Investigators & Key Personnel	Performers present their research, test results, and research plans for next cycle Discuss challenge problem and data sets for next cycle	Review progress and critique prototype systems Review test procedures
Month 38-39	Distribute Challenge Problem	Complete delivery of challenge problem, analytic task descriptions and data sets for next cycle	
Month 39	Start Cycle	Exercise Options	Final Cycle
Month 42	Site Visit (Tem) Attendance By Principal Investigator & Key Personnel	Review research Milestones and Waypoints	Assess research progress
Month 45	Site Visit (Tem) Attendance By Principal Investigator & Key Personnel	Review research Milestones and Waypoints	Assess research progress
Month 47	Prototype Delivery	Prototype compliance check	Preparation for evaluation
Month 48-49	Final Evaluation	Evaluation at government facility of all prototypes KDD PM provides feedback to performers	Formal test
Month 51	Final Program Workshop Attendance By Principal Investigators & Key Personnel	Performers present their research and test results Delivery of final reports and other deliverables	Program technical wrap-up Program close-out

Table 2 - Program Timeline

SECTION 2: AWARD INFORMATION

The KDD Program is envisioned as an approximately four-year effort that is intended to begin in June 2010. The Program will consist of a base period of 15 months with three pre-priced option years.

Funding for optional years will be based upon performance, KDD program priorities, the availability of funds, and IARPA priorities.

Multiple awards are anticipated. The amount of resources made available under 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 determines them to be necessary. If the proposed effort is inherently divisible and nothing is gained from the aggregation, offerors should consider submitting it as multiple independent efforts. Additionally, IARPA reserves the right to accept proposals in their entirety or to select only portions of proposals for award. In the event that IARPA desires to award only portions of a proposal, negotiations may be opened with that offeror.

Awards under this BAA will be made to offerors on the basis of the evaluation criteria listed in 5.A, program balance, and availability of funds. Proposals identified for negotiation may result in a procurement contract. Grants will not be considered under this BAA. The Government reserves the right to negotiate the type of award instrument it determines appropriate under the circumstances.

Offerors whose proposals are accepted for funding will be contacted before award to obtain additional information required for award. The Government may establish a deadline for the close of fact-finding and negotiations that allows a reasonable time for the award of a contract. Offerors that are not responsive to government deadlines established and communicated with the request, may be removed from award consideration. Offerors may also be removed from award consideration should the parties fail to reach agreement on contract terms, conditions and cost/price within a reasonable time.

SECTION 3: ELIGIBILITY INFORMATION

3. A. Eligible Applicants

All responsible sources capable of satisfying the Government's needs may submit a proposal. Historically Black Colleges and Universities (HBCUs), Small Businesses, 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 these organizations' participation due to the impracticality of reserving discrete or severable areas for exclusive competition among these entities. Other Government Agencies, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and any other similar type of organization that has a special relationship with the Government, that gives them access to privileged and/or proprietary information or access to Government equipment or real property, are not eligible to submit proposals under this BAA or participate as team members under proposals submitted by eligible entities.

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

Regulations, Export Control Laws and other governing statutes applicable under the circumstances.

3. A. 1. Procurement Integrity, Standards of Conduct, Ethical Considerations and Organizational Conflicts of Interest (OCI)

"Organizational conflict of interest" means that because of other activities or relationships with other persons, a person is unable or potentially unable to render impartial assistance or advice to the Government, or the person's objectivity in performing the contract work is or might be otherwise impaired, or a person has an unfair competitive advantage.

If a prospective offeror, or any of its proposed subcontractor teammates, believes that a potential conflict of interest exists or may exist (whether organizational or otherwise), the offeror should promptly raise the issue with IARPA and submit a waiver request by e-mail to the mailbox address for this BAA at dni-iarpa-baa-09-10@ugov.gov. All waiver requests must be submitted through the offeror, regardless of whether the waiver request addresses a potential OCI for the offeror or one of its subcontractor teammates. A potential conflict of interest includes, but is not limited to, any instance where an offeror, or any of its proposed subcontractor teammates, is providing either scientific, engineering and technical assistance (SETA) or technical consultation to IARPA. In all cases, the offeror shall identify the contract under which the SETA or consultant support is being provided. Without a waiver from the IARPA Director, neither an offeror, nor its proposed subcontractor teammates, can simultaneously provide SETA support or technical consultation to IARPA and compete or perform as a performer under this solicitation.

All facts relevant to the existence of the potential conflict of interest, real or perceived, should be disclosed in the waiver request. The request should also include a proposed plan to avoid, neutralize or mitigate such conflict. The offeror, or subcontractor teammate as appropriate, shall certify that all information provided is accurate and complete, and that all potential conflicts, real or perceived, have been disclosed. It is recommended that an offeror submit this request as soon as possible after release of the BAA before significant time and effort are expended in preparing a proposal. If, in the sole opinion of the Government, after full consideration of the circumstances, the conflict situation cannot be resolved, the request for waiver will be denied, and any proposal submitted by the offeror that includes the conflicted entity will be withdrawn from consideration for award.

As part of their proposal, offerors who have identified any potential conflicts of interest shall include either an approved waiver signed by the IARPA Director or a copy of their waiver request. Otherwise, offerors shall include in their proposal a written certification that neither they nor their subcontractor teammates have any potential conflicts of interest, real or perceived.

If, at any time during the solicitation or award process, IARPA discovers that an offeror has a potential conflict of interest, and no waiver request has been submitted by the offeror, IARPA reserves the right to immediately withdraw the proposal from further consideration for award.

3. B. US Academic Organizations

According to Executive Order 12333, as amended, paragraph 2.7, "Elements of the Intelligence Community are authorized to enter into contracts or arrangements for the provision of goods or services with private companies or institutions in the United States and need not reveal the sponsorship of such contracts or arrangements for authorized intelligence purposes. Contracts or arrangements with academic institutions may be undertaken only with the consent of appropriate officials of the institution."

It is highly recommended that offerors submit with their proposal a completed and signed Academic Institution Acknowledgement Letter for each U.S. academic organization that is a part of their team, whether the academic organization is serving in the role of prime, or a subcontractor or consultant at any tier of their team. A template of the Academic Institution Acknowledgement Letter is enclosed in this BAA at Appendix A. It should be noted that an appropriate senior official from the institution, typically the President, Chancellor, Provost, or other appropriately designated official must sign the completed form. Note that this paperwork **must** be completed before IARPA can enter into any negotiations with any offeror when a U.S. academic organization is a part of its team.

3. C. Cost Sharing/Matching

Cost sharing is not required and is not an evaluation criterion.

3. D. Other Eligibility Criteria

3. D. 1. Collaboration Efforts

Collaborative efforts and teaming arrangements among potential performers are strongly encouraged. Specific content, communications, networking and team formations are the sole responsibility of the participants.

Offerors should carefully determine the diversity of resources that will be required to assure the highest probability of success against all of the KDD Program goals. Teaming is not a requirement of the KDD Program and it is not required to respond to the KDD BAA. However, IARPA encourages teaming between academic and commercial entities to leverage the strengths of both types of organizations. The performer should have strong research capabilities and the capability to produce robust prototypes. Furthermore, KDD requires the prime contractor for each performer team to have personnel and a facility clearance at the SECRET//NOFORN level at the time their proposal is submitted.

Achieving the goals in accordance with the milestone schedule will require a high throughput of experimental and theoretical iterations. These are inherently difficult and time-consuming tasks. Performers should have sufficient depth and quality of resources in terms of people and facilities to minimize the degree to which resources are the limiting factor.

Consistent with the matrix addressed under Section 4.B.1, the proposal should clearly explain the organization of the team. It should identify all of its key members along with their technical abilities and expected program contributions, with detailed tasking and

references to associated milestones. There should be a single point of contact that represents the team in its contacts with the KDD Program. Additionally, the KDD Program should have visibility into, and access to, all components of the team and its activities.

Achieving the KDD Program goals will require the performer to address unanticipated problems and overcome them in a short period of time. This will require effective channels of communication among the team members. Therefore, interactions among team members, and mechanisms for facilitating these interactions, must be clearly defined and explained. Teams that are loose confederations of members should not be proposed.

Teams will be expected to progress as quickly as possible towards the KDD Program goals and will be expected to use the current state of the art as a jumping off point.

SECTION 4: APPLICATION AND SUBMISSION INFORMATION

This notice with addendums constitutes the total BAA and contains all information required to submit a proposal.

4. A. Content and Form of Application Submission

4. A. 1. Proposal Information

Offerors are required to submit proposals by the time and date specified in Section 4.C.1. in order to be considered during the initial round of selections. IARPA may evaluate proposals received after this date for a period of up to one year from the date of initial posting on FedBizOpps. Selection remains contingent on availability of funds.

The typical proposal should express a consolidated effort in support of one or more related technical concepts or ideas. Disjointed efforts should not be included in a single proposal.

Offerors are expected to propose a staged approach to their prototype development; with each successive prototype leveraging research progress made since the previous prototype.

Offerors should submit proposals for a Base Period of 15-months plus 3 possible 12-month Option Years.

The Government intends to use employees of Booz, Allen, Hamilton (BAH) and its sub-contractor, Scitor Corp., as well as MITRE Corp., Johns Hopkins University Applied Physics Laboratory (JHU/APL) and DOE Laboratories to provide expert advice regarding portions of the proposals submitted to the Government. These companies will also provide logistical and technical support in carrying out the evaluation process. These personnel will have signed and be subject to the terms and conditions of non-disclosure agreements. By submission of its proposal, an offeror agrees that its proposal information may be disclosed to employees of these organizations for the limited purpose stated above. If offerors do not send notice of objection to this arrangement, the

Government will assume consent to the use of contractor support personnel in assisting the review of submittal(s) under this BAA.

Only Government personnel will make evaluation and award determinations under this BAA.

KDD Test and Evaluation contractors providing BLACKBOOK technical assistance to the KDD performers will have access to the performer's work in progress as part of the 200 hours of BLACKBOOK technical support provided to each performer team. The KDD T&E contractors will be covered under a non-disclosure agreement.

All administrative correspondence and questions regarding this solicitation should be directed by e-mail to dni-iarpa-baa-09-10@ugov.gov. Proposals must be mailed to the address provided in Section 4.C.2 (Proposal Delivery). Proposals may **not** be submitted by hand, e-mail or fax; any such proposals received in this manner will be disregarded. See below for proposal submission instructions.

Offerors must submit two hard copies and one electronic copy of their proposals: one original hard copy with original signatures; one hard copy with original or copied signatures; and 1 electronic copy with Volume 1, Volume 2 and any permitted, additional information (.pdf format preferred) on a CD-ROM. Both hard copies and the CD must be clearly labeled with the following information: IARPA-BAA-09-10, the offeror's organization, the proposal title (short title recommended), and copy # of #.

Please note that reviewers receive the electronic copy submitted by CD. Hard copies are only for archival purposes. In case of inconsistencies between the hard copy and the electronic copy, the electronic copy takes precedence.

4. A. 2. Proposal Format

All proposals must be in the format given below. Nonconforming proposals may be rejected without review. Proposals shall consist of two volumes: "Volume 1 - Technical and Management Proposal" and "Volume 2 - Cost Proposal." All pages shall be printed on 8-1/2 by 11 inch paper with type not smaller than 12 point. Smaller font may be used for figures, tables and charts. The page limitation for full proposals includes all figures, tables, and charts. All pages must be numbered. Unnecessarily elaborate brochures or presentations beyond what is sufficient to present a complete and effective proposal are not acceptable and will be discarded without review.

4. A. 3. Proposal Classification

The Government anticipates that proposals submitted under this BAA will be **unclassified**. In the event that an offeror chooses to submit a classified proposal or submit any documentation that may be classified, the submissions must be appropriately marked and submitted in accordance with Section 6.B.1 (Security) below.

4. B. Proposal Content Specifics

Each proposal submitted in response to this BAA shall consist of the following:

Volume 1 – Technical & Management Proposal

- Section 1 - Cover Sheet & Transmittal Letter
- Section 2 – Summary of Proposal
- Section 3 – Detailed Proposal
- Section 4 – Security Plan
- Section 5 - Additional Information

Volume 2 – Cost Proposal

- Section 1– Cover Sheet
- Section 2 – Detailed Estimated Cost Breakdown

4. B. 1. Volume 1, Technical and Management Proposal {Limit of 30 pages}

Volume 1, Technical and Management Proposal, may include an attached bibliography of relevant technical papers or research notes (published and unpublished) that document the technical ideas and approach on which the proposal is based. Copies of not more than three relevant papers can be included with the submission. The submission of other supporting materials along with the proposal is strongly discouraged and will not be considered for review. Except for the cover sheet, transmittal letter, signed Academic Institution Acknowledgement Letter(s) if required, OCI waiver/certification, bibliography, Security Plan with associated documentation, and relevant papers, Volume 1 shall not exceed 30 pages. Any pages exceeding this limit will be removed and not considered during the evaluation process. An official transmittal letter must accompany full proposals. All full proposals must be written in English.

Section 1: Cover Sheet & Transmittal Letter

A. Cover sheet:

- (1) BAA number
- (2) Technical area
- (3) Lead organization submitting proposal
- (4) Type of business, selected among the following categories: “LARGE BUSINESS”, “SMALL DISADVANTAGED BUSINESS”, “OTHER SMALL BUSINESS”, “HBCU”, “MI”, “OTHER EDUCATIONAL”, OR “OTHER NONPROFIT”
- (5) Contractor’s reference number (if any)
- (6) Other team members (if applicable) and type of business for each
- (7) Proposal title
- (8) Technical point of contact to include: title, first name, last name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available)
- (9) Administrative point of contact to include: title, first name, last name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available)
- (10) Organizational Conflict of Interest (OCI) waiver or waiver request [see Section 3.A.1] included? Yes/No
- (10a) If no OCI, a written certification **must** be included (Appendix H letter template)
- (11) Is one or more U.S. Academic Organizations part of your team? Yes/No
- (11a) If Yes, are you including an Academic Institution Acknowledgement Statement with your proposal for each Academic Organization that is part of your team? Yes/No
- (12) Total funds requested from IARPA and the amount of cost share (if any)
- (13) Date proposal was submitted.

B. Official Transmittal Letter.

Section 2: Summary of Proposal

Section 2 shall provide an overview of the proposed work as well as introduce associated technical and management issues. This section shall contain a technical description of and technical approach to the research as well as a succinct portrayal of the uniqueness and benefits of the proposed work. It shall make the technical objectives clear and quantifiable and shall provide a project schedule with definite decision points and endpoints. Offerors must address:

- A. Innovative claims for the proposed research. This section is the centerpiece of the proposal and should succinctly describe the uniqueness and benefits of the proposed approach relative to the state-of-the-art and alternate technologies and approaches.
- B. Summary of the products, transferable technology and deliverables associated with the proposed research results. Measurable deliverables should be defined that show progress toward achieving the stated Program Milestones. Include in this section all proprietary claims to the results, prototypes, intellectual property, 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. Should no proprietary claims be made, Government rights will be unlimited.
- C. Schedule and milestones for the proposed research, including overall estimates of cost for each task. Summarize, in table form, the cost, schedule and milestones for the proposed research, including estimates of cost for each deliverable, total cost and company cost share, if applicable. Do not include proprietary information with the milestones.
- D. Overview of the technical approach and plan. Technical rationale, technical approach and constructive plan for accomplishing the technical goals that realize the innovative claims and deliverables. (This section will be supplemented with a more detailed plan in Volume 1, Section 3 of the proposal.)
- E. Related research. General discussion of other research in this area.
- F. Project contributors. Offerors must include a clearly defined organizational chart of all anticipated project participants, their countries of citizenship, and their roles in the project. Accompanying this chart, offerors will provide brief biographical sketches of key personnel and significant contributors and a detailed description of the roles that contributors (including Principal Investigator(s)) will play based on their qualifications and on their level of effort in each year of the Program. Discussion of the teaming strategy among team members shall be included. If the team intends to use consultants, they must be included in the organizational chart as well. Indicate if the person will be an "individual" or "organizational" consultant (that is, will the consultant represent himself/herself or his/her organization). In both cases, the organizational affiliation should be identified. The consultant should make a written commitment to be available to the team; the commitment should be attached to the Cost Volume. (Interested parties are encouraged to leverage personnel that are dedicated to BAA requirements no less than 10% of their time. If any participant is scheduled for less than 10% of his/her time, the offeror will provide a clear and compelling justification as to how

benefit can be gained from that person's participation at the specified level of effort.)

A chart, such as the following, is suggested.

Participants	Citizenship	Org	Role	Unique, Relevant Capabilities	Specific Task(s) / Contributions	Time Commitment	Clearance Level
John Doe	US	ABC University	PI/Key Personnel	Astrophysicist	Orbit characteristics	25%	S
John Doe, Jr.	US	ABC University	Key Personnel	Computer Programmer	Automated guidance programming	25%	S
Jane Doe	US	ABC University	Significant Contributor	And so forth...	And so forth...	50%	None
Jane Roe	US	ABC University	Contributor			25%	
John Doe, III	England	XYZ Co.	Co-PI/Key Personnel			25%	None
Monique Roe	France	XYZ Co.	Significant Contributor			40%	None
John Doe, IV	US	XYZ University	Consultant (Individual)			200 hours	S

Section 3: Detailed Proposal Information

This section of the proposal shall provide the detailed, in-depth discussion of the proposed research. Specific attention must be given to addressing both the risks and payoffs of the proposed research and why it is desirable for IARPA to pursue. This part shall provide:

- A. Statement of Work (SOW). In plain English, clearly define the technical tasks and sub-tasks to be performed, their durations and the dependencies among them. For each task and sub-task, provide:
- A general description of the objective;
 - A detailed description of the approach to be taken, developed in an orderly progression and in enough detail to establish the feasibility of accomplishing the goals of the task;
 - Identification of the primary organization responsible for task execution (prime, sub-contractor, team member, etc.) by name;
 - The exit criteria for each task/activity, i.e., a product, event or milestone that defines its completion;
 - Definition of all deliverables (e.g., data, reports, software, etc.) to be provided to the Government in support of the proposed research tasks/activities;
 - Do not include any proprietary information in the SOW.

At the end of this section, provide a Gantt chart, showing all the tasks and sub-tasks on the left with the performance period (in years/quarters) on the right. All milestones should be clearly labeled on the chart.

- B. A detailed description of the objectives, scientific relevance, technical approach and expected significance of the work. The key elements of the proposed work should be clearly identified and related to each other. Proposals should clearly detail the technical method(s) and/or approach(es) that will be used to meet or exceed each program milestone and should provide ample justification as to

why the proposed method(s)/approach(es) is/are feasible. Any anticipated risks should be described and possible mitigations proposed. General discussion of the problem without specific detail about the technical implementation will result in an unacceptable rating.

- C. State-of-the-art. Comparison with other on-going research, highlighting the uniqueness of the proposed effort/approach and differences between the proposed effort and the current state-of-the-art clearly stated. Identify the advantages and disadvantages of the proposed work with respect to potential alternative approaches.
- D. Data sources. Selected data sets will be provided as Government Furnished Information as described in Section 1.A (Program Overview) above. Should the offeror choose to use additional data in the pursuit of their research, they must identify those sources in their proposal and provide written verification that all data were lawfully obtained and were either publicly available or collected with informed consent, and, where applicable, that the offeror has a license for use of the data that will cover the proposed activity. The Government reserves the right to reject a proposal if it does not appropriately identify and address data issues. See also Section 1.B (Data Description).
- E. Description of the deliverables associated with the proposed research results, enhancing that of Volume 1, Section 2: Summary of Proposal. Deliverables should be defined that show progress toward achieving the stated Program Milestones. Deliverables should be specified for the Base Period and for each of the Option Years. Deliverables should describe the proposed approach to intellectual property rights, together with supporting rationale of why this approach offers the best value to the Government. This section should include a list of technical data, computer software or computer software documentation associated with this research effort in which the Government will acquire less than unlimited rights. For all software deliverables, the offeror shall include all as delivered version source code produced in the course of software development. Software shall be delivered in Java (JDK 6 or higher). The contractor must deliver source code and the appropriate scripting, subordinate libraries, release notes, and other necessary components, data, and documentation. These and all other deliverables developed as part of the IARPA KDD Program shall be delivered prior to the end of the contract Period of Performance. The government desires government purpose rights for all deliverables, anything less will be considered a weakness in the proposal. (See also Section 6.B.3 (Intellectual Property)).
- F. Cost, schedule, milestones. Cost, schedule, and milestones for the proposed research, including estimates of cost for each deliverable delineated by the primes and major sub-contractors, total cost, and company cost share, if any. Where the effort consists of multiple portions that could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each. The milestones must not include proprietary information.
- G. Offeror's previous accomplishments. Discuss previous accomplishments and work in this or closely related research areas and how these will contribute to and influence the current work.
- H. Facilities. Describe the facilities that will be used for the proposed effort, including computational and experimental resources. The prime contractor must describe the facility they will use to store and process

SECRET//NOFORN level data. This facility must be available for use by contract award. (See Section 4 Security Plan.)

- I. Detailed Management Plan. The Management Plan should identify both the organizations and the individuals within those organizations that make up the team and delineate the expected duties, relevant capabilities and task responsibilities of team members and expected relationships among team members. Expected levels of effort (percentage time or fraction of a full time equivalent) for all key personnel and significant contributors should be clearly noted. A description of the technical, administrative and business structure of the team and the internal communications plan should be included. Project/function/sub-contractor relationships (including formal teaming agreements), Government research interfaces, and planning, scheduling, and control practices should be described. The team leadership structure should be clearly defined. Provide a brief biography of the key personnel (including alternates, if desired) who will be involved in the research along with the amount of effort to be expended by each person during the year. Participation by key personnel and significant contributors is expected to exceed 25% of their time. A compelling explanation of any variation from this figure is required.
- J. Resource Share. Include the type of support, if any, the offeror might request from the Government, such as facilities, equipment or materials, or any such resources the offeror is willing to provide at no additional cost to the Government to support the research effort. Cost sharing is not required from offerors and is not an evaluation criterion, but is encouraged where there is a reasonable probability of a potential commercial application related to the proposed research and development effort.
- K. The names of other federal, state or local agencies or other parties receiving the proposal and/or funding the proposed effort. If none, so state.

Section 4: Security Plan

All offerors shall submit a Security Plan. The Offeror's security plan shall provide sufficient detail regarding the offeror's security capabilities and posture to ensure classified information handling procedures, storage, processing, and personnel are commensurate with the requirements of the classified work required under this BAA.

A. The Security Plan shall be broken into three (3) parts/sections:

1) Security Plan

The offeror shall demonstrate its overall plan/approach for corporately complying with, implementing, and maintaining security related policies, procedures, and directives. At a minimum, the security plan shall include the topics listed below:

Security Organization and Management
Personnel Security
Physical Security
Information Security
OPSEC Security

(OPSEC is intended as it pertains to how the prime contractor will safeguard the classified data entrusted to them, while ensuring that needed information and communication is passed amongst the team members.)

2) Contractor Personnel Summary

The offeror shall clearly demonstrate that all personnel proposed to support the classified portions of the KDD program are cleared and briefed at the appropriate security access level, and will be available for work in accordance with the proposed staffing plan. At a minimum, the prime's Program Manager and an appropriate number of the prime's contractor team must be U.S. citizens and have a SECRET//NOFORN clearance at the time of proposal submission.

As such, the offeror shall provide the following information for each individual employee supporting classified activities:

- Full Name (First Name, Middle Initial, and Last Name)
- Employer
- Social Security Number
- Date of Birth
- Clearance/Accesses currently held by the employee
- Background Investigation Date
- Polygraph Date (if applicable)
- Polygraph Type (i.e. Full Scope, Counterintelligence, etc. – if applicable)
- Government Agency responsible for issuing existing clearances/accesses
- Date the individual is expected to start working on the program

3) Requisite Security Documentation

The Offeror shall submit all requisite security documentation to: 1) confirm accreditation of offeror's SECRET//NOFORN-level facility and Information Systems for all facilities proposed for use, 2) disclose any foreign ownership control or influence issues, and 3) identify key management and personnel (utilizing the provided Key Management and Personnel Listing (KMPL)).

Notwithstanding the provisions of Section 3 of the NISPOM, the Government intends to secure services from companies which are not under foreign ownership, control, or influence (FOCI) or where any FOCI may not, in the opinion of the government, have an adverse impact on security requirements. Accordingly, all offerors responding to this BAA are required to submit a Standard Form 328, Certificate Pertaining to Foreign Interest, and a KMPL with the proposal. SF328 and KMPL submissions are also required for each proposed subcontractor. (See Appendix F and G for SF328 and KMPL forms.)

The Security Plan is not to exceed 5 pages.

This page limitation is not applicable to the Contractor Personnel Summary, SECRET//NOFORN-level Facility and Information System Accreditation Memorandums, FOCI documentation, and the KMPL.

Furthermore, the Security Plan and associated documents do not contribute to the page count of Volume 1.

Section 5: Additional Information

A brief bibliography of relevant technical papers and research notes (published and unpublished) which document the technical ideas on which the proposal is based. Copies of not more than three (3) relevant papers may be included in the submission. This information does not contribute to the page count of Volume 1.

4. B. 2. Volume 2: Cost Proposal {No Page Limit}

Section 1: Cover Sheet

- (1) BAA number;
- (2) Technical area
- (3) Lead organization submitting proposal
- (4) Type of business, selected among the following categories: "LARGE BUSINESS", "SMALL DISADVANTAGED BUSINESS", "OTHER SMALL BUSINESS", "HBCU", "MI", "OTHER EDUCATIONAL", OR "OTHER NONPROFIT"
- (5) Contractor's reference number (if any)
- (6) Other team members (if applicable) and type of business for each
- (7) Proposal title
- (8) Technical point of contact to include: title, first name, last name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available)
- (9) Administrative point of contact to include: title, first name, last name, street address, city, state, zip code, telephone, fax (if available), and electronic mail (if available)
- (10) Award instrument requested: Cost Reimbursable contract
- (11) Place(s) and period(s) of performance
- (12) Total proposed cost separated by basic award and option(s) (if any)
- (13) Name, address, telephone number of the offeror's Defense Contract Management Agency (DCMA) administration office or equivalent cognizant contract administration entity, if known
- (14) Name, address, telephone number of the offeror's Defense Contract Audit Agency (DCAA) audit office or equivalent cognizant contract audit entity, if known
- (15) Date proposal was prepared
- (16) DUNS number
- (17) TIN number
- (18) Cage Code
- (19) Proposal validity period [minimum of 90 days]

[NOTE: See Appendix B for Cover Sheet Template]

Section 2: Detailed Estimated Cost Breakdown

- (1) Total cost broken down by major cost items (direct labor, including labor categories; sub-contracts; materials; other direct costs, overhead charges, etc.) and further broken down by major task and phase; by phase and between the base effort and each option proposed
- (2) Major program tasks by fiscal year
- (3) An itemization of major subcontracts and equipment purchases
- (4) An itemization of any information technology (IT²) purchase
- (5) A summary of projected funding requirements by month
- (6) The source, nature and amount of any industry cost sharing
- (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.).

The prime contractor is responsible for compiling and providing all subcontractor proposals for the Procuring Contracting Officer (PCO) to be provided at time of proposal submittal. All subcontractor proposals shall also include the above listed cost breakdown. If any subcontractor does not wish to provide their direct and/or indirect rates to the prime contractor, their proposal may contain burdened rates; however, a copy of the proposal showing their unburdened rates shall be contained in the offeror's proposal as a sealed package to the Government or submitted separately/directly to the Government under separate cover. Subcontractor proposals should include Interdivisional Work Transfer Agreements (ITWA) or similar arrangements. Where the effort consists of multiple portions that could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each. NOTE: For IT and equipment purchases, include a letter stating why the offeror cannot provide the requested resources from its own funding.

Supporting cost and pricing information must be provided in sufficient detail to substantiate the summary cost estimates in Volume 1 above. Include a description of the method used to estimate costs and supporting documentation. Note: "cost or pricing data" shall be required if the offeror is seeking a procurement contract award of

²IT 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, of 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, is not information technology."

\$550,000 or greater unless the offeror requests an exception from the requirement to submit cost or pricing data. Cost or pricing are not required if the offeror proposes an award instrument other than a procurement contract (e.g., a grant, cooperative agreement, or other transaction). However, such data may be required prior to award if the offeror's proposal is selected for negotiations and the Government determines that a procurement contract is the appropriate award instrument. All proprietary subcontractor proposal documentation, prepared at the same level of detail as that required of the prime, shall be made immediately available to the Government, upon request, under separate cover (i.e., mail, electronic/email, etc.), either by the offeror or by the subcontractor organization.

Consultant letter(s) of commitment should be attached to the Cost Volume and estimated costs should be included in the cost estimates.

4. C. Submission Details

4. C. 1. Due Dates

Proposals must be submitted at or before 5:00 p.m. local time on February 16, 2010 in order to be considered during the initial round of selections.

4. C. 2. Proposal Delivery

The full proposal (one original hard copy with original signatures; one hard copy with original or copied signatures; and 1 electronic copy with Volume 1, Volume 2 and any permitted, additional information (.pdf format preferred) on a CD-ROM), and any abstract must be delivered to:

ODNI/IARPA
Attention: **KDD Program- Dr. Arthur Becker (IARPA-BAA-09-10)**
Gate 5
1000 Colonial Farm Road
McLean, VA 22101

IMPORTANT: Deliveries must be made using one of the following commercial delivery services: UPS, FedEx or DHL. Failure to use one of these methods may jeopardize or delay delivery of proposals. Note that under certain "same day delivery" options, UPS, FedEx and DHL may subcontract out their services to local delivery companies. These smaller local delivery companies will not be allowed access to this address to make deliveries. For this reason and other unforeseen situations, offerors should track their submission to ensure final delivery. Deliveries by hand e-mail or fax will not be accepted.

Offerors must ensure the timely delivery of their proposals. The mail facility closes at 5 p.m. local time; delivery cannot take place after this time until the following day. IARPA will generally acknowledge receipt of complete submissions via e-mail within 24-48 hours and assign control numbers that should be used in all further correspondence regarding proposals. To be certain of delivery, however, it is suggested that a tracking number be obtained from the carrier.

Offerors are required to submit proposals by the time and date specified in the BAA in order to be considered during the initial round of selections. IARPA may evaluate proposals received after this date for a period up to one year from the date of initial posting on FedBizOpps. Selection remains contingent on availability of funds. Failure to comply with the submission procedures may result in the submission not being evaluated.

4. D. Other Submission Requirements

If the offeror chooses to use a computer system for the alignment prototype in the KDD evaluation that is different from the GFE specified in Appendix E, then the proposed system must be completely specified and priced in the proposal. The offeror shall be responsible for providing the System Security Plan for the non-GFE computer system as a contract deliverable and must account for the System Security Plan in their program schedule. This computer system must be stand-alone and have received appropriate accreditation to process and store information at the SECRET//NOFORN level. The offeror shall not use their system until requisite security accreditation of the computer system is received. This could result in a delay in the performer's ability to receive the classified data sets. The performer shall be required to provide the non-GFE system for both their development and the KDD evaluation. All costs associated with the non-GFE system shall be a consideration in the proposal evaluation.

Note: Any commercial software proposed or needed shall include appropriate licenses.

SECTION 5: APPLICATION REVIEW INFORMATION

5. A. Evaluation Criteria

The criteria to be used to evaluate and select proposals for this Program BAA are described in the following paragraphs. Because there is no common statement of work, each proposal will be evaluated on its own merits and its relevance to the Program goals rather than against other proposals responding to this BAA.

5. A. 1. Overall Scientific and Technical Merit

Overall scientific and technical merit of the proposal is substantiated, including unique and innovative methods, approaches, and/or concepts. The offeror clearly articulates an understanding of the problem to be solved. The technical approach is credible, and includes a clear assessment of primary risks and a means to address them. **Offerors should pursue a staged approach, allowing for the pursuit of longer-term research as part of the overarching strategy of the offeror to provide, as an end result, a prototype that meets or exceeds the KDD program's end-goals.** The offeror can expect the selection process to include an assessment of the proposal against the state-of-the-art.

5. A. 2. Effectiveness of Proposed Work Plan

The feasibility and likelihood that the proposed approach for satisfying the Program's milestones and metrics are explicitly described and clearly substantiated along with risk mitigation strategies for achieving stated milestones and metrics. The proposal reflects

a mature and quantitative understanding of the Program milestones and metrics, and the statistical confidence with which they may be measured. The offeror may also propose additional milestones and metrics as needed. Any such milestones and metrics are clear and well defined, with a logical connection to enabling offeror decisions and/or Government decisions. The schedule to achieve the milestones is realistic and reasonable.

The role and relationships of prime and sub-contractors is clearly delineated with all participants fully documented. Work plans demonstrate the ability to provide full Government visibility into and interaction with key technical activities and personnel; and a single point of responsibility for contract performance. Work plans must also demonstrate that key personnel have sufficient time committed to the Program to accomplish the described Program roles.

The requirement for and the anticipated use or integration of Government Furnished Property (GFP) including all equipment, facilities, information, etc., is fully described including dates when such GFP, GFE (Government Furnished Equipment), GFI (Government Furnished Information) or other similar Government-provided resources will be required.

The offeror's proposed intellectual property and data rights are consistent with the Government's need to be able to communicate Program information across Government organizations and to support transition of the Program results to Intelligence Community users at a reasonable cost.

5. A. 3. Contribution and Relevance to the IARPA Mission and Program Goals

The proposed solution meets the letter and intent of the stated program goals and all elements within the proposal exhibit a comprehensive understanding of the problem. The offeror clearly addresses how the proposed effort will meet and progressively demonstrate the KDD Program goals. The offeror describes how the proposed solution contributes to IARPA's mission to invest in high-risk/high-payoff research that can provide the U.S. with an overwhelming intelligence advantage over its future adversaries. The proposed approach to intellectual property rights offers the best value to the Government.

5. A. 4. Relevant Experience and Expertise

The offeror's capabilities, related experience, facilities, techniques, or unique combination of these which are integral factors for achieving the proposal's objectives will be evaluated; as well as qualifications, capabilities, and experience of the proposed principal investigator, team leader, and key personnel critical in achieving the proposal objectives. Time commitments of key personnel must be sufficient for their proposed responsibilities in the effort. The extent to which key technical personnel from offerors, subcontractors and partnerships represent state-of-the-art, renowned expertise and experience in the technical research areas proposed will be evaluated.

5. A. 5. Cost Realism

The proposed costs are reasonable and realistic for the work proposed. Estimates are "realistic" when they are neither excessive nor insufficient for the effort to be

accomplished. The proposal documents all anticipated costs including those of associate, participating organizations. The proposal demonstrates that the respondent has fully analyzed budget requirements and addressed resulting cost risks. Other sponsors who have funded or are funding this offeror for the same or similar efforts are identified. The Government shall evaluate how well all cost data are traceable and reconcilable.

IARPA recognizes 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. IARPA 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.

After selection and before award, the Contracting Officer will negotiate cost/price reasonableness.

5. A. 6. Effectiveness of Proposed Security Plan

The Security Plan evaluation will be (Pass/Fail)

Offerors must have existing and in-place prior to execution of an award, approved capabilities (personnel and facilities) to perform research and development at the classification level they propose. Because data provided by the KDD Program may be classified at the SECRET//NOFORN level, the prime contractor must have a SECRET //NOFORN facility clearance available for the program and have cleared personnel sufficient to comply with contract requirements. These must be in place at time of proposal submission.

The IARPA Security Evaluation Team shall determine which proposals are acceptable or unacceptable from a security standpoint, based on the offeror's compliance with the security requirements for the KDD program. The evaluation will be based upon an assessment and validation of the following:

Personnel Possessing Active Clearances – IARPA Security will verify the status of those personnel proposed as being appropriately cleared and available to support classified portions of the KDD Program in accordance with the proposed staffing plan.

Overall Security Approach – IARPA Security will evaluate the proposed approach for implementing and maintaining a security approach that ensures compliance with organizational and Information Systems security policies, procedures and directives.

Security Documentation – IARPA Security will evaluate and verify the status of all SECRET//NOFORN-level facilities and Information Systems accreditation for those facilities and systems proposed for use – both prime and sub-contractor locations if applicable. In addition, appropriate reviews and determinations of FOCI and KMPL will be conducted.

Each of these areas will be evaluated on a Pass/Fail basis. If an offeror's proposal fails

to meet the security criteria, the proposal may be rejected.

Note to offerors regarding the above evaluation criteria: Award(s) will be made to offerors on the basis of the evaluation criteria listed in Section 5.A (Evaluation Criteria), KDD Program balance and availability of funds. Award recommendations will not be made to offeror(s) whose proposal(s) are determined to be not selectable.

5. B. Review and Selection Process

It is the policy of IARPA 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. 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 only be evaluated against the criteria described under Section 5.A above, and will not be evaluated against other proposals since they are not submitted in accordance with a common work statement. For evaluation purposes, a proposal is the document described in Section 4.A. 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.

As noted above, the Government intends to use employees of BAH, Scitor Corp., MITRE Corp., JHU/APL and the DOE Laboratories to assist in administering the evaluation of the proposals as well as to provide expert advice regarding portions of the proposals submitted to the Government. They will also provide logistical support in carrying out the evaluation process. These personnel will have signed and be subject to the terms and conditions of non-disclosure agreements. By submission of its proposal, an offeror agrees that its proposal information may be disclosed to employees of these organizations for the limited purpose stated above. If you do not send notice of objection to this arrangement, the Government will assume your consent to the use of contractor support personnel in assisting the review of your submittal(s) under this BAA. Only Government personnel will make evaluations and award determinations under this BAA.

5. C. Proposal Retention

It is the policy of IARPA to treat all proposals as competitive information and to disclose their contents only for the purpose of evaluation. Proposals will not be returned. Upon completion of the source selection process, the original of each proposal received will be retained at IARPA and all other non-required copies will be destroyed. A certification of destruction may be requested, provided that the formal request is sent to IARPA via e-mail within 5 days after notification of proposal results.

SECTION 6: AWARD ADMINISTRATION INFORMATION

6. 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.

The KDD Program has engaged the Air Force Research Laboratory/Autonomic Trusted Sensing for Persistent Intelligence (AFRL/RYSB) Division as the Contracting Agent for the KDD Program.

6. B. Administrative and National Policy Requirements

6. B.1. Security

General Operational Security (OPSEC) procedures, policies and awareness are required in an effort to reduce program vulnerability from successful adversary collection and exploitation of critical information. OPSEC will be applied throughout the lifecycle of the awarded contracts. The Critical Information List will be provided upon request by the AFRL/RYSB Security Office, as an extension of its working relationship with IARPA Security.

The Government anticipates that proposals submitted under this BAA will be unclassified. Offerors choosing to submit a classified proposal must first receive permission from the Original Classification Authority to use their information in replying to this BAA. Applicable classification guide(s) should be submitted to ensure that the proposal is protected appropriately.

Offerors choosing to submit a classified abstract or proposal are reminded that the proposal deadline remains the same regardless of whether the offeror's proposal, in whole or in part, is classified. Additional processing time may be required if all or part of a submission is classified. In the event that an offeror chooses to submit a classified proposal or submit any documentation that may be classified, the following information is applicable.

Collateral Classified Information: Use classification and marking guidance provided by previously issued security classification guides and the National Industrial Security Program Operating Manual (DoD 5220.22-M) when marking and transmitting information previously classified by another original classification authority. Classified information at the Confidential and Secret level may only be mailed via U.S. Postal Service (USPS) First Class Registered Mail or U.S. Postal Service Express Mail. All classified information will be enclosed in opaque inner and outer covers and double wrapped. The inner envelope shall be sealed and plainly marked with the assigned classification and addresses of both sender and addressee. The inner envelope shall be addressed to:

TO BE OPENED BY
IARPA Security Office
ATTN: IARPA-BAA-09-10

The outer envelope shall be sealed with no identification as to the classification of its contents and addressed to:

IARPA/MS2 Building
Office of the Director of National Intelligence (ODNI)
Washington, DC 20511

Information above Collateral SECRET Level: For submissions above the Collateral SECRET level, contact the IARPA Security Office at 301-226-9003/9102 for further guidance and instructions prior to transmitting information to IARPA.

6. B. 2. Proprietary Data

It is the policy of IARPA to treat all proposals as competitive information, and to disclose their contents only for the purpose of evaluation.

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.

All data gathered by performers and researchers must be obtained in accordance with U.S. laws and in compliance with the End User License Agreement, Copyright Laws, Terms of Service, and laws and policies regarding privacy protection of U.S. Persons. Before using such data, the performer must provide proof that the data was acquired in accordance with U.S. laws and regulations. Performers can use their own data for development purposes as long as it follows these guidelines.

6. B. 3. Intellectual Property

6. B. 3.1. Procurement Contract Offerors

6. B. 3.1.1. Noncommercial Items (Technical Data and Computer Software)

Offerors responding to this BAA requesting a procurement contract to be issued under the FAR 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. In the event that offerors do not submit such information, 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).³ The

³ "Government purpose rights" means the rights to use, modify, reproduce, release, perform, display, or disclose technical data and computer software within the Government without restriction; and to release or disclose technical data and computer software outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose that data or software for any United States

Government will automatically assume that any such GPR restriction is limited to a period of five (5) years, at which time the Government will acquire “unlimited rights” unless the parties agree otherwise. Offerors are advised that the Government will use this information 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 ITEMS			
Technical Data, Computer Software To be Furnished With Restrictions	Basis for Assertion	Asserted Rights Category	Name of Person Asserting Restrictions
(LIST)	(LIST)	(LIST)	(LIST)

6. B. 3.1.2. Commercial Items (Technical Data and Computer Software)

Offerors responding to this BAA requesting a procurement contract to be issued under the FAR 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 ITEMS			
Technical Data, Computer Software To be Furnished With Restrictions	Basis for Assertion	Asserted Rights Category	Name of Person Asserting Restrictions
(LIST)	(LIST)	(LIST)	(LIST)

6. B. 3.2. All Offerors – Patents

Include documentation proving ownership of or possession of appropriate licensing

Government purpose. United States Government purposes include any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations, or sales or transfers by the United States Government to foreign governments or international organizations. Government purposes include competitive procurement, but do not include the rights to use, modify, reproduce, release, perform, display, or disclose technical data or computer software for commercial purposes or authorize others to do so.

rights to all patented inventions (or inventions for which a patent application has been filed) that will be utilized under the proposal for the IARPA program. If a patent application has been filed for an invention that the proposal utilizes, but the application has not yet been made publicly available and contains proprietary information, the offeror 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 the offeror owns the invention, or 2) proof of possession of appropriate licensing rights in the invention.

6. B. 3.3. All Offerors – Intellectual Property Representations

All offerors shall 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 IARPA 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.

6. B. 4. Meeting and Travel Requirements

Performers are expected to assume responsibility for administration of their projects and to comply with contractual and Program requirements for reporting, attendance at Program workshops and availability for site visits.

6. B. 4.1. Workshops

The KDD Program intends to hold a Program-level Kick-Off meeting during the first month of the Program with each successful bidder and then hold Program-level Workshops approximately every 12 months. These 1-2 day Workshops will focus on technical aspects of the Program and on facilitating open technical exchanges, interaction and sharing among the various Program participants. Program participants will be expected to present the technical status and progress of their projects as well as to demonstrate their technical capabilities to other participants and invited guests at these events. For costing purposes, the offeror should expect one Workshop in the Washington, D.C. area for each year of the contract. The format of the workshop will include both classified and unclassified sessions.

6. B. 4.2. Site Visits

Site visits by the Contracting Officer Representative and the KDD Program Management staff will generally take place two to three times a year during the life of the Program and will occur during the period between Program-level Workshops. These visits will occur at the performer's facility. Reports on technical progress and issues, demonstrations of research prototypes, discussion of contributions to the Program goals, and technology demonstrations will be expected at such visits.

6. B. 5. 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, namely 45 CFR Part 46, *Protection of Human Subjects* (<http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm>) and 32 CFR Part 219 *Protection of Human Subjects* (<http://www.dtic.mil/biosys/downloads/32cfr219.pdf>).

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 sub-contractors, must also have a valid Assurance.

For all proposed research that will involve human subjects in the first year of the program, the institution must provide evidence of or a plan for review by an Institutional Review Board (IRB) on final proposal submission to IARPA. 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 (45 CFR Part 46 and 32 CFR 219.116).

The KDD Program plans to use a DoD Contracting Agent. In addition to a local IRB approval, a headquarters-level human-subject regulatory review and approval is required for all research conducted or supported by the DoD. The DoD 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-subject-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 between one to three months, followed by a DoD review that could last between three to six months. No IARPA funding can be used towards human-subject research until ALL approvals are granted.

In limited instances, human subject research may be exempt from Federal regulations for human subject protection, for example, under Department of Health and Human Services, 45 CFR 46.101(b). Offerors claiming that their research falls within an exemption from Federal regulations for human subject protection must provide written documentation with their proposal that cites the specific applicable exemption and explains clearly how their proposed research fits within that exemption.

6. B. 6. Publication Approval

All successful offerors shall be required to present their research at an annual KDD Workshop. In addition, successful offerors will be encouraged to submit peer reviewed technical articles for publication. Classified material may be published in the Journal of Intelligence Community Research and Development (JICRD). All publications will require pre-publication review.

6. B. 7. Export Control

(1) The offeror 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 this contract. In the absence of available license exemptions/exceptions, the offeror shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of (including deemed exports) hardware, technical data, and software, or for the provision of technical assistance.

(2) The offeror 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 technologies, including technical data or software.

(3) The offeror shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.

(4) The offeror shall be responsible for ensuring that the provisions of this clause apply to its sub-contractors.

(5) The offeror will certify knowledge of and intended adherence to these requirements in the representations and certifications of the contract.

6. B. 8. Subcontracting

It is the policy of the Government to enable small business and small disadvantaged business concerns to be considered fairly as sub-contractors to contractors performing work or rendering services as prime contractors or sub-contractors under Government contracts and to assure that prime contractors and sub-contractors carry out this policy. Each offeror that submits a proposal that includes sub-contractors; is selected for funding (pending negotiations); and has proposed a funding level above the maximum cited in the FAR, may be asked to submit a sub-contracting plan before award, in accordance with FAR 19.702(a) (1) and (2). The plan format is outlined in FAR 19.704. Offerors must declare teaming relationships in their proposals and must specify the type of teaming arrangement in place, including any exclusive teaming arrangements. IARPA neither promotes, nor discourages the establishment of exclusive teaming agreements within offeror teams. Individuals or organizations associated with multiple teams must take care not to over-commit those resources being applied.

6. B. 9. Reporting

Fiscal and management responsibility are important to the KDD Program. Although the number and types of reports will be specified in the award document, all performers will, at a minimum, provide the Contracting Office, Contracting Officer Representative and the KDD Program Manager with monthly technical reports and monthly financial reports. The reports shall be prepared and submitted in accordance with the procedures contained in the award document and mutually agreed upon before award. Technical

reports will describe technical highlights and accomplishments, priorities and plans, issues and concerns; will provide evaluation results; and will detail future plans. Financial reports will present an on-going financial profile of the project, including total project funding, funds invoiced, funds received, funds expended during the preceding month and planned expenditures over the remaining period. Additional reports and briefing material may also be required, as appropriate, to document progress in accomplishing program metrics.

Performers will prepare a final report of their work at the conclusion of the performance period of the award (even if the research may continue under a follow-on vehicle). The final report will be delivered to the Contracting Agent, Contracting Officer Representative and the KDD Program Manager. The report will include:

- Problem definition
- Findings and approach
- System design and solution
- Possible generalization(s)
- Anticipated path ahead

6. B. 10. Central Contractor Registration (CCR)

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

6. B. 11. Representations and Certifications

Prospective offerors may be required to complete electronic representations and certifications at <http://orca.bpn.gov>. Successful offerors will be required to complete additional representations and certifications prior to award.

6. B.11.1. Certification for Grant Awards

Grant awards will not be considered.

6. B.11.2. Certification for Contract Awards

Certifications and representations shall be completed by successful offerors prior to award. Federal Acquisition Regulation (FAR) Online Representations and Certifications Application (ORCA) is at website <http://orca.bpn.gov>. Defense FAR Supplement and contract specific certification packages will be provided to the contractor for completion prior to award.

6. B. 12. 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.

6. B. 13. Lawful Use and Privacy Protection Measures

All data gathered by researchers must be obtained in accordance with U.S. laws and in compliance with the End User License Agreement, Copyright Laws, Terms of Service, and laws and policies regarding privacy protection of U.S. Persons. Before using such data, the performer must provide proof that the data was acquired in accordance with U.S. laws and regulations.

SECTION 7: AGENCY CONTACTS

Administrative, technical or contractual questions concerning this BAA should be sent via e-mail to dni-iarpa-baa-09-10@ugov.gov. If e-mail is not available, fax questions to 301-226-9137, Attention: IARPA-BAA-09-10. All requests must include the name, email address (if available), and phone number of a point of contact for the requested information. Do not send questions with proprietary content. IARPA will accept questions about the BAA until two weeks before its closing. A consolidated Question and Answer response will be periodically posted on the IARPA website (www.IARPA.gov); no answers will go directly to the submitter.

Points of Contact:

The technical POC for this effort is:

Dr. Arthur H. Becker, IARPA, Incisive Analysis Office
ATTN: IARPA-BAA-09-10
Office of the Director of National Intelligence
Intelligence Advanced Research Projects Activity (IARPA)
Washington, DC 20511
Fax: (301) 226-9137
E-mail: dni-iarpa-baa-09-10@ugov.gov

All emails must have the BAA number (IARPA-BAA-09-10) in the Subject Line.

APPENDIX A

Academic Institution Acknowledgement Letter Template

IARPA Broad Agency Announcement (BAA)

Knowledge Discovery and Dissemination Program

IARPA-BAA-09-10

-- Please Place on Official Letterhead --

<insert date>

To: Mr. Thomas Kelso
Chief Acquisition Officer
ODNI/IARPA
Office of the Director of National Intelligence
Washington, D.C. 20511

Subject: Academic Institution Acknowledgement Letter

Reference: Executive Order 12333, As Amended, Para 2.7

This letter is to acknowledge that the undersigned is the responsible official of <insert name of the academic institution>, authorized to approve the contractual relationship in support of the Office of the Director of National Intelligence's Intelligence Advanced Research Projects Activity and this academic institution.

The undersigned further acknowledges that he/she is aware of the Intelligence Advanced Research Projects Activity's proposed contractual relationship with <insert name of institution> through IARPA-BAA-09-10, and is hereby approved by the undersigned official, serving as the president, vice-president, chancellor, vice-chancellor, or provost of the institution.

<Name>
<Position>

Date

Copy Furnished:
Mr. John Turnicky
Chief, ODNI Contracts
Office of the Director of National Intelligence
Washington, DC 20511

APPENDIX B

SAMPLE COVER SHEET

For

VOLUME 1: Technical/Management Details

IARPA Broad Agency Announcement (BAA)

Knowledge Discovery and Dissemination Program

IARPA-BAA-09-10

(1) BAA Number	
(2) Technical Area	
(3) Lead Organization Submitting Proposal	
(4) Type of Business, Selected Among the Following Categories: "Large Business", "Small Disadvantaged Business", "Other Small Business", "HBCU", "MI", "Other Educational", or "Other Nonprofit"	
(5) Contractor's Reference Number (if any)	
(6) Other Team Members (if applicable) and Type of Business for Each	
(7) Proposal Title	
(8) Technical Point of Contact to Include: Title, First Name, Last Name, Street Address, City, State, Zip Code, Telephone, Fax (if available), Electronic Mail (if available)	
(9) Administrative Point of Contact to Include: Title, First Name, Last Name, Street Address, City, State, Zip Code, Telephone, Fax (if available), Electronic Mail (if available)	
(10) OCI Waiver or Waiver Request [see Section 3.A.1] Included?	Yes/No
(10a) If No, is written certification included?	Yes/No
(11) Are one or more U.S. Academic Organizations part of your team?	Yes/No
(11a) If Yes, are you including an Academic Institution Acknowledgement Statement with your proposal for each Academic Organization that is part of your team?	Yes/No
(12) Total Funds Requested from IARPA and the Amount of Cost Share (if any)	\$
(13) Date Proposal as Submitted.	

APPENDIX C

SAMPLE COVER SHEET

For

VOLUME 2: Cost Proposal

IARPA Broad Agency Announcement (BAA)

Knowledge Discovery and Dissemination Program

IARPA-BAA-09-10

(1) BAA Number	
(2) Technical Area	
(3) Lead organization submitting proposal	
(4) Type of Business, Selected Among the Following Categories: "Large Business", "Small Disadvantaged Business", "Other Small Business", "HBCU", "MI", "Other Educational", or "Other Nonprofit"	
(5) Contractor's Reference Number (if any)	
(6) Other Team Members (if applicable) and Type of Business for Each	
(7) Proposal Title	
(8) Technical Point of Contact to Include: Title, First Name, Last Name, Street Address, City, State, Zip Code, Telephone, Fax (if available), Electronic Mail (if available)	
(9) Administrative Point of Contact to Include: Title, First Name, Last Name, Street Address, City, State, Zip Code, Telephone, Fax (if available), Electronic Mail (if available)	
(10) Award Instrument Requested: Cost Reimbursable contract	
(11) Place(s) and Period(s) of Performance	
(12) Total Proposed Cost Separated by Basic Award and Option(s) (if any)	
(13) Name, Address, Telephone Number of the Offeror's Defense Contract Management Agency (DCMA) Administration Office or Equivalent Cognizant Contract Administration Entity, if Known	
(14) Name, Address, Telephone Number of the Offeror's Defense Contract Audit Agency (DCAA) Audit Office or Equivalent Cognizant Contract Audit Entity, if Known	
(15) Date Proposal was Prepared	
(16) DUNS Number	
(17) TIN Number	
(18) Cage Code	
(19) Proposal Validity Period [minimum of 90 days]	

APPENDIX D

BLACKBOOK Framework Description

IARPA Broad Agency Announcement (BAA) Knowledge Discovery and Dissemination Program IARPA-BAA-09-10

BLACKBOOK is a software framework that allows research components, algorithms, and vendor tools to be easily integrated and tested in the Intelligence Community's environment. BLACKBOOK uses commercial standards and supports the IC's Service Oriented Architecture. Using these standards and its easy-to-use interfaces, new tools become plug in components that are interoperable with other tools in the framework.

BLACKBOOK is provided as a free download to U.S. universities and U.S. companies. Accessing BLACKBOOK code is done through the BLACKBOOK Wiki using the following steps:

- 1) Requestor sends an email request to dni-iarpa-baa-09-10@ugov.gov on the internet to get a BLACKBOOK Wiki account. The request must provide the requestor's first and last name, Internet e-mail address, affiliation (company, organization, or university), phone number and address.
- 2) A user name and password will be sent to the requestor.
- 3) Once a login account and password are received, go to <http://rabasrv.jhuapl.edu/wiki/index.php> and log in. Once inside the Wiki, follow the instructions at <http://rabasrv.jhuapl.edu/wiki/index.php/Download> in order to download the BLACKBOOK code.

Additional BLACKBOOK documentation can be found inside the wiki. The wiki provides technical documentation regarding the architecture, extension points, open source standards, downloading instructions and installation steps. It also provides news, contact with other researchers using BLACKBOOK, and discussion forums. There are upward compatible versions of BLACKBOOK released every three to six months. A specific version will be designated for the test and evaluation by the KDD program.

Software shall be delivered in Java (JDK 6 or higher). The contractor must deliver source code and the appropriate scripting, subordinate libraries, release notes, and other necessary components, data, and documentation to allow the T&E evaluation team to inspect for compliance, and to build the delivered software for use in the evaluation. The T&E team will install the software on a Linux server where all the test data resides for each test. Additional software compliance requirements are provided in the BLACKBOOK wiki.

APPENDIX E

Government Furnished Equipment Description

IARPA Broad Agency Announcement (BAA)

Knowledge Discovery and Dissemination Program

IARPA-BAA-09-10

Each performer will be provided as Government Furnished Equipment (GFE) a dual server system in a rack-mountable configuration. Each of the two servers will comprise: (a) Two quad-core processors (each is Intel E5540 Nehalem, or more recent, with clock speed of at least 2.5GHz); (b) At least 12GB of RAM; (c) Two Gb/s Ethernet ports; (d) Two 1TB hard drives. The two servers can communicate via their Ethernet ports. Also provided will be one copy of REDHAT Security Enhanced LINUX. It is the performer's responsibility to install the operating system and BLACKBOOK on the GFE system.

APPENDIX F

SF 328 – Sample Form

For

VOLUME 1: Technical & Management Proposal

Section 4 – Security Plan

IARPA Broad Agency Announcement (BAA)

Knowledge Discovery and Dissemination Program

IARPA-BAA-09-10

Attachment to IARPA-BAA-09-10

APPENDIX G

Key Management and Personnel Listing – Sample Form

For

VOLUME 1: Technical and Management Proposal

Section 4 – Security Plan

BROAD AGENCY ANNOUNCEMENT (BAA)

Knowledge Discovery and Dissemination Program

IARPA-BAA-09-10

Attachment to IARPA-BAA-09-10

APPENDIX H

Letter Template

For

Organizational Conflicts of Interest Certification

IARPA Broad Agency Announcement (BAA)

Knowledge Discovery and Dissemination Program

IARPA-BAA-09-10

(Month DD, YYYY)

Office of the Director of National Intelligence
Intelligence Advanced Research Projects Activity (IARPA)
Incisive Analysis Office
ATTN: Dr Arthur H. Becker
Washington, DC 20511

Subject: OCI Certification

Reference: Knowledge Discovery and Dissemination, IARPA-BAA-09-10, (Insert assigned proposal ID#, if received)

Dear Dr Becker,

In accordance with IARPA Broad Area Announcement IARPA-BAA-09-10, Section 3.A.1, *Procurement Integrity, Standards of Conduct, Ethical Considerations, and Organizational Conflicts of Interest (OCI)*, and on behalf of _____ (offeror name) I certify that neither _____ (offeror name), **nor any of our subcontractor teammates** has as a potential conflict of interest, real or perceived, as it pertains to the **Knowledge Discovery and Dissemination Program**.

If you have any questions, or need any additional information, please contact (Insert name of contact) at (Insert phone number) or (Insert e-mail address).

Sincerely,

(Insert organization name) (Must be signed by an official that has the authority to bind the organization)

(Insert signature)

(Insert name of signatory)
(Insert title of signatory)

<insert date>

To: Mr. Thomas Kelso
Chief Acquisition Officer
ODNI/IARPA
Office of the Director of National Intelligence
Washington, D.C. 20511

Subject: Academic Institution Acknowledgement Letter

Reference: Executive Order 12333, As Amended, Para 2.7

This letter is to acknowledge that the undersigned is the responsible official of <insert name of the academic institution>, authorized to approve the contractual relationship in support of the Office of the Director of National Intelligence's Intelligence Advanced Research Projects Activity and this academic institution.

The undersigned further acknowledges that he/she is aware of the Intelligence Advanced Research Projects Activity's proposed contractual relationship with <insert name of Institution> through <insert solicitation #> and is hereby approved by the undersigned official, serving as the president, vice-president, chancellor, vice-chancellor, or provost of the institution.

<Name>
<Position>

Date

Copy Furnished:
Mr. John Turnicky
Chief, ODNI Contracts
Office of the Director of National Intelligence
Washington, DC 20511

INSTRUCTIONS FOR COMPLETION OF THE CERTIFICATE PERTAINING
TO FOREIGN INTERESTS

Question 1:

a. Do any foreign person(s), directly or indirectly, own or have beneficial ownership of 5% or more of the outstanding shares of any class of your organization's equity securities? If yes:

-Identify the percentage of any class of stock or other securities issued which are owned by foreign persons, broken down by country. Include indirect ownership through one or more intermediate level(s) of subsidiaries. Indicate voting rights of each class of stock.

-Are there shareholder agreements? If yes, attach a copy(ies), and if none, so state.

-Indicate whether a copy of SEC Schedule 13D/13G report has been received from any investor. If yes, attach a copy(ies).

Note: Ownership of less than 5% should be included if the holder is entitled to control the appointment and tenure of any management position.

b. (For entities which do not issue stock): Has any foreign person directly or indirectly subscribed 5% or more of your organization's total capital commitment? If yes:

-Identify the percentage of total capital commitment which is subscribed by foreign persons.

-Is there an agreement(s) with the subscriber(s)? If yes, attach a copy(ies), and if none, so state.

Question #2: Does your organization directly or indirectly through your subsidiaries and/or affiliates, own 10% or more of any foreign interest? If yes:

-Identify the foreign interest by name, country, percentage owned, and personnel who occupy management positions with the organizations.

-If there are personnel from your organization who occupy management positions with the foreign firm(s), identify the name(s), title, and extent of involvement in the operations of the organizations, (to include access to classified information).

Question #3: Do any non-U.S. citizens serve as members of your organization's board of directors (or similar governing body), officers, executive personnel, general partners, regents, trustees or senior management officials? If yes:

-Identify the foreign person(s) by name, title, citizenship, immigration status and clearance or exclusion status.

-Attach copies of applicable by-laws or articles of incorporation, which describe the affected position(s). However, if you have already provided such copies to the Cognizant Security Agency Industrial Security Representative, so state.

Question #4: Does any foreign person(s) have the power, direct or indirect, to control the election,

appointment, or tenure of members of your organization's board of directors (or similar governing body) or other management positions of your organization, or have the power to control or cause the direction of other decisions or activities of your organization? If yes:

-Identify the foreign person(s) by name, title, citizenship, and all details concerning the control or influence.

Note: If any foreign person(s) have such power, this question shall be answered in the affirmative even if such power has not been exercised, and whether or not it is exercisable through ownership of your facility's securities, if such power may be invoked by contractual arrangements or by other means.

Question #5: Does your organization have any contracts, agreements, understandings, or arrangements with a foreign person(s)? If yes:

For each instance, provide the name of the foreign person, country, percentage of gross income derived, and nature of involvement, including:

-Whether defense/nuclear related or not

-Involvement with classified or export controlled technology

-Compliance with export control requirements

-Where the organization has a large number of involvements and where these involvements are not defense/ nuclear related and represent a small percentage of gross income; the explanation can be a generalized statement addressing the totals by country.

Note: We do not expect and will not require the contractor to ask every customer if he/she falls within the NISPOM definition of a foreign person. We will ask the contractor to provide ongoing security education to those individuals who negotiate and/or administer such agreements regarding their responsibilities to report agreements with a foreign person(s) to the best of their knowledge. The contractor will be certifying the response to this question to "the best of his/her knowledge" or "through his/her best efforts".

Question #6: Does your organization, whether as borrower, surety, guarantor or otherwise have any indebtedness, liabilities or obligations to a foreign person(s)? If yes:

-Provide your overall debt-to-equity ratio (in percentage).

-With respect to indebtedness or liability to a foreign person, indicate to whom indebted or liable, what collateral has been furnished or pledged, and any conditions or covenants of the loan agreement. If stock or assets have been furnished or pledged as collateral, provide a copy of the loan agreement or pertinent extracts thereof (to include procedures to be followed in the event of default).

-If any debentures are convertible, provide specifics.

-If loan payments are in default, provide details.

-This question should be answered in the affirmative if the debt is with a U.S. entity that is

owned or controlled either directly or indirectly by a foreign person. If unknown, so state.

Note: As stated above, we do not expect and will not require the contractor to ask every lender if he/she qualifies as a foreign person. We will ask the contractor to provide ongoing security education to those employees who handle lending arrangements regarding their responsibilities to report any such arrangements with a foreign person lender, to the best of their knowledge. The contractor will be certifying the response to this question as being to "the best of his/her knowledge" or "through his/her best efforts".

Question #7: During your last fiscal year, did your organization derive:

a. 5% or more of its total revenues or net income from any single foreign person.

b. In the aggregate 30% or more of its revenues or net income from foreign persons?

If yes to either part of the question:

-Provide overall percentage of income derived from foreign sources by country, nature of involvement, and type of services or products.

-Indicate if any single foreign source represents in excess of 5% of total revenues or net income.

-Indicate whether any classified information is involved.

-State whether facility is in compliance with applicable export control requirements.

Note: As previously stated, we do not expect and will not require the contractor to ask every customer if he/she qualifies as a foreign person. We will ask the contractor to provide ongoing security education to those employees who handle information about company revenues regarding their responsibility to report revenues derived from a foreign person(s) to the best of their knowledge. The contractor will be certifying the response to this question as being to "the best of his/her knowledge" or "through his/her best efforts".

Question #8: Is 10% or more of your organization's securities held in "nominee shares," in "street names" or in some other method which does not disclose the beneficial owner? If yes:

-Identify each foreign institutional investor holding 10% or more of the voting stock by name and address and the percentage of stock held.

-Indicate whether any investor has attempted to, or has exerted any control or influence over appointments to management positions or influenced the policies of the organization.

-Include copies of SEC Schedule 13D/13G.

Question #9: Do any of the members of your organization's board of directors (or similar governing body), officers, executive personnel, general partners, regents, trustees or senior management officials hold any positions with, or serve as consultants for, any foreign person(s)? If yes:

-Provide the name, title, citizenship, immigration status and clearance or exclusion status on all such persons.

-Identify, by name and address, each foreign organization with which such persons serve and indicate the capacity in which they are serving.

-Include a Statement of Full Disclosure of Foreign Affiliations for every cleared individual who is a representative of a foreign interest.

Note: We expect the contractor to be able to answer this question fully for those individuals holding such positions with his/her foreign subsidiaries and any foreign interests. However, we do not expect and will not require the contractor to ask every individual to ascertain if he/she is serving as a director, officer or manager of a foreign person. We will ask the contractor to provide ongoing security education to all key management personnel of their responsibilities to report serving as an interlocking director or in any other type of positions with a foreign person to the best of their knowledge. The contractor will be certifying the response to this question as being to "the best of his/her knowledge" or "through his/her best efforts".

Question #10: Is there any other factor(s) that indicates or demonstrates a capability on the part of foreign persons to control or influence the operations or management of your organization? If yes:

-Describe the foreign involvement in detail, including why the involvement would not be reportable in the preceding questions.

DEFINITIONS FOR COMPLETION OF THE CERTIFICATE PERTAINING TO FOREIGN INTERESTS

Affiliate. Any entity effective owned or controlled by another entity.

Beneficial Owner. The true owner of a security who may, for convenience, be recorded under the name of a nominee. Such ownership entitles the owner to the power to vote or direct the voting of a security or to impose or direct the disposition of a security.

Bond. A certificate which is evidence of a debt in which the issuer promises to repay a specific amount of money to the bondholder, plus a certain amount of interest, within a fixed period of time.

Convertible Debentures. Bonds which the holder can exchange for shares of voting stock.

Covenant. A detailed clause in a lending agreement designed to protect the lender.

Debenture. A general debt unsecured by a pledge of any specific piece of property. Like any other general creditor claims, a debenture is secured by any property not otherwise pledged.

Debt-to-Equity Ratio. Total liabilities divided by total shareholders' equity (total assets minus total liabilities of a corporation; also called stockholders' equity, equity, and net worth). This shows to what extent owners' equity can cushion creditors' claims in the event of liquidation.

Equity Security. An ownership interest in a company, most often taking the form of corporate stock.

Foreign Interest. Any foreign government, agency of a foreign government, or representative of a foreign government any form of business enterprise or legal entity organized, chartered or incorporated under the laws of any country other than the U.S. or its possessions and trust territories, and any person who is not a citizen or national of the United States.

Foreign Person. Any foreign interest and any US person effectively owned or controlled by a foreign interest.

Guarantor. One who makes the guaranty (an agreement or promise to answer for the debt, default or miscarriage of another).

Immigration Status. Legal basis for a non-US citizen's residence in the United States (e.g., work visa, admission for permanent residence). Note: Immigration and Naturalization Service Form 1-9 is an excellent source for this information.

Joint Venture. A partnership or cooperative agreement between two or more persons or firms, usually restricted to a single specific undertaking. Normally the undertaking is of short duration, such as for the design and construction of a dam.

Liability. Claim on the assets of a company or individual.

Licensing Agreement. A permit granted by one business to another which permits duplication of processes and production of similar items.

Management Positions. For the purposes of the questions on this form, management positions shall include owners, officers, directors, partners, regents, trustees, senior management officials, other executive personnel and the facility security officer.

Nominee Share. A share of stock or registered bond certificate which has been registered in a name other than the actual owner.

Proxy. One who acts for another. Also, the document by which such a representative is authorized to act.

Representative of a Foreign Interest (RFI). A citizen or national of the U.S., who is acting as a representative of a foreign interest (see Foreign Interest).

S.E.C. Schedule 13D. This schedule discloses beneficial ownership of certain registered equity securities. Any person or group of persons who acquire a beneficial ownership of more than 5 percent of a class of registered equity securities of certain issuers must file a Schedule 13D reporting such acquisition with certain other information.

S.E.C. Schedule 13G. This schedule is a much abbreviated version of Schedule 13D that is only available for use by a limited category of "persons" (such as banks, broker/ dealers, and insurance companies) and even then only when the securities were acquired in the ordinary course of business and not with the purpose or effect of changing or influencing the control of the issuer.

Sales Agreement. An agreement between two parties for the sale of goods or services on a continuing basis.

Stock Option. An option is the right to buy or sell at some point in the future.

Street Name. The common practice of registering publicly traded securities in the name of one or more brokerage firms.

Subordinated Debenture. A bond having a claim on assets only after the senior debt has been paid off in the event of liquidation.

Surety. One who is immediately liable for the debt of another if that other person or entity falls to pay.

Total Capital Commitment. The sum of money and other property an enterprise uses in transacting its business.

US Person. Any form of business enterprise or entity organized, chartered or incorporated under the laws of the United States or its possessions and trust territories and any person who is a citizen or national of the United States.

LIST OF KEY MANAGEMENT PERSONNEL	INITIAL REPORT (Date) CHANGE REPORT (Date)	FACILITY CAGE CODE (FSC#)
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FACILITY NAME, ADDRESS, AND ZIP CODE (As it appears on the DD Form 441 or DD Form 441-1)

FULL NAME & POSITION / TITLE	DATE, PLACE OF BIRTH & CITIZENSHIP	SOCIAL SECURITY NUMBER	SECURITY CLEARANCE LEVEL (If EXCLUDED, provide date)
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<p>I CERTIFY THAT THE INFORMATION INCLUDED HEREON IS TRUE, COMPLETE, AND CORRECT TO THE BEST OF MY KNOWLEDGE. {REQUIRES SIGNATURE OF ONE LISTED OFFICIAL}</p> <p style="text-align: right;">_____ (Signature / Position)</p>	PAGE of PAGES
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NISPOM REQUIREMENTS RELATING TO KEY MANAGEMENT OFFICIALS

2-104. Personnel Clearances Required in Connection with the FCL.

The senior management official and the FSO must always be cleared to the level of the FCL. Other officials, as determined by the CSA, must be granted a PCL or be excluded from classified access pursuant to paragraph 2-106.

2-106. Exclusion Procedures.

When, pursuant to paragraph 2-104, formal exclusion action is required, the organization's board of directors or similar executive body shall affirm the following, as appropriate.

- a. Such officers, directors, partners, regents, or trustees (designated by name) shall not require, shall not have, and can be effectively excluded from access to all classified information disclosed to the organization. They also do not occupy positions that would enable them to adversely affect the organization's policies or practices in the performance of classified contracts. This action shall be made a matter of record by the organization's executive body. A copy of the resolution shall be furnished to the CSA.
- b. Such officers or partners (designated by name) shall not require, shall not have, and can be effectively denied access to higher-level classified information (specify which higher level(s)) and do not occupy positions that would enable them to adversely affect the organization's policies or practices in the performance of higher-level classified contracts (specify higher level(s)). This action shall be made a matter of record by the organization's executive body. A copy of the resolution shall be furnished to the CSA.

1-302 Reports to be Submitted to the CSA.

h. Change Conditions Affecting the Facility Clearance.

- (3) Any change to the information previously submitted for key management personnel including, as appropriate, the names of the individuals they are replacing. In addition, a statement shall be made indicating: (a) Whether the new key management personnel are cleared, and if so, to what level and when, their dates and places of birth, social security numbers, and their citizenship; (b) Whether they have been excluded from access; or (c) Whether they have been temporarily excluded from access pending the granting of their clearance. A new complete listing of key management personnel need only be submitted at the discretion of the contractor and/or when requested in writing by the CSA.