Department of Defense

Annual Report
on
Cooperative Agreements
and
Other Transactions
Entered into During FY2005
Under 10 USC 2371

Cooperative Agreements and Other Transactions Entered for Fiscal Year 2005

INTRODUCTION

This report is provided in accordance with 10 U.S.C. 2371(h) which requires the Secretary of Defense to submit a report annually to the Senate Committee on Armed Services and the House of Representatives Committee on Armed Services on all those transactions entered into under 10 U.S.C. 2371(a) which are not categorized as contracts, cooperative agreements or grants (hereafter referred to as "other transactions") and all cooperative agreements entered into under 10 U.S.C. 2358 which include a section 2371 authorized clause requiring "Recovery of Funds" (i.e., recoupment).

The Secretary of Defense and the Secretary of each military department are authorized by section 2371 to enter into other transactions to carry out basic, applied, and advanced research projects. That same authority also permits certain transactions to include a clause requiring a person or other entity to make repayments of funds to the Department of Defense or any other department or agency of the Federal Government as a condition for receiving support under the agreement or other transaction. The authority of 10 U.S.C. 2371 was extended by Section 845 of Public Law 103-160, as amended, to permit the Director, Defense Advanced Research Projects Agency (DARPA), the Secretary of a military department, and any other official designated by the Secretary of Defense, to enter into other transactions to carry out prototype projects that are directly relevant to weapons or weapon systems proposed to be acquired or developed by the Department of Defense.

The one-page description for each agreement in this report shows the total amount of funds that the Federal Government agreed to provide for the research or prototype project, as well as the amount that non-Federal Government parties agreed to provide. The sum of those amounts is the total value of the agreement over the life of the project. The amount the Federal Government obligated in FY 2005 for agreements included in this report is approximately $150 million for the other transactions for prototypes and $26 million for the research actions.

The reported amounts include research and development investments made by for-profit firms. It is standard business practice for all for-profit firms to recover research and development investments through prices charged to their commercial and Government customers. Thus, firms that do business with the Federal Government may recover a portion of their investments through commercial prices of items sold to the Government or through allocations of Independent Research and Development costs to cost-type Government contracts.

While some of these agreements include clauses requiring recovery of funds, DoD components reported no funds recovered in FY 2005 due to the use of those clauses. Collectively, Army, Navy, Air Force, Defense Advanced Research Projects Agency (DARPA), the National Security Agency (NSA), the Missile Defense Agency (MDA) and the National Geospatial-Intelligence Agency (NGA) submitted 49 reportable research actions and 78 reportable other transactions for prototypes in FY 2005.

This report provides the specific information required by subsection 2371(h)(2):

(A) The Technology Areas in which research projects were conducted under such agreements or other transactions.
(B) The extent of the cost sharing among Federal and non-Federal sources.
(C) The extent to which the use of the cooperative agreements or other transactions
  (i) has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs; and
  (ii) has fostered within the technology and industrial base new relationships and practices that support the national security of the United States.

The final page of the report provides a summary table for new prototype "other transaction" (OT) agreements. This table identifies: the number of new agreements, the breakdown among the three reasons authorized by statute for the use of prototype OT authority and information regarding the extent of participation of non-traditional contractors.

Cooperative Agreements and Other Transactions Entered for Fiscal Year 2005

Agreement Number: H98230-05-3-0001

Type of Agreement: Research TIA that is not a cooperative agreement

Title: Distillery Phase III Program

Awarding Office: MARYLAND PROCUREMENT OFFICE

Awardee: International Business Machines Corp

Effective Date: 22 Jul 2005

Estimated Completion or Expiration Date: 31 Dec 2006

U.S. Government Dollars: $ 18,538,961

Non-Government Dollars: $ 37,077,922

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The Distillery Project is a large-scale, collaborative research venture jointly staffed by the recipient and Government personnel. Phase III will continue the evaluation of technical and functional capabilities of Distillery to determine interoperability, integrate sub-system components and document the research system to ensure that it is easily configurable and maintainable. Distillery is an example of transformational research and development effort and a prototype system will be delivered by the completion date.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The other transaction for research has permitted the involvement of IBM's commercial division, as well as other divisions of IBM, that would not otherwise participate in the project at the level that is required for success.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This other transaction has allowed IBM, a commercial business that traditionally accepts Government awards for commercial products, to use new business practices in the execution of research that will help the Government get state of the art technology more quickly and less expensively, while also facilitating partnering with IBM's commercial division.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0001

Type of Agreement: Research TIA that is not a cooperative agreement

Title: Ultra-Dense Molecular Electronic Computer Processor (MoleComputing)

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Hewlett-Packard Company

Effective Date: 02 Dec 2004

Estimated Completion or Expiration Date: 01 Jun 2006

U.S. Government Dollars: $ 3,399,267

Non-Government Dollars: $ 3,475,525

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objectives of this effort are the development and testing of a new concept for building electronic logic circuits and devices. These structures will be composed of components that are as small as 15 nanometers and have active elements that are based on molecules and/or molecular interactions. The fabrication approach will combine non-traditional "top-down" techniques such as imprint lithography with "bottom-up" molecular assembly approaches in order to build the circuits as inexpensively as possible. The technology area is electronics.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement permits the DTM Consortium, consisting of Hewlett-Packard Company, a commercial company, and two universities, University of California - Los Angeles and California Institute of Technology, to work together in a collaborative arrangement. If the Consortium realizes the goals of the agreement, the Department of Defense will have access to a new, hopefully inexpensive technology. In addition, the use of an other transaction agreement permits intellectual property rights to be negotiated with a Consortium that would otherwise not have entered into a procurement contract with the Government.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The use of an other transaction agreement has fostered cooperation among industrial, university, and national laboratory contributors to work together with the government to support the national security of the USA. The implication of this technology to the national security is that the military will be the first to benefit by utilizing new and vastly more capable computers, communications devices, and measurement systems made possible by a new electronics technology.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0002

Type of Agreement: Research TIA that is not a cooperative agreement

Title: Negative Index Materials

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Hewlett-Packard Company

Effective Date: 13 Jun 2005

Estimated Completion or Expiration Date: 12 Dec 2006

U.S. Government Dollars: $ 2,000,208

Non-Government Dollars: $ 1,292,320

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The main objective of this program is to develop a new class of electromagnetic materials (EM) to operate at infrared wavelengths. This new class of materials will take advantage of the discovery of a new class of EM's called negative index materials (NIM), and be considered Optical Negative Index Materials (OptoNIM).
1. Develop NIMs at 1.5-10 micron wavelengths and demonstrate the ability to extend the perating frequency of microwave NIM materials by 3-4 orders of magnitude.
2. Demonstrate the OptoNIM properties that will lead to image super-resolution.
3. Develop theoretical and experimental understanding of the loss mechanisms in this class of material development. Then develop strategies to minimize the loss and explore how to amplify the material and achieve maximum performance.
4. Identify designs to implement this new class of materials for transition to military and commercial applications.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction allows Hewlett Packard's commercial business units to participate in critical technology development for advances in negative index materials. As a commercial company, their internal systems are not compliant with regulations imposed by the Federal Acquisition Regulations. If not for an other transaction, they would not have participated under a procurement contract.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The successful development of the OptoNIMs has the potential to make a major impact on future DoD platforms. The materials developed at the infrared wavelengths can lead to high level imagining by improving the detection resolution to determine ground/air targets, this will give the both the military and potential civilian agencies the ability to detect threats in advance. Another potential impact is in the area of phased array technology, the effort plans to develop an OptoNIM based modulator which will allow the transmission of RF power through optical fibers and advance the state-of- the-art in the area of optical beam forming. These systems will have a direct impact on DoD platforms because they will be compact, lightweight and provide additional system functionality.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W56HZV-05-3-0001

Type of Agreement: Research TIA that is not a cooperative agreement

Title: General Motors Corp. GM Military Trucks

Awarding Office: SR W4GG HQ US ARMY TACOM

Awardee: GENERAL MOTORS CORPORATION

Effective Date: 09 May 2005

Estimated Completion or Expiration Date: 08 Jun 2006

U.S. Government Dollars: $ 1,500,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
Test and evaluate experimental Fuel Cell Performance

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
GM, a leading automotive manufacturer, possesses unique experimental Fuel Cell Technology that the Government has an interest in evaluating in order to help define potential military applications.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
GM has had limited contractual involvement with the military in the past. Their interest in working with the military on Fuel Cell technology issues has great potential value to the Government.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W911NF-05-3-0001

Type of Agreement: Research TIA that is not a cooperative agreement

Title: Monolithic Integration of Silicon-Optical-Amplifier with High-k and Silicon-On-Insulator CMOS

Awarding Office: XR W2DF RDECOM ACQ CTR DURHAM

Awardee: Translucent Inc.

Effective Date: 29 Dec 2004

Estimated Completion or Expiration Date: 28 Dec 2008

U.S. Government Dollars: $ 1,213,390

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The goal of the Monolithic Integration of Silicon-Optical-Amplifier with High-k and Silicon-On-Insulator CMOS project is to intimately integrate active and passive photonic elements into Silicon (Si) ultra-large-scale-integrated (ULSi) complementary metal oxide semiconductor (CMOS) technologies. The proposed result of this program is to solve ULSi silicon chip-scale integration with active photonics elements. The monolithically integrated solution to electronics-photonics packaging allows system architecture designers to leverage Si-electronic design and simulation tools toward systems solutions. The proposed research focuses on leveraging Si-electronics processing tools and techniques and will allow fabrication costs to be minimized with functionality maximized.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of this other transaction has fostered a new business relationship with a promising small business, Translucent Photonics, Inc., that would not have been able to participate in this project without the use of this type of instrument. This small company has made a significant investment in developing this technology at its own expense. Through this agreement the Government is provided access to a technology that involves a novel materials solution and a new fabrication technique that is not currently available to the Government or the commercial marketplace. The use of an other transaction was necessary in light of the TIA's patent provisions that needed to vary from what is possible under Bayh-Dole.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The use of this other transaction has fostered a new business relationship with a promising small business, Translucent Photonics, Inc., that would not have been able to participate in this project without the use of this type of instrument. This small company has made a significant investment in developing this technology at its own expense. Through this agreement the Government is provided access to a technology that involves a novel materials solution and a new fabrication technique that is not currently available to the Government or the commercial marketplace. The use of an other transaction was necessary in light of the TIA's patent provisions that needed to vary from what is possible under Bayh-Dole.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W911NF-05-3-0002

Modification Number: N/A

Type of Agreement: Research TIA that is not a cooperative agreement

Title: Quantum Games: Theory and Applications

Awarding Office: XR W2DF RDECOM ACQ CTR DURHAM

Awardee: Hewlett-Packard Company

Effective Date: 01 Sep 2005

Estimated Completion or Expiration Date: 31 Aug 2006

U.S. Government Dollars: $ 224,340

Non-Government Dollars: $ 117,767

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The Hewlett-Packard Company (HP) shall perform a research and development program designed to (i) determine whether game theory solutions to decision problems played on a quantum information processing system offer any computational advantage over current classical approaches and (ii) to determine whether humans can be effective when playing on a quantum information processing system. The goal is to examine through simulations the interface between a human and a quantum information processing system especially in relation to the larger strategy and rules space, and study the feasibility and potential advantages of quantum games through simulations to determine if larger comprehensive studies are warranted.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0004

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Insight Racing - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Insight Racing

Effective Date: 20 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the Insight Racing team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0005

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team Caltech - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team Caltech

Effective Date: 21 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0006

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team Tormenta - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team Tormenta

Effective Date: 13 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0007

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Autonomous Vehicle Systems - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Autonomous Vehicle Systems

Effective Date: 20 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA: Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0008

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: MonsterMoto - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: MonsterMoto

Effective Date: 17 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0009

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Mojavation - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Mojavation

Effective Date: 13 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0010

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team Cornell - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team Cornell

Effective Date: 13 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0011

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team Juggernaut - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team Juggernaut

Effective Date: 17 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0012

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team Jefferson - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team Jefferson

Effective Date: 13 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0013

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: CyberRider - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: CyberRider

Effective Date: 16 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0014

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Palos Verdes Road Warriors - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Palos Verdes Road Warriors

Effective Date: 23 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0015

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team TerraMax - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team TerraMax

Effective Date: 23 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0016

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team Overbot - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team Overbot

Effective Date: 16 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0017

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team ENSCO - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team ENSCO

Effective Date: 13 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0018

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Autonosys - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Autonosys

Effective Date: 23 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0019

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Axion Racing - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Axion Racing

Effective Date: 13 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0020

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Red Team Too - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Red Team Too

Effective Date: 16 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0021

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Gray Team - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Gray Team

Effective Date: 16 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition thereby broadening the technological base available for meeting Department of Defense needs. These agreements provided the institutions/firms with Government Furnished Equipment (GFE) required for the competition. Due to their lack of previous experience with Government contracts, use of a standard, FAR-based contract would have likely precluded their participation. The time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5 would have placed an excessive administrative burden on prospective participants and unnecessarily discouraged their involvement given the relatively small cost of the GFE in question.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0022

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: BJB Engineering - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: BJB Engineering

Effective Date: 13 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0023

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team DAD - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team DAD

Effective Date: 16 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0024

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Indiana Robotic Navigation - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Indiana Robotic Navigation

Effective Date: 20 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0025

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Indy Robot Racing Team - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Indy Robot Racing Team

Effective Date: 13 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0026

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Terra Engineering – DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Terra Engineering

Effective Date: 21 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0027

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team AION - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team AION

Effective Date: 13 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0028

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: The Mitre Meteorites - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: The Mitre Meteorites

Effective Date: 13 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0029

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: A.I. Motorvators - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: A.I. Motorvators

Effective Date: 13 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0030

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Blue Team – DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Blue Team

Effective Date: 20 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0031

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: CIMAR - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: CIMAR

Effective Date: 16 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0032

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team CajunBot - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team CajunBot

Effective Date: 28 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0033

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Desert Buckeyes - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Desert Buckeyes

Effective Date: 20 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0034

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Oregon WAVE - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Oregon WAVE

Effective Date: 17 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0035

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team UCF - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team UCF

Effective Date: 20 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0036

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Virginia Tech Team Rocky - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Virginia Tech Team Rocky

Effective Date: 20 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0037

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team Banzai - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team Banzai

Effective Date: 16 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0038

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Red Team - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Red Team

Effective Date: 14 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0039

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Intelligent Vehicle Safety Technologies I - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Intelligent Vehicle Safety Technologies I

Effective Date: 14 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0040

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: The Golem Group - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: The Golem Group

Effective Date: 13 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0041

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Virgina Tech Grand Challenge Team - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Virginia Tech Grand Challenge Team

Effective Date: 20 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0042

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: SciAutonics/Auburn Engineering - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: SciAutonics/Auburn Engineering

Effective Date: 17 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0043

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Stanford Racing Team - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Stanford Racing Team

Effective Date: 16 Jun 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0045

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Austin Robot Technology - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Austn Robot Technology

Effective Date: 09 Sep 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0047

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Princeton University - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Princeton University

Effective Date: 09 Sep 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-3-0050

Type of Agreement: Other non-acquisition transaction (not a grants/cooperative agreement)

Title: Team Underdawg - DARPA Grand Challenge 2005

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Team Underdawg

Effective Date: 09 Sep 2005

Estimated Completion or Expiration Date: 09 Oct 2005

U.S. Government Dollars: $ 0

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to provide Government-Furnished Equipment (GFE) to the team for use in preparation for and during the DARPA Grand Challenge event.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
By implementing streamlined procedures for the provision of GFE, the agreements highlighted the ease of working with the Department. This ease of doing business will likely encourage repeat business from the non-traditional and commercial institutions/firms that participated in the 2005 DARPA Grand Challenge competition, thereby broadening the Department's technological base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of these agreements facilitated the participation of non-traditional and commercial institutions/firms in the 2005 DARPA Grand Challenge competition that otherwise might not have participated due to the time and effort required for non-traditional and commercial institutions/firms to comply with the GFE property management requirements outlined in FAR Part 45.5.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAD19-02-9-0003

Modification Number: P00007

Task Number: N/A

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Laser Additive Manufacturing

Awarding Office: XR W2DF RDECOM ACQ CTR DURHAM

Awardee: Aeromet Corporation

Effective Date: 27 Sep 2002

Estimated Completion or Expiration Date: 27 Sep 2006

U.S. Government Dollars: $ 19,345,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objective of this effort is to fabricate and deliver small lot, full scale prototype structures of selected defense platform components to demonstrate the production capability of laser forming and to establish the technology and infrastructure as capable of providing the industrial base necessary to supplying high quality metal components for critical defense platforms at reduced cost to the Department of Defense and to the commercial aircraft sectors.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement has contributed to a broadening of the technology and industrial base available for meeting DoD needs as this agreement was awarded to a nontraditional defense contractor that will modify its commercial product for use by the Government, but was unwilling to accept a contract. The prototypes developed in mini-production runs under this agreement will establish the defense readiness of this technology, will win acceptance of laser formed parts by the DoD platform original equipment manufactures (OEM) community, and will certify a new manufacturing process as qualified to provide components to key platforms, e.g. Comanche, Blackhawk, F-18, F-22, C-17, JSF, and missiles such SM and Patriot. In addition, a second source of laser forming will be licensed through this program, in order to foster commercialization of the technology and demonstrate the expansion of the industrial base for DoD use. A parallel development program will support the resolution of technical issues encountered in the program. By leveraging previous research and technology development done by the recipient, the use of an other transaction will facilitate the acquisition of a more affordable manufacturing capability for selected metal structures in defense platforms. The recipient is a large business that has developed a very promising technology with significant potential DoD applications to weapon systems. Through the prototype agreement the Government gains access to this technology and is able to leverage it to develop prototype technology to meet military needs.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The use of a prototype agreement fostered a research relationship between Aeromet Incorporated, the Army Research Laboratory, the Defense Advanced Research Projects Agency, and Aeromet Incorporated's main subcontractor RPM & Associates. RPM & Associates provides the manufacturing capability to the project. Use of the laser additive manufacturing technology partnered with RPM & Associates industrialization of the developed technology provides substantial contributions to the enhancement of the industrial capability available to the Department of Defense. This relationship would not have been possible under any other acquisition or stimulation

instrument as the provisions of the Bayh-Dole Act and the Federal Acquisition Regulation may have limited the immediate transition from research and intellectual property to manufacturing capability. The provisions of this agreement allowed the Government to encourage sharing of process technology while protecting the already patented and newly developed processes of the awardee and their subcontractor.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: NA

Task Number: 0011

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Bunker Defeat Munition (BDM) Prototype

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: General Dynamics O T S (Niceville), Inc

Effective Date: 17 May 2002

Estimated Completion or Expiration Date: 16 May 2007

U.S. Government Dollars: $ 5,406,506

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The overall approach for this effort is that the components of the warhead for the Bunker Defeat Munitions will be developed as a system capable of being placed as a generic delivery system, from a shoulder fired weapon to a gun launched projectile. In order to meet design goals, it will require the evaluation, enhancement, and blending of unique and innovative warhead design concepts. This program effort will involve an extensive series of iterative design excursions to appraise and then advance the necessary state-of-the-art in warhead technology. Design iterations include high rate dynamic computational modeling of warhead and grenade configurations, fabrication of hardware and components, loading and assembly of warheads and components for evaluation, testing of warheads against multiple target configurations and extensive data analysis. This data will be incorporated and used in subsequent design iterations to further advance performance. The following areas will be addressed during develop of the designs.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The proposed technology is capable of being used in individual munitions as part of the kill mechanism for the defeat of multiple targets sets. The demonstrated data against concrete walls shows significant hole size and the potential to defeat multiple targets with a follow-through grenade. The technology is based on the warhead of the German Bunkerfaust weapon. This project will bring that technology on shore and will adapt it to a smaller and lighter weapon system. This technology will then be available on shore for other weapon systems.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of the other transaction for prototype resulted in a unique teaming arrangement between Government and Industry. Warheads and Energetics Technology Center (WETC) and National Warhead and Energetics Consortium (NWEC) members work together to create and support an annual plan for accomplishment of the long and short-term goals of the WETC government members. This has resulted in a better understanding of the government planning and budgeting process by the NWEC members and the focusing of NWEC member's IR&D to meet WETC objectives.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: 0000

Task Number: 0027

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Novel Material for High Blast applications

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Science Applications International Corporation

Effective Date: 06 Jul 2004

Estimated Completion or Expiration Date: 05 Jul 2005

U.S. Government Dollars: $ 199,930

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective is to synthesize novel energetic material with improved performance and reduced sensitivity. These prototype formulations will have metal accelerations and enhanced blast applications that provide up to 50% or higher energy and reduced sensitivity than current explosives. Part of the objective is for the prototype formulations to be environmentally friendly, easy to demilitarize and producible at a reduced cost.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This project will synthesize new solid explosive ingredients that will be much safer than the liquid ingredients used in foreign weapons currently in use. The new ingredients will broaden the U.S. technology base by allowing manufacture of new energetic materials by both traditional and non-traditional explosive ingredient manufacturers. This project provides unlimited data rights to the U.S. Government and which provides for the possibility of dual use manufacturing.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA: This project fosters new relationships between the developer and the manufacturing contractors because this is new material and will require a new manufacturing base that can be dual use capable depending on the characteristics and commercial potential of the new materials. Under this other transaction, the information sharing mission of the Government/Consortium partners will facilitate a member who is interested in manufacturing the item to obtain the development technology.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: 0000

Task Number: 0033

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Reactive Material Warhead Design Battle Axe Munition

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: D E Technologies, Inc

Effective Date: 14 May 2004

Estimated Completion or Expiration Date: 14 May 2007

U.S. Government Dollars: $ 472,492

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this prototype project is to increase energy output at the warhead target and thereby maintain lethality in a smaller warhead size. This will be accomplished through the design and demonstration of a Reactive Material Battle Axe Warhead via modeling and design, warhead fabrication, test planning and support and analysis.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
Through the Organizational Structure and the Program, Planning and Budgeting provisions of this other transaction a collaborative environment is enabled and technologies and requirements are discussed by all the Defense Ordnance Laboratory Center (DOLC) government members and the National Warheads & Energetics Consortium (NWEC) industry and academia members. Under these provisions, both the DOLC and NWEC members participate on research committees that provide recommendations to the overarching Defense Ordnance Technology Consortium (DOTC) Executive Committee for planning the short and long term goals of the DOLC and focusing the NWEC resources to accomplish these goals.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA: Use of this other transaction, with its collaborative provisions, enabled the Air Force to offset the cost of this prototype project funded project by leveraging research work completed by the Navy at their Naval Surface Warfare Centers. The collaborative provisions encourage the sharing of prototype technologies among the DOLC and NWEC members and provide a less expensive cost avenue for the Government to obtain needed technology in an accelerated time frame.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: NA

Task Number: 0039

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Fuze Enabling Technologies

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: University Of Florida

Effective Date: 23 Sep 2004

Estimated Completion or Expiration Date: 23 Sep 2008

U.S. Government Dollars: $ 1,207,606

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The awardee will perform two tasks under this Task Order Sub-Agreement (TOSA). Task 1 will focus on the design and implementation of a low-cost, multifunction fuze sensor tactical prototype that will be realized through advances in digital signal processors and processing. Other key aspects of this task will be the use of advanced waveforms and multi-level simulation, analysis and testing to realize the tactical prototype. Task 2 will be aimed at the design and fabrication of an improved version of the signal processor for the Mortar Fuze and will draw on the expertise of MSI in mixed-signal processors.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The proposed research is based on a close teaming liaison between the awardee and the U.S. Army/ARDEC Fuze Division and from Mixed Signal Integration that will function under the information sharing provisions of the other transaction. Under this project this team will result in both near- and long-term benefits to the Government through the application of new and advanced signal processor and processing techniques for fuzing. First, the project will result in a new, low-cost, multifunction tactical fuze sensor design, implemented with digital signal processing that will allow application and operational flexibility in a variety of future tactical scenarios. In addition, this new tactical fuze sensor design will have performance and reliability exceeding current fuze sensor designs and be suitable for application far into the future. A significant second technical benefit will be a new and improved application specific integrated circuit (ASIC)design, mixed-signal processor for the Mortar fuze.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The fuze enabling technologies that results from this research in fuze signal processors and processing, waveform generation, simulation, analysis, and testing techniques will provide technical benefits to other future fuzing systems needed to meet new and demanding requirements beyond those currently envisioned. This information will be available to the government, industry and academia members of the Defense Ordnance Technology Consortium for their use in related fuze research and will result in lower development costs.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: 0000

Task Number: 0041

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Development of CE Warheads

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: General Dynamics O T S (Niceville), Inc

Effective Date: 20 Dec 2004

Estimated Completion or Expiration Date: 20 Dec 2005

U.S. Government Dollars: $ 2,942,001

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted: The overall objective of this effort is to design and develop a compact multi-purpose warhead with a significant increase in armor penetration performance. In order to meet design goals, it will require the evaluation, enhancement, and blending of unique and innovative warhead design concepts. Warhead design is an iterative process to produce a desired result by replication of a series of operations to sequentially increase and improve performance. This program effort will involve an extensive series of iterative design excursions to appraise and then advance the necessary state-of-the-art in warhead technology. Design iterations include high rate dynamic computational modeling of warhead configurations, fabrication of hardware and components, loading and assembly of warheads for evaluation, testing of warheads against multiple target configurations and extensive data analysis. This data will be incorporated and used in subsequent design iterations to further advance performance.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
U.S. Army future light combat systems will require warhead suites with effectiveness comparable to, or greater than current systems, but of much reduced size in order to achieve transportability goals. Warhead package length must also be reduced to accommodate sensor/seeker and guidance units to increase probability of hit and thereby reduce the number of rounds required. These restraints require a quantum improvement in warhead performance over that currently available. Warheads must also be effective against both hard and soft targets and be capable of operating at longer standoff when active protection systems may be encountered. This program is structured on a test/iteration basis to permit more abbreviated or extensive development as the available schedule and funds dictate. The result of this Task Order Sub Agreement (TOSA) effort will be to develop prototype warheads capable of withstanding 105mm gun tube launch and a fragmenting case on the shaped charge variants for multi-purpose effectiveness.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The proposed effort will be sub-divided into warhead options that can be separated or jointly funded to give the National Energetics & Weapons Technology Center maximum flexibility with regard to the development of the U.S. Army future light combat systems. This new lethality technology is key to the Army's Transformation from a Cold War organization dependent on traditional Army Ammunition Plants to a new Objective Force that can leverage competition across the commercial sector.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: n/a

Task Number: 0042

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Multi-Point Initiation System

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Kaman Aerospace Corporation

Effective Date: 30 Mar 2005

Estimated Completion or Expiration Date: 28 Feb 2006

U.S. Government Dollars: $ 149,200

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
To achieve lethality requirements of Future Combat Systems (FCS) weapon systems, the Warheads Group generated warhead designs that require multiple detonation points. This in turn requires a fire set that provides multi-point initiation.

Kaman Aerospace has produced a similar system for the U.S. Navy warheads. They will provide a multi-point initiation system to detonate explosively formed penetrator (EFP) warheads based on their experience in designing such systems for the Navy. Kaman produces the only Multipoint Safe and Arm in the U.S. inventory, the MK-54.

It is the objective of the Warheads Group to research, design, and develop state-of-the-art technologies for existing EFP warheads and explore advanced technologies for the future combat systems.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This Task Order Sub Agreement (TOSA) broadens the technology and industrial base through collaboration between the Army and Navy, as well as, Industry in designing and developing a state of the art multi point initiator for naval and ground warheads. The technology developed in this TOSA will be available to all members of the Defense Ordnance Technology Consortium through the unique teaming and sharing aspects of the Master Other transaction Agreement.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This TOSA fosters new relationships by forming Joint Army / Navy collaboration efforts with industry to develop state of the art multi point fuzing prototypes. The success of this TOSA will lead to further new relationships within the Air Force and the Defense Threat Reduction Agency with industry.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: N/A

Task Number: 0043

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Manufacture and Development of Nano-Nitramines in Energetic Thermo Plastic Elastomers (ETPE) Propellant

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: ATK Thiokol Inc.

Effective Date: 12 Apr 2005

Estimated Completion or Expiration Date: 12 Apr 2006

U.S. Government Dollars: $ 141,024

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
Under the scope of work effort the company will conduct a program to evaluate the potential change in ETPE propellant properties that could be achieved through the use of nano-sized nitramines. This effort will be done in two tasks. The first task will involve development of a grinding mill for use with nitramines. The second task will involve formulation and testing efforts designed to provide an early indication regarding the potential benefits of the nano-nitramine approach. Prototype samples of propellant using nano-sized nitramines will be delivered to the government for future testing.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
Because nitramines are the major solid ingredient in ETPE propellants they drive many key propellant properties. Potential benefits resulting from the use of nano-nitramines in EPTE propellants include enhanced burning rate control, as well as, improved mechanical and a reduction in propellant vulnerability. Energetic Thermo Plastic Elastomers (ETPEs) are environmentally friendly and recyclable. Since they do not require solvents they can be manufactured in areas with strict environmental emission standards.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Nitramine enhanced ETPEs foster new relationships because of their many uses in military weapon systems. Propellants are the first area for its use but other areas are combustible cartridge cases and igniter trains for mortars and artillery applications. This will increase the number of suppliers and establish new relationships. The new technology will be shared throughout the Defense Ordnance Technology Consortium for applications in new areas.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: N/A

Task Number: 0044

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Preparation of BDNPN and Linear Nitramines

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Science Applications International Corporation

Effective Date: 04 Apr 2005

Estimated Completion or Expiration Date: 04 Apr 2006

U.S. Government Dollars: $ 120,030

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The company will develop, produce and demonstrate a prototype high energy molecule for propellant formulations that increase muzzle energy, reduce gun tube wear, and maintain insensitive munition characteristics. Samples of the formulations using the prototype high energy molecule will be delivered to the government for small scale safety testing and evaluation.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
These prototype high energy molecules will create formulations that have higher performance and reduced sensitivity. Bis (2,2-Dinitropropyl)-Nitramine (BDNPN) prototype scale up and development of Linear Nitramines are important to both the Army and Navy Gun Programs. These molecules will provide a less sensitive replacement for cyclotrimethylenetrinitramine (RDX) in gun propellants. These new molecules will be able to be produced at a large number of chemical factories from commercially available materials such as Nitroethane. This will broaden the industrial base for gun propellant materials.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The preparation of BDNPN and Linear Nitramines will foster new relationships between the Army and Navy Gun Propellant Program Offices and the Chemical Industry that will produce the new materials. It will expand the number of producers capable of making gun propellants in a national emergency and encourage competition between the new players. The joint nature of the agreement allows teaming and sharing of technology between and among government and industry partners.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: 00

Task Number: 0045

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: FCS Durable Gun Barrel

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Questek Innovations LLC

Effective Date: 17 Mar 2005

Estimated Completion or Expiration Date: 20 Mar 2007

U.S. Government Dollars: $ 2,998,100

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of the scope of work is to utilize emerging computational design, the techniques to continue the development of ultra-high strength steels for gun tube applications, and to demonstrate production scale readiness. To support this goal, refinement of mechanistic models and process-ability evaluations are proposed, along with the optimization/testing/characterization of 2nd and 3rd generation prototypes and the production of production scale prototype barrel forgings.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This Task Order Sub Agreement broadens the US technology and industrial base by developing mechanistic models that allow American companies to produce new and stronger steels at lower costs than conventional nickel / cobalt alloys. These new steels are applicable to gun tubes as well as other Defense and Commercial uses. It will retain a broad source of specialty steels within the US industrial base and reduce our reliance on European or Asian steel.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The availability of new and stronger steels from potentially all US steel manufacturers will foster new relationships between the Government and the steel manufacturers. It will broaden the base and bring in new suppliers that traditionally do not compete for Government contracts. These new relationships will result in greater international sales for commercial products and further reduce the cost of government procurements.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: N/A

Task Number: 0046

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Warhead Venting to Reduce Response to Insensitive Munition Threats

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Aerojet - General Corporation

Effective Date: 31 Aug 2005

Estimated Completion or Expiration Date: 31 Oct 2007

U.S. Government Dollars: $ 2,028,105

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The overall objective of this effort is to develop warhead venting technologies for mitigation of cook-off response that applies to all Program Executive Office (PEO) Ammunition managed items that contain high explosive in a confined warhead; including mortars, artillery and tank launched munitions to support the Defense Ordnance Laboratory Center (DOLC) FY05 research and development effort.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the technology and industrial base via collaboration with the energetics and aerospace industries. The new technology developed under this agreement will leverage the technology bases of both energetics and aerospace industries. The unique collaborative arrangements created by this other transaction will allow the new tech to be shared by all industry partners and thereby broaden the tech and industrial base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement will foster new relationships between the energetics and aerospace technology communities. The new materials and technologies developed under this TOSA will be shared between the industrial partners of this other transaction and all the Government agencies involved. The unique relationships developed under this agreement will allow the leveraging of warhead venting technology by both Government and industry partners.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: N/A

Task Number: 0047

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Developmental Testing and Research Assistance of Insensitive Munition

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: General Dynamics O T S (Niceville), Inc

Effective Date: 01 Aug 2005

Estimated Completion or Expiration Date: 01 Aug 2006

U.S. Government Dollars: $ 809,739

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The overall objective of this effort is to develop warhead venting technologies for mitigation of cook-off response that applies to all Program Executive Office (PEO) Ammunition managed items that contain high explosive in a confined warhead; including mortars, artillery and tank launched munitions to support the Defense Ordnance Laboratory Center (DOLC) FY05 research and development effort.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the technology and industrial base via collaboration with the energetics and aerospace industries. The new technology developed under this agreement will leverage the technology bases of both energetics and aerospace industries as well as all Government project management offices in the Program Executive Office for Ammunition. The unique collaborative arrangements created by this other transaction will allow the new technology to be shared by all industry partners and thereby broaden the technology and industrial base available to the Program Executive Office for Ammunition.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement will foster new relationships between the energetics and aerospace technology communities. The new materials and technologies developed under this agreement will be shared between the industrial partners of this other transaction and all the Government program management offices under the Program Executive Office for Ammunition. The unique relationships developed under this Task Order Sub Agreement (TOSA) will allow the leveraging of warhead venting technology by both Government program management offices and industry partners.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: 00

Task Number: 0048

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Hybrid Propellant

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: St. Marks Powder, Inc.

Effective Date: 19 May 2005

Estimated Completion or Expiration Date: 19 May 2006

U.S. Government Dollars: $ 1,184,443

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The program objective is to demonstrate the performance and improved barrel wear potential of Hybrid propellant as a replacement for M30A2 in the 155mm MACS M232 propelling charge and qualify the propellant for use.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the technology and industrial base developing and qualifying a new prototype large caliber propellant that can be manufactured on dual use equipment. This is a variant of Ball Powder that is used in commercial sporting ammunition. This broadens the base by allowing commercial manufacturers to compete for production contracts.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters new relationships between industry and Government in that dual use technology can be licensed to several small arms propellant manufacturing companies to provide large caliber propellant during mobilization or when recovering from a natural disaster.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: n/a

Task Number: 0049

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Development, Scale-up, and Large-scale Manufacture of High Performance, Insensitive Munitions Explosive Formulations at Holston Army Ammunition Plant

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Ordnance Systems Inc

Effective Date: 11 Jun 2005

Estimated Completion or Expiration Date: 10 Jun 2007

U.S. Government Dollars: $ 664,093

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this element of the program is to develop a melt-cast explosive formulation(s) that provides greater energetic performance and improved sensitivity when compared to existing melt-cast explosives that are available and in-service within DOD programs.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the technology and industrial base by developing a new family of Melt Cast Explosives that do not contain ammonium perchlorate and are less sensitive and easy to manufacture. More companies will bid on production contacts if the environmental and safety risks are decreased or eliminated with ease of manufacture increased. This will increase the number of production plants available nationwide.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters new relationships by setting the stage for non traditional companies to enter the Melt Pour Munition community. The new companies will develop relationships with the services for the melt pour of explosives using the new technology that is safer, environmentally friendly and easy to manufacture.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: n/a

Task Number: 0050

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Development of a Slurry-Mix Explosive Analyzer

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Colorado Seminary

Effective Date: 24 Jun 2005

Estimated Completion or Expiration Date: 28 Feb 2007

U.S. Government Dollars: $ 241,397

Non-Government Dollars: $ 11,200

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
This effort covers the final development and prove-out of a process analyzer to monitor explosive slurry mixtures within a production still. During the first two phases of this program, the particle size technology was tested in a laboratory still at Picatinny. A joint paper was recently presented on the phase II results at the Defense Manufacturing Conference (12/1/2004). The goal of Phase III is to continue development and implement a system for extended, production use at Holston Army Ammunition Plant.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the technology and industrial base through the collaboration of Academia with Industry to increase the process controls on the explosive slurry mix process to remove the Black Magic and allow other companies to utilize the Slurry Mix Process quickly and efficiently. It will allow the transfer of Slurry Mix Technology to additional commercial industrial manufacturing plants across the country.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters new relationships in the short term by teaming academia and industry on improving the process controls for Explosive Slurry Mix Operations. New relationships are created in the long term by allowing new non traditional government contractors to bid on explosive production contracts due to the improved process controls.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: N/A

Task Number: 0051

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Advanced Affordable Weapon Systems

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: KDI Precision Products, Inc.

Effective Date: 25 Jul 2005

Estimated Completion or Expiration Date: 25 Jan 2006

U.S. Government Dollars: $ 159,178

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
Advanced Weapons Systems (AWS) consists of a low-cost cruise missile capable of medium ranges and extended loitering times. The missile contains a 193-lb warhead payload section, designated the EX 150, capable of defeating soft and medium armored targets. In order to ensure the safe arming, disarming, and firing of the warhead section, an Electronic Safe and Arm Fuze (ESAF) is required. An ESAF configuration was chosen over traditional Mechanical Safe and Arms Devices due to its low-cost characteristic. Additionally, a height-of-burst (HOB) sensor is required to allow the warhead to detonate at a predetermined height above the ground in order to maximize the system's lethality.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the research and industrial base through extensive collaboration between industry partners and the Army and Navy branches. This agreement broadens the base through the sharing and active collaboration between KDI the primary industrial partner and both services as well as the 68 industry consortium members in the Defense Ordnance Technology Consortium. The Naval funding for this Task Order Sub Agreement (TOSA) leverages the Army's investment in this fuze technology and makes this technology available for all branches of the Government.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters new relationships between the Army/Navy and industrial partners under the unique relationships allowed by the other transaction. The technology developed is made available to the 68 industrial members of the Defense Ordnance Technology Consortium. Specifically the new relationships established between Army and Navy fuze communities and industry will be instrumental in the success of this new prototype design.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: N/A

Task Number: 0052

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Amorphous Metal Manufacturing Technology for Warheads Applications

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: MSE Technology Applications, Inc

Effective Date: 22 Jul 2005

Estimated Completion or Expiration Date: 22 Jul 2008

U.S. Government Dollars: $ 1,120,871

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
1) Perform a Technology Application Survey; 2) Modify existing Pressure-Controlled Atomization Process (PCAP) nozzle; 3) Spray form a shaped charge liner or liners; 4) Spray form a limited number of parts; 5) Remove selected components of the EDU from storage and assemble components; 6) Design and install a basic centrifugal casting system into the controlled-atmosphere chamber; 7) Conduct a series of centrifugal casting tests to determine process feasibility; and 8) Perform selected post fabrication processing.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the research and industrial base by brining in MSE Technology Application Inc. into the Warhead community. MSE brings new amorphous metal technology to the design and fabrication of both shape charge and explosively formed penetrator liners. This expands the industrial base by qualifying new sources for the acquisition of low cost, near net shape liners. As the base for manufacturing amorphous metals expands so will the industrial base for warhead liners. This expansion will decrease the cost and increase the availability of this critical component.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters new relationships between the Warheads manufacturing communities and the emerging amorphous metal producers through developing inexpensive near net shape components that can be easily manufactured at new amorphous metal facilities nationwide. The success of this agreement will lead to the fostering of new relationships utilizing amorphous metal technology for other ordnance applications.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: N/A

Task Number: 0054

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Explosive Biotechnology Program Development

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Rutgers University Center For Continuing Professional Development

Effective Date: 13 Jul 2005

Estimated Completion or Expiration Date: 13 Jul 2006

U.S. Government Dollars: $ 169,009

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this project is to collaborate with the government to development a prototype munitions program that will integrate biotechnology into current and future programs for green manufacturing of explosives.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the technology and industrial base by integrating prototype biotechnology projects into the munition development process. The collaboration between the Bio Technology community of industry and academia with the Government and industry munitions development community will broaden the base by creating broad teams to solve related problems.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters new relationships through broad collaboration between the ordnance technology and Bio Technology Sectors. The prototype process will integrate Bio Tech into the Munitons Development Process at the earliest stages of development. Specifically the new relationships are formed between the Munition Developer and the Bio Technology community of industry and academia.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: N/A

Task Number: 0055

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: BLU-97 UXO Reducing Pyrotechnic Self-Destruct Technology

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: KDI Precision Products, Inc.

Effective Date: 15 Jul 2005

Estimated Completion or Expiration Date: 15 Jul 2006

U.S. Government Dollars: $ 444,903

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this Statement of Work is to describe the engineering program required to develop and test a Self-Destruct Pyrotechnic (Pyro) fuze for the BLU-97 submunition bomblet to address the hazardous Unexploded Ordnance (UXO) problem associated with tactical use of this device. The program shall include design, assembly, and test prototype models of the concept design, from laboratory to system level testing. A Preliminary Design Review with the customer shall be conducted to assure a team design approach.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the research and industrial base through extensive collaboration between industry partners and Government agencies. The prototype fuze technology developed under this agreement broadens the base by providing new and easily manufactured Self-Destruct Fuze components. These simple pyrotechnic components can be manufactured at many industrial plants across the nation. This broadening of the industrial base provides many additional sources during mobilization, or national disasters.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters new relationships between the Energetics and Fuze manufacturing communities through developing simple prototype pyrotechnic components that can be easily manufactured at new facilities nationwide. This agreement develops prototype pyrotechnic solutions to a traditionally mechanical and electronic fuze research and manufacturing industrial base.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: n/a

Task Number: 0056

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Common Smart Submunition (CSS)

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Textron Systems Corp

Effective Date: 24 May 2005

Estimated Completion or Expiration Date: 23 Dec 2008

U.S. Government Dollars: $ 17,630,462

Non-Government Dollars: $ 5,050,510

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to design and develop a Common Smart Submunition that can be launched from many different platforms such as Artillery, Aircraft, Unmanned Aerial Vehicles (UAVs), naval guns, etc.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the technology and industrial base through the extensive teaming of the Army, Air Force, Defense Threat Reduction Agency and three industry partners in designing and developing a Smart Submunition that can be easily integrated in many weapon systems. The base is broadened due to availability of Government furnished submunitions as lethal payloads to weapon designers and developers.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This Task Order Sub Agreement (TOSA) fosters new relationships between the weapon designers and developers from the Army, Air Force, Defense Threat reduction Agency and industry as the new Smart submunition can be provided as government furnished material to industrial weapon developers and producers. When this agreement is successful there will be additional relationships formed with the Navy and Special Operations Command.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: N/A

Task Number: 0057

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Develop Prototype Process for Fabrication, Load & Test Warheads

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Aerojet-General Corporation

Effective Date: 22 Aug 2005

Estimated Completion or Expiration Date: 22 Aug 2008

U.S. Government Dollars: $ 1,612,052

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The overall objective of this effort is to develop a prototype process for procuring parts, loading, fabricating and testing high performance warheads and other munition items to support the development of advanced warheads.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the technology and industrial base through collaboration with the energetics and warheads industries. This is the first shape charge design and development agreement awarded to Aerojet-General, Sacramento, CA. This new partner will greatly add to the corpus of technical agreement knowledge concerning shape charge warheads. The new technology developed under this agreement will leverage the technology bases of both energetics and warheads industries. The unique collaborative arrangements created by this agreement will allow the new technology to be shared by all industry partners and thereby broaden the technology and industrial base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement will foster new relationships within the warheads and energetics technology communities. The new shape charge warhead materials and technologies developed under this agreement will be shared between the industrial partners of this agreement and all the Government agencies involved. The unique relationships developed under this agreement will allow the leveraging of warhead design and development by both Government and industry partners.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: N/A

Task Number: 0059

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Energetics Thermoplastic Elastomers Based Propellants

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Atk Thiokol Inc.

Effective Date: 29 Jun 2005

Estimated Completion or Expiration Date: 28 Feb 2006

U.S. Government Dollars: $ 211,374

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objectives are as follows:

1. Develop environmentally friendly advanced gun propellants

2. Develop a deterrent for a new Energetics Thermoplastic Elastomers (ETPE)-based propellant to replace medium caliber propellants containing environmentally objectionable plasticizers, stabilizers, and oxidizers.

3. Evaluate the NC-based, PAP-8386 propellant as a candidate for medium caliber training ammunition that is more environmentally friendly and will reduce the chance of a catastrophic event caused by a friendly fire incident during training exercises. The propellants under development will be environmentally acceptable, have good safety properties, and maintain ballistic performance.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the Technology and Industrial Base by designing and developing an environmentally friendly binder for medium caliber ammunition propellant. The current propellant binders contain Barium Nitrate and Diphenyl Amine both of which are carcinogenic. The new ETPE binder is environmentally friendly and will allow new non traditional contractors to enter the medium propellant business.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement will foster new relationships with new non traditional contractors in the production of medium caliber ammunition propellant. Non traditional companies realized the risks with working with strong carcinogens and were reluctant to enter into the community. The new non carcinogenic and easy to manufacture propellants use the same manufacturing equipment as the pharmaceutical and candy industries. This should allow new companies with experience in these existing industries to be competitive.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: N/A

Task Number: 0060

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Novel Materials for High Blast Applications

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Science Applications International Corporation

Effective Date: 11 Aug 2005

Estimated Completion or Expiration Date: 11 Aug 2006

U.S. Government Dollars: $ 1,053,929

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this agreement is to urgently develop a new formulation for Red Phosphorus that does not generate Phosphine Gas (poisonous) while in storage. The development includes surveillance of prototype formulations to determine stability in comparison with current formulations.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the research and industrial base through broad collaboration between industry partners and Government agencies. This is the first agreement that leverages funding and technology from the Defense Threat Reduction Agency, Joint Munitions Command, PM Joint Services Ammunition, Army Research Development and Engineering Center (ARDEC), and industry partners. This broadens the Warheads and Energetics technology communities by leveraging technology from different services and Government agencies, and sharing the new technology with the members of the Defense Ordnance Technology Consortium.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters new relationships between the Warheads/Energetics community and the Joint Munitions community. This is the first agreement that leverages funding and technology from the Defense Threat Reduction Agency, Joint Munitions Command, PM Joint Services Ammunition, ARDEC, and industry partners. The new relationships fostered under this agreement are made possible through the unique collaborative mechanisms of the master other transaction agreement.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: N/A

Task Number: 0061

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: MEMS Enabled Safe and Arm Technology

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Kaman Aerospace Corporation

Effective Date: 27 Sep 2005

Estimated Completion or Expiration Date: 27 Sep 2006

U.S. Government Dollars: $ 242,417

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of the effort is to design, build, integrate and demonstrate a MicroElectroMechanical System (MEMS) enabled Fuze/Safe and Arm Device for small, low cost and smart fuze system applications. This MEMS device will provide performance, size and cost capabilities for enhanced warhead lethality, and potentially reduce Unexploded Ordnance (UXO) by enabling low cost, reliable, redundant fuzes. The end goal is to demonstrate a practical, affordable and producible MEMS manufacturing technology that can be applied to address current Safe and Arm reliability and/or second environment safety sensing needs.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the research and industrial base through broad collaboration between industry partners academia and Government agencies. The technology and materials developed under this agreement will be shared between the services and among industry and academia partners under the broad other transaction. This is the first agreement with an aerospace company teamed with Draper Laboratory and a cutting edge technology firm Microfabrica. This broadens the Warheads and Energetics technology communities by leveraging technology from different sectors.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters new relationships between the Warheads/Energetics community and the aerospace community. Additionally Draper Labs with its strong academic component is a new player in Warheads and Energetics. This Task Order Sub Agreement (TOSA) adds Microfabrica as a player for the first time under this master other transaction agreement. The technology and prototype materials developed under this agreement will be shared with the other members of the Consortium under the unique relationships allowed by the other transaction.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: DAAE30-01-9-0800

Modification Number: N/A

Task Number: 0062

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Synthesis of Novel High Nitrogen Materials

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: Science Applications International Corporation

Effective Date: 26 Sep 2005

Estimated Completion or Expiration Date: 26 Sep 2006

U.S. Government Dollars: $ 967,950

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The contractor shall investigate and synthesize novel approaches for the synthesis and study of high nitrogen materials, assessment of the state of the art of these materials and their potential incorporation into weapons systems.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadens the Research and Industrial Base by introducing new High Nitrogen Compounds for energetic materials that can be produced at new industrial locations due to the low sensitivity and environmentally friendly processes that reduces the risk to new producers entering the market. The new materials can be designed and manufactured at new facilities and do not restrict the Government to the use of existing ammo plants and contractors.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters new relationships by bringing in new and non traditional contractors and academic institutions to design and manufacture the new High Nitrogen materials. The reduced environmental and explosive risk will allow new players to compete for development and production contacts.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: FA8621-05-9-6254

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Pneumatic Tactical Motion Control System Demonstration

Awarding Office: FA8621 ASC YW TRNG SYS PROD GRP

Awardee: Cobra Technologies Inc

Effective Date: 14 Sep 2005

Estimated Completion or Expiration Date: 14 Dec 2006

U.S. Government Dollars: $ 861,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of the Pneumatic Tactical Motion Control System Demonstration program is to demonstrate the capabilities of a new patented pneumatic valve technology in an aircraft training device. The pneumatic valve system has a small footprint, which is critical in integrating with an ejection seat in a fighter aircraft cockpit. If successful, this system could be applicable to any current and future high performance aircraft training system. The prototype will consist of integrating a tactical motion control system into a commercially available training device and demonstrating the control system performance. This work will be accomplished in a phased approach: seat design, build-up and testing of modified seat with pneumatic motion control system integrated and integration and testing of modified seat in a fixed-base training device with motion cueing algorithm. Demonstrations of the modified seat and the integrated tactical motion control system in a training system device will be the major technical events of this effort. The prototype should demonstrate the successful integration of the entire control system in the tight confines of a training system device and its associated performance.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement has resulted in the participation of a non-traditional defense contractor: Cobra Technologies Inc., Irvine CA. This enables the rapid infusion of advanced, patented pneumatic valve and control systems technologies into the specialized training systems arena. Use of this agreement has enabled the government to benefit from this participation of a contractor providing technology and expertise otherwise unavailable because the company does not normally do business with the Department of Defense.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement has placed knowledgeable individuals from divergent fields into an environment designed for collaboration and cooperation. Access to the technologies and knowledge base present in this company is best accomplished through the other transaction. The technologies hidden in the laboratories of this company that normally does not do business with the government are extensive and directly applicable to force cueing in aircraft training systems. If successful, the company will benefit by expanding the industrial base of new products available for purchase.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HC1047-05-9-0001

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Actionable Situational Awareness Pull Advanced Concept Technology Demonstration

Awarding Office: DISA SKYLINE FIVE

Awardee: Titan Corporation

Effective Date: 15 Sep 2005

Estimated Completion or Expiration Date: 30 Sep 2008

U.S. Government Dollars: $ 4,195,836

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The main objective of the Actionable Situational Awareness Pull Advanced Concept Technology Demonstration (ASAP ACTD) is to develop DoD's ability to provide its warfighters with timely access to operationally relevant static and dynamic information through the "pull and tailor" concept. The ASAP ACTD is to be designed for use by tactical commanders in active engagement battle situations, and it will form part of the DoD's migration to Network Centric Enterprise Services ("NCES") within the Global Information Grid ("GIG"). The ASAP ACTD will provide seamless integration with other existing DoD Joint and Services tactical application programs, including other ongoing ACTDs.

The ASAP ACTD will create a composable, user-friendly, tactical, user-centric, system of web-based services from which warfighters can "pull and tailor" relevant actionable information to their own locations, on demand and at will, yet within bandwidth constraints, from a variety of national, theater, and tactical data and information sources. The ASAP ACTD, which will be a computer and web services-based prototype, will allow the warfighter to assess and determine his or her own information needs and to gain immediate, direct, and autonomous access to available data and information, whether static or dynamic. This "pull and tailor" method of acquiring warfighter access to data and information is in direct contrast with DoD's present method of information dissemination, wherein base commands, often far removed from the scene of engagement, predetermine which static information or data will be made available to users, and then attempt to "push" it all out to the field through communications channels, requiring the warfighter to use scarce field resources for reception and sorting through the information and data, much of which may be untimely and locally irrelevant.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
Execution and implementation of this agreement will further the Government policy objective to encourage technology transfer from the military to the commercial sector through encouraging the development of dual use technologies embodied in the ASAP ACTD prototype. It will also support the Government policy objective to attract participation by nontraditional defense contractors who possess innovative ideas and technology potentially useful to United States government defense contracting projects.

The ASAP ACTD project engages the efforts of three (3) non-traditional defense contractors, Systinet Corporation, WebLayers, Inc., and Concurrent Technologies Corporation. Systinet's COTS universal description, discovery and integration (UDDI) Registry software will be used to make the ASAP ACTD web service easily discoverable and consistent with net-centric enterprise services (NCES) methods. WebLayers' COTS NCES Governance software will be applied to permit NCES compliance. Concurrent will support the design of the web service and use their Joint WebCop situation awareness capability so that the ASAP web service data may be displayed on a browser. Moreover, these three vendors will be working under the management of L3 Communications Titan Corporation, a firm with which DISA has had limited contractual relationships to date. This will be the first large-scale award from

Defense Information Systems Agency (DISA) to L3 Comm Titan Corporation, one that by its nature calls for close technical and managerial interaction between the parties due to the unique nature of the project objectives.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Development of the ASAP ACTD prototype will be helpful to the Government by providing a demonstrative mechanism through which to evaluate the military usefulness of several needed technologies as yet undeveloped in whole or in part. In particular, current technology does not presently allow for capture and use of dynamic, or streaming, information; rather, present search engines are only able to locate and provide the searcher with access to static files. In contrast, the ASAP ACTD prototype will separate data or information from its software applications and mediate the data/information so that it is usable everywhere, by all users at appropriate access levels, throughout the network. Another shortfall of current information technology is that it does not allow for interactive, correlated, and measurable governance of many of the web services relating to the envisioned "pull and tailor" methodology.

Other benefits to the DOD through use of this agreement:
As DoD implements more net-centric technologies similar to the ASAP, a broader industrial base including new partnerships will result. This will enhance competition both in terms of technological advances and prices for those new technologies. Additionally, the ASAP ACTD agreement has allowed for intellectual property terms which would not otherwise be available to the Government if a conventional Federal Acquisition Regulations (FAR)-based contractual relationship had been affected, and may serve as a precedent for future awards.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HQ0006-04-9-0001

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Design & Risk Reduction for HAA ACTD

Awarding Office: DEPARTMENT OF DEFENSE

Awardee: Lockheed Martin Corporation

Effective Date: 14 Oct 2003

Estimated Completion or Expiration Date: 30 Jun 2004

U.S. Government Dollars: $ 39,400,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
Missile Defense Agency Advanced Systems (MDA/AS) was designated as the Program Manager for the High Altitude Airships (HAA)-Advanced Concept Technology Demonstration and is chartered to execute and manage the design, development and demonstration of an unmanned, untethered, lighter than air, airship capable of operating autonomously in the stratosphere for sustained, long endurance operations as a stable, geostationary communications and sensor platform. To achieve this objective, MDA has teamed with Lockheed Martin to design, develop, integrate, test, and demonstrate an unmanned, untethered, and lighter than air, airship technologies, payload capabilities and methods of employment. Innovative Government and industry enterprise integration and acquisition methods will focus on the rapid acquisition of threshold capability while enabling growth as technologies mature, threats adapt, and organizations mature within new operational constructs. This program will focus on the need for key promising technologies and techniques in areas such as airship design, construct and station keeping; power generation, distribution and storage; command and control; payload monitoring and instrumentation and payload possibilities.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement has contributed to the broadening of the technology and industrial base available for meeting Department of Defense needs by introducing participation of non-traditional contractors. Lockheed Martin's team includes non-traditional defense contractors such as Warwick Mills, Hydrogenics, AeroVehicles, and Physical Sciences Laboratory. Under this agreement, each non-traditional defense contractor will make the following significant contributions to the prototype project:

·Warwick Mills – Hull Laminates and Fabric Engineering

Hydrogenics – Fuel Cell Stacks and Engineering

AeroVehicles – Power/System Engineering

Physical Sciences Laboratory – Thermal/System Engineering

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The work under this agreement will result in the demonstration of an unmanned, untethered, lighter than air airship capable of operating autonomously in the stratosphere for sustained, long endurance operations as a stable, geostationary communications and sensor platform. The use of an other transaction agreement was approved by the MDA Senior Procurement Executive based on the use of non-traditional defense contractors, as well as, establishing

innovative business arrangements and structures that would not be feasible or appropriate under a procurement contract. The agreement allows industry to reap the benefits of the use of the airship and its associated technologies in the commercial arena without the strict limitation imposed by the Federal Acquisition Regulation/Defense Federal Acquisition Regulation Supplement (FAR/DFARS) concerning intellectual property, data rights, and royalties. The Government and contractor were able to negotiate terms and conditions focused specifically for this effort rather than the standard FAR/DFARS clauses. This business construct provided for a "teaming structure" in which there was a collaborative effort to promote defense objectives.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-04-9-0007

Modification Number: P00005

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Super High Efficiency Diodes(SHEDS) Wavelength Stabilized Bars(RAWS BARS)

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: JDS Uniphase Corp

Effective Date: 25 Aug 2005

Estimated Completion or Expiration Date: 15 Nov 2006

U.S. Government Dollars: $ 2,233,281

Non-Government Dollars: $ 2,233,281

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objective of Phase II is to attain an electrical-to-optical efficiency of 80% in the generation of light from stacks of semiconductor diode laser bars. It is a goal of the DoD to ultimately develop a solid state laser system that is 100 times as powerful as the current state-of-the-art, with a smaller overall footprint and power requirements that could contribute to the protection of high-value platforms. The technology area is high power lasers.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The performing organization, JDS Uniphase Corporation, is a nontraditional defense supplier. The use of an other transaction provided DoD with access to this commercial firm on a military prototype project, thereby broadening the technology and industrial base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The use of an other transaction allowed this commercial firm to use its existing commercial accounting practices, alleviating the requirement and avoiding the cost of setting up a government-approved system. Further, the use of an other transaction provided freedom from the standard intellectual property regime and mandatory flow-down clauses that are obstacles to commercial participation and practice. Certain rights pertaining to intellectual property rights (Bayh-Dole) were very important to JDS and, in large part, the reason they have been unwilling to do business with the DoD in the recent past. These issues required additional negotiation and flexibility in the provisions ultimately agreed upon between the parties. This flexibility and tailoring was possible only with the use of an other transaction.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-04-9-0010

Modification Number: P00006

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Falcon Phase ll, Design and Development.

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Lockheed Martin Corporation

Effective Date: 10 Mar 2005

Estimated Completion or Expiration Date: 05 Jun 2005

U.S. Government Dollars: $ 57,721,836

Non-Government Dollars: $ 5,825,000

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objective of Phase IIb includes the continued development, design, fabrication and flight test of a low risk Hypersonic Technology Vehicle-1 (HTV-1) employing existing technologies and launched by a government furnished launch vehicle. The technology area is hypersonic vehicle technology.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
Although the leader of the performing team, Lockheed Martin, is a traditional defense supplier, two team members are nontraditional and participating substantially in this phase: Pryodyne, providing the key enabling Inward Turning Propulsion System technology for the HCV; and Paragon, providing aero-thermodynamic analysis and thermal protection system design expertise for flight demonstration planning and implementation.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The other transaction process has encouraged traditional defense contractors such as Lockheed Martin, to seek out teaming partners from the small business and nontraditional defense business sectors. The commercial firms, Pryodyne and Paragon, will use their normal operating practices, without being forced into standardized government systems and procedures, for accounting, reporting, and making changes. This flexibility will contribute to innovative pursuit of technical accomplishment.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-04-9-0010

Modification Number: P00010

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Falcon Phase II, Design and Development.

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: Lockheed Martin Corporation

Effective Date: 27 Jun 2005

Estimated Completion or Expiration Date: 30 Sep 2008

U.S. Government Dollars: $ 124,778,915

Non-Government Dollars: $ 5,825,000

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
Phase II of the FALCON program includes the development, design, fabrication and flight test of a low risk Hypersonic Technology Vehicle-1 (HTV-1) employing existing technologies and launched by a government furnished launch vehicle. Options 5 and 6 exercised by this modification include tasks for the FALCON Combined Cycle Engine Technology (FACET) Program. The technology area is hypersonic vehicle technology.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
Although the leader of the performing team, Lockheed Martin, is a traditional defense supplier, two team members are nontraditional and participating substantially in this phase: Pryodyne, providing the key enabling Inward Turning Propulsion System technology for the HCV; and Paragon, providing aero-thermodynamic analysis and thermal protection system design expertise for flight demonstration planning and implementation.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The other transaction process has encouraged traditional defense contractors, such as Lockheed Martin, to seek out teaming partners from the small business and nontraditional defense business sectors. The commercial firms, Pryodyne and Paragon, will use their normal operating practices, without being forced into standardized government systems and procedures, for accounting, reporting, and making changes. This flexibility will contribute to innovative pursuit of technical accomplishment.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-9-0001

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Characterization of the MicroChannel Array (MCA), An Enabling Component for Advanced Lithography

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: EMISSION SYSTEMS, INC.

Effective Date: 01 Nov 2004

Estimated Completion or Expiration Date: 30 Apr 2005

U.S. Government Dollars: $ 499,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objective of this effort is to develop a high-throughput, high-resolution, and mask-less alternative to conventional lithography that is based on a solid state electron beam source called MESA (Micro Channel Array (MCA)-Equalized Source Array). MESA is a massively parallel, solid state, compact, cold-cathode e-beam source. The completed MESA source has the potential of delivering thousands of switchable, uniform, focused electron sources enabling high speed direct write of photo resist for semiconductor manufacturing for critical dimension geometries spanning 90 to 10 nm. Depending on the application, raw throughput of 300mm wafers is expected to range from 10-60 WPH potentially serving not only low volume semiconductors devices, but high volume as well. The program will develop and deliver a silicon-based MCA prototype. In the first phase (6 months), the prototype will be proven through the use of off-the-shelf equipment and academic consultants in order to further establish the viability of the approach. In the second phase (9 months) custom test equipment will be used to fully characterize the prototype for commercial and military use. In keeping with the DARPA legacy of technical and operational innovation, DARPA is pushing to conduct demonstrations to validate technical feasibility, operational utility, military value, and affordability of the array for a military use in FY 2006.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The recipient of this award is a nontraditional performer. As a small, purely commercial company unable to meet the requirements of a federal procurement contract, Emission Systems is not disposed to accept the regulations and restrictions that accompany FAR-based procurement contracts. An other transaction is far more attractive to Emission Systems, because it can quickly respond to DoD needs, without being burdened with layers of acquisition rules or changes to its accounting systems. As a result, the use of an other transaction has broadened the technology base by providing access to a nontraditional defense supplier.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This program brings a commercial company into defense contracting to foster innovative research in the area of advanced lithography. The outcome of this program will help the military obtain custom integrated circuits (ASICs) that are manufactured using cost-effective, low-volume semiconductor lithography capability at leading edge nodes (90nm to 16nm). The use of an other transaction allowed this commercial firm to use its existing commercial accounting practices, alleviating the requirement of setting up a government-approved system. On this effort the government is making payments based upon the accomplishment of milestones. Milestones may be adjusted as technical needs or expenditure requirements dictate. This issue required additional negotiation and flexibility in the provisions ultimately agreed upon between the parties. This flexibility and tailoring was possible only with the use of an other transaction.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-9-0002

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Super High Efficiency Diodes (SHEDS)

Awarding Office: DEFENSE DVANCED RESEARCH PROJECTS AGENCY

Awardee: NOVALUX INC

Effective Date: 25 Oct 2004

Estimated Completion or Expiration Date: 09 Mar 2005

U.S. Government Dollars: $ 2,382,000

Non-Government Dollars: $ 427,034

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
In general, the goal of this research is to greatly improve upon on the most inefficient part of a diode bar-pumped solid-state laser system, the conversion of electric power to optical power. The technical objective of this effort is to develop, demonstrate and deliver a prototype that attains an electrical-to-optical efficiency of 80% in the generation of light from stacks or semiconductor diode laser bars operating in the spectral range of 880nm to 980nm. To establish that progress is being made toward this overall program goal, a Phase 1 goal of 65% from single diode bars will be accomplished at month 7 of the 19 month effort (12-month Phase 2 is an Option). In general, the goal of this research is to greatly improve upon on the most inefficient part of a diode bar-pumped solid-state laser system, the conversion of electric power to optical power. Doing so will ultimately lead to more efficient and, therefore, smaller/light weight laser systems that would be more practical components of future defense systems. Specifically, Novalux, Inc. will develop arrays of surface emitting laser diodes that will offer several system-level advantages over stacks of edge-emitting laser diode bars, notably superior beam quality, better element-to-element matching, higher reliability and better wavelength stability.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction facilitates both Novalux's commercial research objectives, which led them to offer a 25% cost-share arrangement spread over Phase 1 and 2 of the program, and the DoD's goals of increasing the current state-of-the-art in solid state laser systems/technology which, ultimately, will benefit future DoD laser-based protection systems. Novalux is currently a nontraditional, small business contractor and would only participate in the SHEDS research program if awarded an other transaction. As it is DARPA's belief that advancement of the subject technology is considerably more likely with the participation of small, non-traditional companies such as Novalux, use of an other transaction was an absolute necessity and is in the best interests of the DoD. Otherwise, Novalux would not have participated in the program.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This other transaction brings together with the DoD an emerging commercial small business that is starting to make a name for itself in the diode laser technology arena. In addition to the obvious benefits to the DoD from the advancement in the technology above and beyond the current state-of-the-art, this other transaction serves as a launching point from which both parties (DoD and Novalux) can establish a business relationship with each other. If this project is successful from both a business and technological perspective, there is a greater likelihood of Novalux and the DoD partnering in the future on other research endeavors.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-9-0003

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Demonstration, Validation, and Fabrication of Hardwire Composite Panels for Ballistic-and Blast-Resistant Applications

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: HARDWIRE LLC

Effective Date: 26 Nov 2004

Estimated Completion or Expiration Date: 31 Aug 2005

U.S. Government Dollars: $ 1,079,600

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objectives of this effort are to rapidly demonstrate ballistic and fragmentation protection multi-layer laminate panels suitable for vehicle protection against ballistic, rocket propelled grenades and improvised explosive devices. Specifically, it is aimed at producing prototype panels using commercially available materials and production technology and infrastructure to produce laminate panels that afford the same protection as armor steel at significantly reduced weight. The tasks include panel layer configuration optimization, fabrication processes optimization, prototypes production and testing against various ballistic and fragmentation tasks.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction will enable the rapid development of the technology. It will further enable a nontraditional DoD contractor to rapidly transition and insert commercial technology into DoD to the benefit of the Armed Forces and the Government. If successful, this other transaction will result in the establishment of materials, data, knowledge, process, and industrial facilities that will produce materials of interest to the DoD.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The use of an other transaction agreement by DARPA facilitates the timely insertion of commercial technology and innovation into DoD systems to the benefit of national security. It leverages commercial technology to provide a significant benefit to the warfighter.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-9-0004

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: DIGITAL AND RF CMOS EPIC TECHNOLOGY

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: LUXTERA INC

Effective Date: 15 Dec 2004

Estimated Completion or Expiration Date: 14 Jun 2006

U.S. Government Dollars: $ 5,491,779

Non-Government Dollars: $ 2,741,772

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objectives of this effort are to develop and deliver a Link-Enhanced Performance Implanted CMOS (EPIC) transceiver, an application-specific EPIC chip prototype. In Phase I (18 months), the Basic agreement, Luxtera will fabricate, develop and deliver a first-generation device library, stand-alone Ge waveguide photo detector prototypes and the Link-EPIC Chip Prototype 1, as well as define a second-generation device library. In Phase II (Option 1), Luxtera will demonstrate a stand-alone co-packageable optical source prototype as well as develop and fabricate a second-generation device library and Link-EPIC Chip Prototype 2. In Phase III (Option 2), Luxtera will develop, fabricate and deliver Link-EPIC Chip Prototype 3 and deliver the second generation device library. In Option 3 (to run concurrent with Option 1/Phase II), IBM, subcontractor to Luxtera, will fabricate and deliver stand-alone antenna-coupled tunnel junction (ACTJ) detectors on top of LuxEPIC waveguides provided by Luxtera to simplify the fabrication of LuxEPIC devices in other complimentary metal oxide semiconductor (CMOS) processes. In keeping with the DARPA legacy of technical and operational innovation, DARPA is pushing to conduct demonstrations to validate technical feasibility, operational utility, military value, and affordability of the transceiver for military use in FY 2009.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The recipient of this award is a nontraditional performer. As a small, purely commercial company unable to meet the requirements of a federal procurement contract, Luxtera is not disposed to accept the regulations and restrictions that accompany FAR-based procurement contracts. An other transaction is far more attractive to Luxtera, because it can quickly respond to DoD needs, without being burdened with layers of acquisition rules or changes to its accounting systems. As a result, the use of an other transaction has broadened the technology base by providing access to a nontraditional defense supplier.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This program brings a nontraditional, commercial company into defense contracting to foster innovative research in the area of EPIC technology. The outcome of this program will help the military meet its urgent application requirements including dynamically reconfigurable high-bandwidth interconnections for intelligence, surveillance and reconnaissance (ISR) platforms with massive phase arrays of high bandwidth sensors, and Link-EPIC will also serve as an interconnect for multiprocessor clusters, where it can achieve size, weight and power (SWAP) and very high bit rates and size not realizable in any current or foreseeable technology. The use of an other transaction allowed this commercial firm to use its existing commercial accounting practices, alleviating the requirement of setting up a government-approved system. On this effort, the Government is making payments based upon the accomplishment of milestones.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-9-0007

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Submarine Launched and Recovered Multi-Purpose Unmanned Air Vehicle(MPUAV) Phase 1 Project

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: LOCKHEED MARTIN CORPORATION

Effective Date: 09 May 2005

Estimated Completion or Expiration Date: 08 Sep 2006

U.S. Government Dollars: $ 7,087,376

Non-Government Dollars: $ 3,421,244

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objective for Phase 1 of this effort is to conduct key risk reduction demonstrations to establish the technical and operational feasibility of key system concept aspects, as well as to mature air vehicle and related servicing and support system concepts. The results of these efforts will provide a foundation for technical and operational feasibility for the Submarine-Launched and Recovered MPUAV system concept that may be pursued in subsequent program phases.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
Lockheed Martin is a traditional defense supplier. As a result, the technology and industrial base was not broadened in this effort. Other benefits did accrue, however, from the use of an other transaction, as described below.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The other transaction process has encouraged traditional defense contractors such as Lockheed Martin to seek out teaming partners from the small business, non-traditional defense business, and institutions of higher education sectors. In addition, the use of an other transaction fostered participation of all team members including the Government team; enhanced flexibility to adopt product improvements as technology advances; and encouraged sensitivity to emerging requirements and changing missions, all of which forged new relationships and practices that support our national security.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: HR0011-05-9-0008

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Palm Reader: Detection of Explosive Activity on Bombers and Bomb Makers

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Awardee: REDXDEFENSE

Effective Date: 30 Sep 2005

Estimated Completion or Expiration Date: 29 Sep 2006

U.S. Government Dollars: $ 1,288,959

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objective of this effort is to develop and demonstrate a field-deployable, low cost simple-to-operate, prototype system for detecting trace amounts of explosives on human hands thus combating the threat of explosives, in particular, terrorist or asymmetric threats.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The performing organization, RedXDefense, LLC, is a nontraditional defense supplier. The use of an other transaction provided DoD with access to this commercial firm on a military prototype project, thereby broadening the technology and industrial base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The use of an other transaction allowed this newly established commercial firm to use its existing commercial accounting practices, alleviating the requirement and avoiding the cost of setting up a government-approved system.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: MDA972-02-9-0006

Modification Number: P00014

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Rascal

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGCY

Awardee: Space Launch Corporation

Effective Date: 1 Sep 2005

Estimated Completion or Expiration Date: 31 Oct 2005

U.S. Government Dollars: $ 25,794,923

Non-Government Dollars: $ 879,777

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objective of this RASCAL Phase II option is to allow the extension of the high pressure F-100 test series to include an additional test engine. The program objective is to complete all tasks necessary to validate the analytical engine performance models and system trajectories developed during RASCAL Phase II. The technology area is small cargo space launch.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The performing organization, the Space Launch Corporation, is a nontraditional defense supplier, as are three other team members: Universal Space Lines, Scaled Composites, and Hunter and Associates. The use of an other transaction provided access to these commercial firms by allowing relief from the normal intellectual property regime, accounting requirements and flow-down requirements of standard government contracts. Access to these firms broadened the technology base.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The use of an other transaction will result in a more flexible, tailored allocation of intellectual property rights than is possible under a procurement contract. It will also allow the members of this team to utilize their normal operating practices, whether commercial or government oriented, without being forced into standardized government systems and procedures, especially for accounting, reporting, and making changes. This flexibility contributes to innovative pursuit of technical accomplishment, free of rigid requirements which are not appropriate for this collaboration.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: MDA972-03-9-0002

Modification Number: P00004

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Aluminum-Free Active Super High Efficiency Diodes

Awarding Office: DEFENSE ADVANCED RESEARCH PROJECTS AGCY

Awardee: Alfalight Inc

Effective Date: 07 Jun 2005

Estimated Completion or Expiration Date: 22 Sep 2006

U.S. Government Dollars: $ 5,325,901

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objective of Option 1 of this effort is to continue to develop several revolutionary as well as evolutionary methods for increasing the power conversion efficiency(PCE) of aluminum-free(AL-free) laser diode bars from a current 50% to a goal of 80% at 880nm and 980nm wavelength in order to pump Nd:YAG and Yb:YAG, respectively. The technology area is super high efficiency diodes (SHEDS).

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The recipient of this award is a nontraditional performer. As a small business and a purely commercial company, unable to meet the requirements of a federal procurement contract, Alfalight stated that it would not agree to the terms of the Federal Acquisition Regulation. Also, the principal purpose of this non-procurement instrument is the acquisition of a prototype for the direct benefit of the Federal Government.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This program brings a non-traditional, commercial company into the effort foster innovative research in the area of super high efficiency diodes. The outcome of this program will help the military to build compact, low cost high energy laser systems based on direct-diode and diode-pumped solid state materials such as slab, disk and fiber lasers that could be used for numerous defensive, tactical and surveillance applications. Some key innovations proposed are: use of a single layer of quantum dots with high bandgap Al-free material in the surrounding barrier as the gain medium for high gain and ultra-low threshold laser. Certain rights pertaining to obligation and payment and intellectual property rights were important to Alfalight. These issues required additional negotiation and flexibility in the provisions ultimately agreed upon between the parties. This flexibility and tailoring were possible only with the use of an other transaction.

Other benefits to the DOD through use of this agreement:
The use of an other transaction allows Alfalight to use existing commercial accounting practices, which is necessary for this purely commercial company to conduct business with the Government.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: N00014-05-9-0001

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Expeditionary Warfare Craft (E-CRAFT)/Knik Arm Transport Rescue Boat

Awarding Office: OFFICE OF NAVAL RESEARCH

Awardee: Alaska Ship & Drydock Inc

Effective Date: 22 Aug 2005

Estimated Completion or Expiration Date: 30 Oct 2010

U.S. Government Dollars: $ 29,900,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The purpose of this project is to build a prototype to test various technologies for their usefulness in employment in potential new naval ship designs to facilitate the Navy's warfighting strategy Seapower 21. The E-CRAFT will be constructed as a ferry serving as a research vessel that can be used by ONR to develop and evaluate designs and intregal leading edge technologies to demonstrate the operational utility of the vessels design in the performance of littoral transport mission.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The E-Craft will provide the Navy with a high speed, multi-purpose, cargo and troop ship. It will perform efficiently at high speed, in ice, in shallow waters and in high sea states, thus offering operational flexibility and logistic delivery efficiencies far beyond the Navy's current capability.

Other benefits to the DOD through use of this agreement:
The benefits to the Navy are the ability to assess new technologies and concepts and collect long term operational data as well as provide a potential test platform for emerging technologies in a particularly harsh and demanding environment with minimal additional cost.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: N66001-05-9-6016

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: ADVANCED CONTAINER SECURITY DEVICE (ACSD)

Awarding Office: SPACE AND NAVAL WARFARE SYSTEMS

Awardee: L-3 COMMUNICATIONS SECURITY AND DETECTION SYSTEMS INC

Effective Date: 17 May 2005

Estimated Completion or Expiration Date: 30 Sep 2005

U.S. Government Dollars: $ 700,000

Non-Government Dollars: $ 1,132,261

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The intent of the ACSD program is to further the state of the art in the area of container security, which will then allow for commercial use of a higher standard of container security. This higher standard of container security may be mandated via statute, industry standard, or the Maritime Transportation Security Act – International Ship and Port Facility Security Code. The interest of the federal government, as managed by HSARPA, is to foster this research in order to advance the total security of the citizens of the United States.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The ACSD prototype also provides data to the Office of Naval Intelligence (ONI) to support the Navy's role in Maritime Domain Awareness and Cargo Tracking. In addition, the ACSD prototype will alert authorities of threats prior to transfer of hazardous cargo to sea basing ships containing munitions. The device will have the ability to target containers and provide positioning information for ships transporting threats. This defensive weapons system is similar to a Fire Control or Sonar Combat System that provides location data and targeting information. The early detection of WMD and terrorists during transportation makes the ACSD prototype a critical defensive weapons system.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The ACSD prototype will be able to provide location data in the event of an unauthorized entry on land or sea, which acts as an early detection defensive weapons system for the primary purpose of combating hidden weapons smuggled by land or sea. The positioning of the ACSD prototype in cargo container/transport will also assist in interdiction. When indicated by the ACSD prototype, detected threats in the open ocean will be responded to by US Naval forces due to their far forward deployment and their role in maritime domain awareness. The ACSD prototype has interfaces for future sensors, such as chemical/biological, radiological/nuclear, and explosives being developed to alert for weapons of mass destruction (WMD). The early detection of these weapons will provide the military with the ability to target or intercept these weapons before they are deployed. The five areas in which the ACSD prototype acts as a defensive weapon system are: 1) assuring the integrity of container loading; 2) detecting human cargo (which could include possible terrorists); 3) significantly reducing the risk of undetected tampering in transit; 4) sensing any intrusion into the container; and, 5) providing an interface for the previously mentioned advanced sensors. The resulting data can be correlated with other national technical means for targeting containers/shipping on land or sea for inspection while in transit. If cargo is being shipped into a military supply chain, data regarding dangerous cargo, including WMD, possible terrorist-as-human-cargo, suspicious movement or unauthorized openings in route, are key to target for interdiction and inspection.

Other benefits to the DOD through use of this agreement:
Commercialization of the ACSD prototypes is the ultimate goal.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: N66001-05-9-8904

Type of Agreement: Acquisition transaction (in lieu of procurement contracts (under 10 U.S.C. 2371))

Title: Control for High-Throughput Adaptive Resilient Transport (CHART)

Awarding Office: SPACE AND NAVAL WARFARE SYSTEMS

Awardee: Hewlett-Packard Company

Effective Date: 09 Feb 2005

Estimated Completion or Expiration Date: 08 Aug 2006

U.S. Government Dollars: $ 6,446,716

Non-Government Dollars: $ 3,954,796

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The Control for High-Throughput Adaptive Resilient Transport (CHART) proposal directly addresses the problem of providing control plane functionality within the network. The need for the control plane arises from the reality that the Internet today is a best effort system that makes no guarantees on the quality of the routes, and the performance of standard protocols degrades rapidly in response to minor loss of link quality. The keys to realizing the control plane vision are the provision of a network-wide real-time weather service that is reliable, efficient, scalable, and secure, available to end hosts, and the provision of an in-network routing solution that can rapidly re-route. The proposed effort is directly relevant to weapons or weapon systems proposed to be developed or acquired by the DoD. The research from the Control Plane Program will enhance network weapon systems. The communication community is working to provide added value to the kill chain through networks employed as weapon systems. GIGBE is one of the most pressing issues associated with information dominance and using information acquired through the Control Plane Program to shorten the kill chain is vital to the success of the war fighter. The Control Plane Program is envisioned to be the backbone of multiple weapon systems. It will be called upon to operate 24 hours a day, 365 days a year. It will operate in areas of responsibility covering more than half of the earth, and will be able to undergo constant hardware and software upgrades. An existing weapon system that would be directly impacted by this project would be the Global Hawk Unmanned Aerial Vehicle. The Global Hawk circles the battlefield collecting valuable information. Live video feeds instantly appear on consoles over 2,000 miles away, are reviewed by local analysts and targets are fixed. Without the accurate information provided by the Control Plane Program, DoD weapons and weapon systems will not be as effective.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement contract has facilitated teaming between HP and McAfee associates to produce a software/hardware solution that is better than a software solution alone. The two firms probably would not have collaborated together otherwise because they are in different basic businesses.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement has fostered new business relationships that support the national security of the United States by improving traffic profiles across the internet. The focus of the Broad Agency Announcement (BAA) is to improve end-to-end Standard Transmission Control Protocol/Internet Protocol (TCP/IP) wide area network performance topic area. An essential part of Joint Vision 2020 and the Defense Department's Global Information Grid Bandwidth Expansion (GIGBE) is the ability for forward deployed combat, combat support, and combat service support units to receive the information and raw data they need from Continental United States (CONUS) support bases. The communication paths between the forward deployed units and the CONUS supporting base are often well below that of normal commercial Internet service in the US or Europe. The use of the other transaction allowed us to create new relationships between Hewlett Packard, McAffee, and academia as subcontractors.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: NMA401-02-9-2001

Task Number: 0042

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: National Technology Alliance, Rosettex

Awarding Office: NATL GEOSPATIAL-INTELLIGENCE AGENCY

Awardee: Sarnoff Corporation

Effective Date: 29 Apr 2005

Estimated Completion or Expiration Date: 26 Aug 2006

U.S. Government Dollars: $ 2,999,515

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objectives of this effort are to prototype an end-to-end real-time dissemination system for use in urban environments. Results of the prototype are intended to provide an example of nationally relevant dissemination architecture for urban environments, test operational interconnectivity and related policy issues, and validate various technical approaches for distributed networks of sensors, metropolitan-area information dissemination, and mobile end user receipt and use of timely information. Intended users are first responders and Homeland Security/Homeland Defense responders; military users will likely be interested in portions of the dual use technology and architecture.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement has resulted in the participation of a nontraditional defense contractor, Rosettex Technology and Ventures Group. Rosettex was formed to provide innovative solutions to government intelligence community user needs. In addition to providing program management for this effort Rosettex, with its diverse team, is able to provide research and development services, prototype development and demonstration, seamless system integration, and transition of technology into the commercial market place. In addition to Rosettex, there are five (5) other non-traditional defense contractors supplying technical expertise and system engineering, and integration support for the overall Geospatially Aware urban Approaches for Responding to Disaster (GUARD) effort: (1) Grey Island Systems, (2) Thirteen/WNET (PBS affiliate television broadcaster), (3) Cranite, (4) Asgard, (5) NextNet Wireless. Additional non-traditional defense contractors are anticipated as new technologies are identified for incorporation into the program testbed environment. The use of an other transaction agreement for this project will broaden the DoD technology and industrial base by encouraging the development of unique and innovative dissemination and command and control capabilities.

Extent to which the cooperative agreement or other transaction has fostered within the technology This
agreement fosters research and development practices that are more like those in commercial organizations resulting in the rapid development of new technologies. The agreement places industry team members and the Government in a more commercial-like relationship than would a customary Government contract. Industry team members are more willing to commit their personnel and resources to projects in support of this relationship than it would otherwise.

Other benefits to the DOD through use of this agreement:
The GUARD Infrastructure supports distributed sensor networks in urban environments for use in military urban operations and domestic Homeland Security activities. Also, the program supports Command and Control for both military and civil organizations involved in Homeland Defense/Homeland Security.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: NMA401-02-9-2001

Task Number: 0048

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: National Technology Alliance, Rosettex

Awarding Office: NATL GEOSPATIAL-INTELLIGENCE AGENCY

Awardee: Sarnoff Corporation

Effective Date: 18 May 2005

Estimated Completion or Expiration Date: 17 Jun 2006

U.S. Government Dollars: $ 995,258

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
It is imperative that the National Geospatial Intelligence Agency (NGA) has a capability to test spatiotemporal components and interfaces and to familiarize operational users with the possibilities of using the time-varying elements of geospatial information in their analysis. The object of this project is to pave the way for improved management and exploitation of time-varying geospatial information in the US government. This project is in the Geospatial Intelligence technology area.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement has resulted in the participation of a nontraditional defense contractor, Rosettex Technology and Ventures Group. Rosettex was formed to provide innovative solutions to government intelligence community user needs. In addition to providing program management for this effort Rosettex, with its diverse team, is able to provide research and development services, prototype development and demonstration, seamless system integration, and transition of technology into the commercial market place. Other suppliers of commercial or open source technology envisioned to be used as a part of TEAL are nontraditional defense contractors. This project will broaden the DoD technology and industrial base by encouraging the development of a unique and innovative processing capability.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This other transaction agreement fosters research and development practices that are more like those in commercial organizations resulting in the rapid development of new technologies. The agreement places industry team members and the Government in a more commercial-like relationship than would a customary Government contract. Industry team members are more willing to commit their personnel and resources to projects in support of this relationship than it would otherwise. Furthermore, these partnering relationships are anticipated to continue beyond the life of the agreement, thereby broadening the industrial technologies available to meet DoD needs.

Other benefits to the DOD through use of this agreement:
This project will benefit NGA and the DoD/IC community by designing and developing a Temporal Evaluation and Assessment (TEA) system for use in prototyping, software evaluation, and testing to pave the way for improved management and exploitation of time-varying geospatial information in the US government. The TEA capability is needed for geospatial analysis and near-real-time decision-making to ensure the continued high lethality and survivability for US forces.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: NMA401-02-9-2001

Task Number: 0049

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: National Technology Alliance, Rosettex

Awarding Office: NATL GEOSPATIAL-INTELLIGENCE AGENCY

Awardee: Sarnoff Corporation

Effective Date: 01 Aug 2005

Estimated Completion or Expiration Date: 01 Sep 2006

U.S. Government Dollars: $ 976,914

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
This effort supports the National Reconnaissance Office (NRO) by performing prototyping, evaluations, assessments, demonstrations, and making recommendations with respect to the use of nanostructured approaches for the development of the next generation of high efficiency photo voltaic (PV) solar cell for space. The overall objective is twofold: (1) incorporate nanotechnology in state-of-the-art photovoltaic devices to provide a near term power conversion efficiency improvement; and (2) leverage activities performed in the first area to enable the demonstration of ultra-high efficiency intermediate band solar cell (IBSC) photovoltaic devices.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement has resulted in the participation of a nontraditional defense contractor, Rosettex Technology and Ventures Group. Rosettex was formed to provide innovative solutions to government intelligence community user needs. In addition to providing program management for this effort, Rosettex, with its diverse team, is able to provide research and development services, prototype development and demonstration, seamless system integration, and transition of technology into the commercial market place. This project will broaden the DoD technology and industrial base by encouraging the development of a unique and innovative processing capability.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters research and development practices that are more like those in commercial organizations, resulting in the rapid development of new technologies. The agreement places industry team members and the Government in a more commercial-like relationship than would a customary Government contract. Industry team members are more willing to commit their personnel and resources to projects in support of this relationship than it would otherwise. Furthermore, these partnering relationships are anticipated to continue beyond the life of the agreement, thereby broadening the industrial technologies available to meet DoD needs.

Other benefits to the DOD through use of this agreement:
This project will benefit the DoD/IC community by conducting necessary research and demonstrate the feasibility of: (1) incorporating nanotechnology in state-of-the-art photovoltaic devices to provide a near term power conversion efficiency improvement; and (2) leveraging the activities performed in the first area to enable the demonstration of ultra-high efficiency intermediate band solar cell (IBSC) photovoltaic devices.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: NMA401-02-9-2001

Task Number: 0050

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: National Technology Alliance, Rosettex

Awarding Office: NATL GEOSPATIAL-INTELLIGENCE AGENCY

Awardee: Sarnoff Corporation

Effective Date: 25 Jul 2005

Estimated Completion or Expiration Date: 18 Sep 2006

U.S. Government Dollars: $ 2,814,779

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
This effort supports the National Geospatial-Intelligence Agency (NGA), National System for Geospatial Intelligence (NSG) Baseline, by performing evaluations, assessments, demonstrations, and making recommendations with respect to, advanced wavelet-based processing for target detection in large geographical areas, target identification and tracking, and advanced visualization and data fusion. The overall objective is to deploy capabilities and identify avenues to improve and enhance the means for detecting high-interest targets. This project is in the Informational Processing Analysis and Management (IPAM) technology area.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement has resulted in the participation of a nontraditional defense contractor, Rosettex Technology and Ventures Group. Rosettex was formed to provide innovative solutions to government intelligence community user needs. In addition to providing program management for this effort, Rosettex, with its diverse team, is able to provide research and development services, prototype development and demonstration, seamless system integration, and transition of technology into the commercial market place. This project will broaden the DoD technology and industrial base by encouraging the development of a unique and innovative processing capability.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters research and development practices that are more like those in commercial organizations, resulting in the rapid development of new technologies. The agreement places industry team members and the Government in a more commercial-like relationship than would a customary Government contract. Industry team members are more willing to commit their personnel and resources to projects in support of this relationship than it would otherwise. Furthermore, these partnering relationships are anticipated to continue beyond the life of the agreement, thereby broadening the industrial technologies available to meet DoD needs.

Other benefits to the DOD through use of this agreement:
The capabilities developed in this effort are directly related to DoD/IC needs to support fielded weapons systems dependent upon geospatial intelligence to quickly identify and track high-interest objects or targets.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: NMA401-02-9-2001

Task Number: 0051

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: National Technology Alliance, Rosettex

Awarding Office: NATL GEOSPATIAL-INTELLIGENCE AGENCY

Awardee: Sarnoff Corporation

Effective Date: 04 Aug 2005

Estimated Completion or Expiration Date: 01 Sep 2006

U.S. Government Dollars: $ 429,127

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The National Geospatial Intelligence Agency (NGA) has a requirement to automatically identify vertical obstructions while minimizing the number of false positives for populating their digital Vertical Obstruction Database (VOD). This project addresses this requirement by providing NGA with a software solution, which will allow the Geospatial analyst to fuse a number of available geospatial intelligence (GEOINT) data sources to ensure a high probability of automatically and correctly identifying vertical obstructions with a minimum number of false positives. This project is in the Geospatial Intelligence (GI) technology area.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement has resulted in the participation of a nontraditional defense contractor, Rosettex Technology and Ventures Group. Rosettex was recently formed to provide innovative solutions to government intelligence community user needs. In addition to providing program management for this effort Rosettex, with its diverse team, is able to provide research and development services, prototype development and demonstration, seamless system integration, and transition of technology into the commercial market place. This project will broaden the DoD technology and industrial base by encouraging the development of a unique and innovative processing capability.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters research and development practices that are more like those in commercial organizations resulting in the rapid development of new technologies. The agreement places industry team members and the Government in a more commercial-like relationship than would a customary Government contract. Industry team members are more willing to commit their personnel and resources to projects in support of this relationship than it would otherwise. Furthermore, these partnering relationships are anticipated to continue beyond the life of the agreement, thereby broadening the industrial technologies available to meet DoD needs.

Other benefits to the DOD through use of this agreement:
The capabilities developed in this effort are directly related to DoD/IC needs to support fielded weapons systems with dependent upon VOD geospatial intelligence for navigation and targeting.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: NMA401-02-9-2001

Task Number: 0052

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: National Technology Alliance, Rosettex

Awarding Office: NATL GEOSPATIAL-INTELLIGENCE AGENCY

Awardee: Sarnoff Corporation

Effective Date: 23 Aug 2005

Estimated Completion or Expiration Date: 23 May 2006

U.S. Government Dollars: $ 235,096

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The National Geospatial Intelligence Agency (NGA)has a requirement to produce integrated databases and datasets that have correct geometry and attribution and are consistent with adjoining datasets within the database. This project addresses the data consistency problem by providing NGA with a software capability that will allow the Geospatial Analyst the ability to correctly perform edge matching to reconcile data inconsistencies between adjoining datasets in either a manual, user interactively, or automatic mode. This project is in the Geospatial Intelligence (GI) technology area.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement has resulted in the participation of a nontraditional defense contractor, Rosettex Technology and Ventures Group. Rosettex was recently formed to provide innovative solutions to government intelligence community user needs. In addition to providing program management for this effort Rosettex, with its diverse team, is able to provide research and development services, prototype development and demonstration, seamless system integration, and transition of technology into the commercial market place. This project will broaden the DoD technology and industrial base by encouraging the development of a unique and innovative processing capability.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement fosters research and development practices that are more like those in commercial organizations resulting in the rapid development of new technologies. The agreement places industry team members and the Government in a more commercial-like relationship than would a customary Government contract. Industry team members are more willing to commit their personnel and resources to projects in support of this relationship than it would otherwise. Furthermore, these partnering relationships are anticipated to continue beyond the life of the agreement, thereby broadening the industrial technologies available to meet DoD needs.

Other benefits to the DOD through use of this agreement:
The capability developed in this effort will directly support the ability of DoD/IC to generate a common operating picture of the battlefield for mission planning, rehearsal, and execution. The project will enhance the geospatial analyst's ability to more efficiently and accurately develop and provide the war fighter with geospatial intelligence. This enhanced capability will enable military mission planners and executioners to perform their mission with a greater degree of success.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: NMA401-02-9-2001

Task Number: 0053

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: National Technology Alliance-Rosettex Technology & Venture Group

Awarding Office: NATL GEOSPATIAL-INTELLIGENCE AGENCY

Awardee: Sarnoff Corporation

Effective Date: 23 Sep 2005

Estimated Completion or Expiration Date: 24 Mar 2006

U.S. Government Dollars: $ 186,708

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of the effort is the development of prototype Portable Document Format (PDF) products and standardized exploitation tools to support community efforts to standardized GeoPDF products, to promote exploitation support applications development, and to facilitate the use of GeoPDF products in critical operational systems.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement has resulted in the participation of a nontraditional defense contractor, Layton Geo-Science, Inc., 155 Woolco Drive, Marietta, GA 30065. Layton Graphics, Inc. (LGI), founded in 1976, is composed of three core business disciplines: (1) Mobile Map Viewing and GIS Publishing Products and Services; (2) CAD Software Publishing Products and Services; (3) Document Scanning and Indexing Services. Layton Geosciences, Inc created as a LGI spin out in 2004, develops and supports MAP2PDF, the product which allows the publication of GIS spatial data, engineering maps, drawings and attribute data to geo-referenced intelligent PDF files for viewing and use by any device with Adobe Reader. This project will broaden the DOD technology and industrial base by encouraging the development of a unique and innovative processing capability.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Layton Geo-Science, Inc is a newly formed, non-traditional Defense contractor with unique capabilities that have the potential to dramatically increase the Nation's ability to distribute and exploit GEOINT maps, charts, and images within fielded weapons systems. Layton does not posses the infrastructure or expertise to support a traditional contract. This agreement fosters research and development practices that are more like those in commercial organizations, like Layton, and will result in the rapid development and fielding of critical new technologies, that might not be possible under traditional Federal Acquisitions Regulations (FAR). The agreement places Layton project team members and the Government in a more commercial-like relationship than would a customary Government contract. This is critical to rapid development of the required prototypes

Other benefits to the DOD through use of this agreement:
The capabilities to use standardized spatially-enabled PDF products and standardized and ubiquitous exploitation tools developed in this effort are directly related to DoD/IC needs to distribute and exploit GEOINT maps, charts, and images by fielded weapons systems with geospatial intelligence and a common relevant operating picture functionality.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: NMA401-02-9-2001

Task Number: 0054

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: National Technology Alliance-Rosettex Technology and Venture Group

Awarding Office: NATL GEOSPATIAL-INTELLIGENCE AGENCY

Awardee: Sarnoff Corporation

Effective Date: 29 Sep 2005

Estimated Completion or Expiration Date: 31 Dec 2006

U.S. Government Dollars: $ 1,398,487

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of the effort is the development of an advanced prototype of a multi-modal biometrics identification and detection device to support community efforts to fight the global war on terror.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement has resulted in the participation of a nontraditional defense contractor, SecuriMetics, Inc.; 757 Arnold Drive, Suite D; Martinez, CA 94553. SecuriMetrics is a small business formed to meet commercial and Government needs for assured identification of individuals through the use of various biometric modalities. SecuriMetrics has developed a number of products for this purpose and, specific to this effort, a baseline prototype device. This project will broaden the DoD/IC technology and industrial base by encouraging the development of a unique and innovative processing capability.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
SecuriMetrics is a small, non-traditional Defense contractor with unique capabilities that have the potential to dramatically increase the Nation's ability to fight the global war on terror. SecuriMetrics does not posses the infrastructure or expertise to support a traditional contract. This agreement fosters research and development practices that are more like those in commercial organizations, like SecuriMetrics, a will result in the rapid development and fielding of critical new technologies, that might not be possible under traditional Federal Acquisitions Regulations. The agreement places SecuriMetrics project team members and the Government in a more commercial-like relationship than would a customary Government contract. This is critical to rapid development of the required prototypes.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: NMA401-02-9-2002

Task Number: 0017

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: National Technology Alliance, CBRTA

Awarding Office: NATL GEOSPATIAL-INTELLIGENCE AGENCY

Awardee: 3M, On Behalf of CBRTA

Effective Date: 01 Jun 2005

Estimated Completion or Expiration Date: 01 Jun 2006

U.S. Government Dollars: $ 1,497,500

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objectives of this effort are to explore the capabilities and limitations of networks of fused acoustic, seismic, video and infrared hyperspectral sensors for persistent, wide-area Intelligence, Surveillance, & Reconnaissance (ISR). The proposed solution will intelligently fuse data from distributed arrays of sensors to detect, classify, identify and track people and vehicles over extended distances. Fused sensor signatures will be used to construct Adaptive Appearance Fusion Models that will enable the system to track human and/or vehicular targets, reacquire the targets, classify the targets and even uniquely identify specific targets. Algorithms will be developed that identify critical events and assess threats, and provide situational awareness from both an integrated global perspective as well as a local area perspective. The purpose of this system is to improve quality, accessibility, and timeliness of intelligence.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement has enabled Honeywell and its team members to work within the highly efficient Chemical, Biological & Radiological National Technology Alliance (CBRTA) team framework. The sharing of member research and development thrusts within the CBRTA has helped Honeywell to identify potential future efforts that can be supported within this research program and that can broaden the domain of applicability of the MASINT system for DoD.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement placed trusted and knowledgeable individuals from divergent companies into an environment designed for collaboration and cooperation so that the access to the technologies and the knowledge base present in these divergent corporations could only be accomplished through the agreement. This agreement with the CBRTA has provided a streamlined mechanism for facilitating this potential inter-agency Measurement and Signature Intelligence (MASINT) Consortium (DIA, CIA, NRO, DARPA and NASA) collaboration with the CBRTA member organizations. Relationships within the CBRTA will allow Honeywell (the program technical lead) to respond more expeditiously to sponsor directions within this program through utilization of the broadened technology base provided by the on-going, commercially-driven R&D at the CBRTA member organizations.

Other benefits to the DOD through use of this agreement:
Other markets for the Decentralized-Fusion, On-Demand Activation, Awareness Sensor Network system can be developed by helping each customer overcome specific challenges by deploying a robust, reliable system, with near-real-time detection/characterization, ease of use, and multiple means of communication.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: NMA401-02-9-2002

Task Number: 0018

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: National Technology Alliance, CBRTA

Awarding Office: NATL GEOSPATIAL-INTELLIGENCE AGENCY

Awardee: 3M, On Behalf Of CBRTA

Effective Date: 27 Jun 2005

Estimated Completion or Expiration Date: 27 Jun 2006

U.S. Government Dollars: $ 821,500

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
Biometrics is emerging as a reliable means of controlling access to both physical and virtual spaces. As the amount of biometric data available to government agencies is growing, there is an increasing need for new techniques to manage, organize and utilize nationwide biometric databases for use in homeland security, border security, law enforcement and intelligence applications. The research community has thus far focused only on accuracy with small databases, while neglecting the scalability and speed issues which are important to large database applications. While the vast majority of the biometric research community is exclusively focusing on modalities such as face and fingerprints, insufficient exploratory research has been done in new modalities that can be captured unobtrusively and covertly, and can augment or replace existing obtrusive modalities. The possibility of using objective measurements of behavioral traits as a biometric is relatively unexplored.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement has enabled Calspan-U of Buffalo Research Center (CUBRC) to team with a non-traditional defense contractor, the State University of New York at Buffalo, Center for Unified Biometrics in a collaboration that would not have been possible outside of the agreement structure because the University at Buffalo does not accept work that is classified in nature. This strengthened teaming arrangement offers potential for meeting other DoD needs as they arise.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
In meeting with the technical personnel within DIA, development of advanced biometric data collection and analysis techniques were identified as a critical need. The Chemical, Biological & Radiological National Technology Alliance (CBRTA) has the necessary skill sets and infrastructure required to perform activities such as those identified in the Statement of Work. This agreement will bring together the planning, experimental design, fabrication, and test execution skill sets from within the CBRTA to tackle the difficult challenge of meeting US biometric requirements.

Other benefits to the DOD through use of this agreement:
This agreement has placed trusted and knowledgeable individuals from competing companies into an environment designed for collaboration and cooperation. Access to the technologies, knowledge base, and infrastructure required for this program can best be accomplished through the agreement. The expertise, data, and insights hidden in the work history and relationships of companies that normally do not do business with the government are directly applicable to U.S. national security biometric needs.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: NMA401-02-9-2002

Task Number: 0019

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: National Technology Alliance, CBRTA

Awarding Office: NATL GEOSPATIAL-INTELLIGENCE AGENCY

Awardee: 3M, On Behalf Of CBRTA

Effective Date: 01 Jun 2005

Estimated Completion or Expiration Date: 01 Jun 2006

U.S. Government Dollars: $ 1,700,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objectives of this effort are to explore the capabilities and limitations of biometric identification systems, and to develop advanced biometric technologies. The program directly addresses the US Government's need to exploit biometrics technology, by evaluating the strengths and limitations of emerging technology and the resulting products and systems that may be encountered around the world; developing specialized tools and systems that use or exploit biometrics; and developing a comprehensive capability to manage the human identity information in diverse databases. The purpose of this system is to improve quality, accessibility, and timeliness of intelligence.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement has enabled Honeywell and its team members to work within the highly efficient Chemical, Biological & Radiological National Technology Alliance (CBRTA) team framework. The sharing of member research and development thrusts within the CBRTA has helped Honeywell to identify potential future efforts that can be supported within this research program and that can broaden the domain of applicability of the biometrics technology for DoD and the intelligence community.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement has placed trusted and knowledgeable individuals from divergent companies into an environment designed for collaboration and cooperation so that the access to the technologies and the knowledge base present in these divergent corporations could only be accomplished through the agreement. The agreement with the CBRTA has provided a streamlined mechanism for facilitating this potential inter-agency collaboration with the CBRTA member organizations. Relationships within the CBRTA will allow Honeywell (the program technical lead) to respond more expeditiously to sponsor directions within this program through utilization of the broadened technology base provided by the on-going, commercially-driven R&D at the CBRTA member organizations.

Other benefits to the DOD through use of this agreement:
Future uses for this system could reach across many government and commercial applications including force protection, homeland security, industrial security, and police. The Biometrics Evaluation and Integration Project program will, by enabling improved identification and characterization of personnel, enhance the ability of many weapons to address their mission targets. This will include perimeter security and force protection as well as force projection missions.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: NMA401-02-9-2002

Task Number: 0020

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: National Technology Alliance. CBRTA

Awarding Office: NATL GEOSPATIAL-INTELLIGENCE AGENCY

Awardee: 3M on Behalf of CBRTA

Effective Date: 27 Jun 2005

Estimated Completion or Expiration Date: 29 Sep 2006

U.S. Government Dollars: $ 966,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The Remote Underwater Sampling Station (RUSS) program seeks to meet U.S. Government user needs through the design, prototype, and demonstration of a modular device for providing connectivity between *in situ* sensors and information consumers over long periods of time in a variety of sites, including remote or hostile/denied locations. The RUSS program will address force and area protection requirements for Combatant Commanders and civil authorities. RUSS will be designed to accept a wide variety of present and future sensors and communication devices. The overarching objectives of the RUSS program are to produce a highly modular hardware and software system that facilitates rapid deployment of *in situ* sensors in support of a wide range of military and civil sensing needs by providing easy connectivity between sensors and information consumers, and to design the system in such a manner that it is suitable for rapid technology refresh.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement has enabled OSD to access expertise that would be difficult to engage through other means in a timely and effective manner.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement has established a mechanism by which industrial capabilities of the USA can be more effectively utilized in support of national security goals. Additionally, the agreement is substantially facilitating the ultimate transition of commercial research into national security applications.

Other benefits to the DOD through use of this agreement:
The RUSS system will be an element of military sensing systems engaged in threat detection, site monitoring, or area surveillance, and will thus be a weapons-related system by itself, and can also be configured into larger military command and control systems.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: NMA401-02-9-2002

Task Number: 0021

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: National Technology Alliance-CBRTA

Awarding Office: NATL GEOSPATIAL-INTELLIGENCE AGENCY

Awardee: 3M, On Behalf Of CBRTA

Effective Date: 22 Sep 2005

Estimated Completion or Expiration Date: 22 May 2006

U.S. Government Dollars: $ 600,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objectives of Deployable Aerosol Collection System (DACS) are 1) to test the first generation DACS sampler at testing facility and 2) to redesign, fabricate and deliver 2 second generation, smaller DACS sampling systems that are rugged and operated through a wireless communication module.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement will allow a rapid transition of a prototype technology to meet the government's needs for Homeland Security. It will also provide a mechanism for rapidly testing and evaluating different and competing air sampling technologies leading to a redesigned and optimized solution for the government.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This agreement placed trusted and knowledgeable individuals into an environment designed for collaboration and cooperation so that the access to the technologies and the knowledge base present in these divergent corporations could only be accomplished through the agreement.

Other benefits to the DOD through use of this agreement:
The capabilities developed in this effort are directly related to DoD/IC needs to support fielded weapons systems that require automated collection functionality and reduced logistical burden.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15P7T-04-9-K446

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: EHF SOLID STATE POWER AMPLIFIER FOR HC3

Awarding Office: XR W4GV USA HQ COMM ELECT CMD

Awardee: NORTHROP GRUMMAN SPACE & MISSION SYSTEMS CORP

Effective Date: 20 Aug 2004

Estimated Completion or Expiration Date: 30 Sep 2005

U.S. Government Dollars: $ 1,000,000

Non-Government Dollars: $ 500,000

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The primary focus of this effort is the development and demonstration of an SSPA Solid State Power Amplifier (SSPA) with a goal of >10W at 44GHz and a form factor of less than 25 in 3. This effort specifically solicits novel designs capable of being scaled to higher power outputs with minimal decrease in efficiency and increase in overall size and weight. A small form factor, high efficiency, high power, low cost SSPA is essential to fielding a reliable, affordable, full duplex, on-the-move SATCOM system in support of the Army's Objective Force.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
Current Q-band power amplifiers are only marginally efficient and occupy significant volume. As the Army moves to a faster, lighter, more survivable and lethal Future Force, improvements in size, weight, power, efficiency and performance are essential. This SSPA will provide a 10+W solution that is easily scalable to 30+W with no change in size or form factor (<25in3). This capability will both allow for retrofitting existing Q-band systems and equipping current and future terminals with high-efficiency, high power solid state amplifiers. This end product will save valuable real estate in space-limited Future Combat Systems (FCS) vehicles, permitting more critical equipment to be carried by the Warfighter. Additionally, the SSPA will improve communications capacity and connectivity, enabling better performance from existing terminals and permitting further size reductions and performance improvements for future systems. All of these factors contribute to an increase in survivability, lethality and maneuverability for the Warfighter.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The major goal of this program is to develop a technology solution for the Army for a highly efficient, high power EHF SSPA meeting the requirements for EHS SATCOM communications in a highly mobile environment. Current designs do not meet requirements for output power, efficiency, size and cost. These are the same issues that the commercial world is addressing for applications like wideband Code Division Multiple Access (CDMA) and Enhanced Data rate for GSM Evolution (EDGE) for mobile phone base stations. Techniques from these commercial product developments, such as low cost millimeter wave packaging and power combining, can be directly applied to Government EHF type application.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15P7T-05-9-P232

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Radar Scope: Wall Penetrating Personnel Detection System

Awarding Office: XR W4GV USA HQ COMM ELECT CMD

Awardee: Cyterra Corporation

Effective Date: 02 Aug 2005

Estimated Completion or Expiration Date: 02 Jan 2006

U.S. Government Dollars: $ 450,138

Non-Government Dollars: $ 250,143

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The use of the other transaction agreement in the case of the DARPA Radar Scope: Wall Penetrating Personnel Detection (WPPD) Program was critical in that it allowed the Government to broaden its search area of technically capable contractors. The agreement and the additional latitude that it allows the developer contractor should increase the technical range and experimentation of the development without necessarily increasing the risk of the overall success of the program.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of the other transaction agreement in the DARPA Radar Scope: Wall Penetrating Personnel Detection (WPPD) Program has allowed DARPA and the Government to foster a mutually beneficial relationship where technical success and cost management is a reciprocal concern of both parties. Both the contractor developer and the Government will benefit from technical success and cost containment. Ultimate success will benefit both national security and troop safety. The use of the agreement has the beginnings of a better working relationship as it is clear to both parties that each has a major investment in the success of the overall program.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The agreement benefits the Government in that it allowed the Government to go with the contractor that put forth the best proposal and limits the Government's initial investment while simultaneously providing an up-front incentive to the developer contractor that is not solely based on funding. There is a real mutual desire to succeed as all have a real capital investment.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15P7T-05-9-R005

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Advanced Polymer Molding Demonstration

Awarding Office: XR W4GV USA HQ COMM ELECT CMD

Awardee: 3M Company

Effective Date: 24 Feb 2005

Estimated Completion or Expiration Date: 23 Oct 2005

U.S. Government Dollars: $ 1,547,251

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of this effort is to develop tooling and processes so as to rapidly mold large quantities of specific high-temperature plastic components at affordable prices. These components serve a military purpose. The Government requires the plastic components be produced with a high-temperature material such as G.E. Ultem (polyetherimide) Film. Ultem Film is very difficult to process because it requires molding temperatures and pressures much higher than virtually all other polymers.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The first objective of this program is to investigate continuous embossing processing methods using available, unclassified, "generic" tooling. If the results of this approach indicate that high-speed processing of these materials appears feasible, the fabrication of classified tooling processing capable of producing prototype components will then be undertaken. This classified tooling process technology will be evaluated for processing prototype components at high-production rates necessary to satisfy the requirements of the Government. The undertaking of the second and third objectives is predicated on the success of each preceding effort, each one of which will be evaluated by the Government.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This DARPA project with 3M for Advanced Polymer Molding will explore the possibility of fulfilling requirements to produce classified tooling at high production rates using unclassified "generic" tooling. If the results indicate that high-speed processing appears feasible, the fabrication of classified tooling processing capable of producing prototype components will then be undertaken.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15QKN-04-0-0700

Task Number: 0001

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: University Of Medicine And Dentistry Of New Jersey

Effective Date: 30 Aug 2004

Estimated Completion or Expiration Date: 30 Aug 2008

U.S. Government Dollars: $ 4,173,184

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective is to better understand how people perform and behave when they are subjected to Tactical Fog (TF), define the safety outcomes from exposure to TF, and to promote and develop new ideas for systems that deliver and utilize TF.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The major purpose of this agreement is to provide intellectual and academic support toward conducting neuroscientific research, training and demonstrations at Picatinny Arsenal. Army Research Development and Engineering Center (ARDEC) has an established capability to develop engineering solutions to problems in both military and homeland defense applications directly relevant to weapons and weapon systems, both lethal and non-lethal, presently under development at Picatinny for the DoD. For example, scaleable target effects systems, made possible by emerging advanced energy technologies, represent an appealing new category of weapons for a variety of military and homeland defense situations. ARDEC is in the process of constructing state-of-the-art laboratory facilities to validate human responses to advance technology solutions. ARDEC has recognized the need for a capability to generate such data and created the Target Behavioral Response Laboratory (TBRL) to evaluate human behavioral responses to aversive stimuli primarily created by advanced energy systems. Also, an Emergency Operations Center (EOC) is under construction. The overall goals are to create a large indoor facility at the TBRL to evaluate effects with individuals and groups simulating crowds under a wide range of motivational situations and with extensive data collection capabilities and the building of a facility for training and research toward emergency responses to terrorism.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of the other transaction agreement establishes a business relationship with a unique and diverse non-traditional collaboration of institutes that would be difficult or impossible to attain under a standard contract, grants, or cooperative agreement. Under a previous grant with ARDEC, collaboration was formed with the Department of Neuroscience, New Jersey Medical School (NJMS) in conjunction with Neurology Service, Department of Veterans Affairs New Jersey Health Care System (NJHCS), and East Orange (EO), New Jersey. This resulted in the creation within the NJMS of the Stress and Motivated Behavior Institute (SMBI). The SMBI joins core faculty from the New Jersey Medical School, as well as faculty whose appointments are primarily at other institutions (e.g., New Jersey Institute of Technology, University of California at Los Angeles, University of Arizona).

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15QKN-04-9-0700

Task Number: 0002

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Neuroscientific Demonstrations

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: University Of Medicine And Dentistry Of New Jersey

Effective Date: 23 Sep 2004

Estimated Completion or Expiration Date: 30 Aug 2008

U.S. Government Dollars: $ 4,173,184

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The contractor shall perform a coordinated research and development program entitled "Effects of Synthetic Fog (Aqueous Solutions Glycol and Glyerin) on Lung Function". The objective is to develop a program to administer synthetic fog to assess safety.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The major purpose of this agreement is to provide intellectual and academic support toward conducting neuroscientific research, training and demonstrations at Picatinny Arsenal. Army Research Development and Engineering Center (ARDEC) has an established capability to develop engineering solutions to problems in both military and homeland defense applications directly relevant to several weapons and weapon systems, both lethal and non-lethal, presently under development at Picatinny for the DoD. For example, scaleable target effects systems, made possible by emerging advanced energy technologies, represent an appealing new category of weapons for a variety of military and homeland defense situations. ARDEC is in the process of constructing state-of-the-art laboratory facilities to validate human responses to advance technology solutions. ARDEC has recognized the need for a capability to generate such data and created the Target Behavioral Response Laboratory (TBRL) to evaluate human behavioral responses to aversive stimuli primarily created by advanced energy systems. Also, an Emergency Operations Center (EOC) is under construction. The overall goals are to create a large indoor facility at the TBRL to evaluate effects with individuals and groups simulating crowds under a wide range of motivational situations and with extensive data collection capabilities and the building of a facility for training and research toward emergency responses to terrorism.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of the other transaction agreement establishes a business relationship with a unique and diverse non-traditional collaboration of institutes that would be difficult or impossible to attain under a standard contract, grants, or cooperative agreement. Under a previous grant with ARDEC, collaboration was formed with the Department of Neuroscience, New Jersey Medical School (NJMS) in conjunction with Neurology Service, Department of Veterans Affairs New Jersey Health Care System (NJHCS), and East Orange (EO), New Jersey. This resulted in the creation within the NJMS of the Stress and Motivated Behavior Institute (SMBI). The SMBI joins core faculty from the New Jersey Medical School, as well as faculty whose appointments are primarily at other institutions (e.g., New Jersey Institute of Technology, University of California at Los Angeles, University of Arizona).

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15QKN-04-9-0700

Task Number: 0003

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Neuroscientific Demonstrations

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: University Of Medicine And Dentistry Of New Jersey

Effective Date: 28 Apr 2005

Estimated Completion or Expiration Date: 30 Aug 2008

U.S. Government Dollars: $ 4,173,184

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The contractor will evaluate established training regimens for the degree of stressfulness instilled in trainees from physiological and psychological perspectives.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
New Jersey Medical School (NJMS) will provide intellectual and academic support toward conducting neuroscientific research, training and demonstrations at Army Research Development and Engineering Center (ARDEC). ARDEC has an established capability to develop engineering solutions to problems in both military and homeland defense applications directly relevant to several weapons and weapon systems, both lethal and non-lethal, presently under development at Picatinny for the DoD. For example, scaleable target effects systems, represent an appealing new category of weapons for a variety of military and homeland defense situations. ARDEC is in the process of constructing state-of-the-art laboratory facilities to validate human responses to advance technology solutions. ARDEC is creating a Target Behavioral Response Laboratory (TBRL) to evaluate human behavioral responses to aversive stimuli primarily created by advanced energy systems. Also, an Emergency Operations Center (EOC) is under construction. In this EOC, technologies and systems may be integrated to improve management in times of crisis such as terrorist acts. The overall goals are to create a large indoor facility at the TBRL to evaluate effects with individuals and groups simulating crowds under a wide range of motivational situations and with extensive data collection capabilities and the building of a facility for training and research toward emergency responses to terrorism.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of the other transaction agreement establishes a business relationship with a unique and diverse non-traditional collaboration of institutes that would be difficult or impossible to attain under a standard contract, grants, or cooperative agreement. Under a previous grant with ARDEC, collaboration was formed with the Department of Neuroscience, NJMS in conjunction with Neurology Service, Department of Veterans Affairs New Jersey Health Care System (NJHCS), and East Orange (EO), New Jersey. This resulted in the creation within the NJMS of the Stress and Motivated Behavior Institute (SMBI). The SMBI joins core faculty from the New Jersey Medical School, as well as faculty whose appointments are primarily at other institutions (e.g., New Jersey Institute of Technology, University of California at Los Angeles, University of Arizona). The grant is was limited to archival research and limited laboratory experimentation. A basic requirement for experimentation with human subjects is the need for Institutional Review Board approval of Human Use Protocols. It is not possible for ARDEC to employ scientists with appropriate credentials and appointments to prepare such documents and conduct such experiments.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15QKN-04-9-0700

Task Number: 0004

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Neuroscientific Demonstrations

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY

Effective Date: 12 Jul 2005

Estimated Completion or Expiration Date: 30 Aug 2005

U.S. Government Dollars: $ 4,173,184

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The effort consists of sequential phases of the research process concerning sound and light interference with targeting. Participation in security training exercises to be followed by a series of specifically designed demonstrations during training to better understand the problem, and especially to define the experimental needs. An initial set of experiments with human subjects to further refine the problems and the metrics needed to establish a realistic, useful experimental analog to the space-entry problem. The result will be a prototypical/experimental analog to the space-entry problem on flash-bang munitions.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
NJMS will provide Intellectual and academic support toward conducting neuroscientific research, training and demonstrations at Picatinny Arsenal. Army Research Development and Engineering Center (ARDEC) has an established capability to develop engineering solutions to problems in both military and homeland defense applications directly relevant to weapons and weapon systems, both lethal and non-lethal, presently under development at Picatinny for the DoD. For example, scaleable target effects systems, made possible by emerging advanced energy technologies, represent an appealing new category of weapons for a variety of military and homeland defense situations. ARDEC is in the process of constructing state-of-the-art laboratory facilities to validate human responses to advance technology solutions. ARDEC has recognized the need for a capability to generate such data and created the Target Behavioral Response Laboratory (TBRL) to evaluate human behavioral responses to aversive stimuli primarily created by advanced energy systems. Also, an Emergency Operations Center (EOC) is under construction. In this EOC, technologies and systems may be integrated to improve management in times of crisis such as terrorist acts. ARDEC needs to evaluate these systems and human performance in as realistic a manner as possible. The overall goals are to create a large indoor facility at the TBRL to evaluate effects with individuals and groups simulating crowds under a wide range of motivational situations and with extensive data collection capabilities and the building of a facility for training and research toward emergency responses to terrorism.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of the Prototype other transaction establishes a business relationship with a unique and diverse non-traditional collaboration of institutes that would be difficult or impossible to attain under a standard contract, grants, or cooperative agreement. Under a previous Grant with ARDEC, collaboration was formed with the Department of Neuroscience, New Jersey Medical School (NJMS) in conjunction with

Neurology Service, Department of Veterans Affairs New Jersey Health Care System (NJHCS), and East Orange (EO), New Jersey. This resulted in the creation within the NJMS of the Stress and Motivated Behavior Institute (SMBI). The SMBI joins core faculty from the New Jersey Medical School, as well as faculty whose appointments are primarily at other institutions (e.g., New Jersey Institute of Technology, University of California at Los Angeles, University of Arizona). The grant is limited to archival research and limited laboratory experimentation. A basic requirement for experimentation with human subjects is the need for Institutional Review Board approval of Human Use Protocols. It is not possible for ARDEC to employ scientists with appropriate credentials and appointments to prepare such documents and conduct such experiments. The SMBI is staffed for just an effort but it is necessary to establish this other transaction for their efforts to be applied to these experiments, which lie outside the scope of the previously mentioned grant. The intent is to prepare separate tasks to NJMS/SMBI for each of the experiments to be conducted to provide the appropriate researchers and biomedical staff as needed.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15QKN-04-9-0700

Task Number: 0005

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Neuroscientific Demonstrations

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: University Of Medicine And Dentistry Of New Jersey

Effective Date: 26 Sep 2005

Estimated Completion or Expiration Date: 30 Aug 2008

U.S. Government Dollars: $ 4,173,184

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
To assist Army Research Development and Engineering Center (ARDEC) in determining whether log range-directional acoustic devices in general, and the Long Range Acoustic Device (LRAD) in particular, can be used more aggressively in protecting assets and controlling areas as part of the overall non-lethal mission capabilities.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
New Jersey Medical School (NJMS) will provide intellectual and academic support toward conducting neuroscientific research, training and demonstrations at Picatinny Arsenal. ARDEC has an established capability to develop engineering solutions to problems in both military and homeland defense applications directly relevant to several weapons and weapon systems, both lethal and non-lethal, presently under development at Picatinny for the DoD. For example, scaleable target effects systems, made possible by emerging advanced energy technologies, represent an appealing new category of weapons for a variety of military and homeland defense situations.

ARDEC is in the process of constructing state-of-the-art laboratory facilities to validate human responses to advance technology solutions. ARDEC has recognized the need for a capability to generate such data and created the Target Behavioral Response Laboratory (TBRL) to evaluate human behavioral responses to aversive stimuli primarily created by advanced energy systems. Also, an Emergency Operations Center (EOC) is under construction. In this EOC, technologies and systems may be integrated to improve management in times of crisis such as terrorist acts. ARDEC needs to evaluate these systems and human performance in as realistic a manner as possible. The overall goals are to create a large indoor facility at the TBRL to evaluate effects with individuals and groups simulating crowds under a wide range of motivational situations and with extensive data collection capabilities and the building of a facility for training and research toward emergency responses to terrorism.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of the other transaction agreement establishes a business relationship with a unique and diverse non-traditional collaboration of institutes that would be difficult or impossible to attain under a standard contract, grants, or cooperative agreement. Under a previous grant with ARDEC, collaboration was formed with the Department of Neuroscience, NJMS in conjunction with Neurology Service, Department of Veterans Affairs New Jersey Health Care System (NJHCS), and East Orange (EO), New Jersey. This resulted in the creation within the NJMS of the Stress and Motivated Behavior Institute (SMBI). The SMBI joins core faculty from the New Jersey Medical School, as well as faculty whose appointments are primarily at other institutions (e.g., New Jersey Institute of Technology, University of California at Los Angeles, University of Arizona). The grant is limited to archival research and limited laboratory experimentation. A basic requirement for experimentation with human subjects is the need for

Institutional Review Board approval of Human Use Protocols. It is not possible for ARDEC to employ scientists with appropriate credentials and appointments to prepare such documents and conduct such experiments. The SMBI is staffed for just an effort but it is necessary to establish this otherTransaction for their efforts to be applied to these experiments, which lie outside the scope of the previously mentioned grant. The intent is to prepare separate tasks to NJMS/SMBI for each of the experiments to be conducted to provide the appropriate researchers and biomedical staff as needed.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15QKN-04-9-0701

Task Number: 0002

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Acceleration of Dual Use Technologies

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: INSITECH INC

Effective Date: 30 Nov 2004

Estimated Completion or Expiration Date: 30 Sep 2008

U.S. Government Dollars: $ 11,000,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
This task will continue InSitech's efforts to assist Army Research Development and Engineering Center (ARDEC) in accelerating dual use technology development in core mission areas to include homeland defense/homeland security technology, environmental technology and manufacturing prototyping. The overall goal is to significantly enhance the rapid transition of new technologies to the war fighter through the identification and development of innovative technologies for prototyping. Mission areas directly related include Nano-technologies, Manufacturing process/Rapid prototyping, Environmental technologies, Biomedical technologies, and Homeland Defense/Security technologies. InSitech will perform a market assessment of various technologies to gage marketability and value from a military, public sector and commercial standpoint and present findings and recommendations. Upon approval InSitech will establish business and overall leverage investment strategy for the potential development and commercialization of each technology project. The Miniature Integrated Nuclear Detection System (MINDS) prototype project is near completion. MINDS is a cost effective, high-tech security system that continually monitors the environment for the presence of nuclear spectra. MINDS applications include securing all military bases and immediately fills a gap in national security. The Multi-Network Communicator (MNC) prototype project is currently in process. MNC is an expanded offering that significantly increases the reliability of wireless voice, data, and video services. When used for military applications, communications could be randomly distributed over multiple pathways to frustrate jamming and eavesdropping.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
Use of the prototype other transaction establishes a business relationship with a unique and diverse non-traditional, non-profit corporation that would be difficult or impossible to attain under a standard contract, grant or cooperative agreement and the flexibility inherent in the other transaction will encourage InSitech to utilize commercial practices. Also, using a Prototype other transaction creates an opportunity for ARDEC to leverage its resources to influence the design and development of dual use technologies to satisfy the Army’s mission needs. InSitech is a non-traditional contractor that has never entered into or performed on (1) any procurement contract that is subject to full coverage under the cost accounting standard prescribed pursuant to Section 26 of the Office of Federal Procurement Policy Act (41 U.S.C. 422) and the regulations implementing such section; or (2) any other procurement contract in excess of $500,000 to carry out prototype projects or to perform basic, applied or advanced research projects for a federal agency. InSitech, as a non-traditional contractor, coordinates the interests of state economic development authorities, local municipalities, small businesses, institutions of higher education, and the

private sector.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Fostering New Relationships: Use of the prototype other transaction establishes a business relationship with a unique and diverse non-traditional, non-profit corporation that would be difficult or impossible to attain under a standard contract, grant or cooperative agreement and the flexibility inherent in the other transaction will encourage InSitech to utilize commercial practices. InSitech Inc. was incorporated as a New Jersey based non-profit corporation in November 2003. The purpose for which this corporation was created was to work in conjunction with federal, state and local government entities to lessen the governmental burdens of Government by: a) facilitating the recognition of Picatinny and the surrounding community in New Jersey as a world center of excellence in technology transfer, commercialization, development and service; b) facilitating the recognition of Picatinny and the surrounding community in New Jersey as a world leader in technology enhancement-manufacturing technology, environmental remediation, nanotechnology, homeland defense technology/training, biomedical device development, armament technologies and renewable energy sources; c) positioning Picatinny and the surrounding community in New Jersey to develop job opportunities.

Other benefits to the DOD through use of this agreement:
Over the years, the Army has made substantial investments in military technology, as well as university-led and private sector research and development activities. Recent events, however, have made it imperative that the Army creates new mechanisms to promote the accelerated deployment of critical technologies being developed at government, university and commercial laboratories. It is now essential that critical technologies be rapidly tested, evaluated and fielded in order to meet the Army's evolving roles and mission requirements. Also, the continued reduction of base operation funding over the past decade, has made it essential that the Army explore novel approaches to reduce base operation costs. Recent changes to 10 USC 2667 have now allowed the Army to pursue installation-reshaping strategies through innovative leasing arrangements with the private sector. In light of the above, Picatinny has developed a unique approach to accelerate dual use technology development, enhance its mission objectives and reduce base operation costs through the more efficient and effective utilization of its real property assets. As part of this strategy Picatinny proposes to enter into an 845 Prototype other transaction with InSitech, a non-profit, non traditional, NJ based corporation, for dual use technology development and commercialization of select Picatinny Intellectual Property.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15QKN-04-9-0701

Task Number: 0003

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Acceleration of Dual Use Technologies

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: INSITECH INC

Effective Date: 05 Mar 2005

Estimated Completion or Expiration Date: 30 Sep 2008

U.S. Government Dollars: $ 11,000,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
This task will continue InSitech's effort to assist Army Research Development and Engineering Center (ARDEC) in accelerating dual use technology development in core mission areas to include homeland defense/homeland security technology, environmental technology and manufacturing prototyping. The overall goal is to significantly enhance the rapid transition of new technologies to the war fighter through the identification and development of innovative technologies for prototyping. Mission areas directly related include Nano-technologies, Manufacturing process/Rapid prototyping, Environmental technologies, Biomedical technologies, and Homeland Defense/Security technologies. InSitech will perform a market assessment of various technologies to gage marketability and value from a military, public sector and commercial standpoint and present findings and recommendations. Upon approval InSitech will establish business and overall leverage investment strategy for the potential development and commercialization of each technology project. The Miniature Integrated Nuclear Detection System (MINDS) prototype project is near completion. MINDS is a cost effective, high-tech security system that continually monitors the environment for the presence of nuclear spectra. MINDS applications include securing all military bases and immediately fills a gap in national security. The Multi-Network Communicator (MNC) prototype project is currently in process. MNC is an expanded offering that significantly increases the reliability of wireless voice, data, and video services. When used for military applications, communications could be randomly distributed over multiple pathways to frustrate jamming and eavesdropping.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
Use of the prototype other transaction establishes a business relationship with a unique and diverse non-traditional, non-profit corporation that would be difficult or impossible to attain under a standard contract, grant or cooperative agreement and the flexibility inherent in the other transaction will encourage InSitech to utilize commercial practices. Also, using a prototype other transaction creates an opportunity for ARDEC to leverage its resources to influence the design and development of dual use technologies to satisfy the Army’s mission needs. InSitech is a non-traditional contractor that has never entered into or performed on (1) any procurement contract that is subject to full coverage under the cost accounting standard prescribed pursuant to Section 26 of the Office of Federal Procurement Policy Act (41 U.S.C. 422) and the regulations implementing such section; or (2) any other procurement contract in excess of $500,000 to carry out prototype projects or to perform basic, applied or advanced research projects for a federal agency. InSitech, as a non-traditional contractor, coordinates the interests of state economic development authorities, local municipalities, small businesses, institutions of higher education, and the

private sector.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of the prototype other transaction establishes a business relationship with a unique and diverse non-traditional, non-profit corporation that would be difficult or impossible to attain under a standard contract, grant or cooperative agreement and the flexibility inherent in the other transaction will encourage InSitech to utilize commercial practices. InSitech Inc. was incorporated as a New Jersey based non-profit corporation in November 2003. The purpose for which this corporation was created was to work in conjunction with federal, state and local government entities to lessen the governmental burdens of Government by: a) facilitating the recognition of Picatinny and the surrounding community in New Jersey as a world center of excellence in technology transfer, commercialization, development and service; b) facilitating the recognition of Picatinny and the surrounding community in New Jersey as a world leader in technology enhancement-manufacturing technology, environmental remediation, nanotechnology, homeland defense technology/training, biomedical device development, armament technologies and renewable energy sources; c) positioning Picatinny and the surrounding community in New Jersey to develop job opportunities.

Other benefits to the DOD through use of this agreement:
Over the years, the Army has made substantial investments in military technology, as well as university-led and private sector research and development activities. Recent events, however, have made it imperative that the Army creates new mechanisms to promote the accelerated deployment of critical technologies being developed at government, university and commercial laboratories. It is now essential that critical technologies be rapidly tested, evaluated and fielded in order to meet the Army?s evolving roles and mission requirements. Also, the continued reduction of base operation funding over the past decade, has made it essential that the Army explore novel approaches to reduce base operation costs. Recent changes to 10 USC 2667 have now allowed the Army to pursue installation-reshaping strategies through innovative leasing arrangements with the private sector. In light of the above, Picatinny has developed a unique approach to accelerate dual use technology development, enhance its mission objectives and reduce base operation costs through the more efficient and effective utilization of its real property assets. As part of this strategy Picatinny proposes to enter into an 845 prototype other transaction with InSitech, a non-profit, non traditional, NJ based corporation, for dual use technology development and commercialization of select Picatinny Intellectual Property. The planned cost is $11M over a three-year period.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15QKN-04-9-0701

Task Number: 0004

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Acceleration of Dual Use Technologies

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: INSITECH INC

Effective Date: 21 Sep 2005

Estimated Completion or Expiration Date: 30 Sep 2008

U.S. Government Dollars: $ 11,000,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
This task will continue InSitech's efforts to assist Army Research Development and Engineering Center (ARDEC) in accelerating dual use technology development in core mission areas to include homeland defense/homeland security technology, environmental technology and manufacturing prototyping. The overall goal is to significantly enhance the rapid transition of new technologies to the war fighter through the identification and development of innovative technologies for prototyping. Mission areas directly related include Nano-technologies, Manufacturing process/Rapid prototyping, Environmental technologies, Biomedical technologies, and Homeland Defense/Security technologies. InSitech will perform a market assessment of various technologies to gage marketability and value from a military, public sector and commercial standpoint and present findings and recommendations. Upon approval InSitech will establish business and overall leverage investment strategy for the potential development and commercialization of each technology project. The Miniature Integrated Nuclear Detection System (MINDS) prototype project is near completion. MINDS is a cost effective, high-tech security system that continually monitors the environment for the presence of nuclear spectra. MINDS applications include securing all military bases and immediately fills a gap in national security. The Multi-Network Communicator (MNC) prototype project is also nearing completion. MNC is an expanded offering that significantly increases the reliability of wireless voice, data, and video services. When used for military applications, communications could be randomly distributed over multiple pathways to frustrate jamming and eavesdropping.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
Use of the prototype other transaction establishes a business relationship with a unique and diverse non-traditional, non-profit corporation that would be difficult or impossible to attain under a standard contract, grant or cooperative agreement and the flexibility inherent in the other transaction will encourage InSitech to utilize commercial practices. Also, using a prototype other transaction creates an opportunity for ARDEC to leverage its resources to influence the design and development of dual use technologies to satisfy the Army’s mission needs. InSitech is a non-traditional contractor that has never entered into or performed on (1) any procurement contract that is subject to full coverage under the cost accounting standard prescribed pursuant to Section 26 of the Office of Federal Procurement Policy Act (41 U.S.C. 422) and the regulations implementing such section; or (2) any other procurement contract in excess of $500,000 to carry out prototype projects or to perform basic, applied or advanced research projects for a federal agency. InSitech, as a non-traditional contractor, coordinates the interests of state economic development authorities, local municipalities, small businesses, institutions of higher education, and the

private sector.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Use of the prototype other transaction establishes a business relationship with a unique and diverse non-traditional, non-profit corporation that would be difficult or impossible to attain under a standard contract, grant or cooperative agreement and the flexibility inherent in the other transaction will encourage InSitech to utilize commercial practices.

InSitech Inc. was incorporated as a New Jersey based non-profit corporation in November 2003. The purpose for which this corporation was created was to work in conjunction with federal, state and local government entities to lessen the governmental burdens of Government by: a) facilitating the recognition of Picatinny and the surrounding community in New Jersey as a world center of excellence in technology transfer, commercialization, development and service; b) facilitating the recognition of Picatinny and the surrounding community in New Jersey as a world leader in technology enhancement-manufacturing technology, environmental remediation, nanotechnology, homeland defense technology/training, biomedical device development, armament technologies and renewable energy sources; c) positioning Picatinny and the surrounding community in New Jersey to develop job opportunities.

Other benefits to the DOD through use of this agreement:
Use of the prototype other transaction establishes a business relationship with a unique and diverse non-traditional, non-profit corporation that would be difficult or impossible to attain under a standard contract, grant or cooperative agreement and the flexibility inherent in the other transaction will encourage InSitech to utilize commercial practices.

The purpose for which this corporation was created was to work in conjunction with federal, state and local government entities to lessen the governmental burdens of Government by: a) facilitating the recognition of Picatinny and the surrounding community in New Jersey as a world center of excellence in technology transfer, commercialization, development and service; b) facilitating the recognition of Picatinny and the surrounding community in New Jersey as a world leader in technology enhancement-manufacturing technology, environmental remediation, nanotechnology, homeland defense technology/training, biomedical device development, armament technologies and renewable energy sources; c) positioning Picatinny and the surrounding community in New Jersey to develop job opportunities.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15QKN-05-9-0700

Task Number: 0001

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Metal Matrix Technology Project (MMTP)

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: 3M Company

Effective Date: 24 Mar 2005

Estimated Completion or Expiration Date: 28 Jan 2009

U.S. Government Dollars: $ 9,319,376

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The government requires engineering and technical services to support the establishment of an agile manufacturing center for the fabrication of prototype ammunition and weapon components fabricated with unique, stiff, strong, light weight Metal Matrix Composite (MMC) materials. The establishment of this capability shall extend MMC technology to manufacturing readiness and offer rapid deployment of ammunition and weapon systems using unconventional materials characterized by lower weight and higher performance for the US Army. This first task is for the casting unit and crane which enables inert gas pressure infiltration of liquid metal into casting molds. The unit is capable of vacuum and high pressure processing, aluminum melting, ceramic preform infiltration and directional solidification.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The major purpose of this agreement is for 3M to conduct research and development, in cooperation with the Government, leading to technology demonstrations in the field of new and advanced aluminum matrix composites for various weapon system applications. 3M will assist Army Research Development and Engineering Center (ARDEC) in establishing an Agile Manufacturing Center at Picatinny for new and advanced metal matrix composites.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
3M Specialty Materials Division meets the definition of a non-traditional defense contractor. 3M is a separate business unit of 3M Company that has not, for a period of at least one year prior to the date of the agreement, entered into or performed on any procurement contract that is subject to full coverage under the cost accounting standards or any other procurement contract in excess of $500,000 to carry out prototype projects or to perform basic, applied, or advanced research projects for a federal agency. 3M Specialty Materials is primarily a commercial company with only about 1% of its annual sales being made to the Government and presently has 845 prototype with DARPA.

Use of the other transaction agreement establishes a business relationship with a unique and diverse non-traditional, commercial entity that would be difficult or impossible to attain under a standard contract, grant or cooperative agreement and the flexibility inherent in the agreement will encourage 3M to utilize commercial practices. Also, using an other transaction agreement creates the flexibility to negotiate patent rights and data rights since the Bayh-Dole Act does not apply to other transaction agreements. This will allow 3M to negotiate agreements with commercial firms that would not be possible under the normal DFARS data rights and patent clauses, thereby giving the Government access to state-of-the-art technologies not available under procurement contracts.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15QKN-05-9-0700

Task Number: 0002

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Metal Matrix Technology Project (MMTP)

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: 3M Company

Effective Date: 24 Mar 2005

Estimated Completion or Expiration Date: 28 Jan 2009

U.S. Government Dollars: $ 9,319,376

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
Establishment of a Metal Matrix prototype capability at Picatinny for aluminum composite components.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The major purpose of this agreement is for 3M to conduct research and development, in cooperation with the Government, leading to technology demonstrations in the field of new and advanced aluminum matrix composites for various weapon system applications. 3M will assist ARDEC in establishing an Agile Manufacturing Center at Picatinny for new and advanced metal matrix composites.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
3M Specialty Materials Division meets the definition of a non-traditional defense contractor. 3M is a separate business unit of 3M Company that has not, for a period of at least one year prior to the date of the agreement, entered into or performed on any procurement contract that is subject to full coverage under the cost accounting standards or any other procurement contract in excess of $500,000 to carry out prototype projects or to perform basic, applied, or advanced research projects for a federal agency. 3M Specialty Materials is primarily a commercial company with only about 1% of its annual sales being made to the Government and presently has 845 prototype OT's with DARPA.

Use of the other transaction agreement establishes a business relationship with a unique and diverse non-traditional, commercial entity that would be difficult or impossible to attain under a standard contract, grant or cooperative agreement and the flexibility inherent in the other transaction will encourage 3M to utilize commercial practices. Also, the agreement creates the flexibility to negotiate patent rights and data rights since the Bayh-Dole Act does not apply to other transaction agreements. This will allow 3M to negotiate agreements with commercial firms that would not be possible under the normal DFARS data rights and patent clauses, thereby giving the Government access to state-of-the-art technologies not available under procurement contracts.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15QKN-05-9-0700

Task Number: 0003

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Metal Matrix Technology Project (MMTP)

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: 3M Company

Effective Date: 24 Mar 2005

Estimated Completion or Expiration Date: 28 Jan 2009

U.S. Government Dollars: $ 9,319,376

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
This task will move the technologies toward production capability by working on the material science and manufacturing science needed to make metal matrix components producible and affordable. The material system consists of aluminum, reinforced with approximately 60-65% NEXTEL 610 Ceramic Oxide Fiber.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The major purpose of this agreement is for 3M to conduct research and development, in cooperation with the Government, leading to technology demonstrations in the field of new and advanced aluminum matrix composites for various weapon system applications. 3M will assist Army Research Development and Engineering Center (ARDEC) in establishing an Agile Manufacturing Center at Picatinny for new and advanced metal matrix composites.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
3M Specialty Materials Division meets the definition of a non-traditional defense contractor. 3M is a separate business unit of 3M Company that has not, for a period of at least one year prior to the date of the agreement, entered into or performed on any procurement contract that is subject to full coverage under the cost accounting standards or any other procurement contract in excess of $500,000 to carry out prototype projects or to perform basic, applied, or advanced research projects for a federal agency. 3M Specialty Materials is primarily a commercial company with only about 1% of its annual sales being made to the Government and presently has an other transaction agreement with DARPA.

Use of the agreement establishes a business relationship with a unique and diverse non-traditional, commercial entity that would be difficult or impossible to attain under a standard contract, grant or cooperative agreement and the flexibility inherent in the other transaction agreement will encourage 3M to utilize commercial practices. Also, it creates the flexibility to negotiatepatent rights and data rights since the Bayh-Dole Act does not apply to other transaction agreements. This will allow 3M to negotiate agreements with commercial firms that would not be possible under the normal DFARS data rights and patent clauses, thereby giving the Government access to state-of-the-art technologies not available under procurement contracts.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W15QKN-05-9-0700

Task Number: 0004

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Metal Matrix Technology Project (MMTP)

Awarding Office: XR W4GG TACOM PICATINNY

Awardee: 3M Company

Effective Date: 24 Mar 2005

Estimated Completion or Expiration Date: 28 Jan 2009

U.S. Government Dollars: $ 9,319,376

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
Building prototype components.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The major purpose of this agreement is for 3M to conduct research and development, in cooperation with the Government, leading to technology demonstrations in the field of new and advanced aluminum matrix composites for various weapon system applications. 3M will assist ARDEC in establishing an Agile Manufacturing Center at Picatinny for new and advanced metal matrix composites.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
3M Specialty Materials Division meets the definition of a non-traditional defense contractor. 3M is a separate business unit of 3M Company that has not, for a period of at least one year prior to the date of the agreement, entered into or performed on any procurement contract that is subject to full coverage under the cost accounting standards or any other procurement contract in excess of $500,000 to carry out prototype projects or to perform basic, applied, or advanced research projects for a federal agency. 3M Specialty Materials is primarily a commercial company with only about 1% of its annual sales being made to the Government and presently has an other transaction agreement with DARPA.

Use of an other transaction agreement establishes a business relationship with a unique and diverse non-traditional, commercial entity that would be difficult or impossible to attain under a standard contract, grant or cooperative agreement and the flexibility inherent in the agreement will encourage 3M to utilize commercial practices. Also, it creates the flexibility to negotiate patent rights and data rights since the Bayh-Dole Act does not apply to other transaction agreements. This will allow 3M to negotiate agreements with commercial firms that would not be possible under the normal DFARS data rights and patent clauses, thereby giving the Government access to state-of-the-art technologies not available under procurement contracts.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W911NF-04-9-0001

Modification Number: P00003

Task Number: N/A

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Label Switched Optical Router (LASOR)

Awarding Office: XR W2DF RDECOM ACQ CTR DURHAM

Awardee: University of California- Santa Barbara

Effective Date: 01 Dec 2003

Estimated Completion or Expiration Date: 30 Nov 2007

U.S. Government Dollars: $ 15,794,965

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
Technical Objective: Utilizing optics for data routing (sub-wavelength) imposes a new set of functional requirements that push integration much farther than is possible with today's technology. The overall goal of this prototype technology development program is to demonstrate: (1) a new dynamic routing and optical packet switching technology that keeps the data in the optical domain; (2) a multi-port core optical data router (ODR) that keeps data in the optical domain; (3) advances in chip-level integration of key optical data plane (ODP) functions and (4) a ultra-high performance optical packet routing and forwarding system interfacing the ODP with a high performance optical header/label routing processing (control) plane (ERP). The development of an all-optical core router technology and its integration at the chip and multi-chip level with throughput capacities will be scalable to orders of magnitude greater than what is available commercially today. Routing is achieved using high-performance time domain optical labels. The label handling and packet forwarding functions will be integrated into chip sets using amonolitic planar InP integration platform. To overcome the power, weight and size inefficiencies of electronic routers, new all-optical technologies and architectures are needed to switch data at the sub-wavelength granularity, without passing the data through optoelectronic conversions. All-optical routers have the potential to make power consumption independent of bit-rate and overcome memory access and switch capacity bottlenecks. Multiple technological hurdles exist in building the functional equivalent of what exists today in electronic router technology, yet overcomes very real limitations to performance scalability, power consumption and size of today's routers and networks, particularly as they apply to the requirements of military real-time data applications and platforms such as airborne, terrestrial and unmanned aerial vehicles.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This all-optical data router can scale to the enormous capacities and supply the functionality required in future military applications, and it can do so with a fraction of the power, size and expense of existing electronic routers. To meet this challenge a team has been formed with members that have pioneered many of the concepts that will be used and contain expertise in all of the diverse disciplines necessary to successfully address the cross-disciplinary goals and objects of this project.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
This other transaction agreement will broaden the technology and industrial base available for meeting Department of Defense needs.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W911NF-05-9-0001

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Enhanced Survivability for Ground and Air Assets in an Urban Warfare Environment: Nanostructured B4C for Lightweight Armor Applications

Awarding Office: XR W2DF RDECOM ACQ CTR DURHAM

Awardee: P P G Industries Inc

Effective Date: 13 May 2005

Estimated Completion or Expiration Date: 12 May 2009

U.S. Government Dollars: $ 343,685

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of the nanostructured B4C program is to take advantage of two emerging, proprietary, patented technologies - novel low cost plasma synthesis of nano B4C and pressureless sintering - with the goal of creating the necessary infrastructure for transitioning this prototype technology to DoD weapons systems and/or weapons subsystems. The overall nanostructured B4C program transitions the novel low cost plasma synthesis and pressureless sintering process into a research and development infrastructure environment, intended for use by DoD in current and future weapons systems and/or weapons subsystems.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement broadened the technological and industrial base by bringing a well known and respected firm into a research relationship with the Department of Defense. PPG Industries Inc. Coatings and Resins Group is a large firm who works with the US automobile industry but has not done business with the US Government in over 25 years. The technology that this firm offers is novel and revolutionary. This firm is one of very few that can provide the facility capability to do this research. PPG Industries Inc would not have participated in a stimulation instrument such as a cooperative agreement as the intellectual property rights required by the firm were not conducive to the limitations of the Bayh-Dole Act. The firm was not willing to participate in a Contractual action that would require Defense Contract Audit Agency to have access to their records. The other transaction agreement allowed the US Government to work with this firm in a commercially adaptable fashion in which the US Government received the intellectual property and prototypes that it desired and PPG Industries was not forced to change any of their commercial practices in order to work with the Defense Department.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
New relationships were fostered between the firm PPG Industries Inc. Coatings and Resins Group, the Army Research Laboratory, and the Defense Advanced Research Projects Agency. The Program Manager believes that PPG Industries' effort will have a direct impact on body and aircraft armor that can potentially save lives on the battlefield and on the local police forces in the US. The other transaction agreement offered the US Government the option to develop a commercial market agreement in which the firm can further develop their product for industrial markets (auto, aircraft, police protection) while providing research results on a proprietary and revolutionary process to the Department of Defense. The Department of Defense is the recipient of PPG Industries Inc's years of experience in the commercial metallurgy industry.

Other benefits to the DOD through use of this agreement:
By leveraging previous research and technology development done by PPG Industries Inc. and their research results

on this project, the agreement will facilitate the acquisition of prototypes that enhance the survivability of tactical vehicles, tanks, and soldiers. There is a high potential of use of these materials in the Army's ballistics programs, and programs that focus on advanced ballistic protection materiel design. The program will be monitored and managed closely by the Army Research Laboratory as the potential application of the technologies being developed under this program are expected to be numerous for the US Army.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W911NF-05-9-0002

Modification Number: N/A

Task Number: N/A

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: PowerSwim: A Novel Concept for Combat Swimmers

Awarding Office: XR W2DF RDECOM ACQ CTR DURHAM

Awardee: DEKA Research & Development Corp.

Effective Date: 01 Jul 2005

Estimated Completion or Expiration Date: 31 Mar 2006

U.S. Government Dollars: $ 2,809,407

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
Combat swimmers are currently limited to speeds of 1 knot in order to maintain a sustainable caloric burn rate over a period of hours. This speed limit constrains mission planning and prevents missions in some strong tidal areas. Additionally, the maximum mission length is limited to 4 hours due to fatigue and hypothermia, limiting maximum mission distances to 4.5 miles. Placing more propulsive power in the hands of combat swimmers will raise speeds, increase range and carrying capacity, increase mission options and tempo, and deliver a more alert and effective operator on target. This proposal outlines a program to develop a device that will use advanced oscillating foil technology to enable combat swimmers to literally 'fly' through water like efficient swimmers in nature. The concept will be evaluated by measuring the metabolic costs of swimming with conventional fins and then with the oscillating foil device over a range of swimming speeds. Program success will be measured in terms of the reduction in the metabolic cost of swimming at a given speed, and by demonstrating a dramatic increase in the swimmer's maximum sustainable rate of speed.

The overall goals/objectives of the agreement are to increase the overall swimming efficiency such that a given combat swimmer can demonstrate a sustainable speed of 50% higher than the typical sustainable speed achieved using standard-issue swim fins, and to reduce by a factor of 2 the metabolic energy required to maintain a sustained speed of 1 knot.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
Non-Traditional Defense Contractor:
The business arrangement to be made with DEKA seeks to establish a long term, 'future focused' relationship with a non-traditional defense contractor at 'the cutting edge' of technology without requiring the Contractor to change his existing business practices.

Innovative Business Practices for DoD:
DEKA is classified as a small business. Traditionally, small businesses have not been significantly involved in developing and manufacturing weapons systems for DoD.

Rapid Prototyping Advantage for DoD:
DEKA's organizational structure and facilities design both foster constant interaction between and within DEKA's engineering groups. DEKA's machine shop and molding facility are located on-site, enabling the development and testing of prototypes in record time. This rapid prototyping capability is advantageous to the Government.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
Traditionally, significant volumes of defense contracting in the area of weapons systems development have been performed by large business. DEKA Research and Development Corp. is a non-traditional defense contractor classified as small business. The company was founded in 1982 and thrives as an innovative think tank. This prototype agreement is a novel concept inspired under the technical area 'Applications of Biology to Defense Needs: Bio-Inspired Systems.' The business arrangement to be made with DEKA Research and Development Corp. seeks to establish a long term, 'future focused' relationship with a non-traditional defense contractor at 'the cutting edge' of technology without requiring the contractor to change his existing business practices. The contractor has not done much business with the Government in the past, and is currently in the process of developing a business division dedicated to government business. The flexibility provided by 10 U.S.C. Section 845 'other transactions' for prototypes encourages non-traditional defense contractors such as DEKA Research and Development Corp. to contribute to major DoD research and development programs. These non-traditional business arrangements may result in innovative solutions for the Future Force. Additionally, major U.S. corporations are continually seeking to outsource their manufacturing bases to labor markets outside the U.S. This ongoing erosion of the U.S. manufacturing base may pose a threat to national security. Small businesses and 'non-traditional' defense contractors could become very critical players in compensating for lost capabilities in development and manufacturing.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W911NF-05-9-0003

Modification Number: N/A

Task Number: N/A

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Rapid Vertical Mobility Concept/Urban Area Operations

Awarding Office: XR W2DF RDECOM ACQ CTR DURHAM

Awardee: DEKA Research & Development Corp.

Effective Date: 11 Jul 2005

Estimated Completion or Expiration Date: 30 Sep 2006

U.S. Government Dollars: $ 951,300

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
There is currently no effective solution for quickly getting soldiers on top of buildings to dominate the "high ground" in urban operations. Helicopters are not the best answer, as they are susceptible to being shot down by ground fire, which can result in the loss of the helicopter, crew and an entire combat team. Today, soldiers still use the centuries-old methods of climbing ladders or throwing grappling hooks into windows or onto roofs and pulling themselves up. Both of these methods of ascent are extremely slow and leave the soldier vulnerable to enemy fire. Even if a soldier using a grappling hook is successful at "hooking" the building on the first attempt and using power assisted winches to haul himself up, it still takes about two (2) minutes to get to the roof- a long time for someone who is highly vulnerable to enemy fire while ascending. DEKA proposes the application of a high precision catapult to launch a soldier onto a roof with a reusable, pneumatically activated launcher that is mounted to a vehicle, providing significantly greater vertical mobility and enabling more effective urban area operations.

DEKA has already developed and built a prototype launcher that is capable of repeatedly launching one hundred eighty (180) pound payloads to heights over fifty (50) feet. The proposed prototype Program Plan (PPP) aims to (1) refine the current DEKA launcher concept, (2) design and build a second-generation launcher that is more portable and (3) design and analyze adequate safety systems. The second phase outlined in the PPP aims to develop a safety system intended to allow human use of the product. Once the safety systems are acceptable, human use trials will be conducted. The second phase of the PPP will not be conducted or funded under this agreement. The specific technical goal of this program is to reduce the size and weight of the second-generation device, improving its usability and transportability.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
Non-Traditional Defense Contractor: The business arrangement to be made with DEKA seeks to establish a long term, 'future focused' relationship with a non-traditional defense contractor at 'the cutting edge' of technology without requiring the Contractor to change his existing business practices.

Innovative Business Practices for DoD: DEKA Research and Development Corp. is classified as a small business. Traditionally, small businesses have not been significantly involved in developing and manufacturing weapons systems for DoD.

Rapid Prototyping Advantage for DoD:

DEKA's organizational structure and facilities design both foster constant interaction between and within DEKA's engineering groups. DEKA's machine shop and molding facility are located on-site, enabling the development and testing of prototypes in record time. This rapid prototyping capability is advantageous to the Government.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The business arrangement to be made with DEKA Research and Development Corp. seeks to establish a long term, 'future focused' relationship with a non-traditional defense contractor at 'the cutting edge' of technology without requiring the contractor to change his existing business practices. The contractor has not done much business with the Government in the past, and is currently in the process of developing a business division dedicated to government business. DEKA Research and Development Corp. is classified as a small business. Traditionally, small businesses have not been significantly involved in developing and manufacturing weapons systems for the Department of Defense. The flexibility provided by 10 U.S.C. Section 845 'other transactions' for prototypes encourages non-traditional defense contractors such as DEKA Research and Development Corp. to contribute to major DoD research and development programs. These non-traditional business arrangements may result in innovative solutions for the Future Force. Additionally, major U.S. corporations are continually seeking to outsource their manufacturing bases to labor markets outside the U.S. This ongoing erosion of the U.S. manufacturing base may pose a threat to national security. Small businesses and 'non-traditional' defense contractors could become very critical players in compensating for lost capabilities in development and manufacturing.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W911NF-05-9-0004

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Direct Diode Electro-Optic Source (DDEOS)

Awarding Office: XR W2DF RDECOM ACQ CTR DURHAM

Awardee: Alfalight Inc

Effective Date: 29 Jul 2005

Estimated Completion or Expiration Date: 28 Jul 2006

U.S. Government Dollars: $ 4,500,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The objective of the Direct Diode Electro-Optic (DDEOS) program is to put into place technology and capabilities that will be needed for high efficiency, high power, direct diode laser systems. The awardee will develop these diode sources with improved diode architecture for higher brightness. Additionally, this program will address novel beam shaping and steering optics that will preserve the brightness of the source diode lasers. The spectral beam combining and polarization multiplexing techniques will be implemented to achieve 1Kw of CW output power from 600 um diameter fiber with 0.22 NA. The complete system is comprised of diode lasers, beam shaping/steering as well as wavelength and polarization beam combining optics, a thermal management platform, a power supply, and programmable controls.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
This agreement allowed us to involve Alfalight, Inc. in the prototype project. It allowed DoD to take advantage of an emerging, proprietary, patented technology with the goal of creating the necessary infrastructure for transitioning this technology to several DoD weapons systems and/or weapons subsystems. Direct Diode Electro-Optic source technology is currently being used and actively being further developed for upgrades and improved versions of the Directed Energy Weapons systems and mine-clearing systems. Alfalight, Inc. would not have agreed to a contract or an assistance instrument because of the intellectual property provisions required. Alfalight has developed a process to use and prototype the Optical Engines High Brightness Laser Diode Stack Focusing and Fiber Coupling System, the Stack Polarization Combining System, and the Stack Wavelength Combining System at their own expense. Alfalight was only willing to provide the government limited right to the technology. The use of an other transaction agreement allowed flexibility in terms related to intellectual property rights and resulted in successful acquisition of enhancements in the process and architecture that will facilitate upgrades and improvements in Directed Energy Weapons.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
A new relationship was fostered between the Army Research Laboratory and Alfalight Inc. The program manager believes that the use of this type of agreement allowed the firm to use commercial invoicing and accounting practices coupled with commercial intellectual property agreements to allow the Government to benefit from novel and innovative laser technology. Alfalight required intellectual property protections that were not consistent with the Bayh-Dole Act. The use of this agreement allowed the Government to work with a small business and a non-traditional contractor who is closely tied with the university community.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W911NF-05-9-0005

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Very High Efficiency Solar Cell Program titled “50% Efficient Solar Cells"

Awarding Office: XR W2DF RDECOM ACQ CTR DURHAM

Awardee: University Of Delaware

Effective Date: 01 Oct 2005

Estimated Completion or Expiration Date: 30 Sep 2006

U.S. Government Dollars: $ 33,629,779

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The proposed research is considered to provide a unique opportunity to deliver revolutionary capabilities for war fighters. This effort’s objective is to provide the Department of Defense with cost effective solar power at 50% conversion efficiency that will enable a dramatic reduction in battery weight and fuel consumption by all power-consuming weapon systems and a reduction in the logistical burden of the supply chain. The end product to be delivered by the proposed effort is to develop 1000 prototype solar cells with an area of ten square centimeters each providing at least 50% efficient conversion of solar power to electrical power at an assumed solar power fluence of 1000 Watts per square meter. The ultimate manufacturing goals are to have a production cost of less than $1000 per square meter of solar cell with a target goal of $100 per square meter of solar cell.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The proposed research provides a unique opportunity to deliver revolutionary capabilities for war fighters in all facets. With today's technology, a three-day soldier battery load weighs 20 lbs. This is a significant constraint to the technologies and capabilities that the warfighter takes and uses on mission assignments. An unlimited energy source (solar power) combined with rechargeable batteries will provide the dismounted soldier with more power at reduced weight, thus extending the length of time power consuming systems can be used while improving mobility, survivability and the availability of advanced technologies. In addition to serving the needs of the dismounted soldier, the proposed solar power source would augment the existing tactical electrical power program (which relies on diesel/JP-8 fuel for electrical power generation) and is used in nearly all C4ISR systems, weapon systems and other battlefield support equipment

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The business arrangement to be made with the University of Delaware seeks to establish a long term, ‘future focused’ relationship which includes technically essential non-traditional defense contractors using the authority of a Section 845 other transaction for prototype developments. This arrangement by the University of Delaware includes two nontraditional defense contractors. Both are small businesses and one plays a very significant role in the prototype project. Blue Square Energy (BSE), one of the nontraditional partners, plays an essential role in the overall project, being responsible for the silicon-based components and the manufacturing integration. These non-traditional business arrangements may result in innovative solutions for the Future Force. Additionally, major U.S. corporations are continually seeking to outsource their manufacturing bases to labor markets outside the U.S. This ongoing erosion of the U.S. manufacturing base may pose a threat to national security. Small businesses and ‘non-traditional’ defense contractors could become very critical players in compensating for lost capabilities in development and manufacturing.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W56HZV-05-9-0001

Type of Agreement: Acquisition transaction for prototype (using Section 845)

Title: Modeling & Simulation of Utility Vehicle for FTTS ACTD

Awarding Office: SR W4GG HQ US ARMY TACOM

Awardee: INTERNATIONAL TRUCK AND ENGINE CORPORATION

Effective Date: 17 Dec 2004

Estimated Completion or Expiration Date: 30 Sep 2005

U.S. Government Dollars: $ 2,900,000

Non-Government Dollars: $ 0

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objectives of this effort are to model and simulate the utility vehicle with a capacity approximately 2½ - 3 tons.

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement provides DoD with access to emerging commercial technology that, if verified through appropriate modeling and simulation, will identify and assess key technologies and emerging Operational and Sustainment Concepts to develop the requirements of an optimized distribution and C2 / Support platform for the Future Combat Systems (FCS) Unit of Action (UA) and to identify potential product improvements for the current Tactical Wheeled Vehicle fleet. The goal of the FTTS is to support future force operations within the UA with a Tactical Wheeled Vehicle based system.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The use of an other transaction agreement in an Advanced Concept Technology Demonstration emphasizes the development of prototypes that demonstrate proof-of-concept vehicles with advanced technologies. With this other transaction, the recipient will develop new business relationships with various subcontractors, along with fostering and supporting the local industrial base. These relationships will be crucial should this modeling and simulation project perform as expected, and thus lead to a vehicle demonstration and identification of technologies to become a part of the validated requirements for future tactical utility vehicle.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

Agreement Number: W56HZV-05-9-0002

Type of Agreement: Acquisition transaction (in lieu of procurement contracts (under 10 U.S.C. 2371))

Title: FTTS ACTD Utility Vehicle M & S

Awarding Office: SR W4GG HQ US ARMY TACOM

Awardee: LOCKHEED MARTIN CORPORATION

Effective Date: 17 Dec 2004

Estimated Completion or Expiration Date: 30 Sep 2005

U.S. Government Dollars: $ 1,977,091

Non-Government Dollars: $ 2,320,933

Dollars Returned to Government Account: $ 0

Technical objectives of this effort including the technology areas in which the project was conducted:
Modeling & Simulation of Utility Vehicle for Future Tactical Truck System (FTTS) Advanced Concept Technology Demonstration (ACTD).

Extent to which the cooperative agreement or other transaction has contributed to a broadening of the technology and industrial base available for meeting Department of Defense needs:
The use of an other transaction agreement provides DoD with access to emerging commercial technology that, if verified through appropriate modeling and simulation, will identify and assess key technologies and emerging Operational and Sustainment Concepts to develop the requirements of an optimized distribution and C2 / Support platform for the FCS Unit of Action (UA) and to identify potential product improvements for the current Tactical Wheeled Vehicle fleet. The goal of the FTTS is to support future force operations within the UA with a Tactical Wheeled Vehicle based system.

Extent to which the cooperative agreement or other transaction has fostered within the technology and industrial base new relationships and practices that support the national security of the USA:
The use of an other transaction agreement in an Advanced Concept Technology Demonstration emphasizes the development of prototypes that demonstrate proof-of-concept vehicles with advanced technologies. With this other transaction, the recipient will develop new business relationships with various subcontractors, along with fostering and supporting the local industrial base. These relationships will be crucial should this modeling and simulation project perform as expected, and thus lead to a vehicle demonstration and identification of technologies to become a part of the requirements documents for future tactical utility vehicle.

Cooperative Agreements and Other Transactions
Entered for Fiscal Year 2005

The following charts provide a summary of the DoD's use of the three statutory reasons an agency can use to award new prototype other transactions and the level of participation of non-traditional contractors in new other transactions.

Prototype OT Reason Type Code	Number of Awards	% Total Awards	# Distinct Non-Traditional Firms Participating
"A" = Non-Traditional Significant Participation	74	95	79
"B" = Cost Sharing	4	5	0
"C" = SPE Determination of Exceptional Circumstances	0	0	0

# Non-Traditional Companies Participating	79
# Non-Traditional Companies as Prime	49

- New agreements consist only of those agreements coded as Initial Award in the Type of Action reporting block of the DD 2759, REPORT OF OTHER TRANSACTIONS FOR PROTOTYPE PROJECTS.
- Major modifications (increased scope of work) and master agreements are not considered to be new agreements.