



**NAVAL
POSTGRADUATE
SCHOOL**

THESIS

**AN ANALYSIS OF OTHER TRANSACTIONS. HAVE
OTHER TRANSACTIONS MET THE INTENT OF
CONGRESS?**

by

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June 2005

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TRANSACTIONS MET THE INTENT OF CONGRESS?**

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requirements for the degree of

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from the

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ABSTRACT

Department of Defense (DoD) Science and Technology (S&T) programs seek and need the best research and technology, most of which serves the needs of the commercial marketplace. DoD had limited access to these non-traditional performers because many would not accept the onerous requirements imposed by contracts issued under the rules of Federal Acquisition Regulations. In 1989, Congress provided “Other Transaction Authority” (OTA) to address this problem. OTA provided a procurement vehicle which minimized the laws and regulations applicable to contracts, grants, or cooperative agreements. This study examined all DoD reports submitted to Congress detailing Cooperative Agreement and “Other Transaction” awards for fiscal years 1997 - 2003 to determine the extent to which the objectives of the OTA legislation were achieved. The researcher found that only 11 percent of the awards went directly to “non-traditional” contractors, the remaining 89 percent going to traditional defense contractors. Only one-tenth of one percent of all DoD “Research, Development, Test & Evaluation” funding in those fiscal years, awarded in the form of cooperative agreements or “other transactions,” went directly to “non-traditional” contractors. Thus, OTA has proved ineffective at attracting “non-traditional” contractors to DoD S&T projects.

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I. INTRODUCTION

A. GENERAL

The Department of Defense is embarked on efforts to transform the nation's armed forces to meet the demands being placed on them by a changing world order. There is a growing threat of missiles, information warfare and biological, chemical, and nuclear weaponry, different than the cold war era threat, but equally troublesome. Similarly, there is the need to begin creating the military of the future - one that takes full advantage of revolutionary new technologies. Further, the Department must modernize and transform the business of defense, getting the best value for the taxpayer's money. [Ref. 1:p. 1]

The Department of Defense (DoD) Science and Technology (S&T) program has as its primary mission to develop and transition superior technology that enables affordable and decisive military capability. To perform this mission well, it is imperative that DoD S&T programs draw upon the nation's best researchers and technology developers. Among the best S&T performers are many companies that primarily serve the needs of the commercial marketplace. [Ref. 2:p. 41]

By the early 1980's, it was recognized that technology was progressing at an ever-increasing pace. It was also recognized within the Congress and the Department of Defense that the Department was no longer leading the S&T focus of the country. The commercial marketplace was rapidly becoming the primary S&T driver.

Industry's share of national R&D performance has been rising steadily—from two-thirds of the total in the 1970s to nearly three-fourths in the late 1990s. During the same period (1970-97), the academic share rose slightly—from 9-10 percent to 12-13 percent—and the federal share dropped by half—from 16 percent to 8 percent. [Ref. 3:p. 5]

Particularly troubling to the Department was the fact that it was no longer the preferred customer for many of the companies at the forefront of these emerging technologies. [Ref. 4:p. 1] Existing legislation and procurement regulations did not allow the Department of Defense much flexibility with regard to the types of

procurement vehicles available. There was also little flexibility with regard to the plethora of procurement regulations that impacted Department of Defense procurements. [Ref. 5:p. 11]

Congress decided to get involved to ensure that the Department of Defense had access to a broader spectrum of the national technology and industrial base. In November 1989, Congress enacted 10 U.S.C. 2371 (Public Law 101-189, Section 251) giving authority to the Secretary of Defense, through the Defense Advanced Research Projects Agency (DARPA), to conduct research and technology development using “cooperative agreements” or “other transactions”. This authority, initially provided for two years, allowed for the use of instruments that more closely resemble commercial contracts. It was expected that the use of these instruments would improve DoD’s chances to access an otherwise closed source of science and technology (S&T) support. The National Defense Authorization Act for FY 1992 (Public Law 102-190, Section 826) amended 10 U.S.C. 2371 to make the authority permanent, and extended it to the Secretaries of the Military Services. A more detailed discussion of relevant legislation follows in Chapter II.

B. PRIOR RESEARCH

Since 1997, six theses have been generated at the Naval Postgraduate School on the topic of Other Transactions (OTs). To some extent, all address the changing environment affecting science and technology, particularly that part of interest to DoD. They also discussed the legislation making OTs possible. However, as would be expected, the researchers looked at different aspects of OTs.

Tucker (2002) focused on Technology Investment Agreements (TIA) used in DoD’s Dual Use Science and Technology (DUS&T) Program during fiscal years 1997 through 2001. Her thesis describes the genesis of the term TIA.

On 2 December 1997, after determining that having two very similar agreements with different names was confusing, the Director of Defense Research and Engineering (DDR&E), who was responsible for managing research OTs, issued guidance merging the two types of agreements into a single class of instrument called a TIA. [Ref. 5:p. 13]

The two types of agreements referred to in the Tucker thesis are cooperative agreements and OTs for research.

Gilliland (2001) focused on DoD's attempt to attract non-traditional defense contractors by using Section 845 Other Transactions. The period covered by this research was 1994 through 2000. [Ref. 4:p. 5]

Stamatopoulos (1999) also limited his research to Section 845 Other Transactions. He chose to focus his research on "appraisal metrics that measure both the use and value" of this particular segment of Other Transactions. [Ref. 6:p. 4]

Slade (1998) performed research on Other Transactions awarded to support a specific program called the "Commercial Operations and Support Savings Initiative (COSSI)." COSSI was DoD's attempt at inserting commercial components into DoD weapons systems in order to save money. Slade's research was limited to 1997. [Ref. 7]

As with Stamatopoulos (1999), Hayes (1998) addressed the need for management tools. However, whereas Stamatopoulos focused on management metrics, Hayes chose to focus on the decision processes required to determine when an Other Transaction is the proper instrument. [Ref. 8:p. 4]

Howell's (1997) research focused on awards made by DARPA since they were "the most predominant and most experienced user of this contractual vehicle . . ." Howell noted that:

A limitation of this study is that research was conducted principally with DARPA and does not provide a significant perspective on the use of OTs by other DoD components. [Ref. 9:p. 5]

C. RESEARCH OBJECTIVE

The purpose of this thesis is to provide a comprehensive analysis of Department of Defense Other Transaction awards as reported to Congress for fiscal years 1997 through 2003 in order to determine the extent to which these awards have achieved the objectives of the legislation that made them possible. The primary focus of this research is to determine the extent that traditional DoD contractors have benefited from awards citing Other Transaction Authority.

This thesis differs from previous research in that the researcher accessed all reports submitted to Congress over a seven year period. That is, the researcher collected the raw data for this seven-year period whereas previous researchers used statistical data presented in GAO reports, DARPA websites, and presentations by DoD officials.

D. RESEARCH QUESTIONS

1. Primary Question

- Have Other Transactions (OTs) met the intent of Congress?

2. Secondary Questions

- What is congressional intent with respect to Other Transactions?
- What percentage of Department of Defense RDT&E dollars are awarded through the use of Cooperative Agreements or Other Transactions?
- To what extent are the recipients of OTs traditional defense contractors?

E. SCOPE AND METHODOLOGY

Other Transactions were expected to more closely resemble commercial contracts in that Government unique requirements imposed by the Federal Acquisition Regulations (FAR) and various procurement statutes do not apply. Consequently, they should improve DoD's chances to access an otherwise closed source of science and technology (S&T) support. Previous research indicates that these "non-traditional" companies are being accessed using Other Transaction Authority, but not to the extent expected or intended. [Ref. 4:p. 101 and Ref. 5:p. 21]

The approach of this study is to evaluate Other Transaction awards by the Department of Defense for fiscal years 1997 through 2003, to determine the scope of participation of traditional and non-traditional companies.

In order to gain a better understanding of the legislative intent, regulatory implementation, and the execution of Other Transaction Authority by major DoD activities, the researcher first reviewed relevant literature, including but not limited to:

- References, publications, and electronic media available at the Naval Postgraduate School.
- Published reports, databases, journal articles, and research papers.
- Internet websites and homepages.
- Major government investigative reports from the General Accounting Office and the Department of Defense Inspector General.

- For fiscal years 1997 through 2001, the Department of Defense’s Annual Report to Congress on Cooperative Agreements and Other Transactions may be found on the Office of the Secretary of Defense, Defense Procurement and Acquisition Policy (OSD DPAP) website. To obtain the fiscal year 2002 and 2003 reports, this researcher contacted OSD DPAP directly for a copy.

F. ORGANIZATION

The thesis is divided into four chapters. Chapter I, the introduction, identifies the focus and purpose of the thesis, states the primary and secondary research questions and discusses the scope of research and the methodology. Chapter II presents background information on the defense and science and technology environments since the end of the Cold War. This chapter also describes the legislative history and congressional intent of Other Transaction Authority, and provides background on the Department of Defense’s use of Other Transaction Authority since November 1989. Chapter III provides details regarding Department of Defense Other Transaction awards as reported to Congress for fiscal years 1997 through 2003, and identifies the “Top 100” defense contractors for that same period. This chapter also provides a comprehensive analysis of that data. Chapter IV provides the study’s principal conclusions, recommendations, answers to the research questions and identifies areas for future study.

G. BENEFITS OF THE STUDY

This thesis is intended to benefit Congress, DoD policy makers and DoD activities contemplating the use of Other Transactions. An analysis of the intended vs. actual recipients of Other Transactions will help policy makers measure the success of Other Transaction Authority.

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II. BACKGROUND

One of the things that has prevailed particularly in this battle is our technology. [Schwarzkopf]

A. INTRODUCTION

The technology that General Norman Schwarzkopf references in his statement above made all the difference when it came to overwhelming the Iraqis in the first Gulf War, a victory achieved with minimal U.S. casualties. That advanced technology included laser-guided munitions that fly through the front door of a building, stealth aircraft, missiles that can kill enemy missiles, airborne sensors that can detect and kill a single tank or anti-aircraft battery from hundreds of miles away, and night vision goggles that can turn night into day. [Ref. 10:p. 219] Many of these same systems (e.g., the Patriot missile system) were perfected with current state-of-the-art sensors that made them even more deadly in the most recent Iraqi conflict (March 2003).

One could conclude that the United States has a significant lead over any potential adversary and that incremental technological improvements will ensure our lead. What most people do not realize is that most of the systems that performed so impressively in Desert Storm are not new; rather, they are merely improved versions of technology that had been previously developed. The stealth technology in the F-117 is thirty years old. The Patriot missile system contains mostly Viet Nam War era technology. [Ref. 10:p. 220] What we have is “perfected technology.”

A case in point is the smart bomb. These first appeared during World War II. At the time they were called “guided” bombs. These first smart bombs were a vast improvement over their predecessors in their ability to “find the target.” In the early 1970’s, lasers were incorporated into the smart bombs to improve accuracy. Although these bombs were advertised as a new weapon, they were not new. They were merely an improved weapon system. [Ref. 11:p. 1]

“By the 1980s, there were better night vision devices, which also improved smart bomb effectiveness. But these were not new weapons. However, they were pitched as

new “weapons systems” in order to justify the high cost of the night vision gear and all the new electronics needed to make possible night operations by bombers dropping smart bombs.” [Ref. 11:p. 1] By the 1990’s, there were other options for guiding munitions. “In addition to the laser approach, you could also choose a guidance system that had a TV camera in the nose of the bomb, allowing the “weapons officer” on the bomber to literally fly the bomb to very precise targets (even through a window.) [Ref. 11:p. 1]

Most recently, bomb technology has benefited from a new technology called the Global Positioning System (GPS). Now the GPS location could be inserted into the smart bombs memory, and the bomb’s GPS receiver would provide the directions that would guide the bomb to the target. “At this point, the smart bomb, benefiting from five decades of improvements, became cheaper, more reliable, easier to use and remarkably effective.” Again, this was perfected technology, not new technology. [Ref. 11:p. 1]

U.S. military strategy has shifted from countering the threat of a single superpower to preparing to confront future unknown adversaries with unknown capabilities.

The speed of technological change raises unprecedented challenges. The spread of modern weaponry has multiplied the number of sophisticated Third World arsenals that include such items as advanced tanks, attack submarines, and cruise missiles. Of grave concern is the proliferation of nuclear weapons and the means to deliver them. By the year 2000, it is estimated that at least 15 developing nations will have the ability to build ballistic missiles--eight of which either have, or are near to acquiring nuclear capabilities. Thirty countries will have chemical weapons and 10 will be able to deploy biological weapons as well. These threats are clearly on the horizon and we must shape capabilities to respond to them. [Ref. 12:p. ix]

The problem is not just the proliferation of military technologies, but also the widespread availability of weapons on the open market. Other than nuclear weapons, there is very little that any country with money cannot buy. Thus, some Third World nations, especially those with oil reserves, have been able to acquire substantial arsenals. Several nations have bought sophisticated types of weapons that, even if not possessed in large numbers, can severely complicate U.S. defense plans. Anti-ship cruise missiles are an example. [Ref. 13:p. 6]

One need look no further than the uproar during Operation Iraqi Freedom (2003) over Iraq's ability to obtain night vision devices with assistance from Syria, or Iraq's ability to obtain antitank missiles, jamming gear, and support services for those systems from Russian companies for evidence of these trends. [Ref. 14:p. 1 and Ref. 15:p. 1] As General Horner noted,

The Russians sell on the open market the GPS jammer. It's about the size of a package of cigarettes, and it goes out for a limited area, maybe 20 miles, and you just have to build a bigger one if you're going to go out further. [Ref. 16:p. 8]

Throughout the Cold War, United States doctrine focused on countering the Soviet Union's greater numbers of weapon systems with fewer, higher performance weapons. Weapons performance was primarily benchmarked against the capabilities of the Soviet Union. However, despite the fall of the Soviet Union, the U.S. policy of performance over numbers continues. We have been slow to adjust, but the international arms market must now be the benchmark by which the United States measures weapons performance. [Ref. 13:p. 13]

The future choices about the performance of U.S. weapons relative to that of potential enemies will have significant long-term effects on the defense technology and production base supporting U.S. military forces. These choices will determine how much effort is devoted to research for new technology, what the sources of that technology will be, and how it will be paid for. [Ref. 13:p. 13]

The Department of Defense and Congress understand that technology is a force multiplier. It is clear that the uncertainty of future defense budgets requires both continual incremental advances in technology as well as leap-ahead advances if the U.S. is to remain a dominant force in the world.

DoD seeks to transform the armed forces, taking advantage of new technologies and operational concepts to strengthen America's military capabilities. The deployment of robotic, unmanned combat air vehicles (UCAVs) could, one day, replace certain strike aircraft and provide a means to easily overwhelm less sophisticated, opposing air forces. Similarly, the employment of advanced laser communications satellites, coupled with new information warfare techniques, could render most existing command and control systems obsolete and vulnerable.

Transforming DoD should produce new forces capable of projecting power rapidly, precisely, and on a global basis. These forces will be well-tailored to meet the needs of the 21st Century security environment. [Ref. 17:p. 1]

B. DEFENSE INDUSTRY

In 2005, it is difficult to imagine a defense procurement environment not dominated by Lockheed Martin Corporation, The Boeing Company, Northrop Grumman Corporation, Raytheon Corporation, and General Dynamics Corporation. These companies have dominated the Department of Defense acquisition landscape in recent years. [Ref. 18:p. 1 and Ref. 19:p. 1] However, that has not always been the case.

Until the beginning of World War II, the United States had no armaments industry. When the need would arise, this commercial-focused U.S. industry could convert from production of commercial goods and services to production of military goods and services to support the war effort. [Ref. 20: p. 100] These firms viewed this effort as temporary and as such, never really lost their “commercial business” characteristics. At the end of World War II these industries went back to commercial production just as they had before the war.

However, by the mid-1950’s the defense environment was changing. Primarily as a response to the Cold War (1945-1990), the United States was transitioning from a policy of mobilization in time of peril to one of “forces-in-being.” That policy change not only required a large military establishment, but a new industrial entity to support it. President Eisenhower first used the term “military-industrial complex” in his farewell radio and television address to the American people on January 17, 1961. [Ref. 20:p. 100]

In contrast to the World War II experience, the Cold War experience was one where the defense and commercial markets existed simultaneously. As time passed, firms involved in defense-related industries gradually evolved away from commercial practices based in large part on the procurement practices of the Department of Defense. [Ref. 21:p. 242]

Since the end of World War II there have been two major downturns in the defense industry. The period from 1968 to 1974 was the first. The second (1985 – 1997) is discussed below (see “Defense Budgets”). In response to this second downturn, the defense industry underwent a major restructuring. There were 21 companies doing major defense aerospace work in 1993. As shown above, that number has dwindled to five. The increased competition for shrinking defense budgets during the 1985 – 1987 timeframe resulted in a significant number of mergers, acquisitions, and the formation of partnerships among defense contractors. [Ref. 22:p. 144]

As the number of firms decline, the amount of research funded by any one firm will be strongly influenced by the amount of research funded by other firms in their relative market. “Additionally, the resources expended on internal R&D will depend on the expected distribution of work and profits among the firms involved after the prime contractor is selected.” [Ref. 22:p. 144]

C. DEFENSE BUDGETS

Secretary of Defense William S. Cohen noted in the Quadrennial Defense Review Report of May 1997,

During most of the Cold War years, the United States pursued a strategy of containing the Soviet Union. In 1985, America appropriated about \$400 billion for the Department of Defense (in constant, fiscal year 1997 dollars), which constituted 28 percent of our national budget and 7 percent of our Gross National Product. We had more than 2.2 million men and women under arms, with about 500,000 overseas, 1.1 million in the Reserve forces, and 1.1 million civilians in the employment of the Department of Defense. Defense companies employed 3.7 million more and about \$120 billion of our budget went to procurement contracts. [Ref. 23:p. 1]

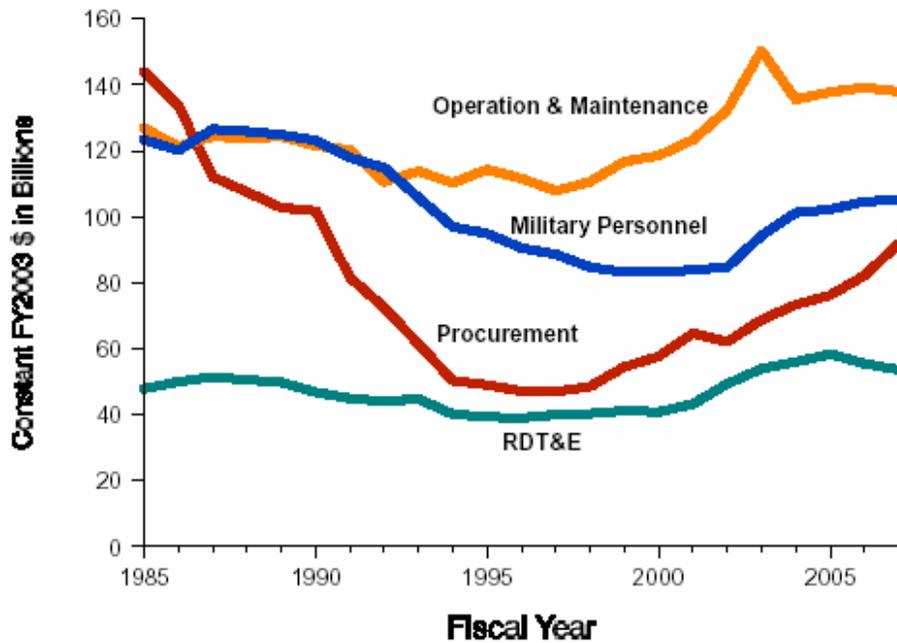


Figure 1. Department of Defense Budget Authority by Title, 1985 - 2007 (From: [Ref. 24:p. 14])

As illustrated in Figure 1, from the peak of the Reagan build-up in 1985 through 1997, the United States made significant changes to Department of Defense funding and manpower in response to the equally significant changes taking place around the world. During that period, the defense budget was reduced by 38 percent. Force structure was reduced by 33 percent. Procurement programs were reduced by 63 percent. At the time the Quadrennial Defense Review Report was released by Secretary Cohen, the budget of the Department of Defense was \$250 billion, there were 1.45 million men and women in the armed forces (including civilians), and procurement accounts were \$44 billion. During that same 1985 – 1997 period, the defense industrial base reduced the number of workers to 2.2 million, a 41 percent reduction from 1985 levels. [Ref. 23:p. 1]

There was a steady decline in funding of Department of Defense programs during much of the Clinton Administration. Under the Clinton Administration, “the Pentagon was largely forced to take a procurement holiday -- deferring or canceling outright long-overdue acquisitions of ships, planes, armored vehicles and other modernization programs.” [Ref. 25:p. 1] Toward the end of Clinton’s second term, readiness was at an all time low. Major systems were exceeding their service life, systems were being

cannibalized to obtain spare parts, and training budgets were under-funded. For the first seven years of the Clinton administration, forces were deployed forty-eight times on peacekeeping and combat missions. Between 1945 and 1990, the military was deployed overseas 50 times. [Ref. 26:p. 2]

Personnel cuts during that same period meant longer deployments.

The Army and the Air Force fell short of their 1999 recruiting goals by 6,300 and 1,700 recruits, respectively. The Navy met its 1999 goals, but only after changing its standards to make up for the nearly 7,000 sailors it fell short of in 1998. It has become difficult for the military to keep the people it has. In 1999, for example, the Air Force missed its retention goals in all enlisted categories, losing 5,000 enlistees. Even the Marines, who usually attract prospective recruits with ease, were beginning to have retention problems. Throughout the first part of 2000, they lost people at a rate 10 percent higher than expected. [Ref. 26:p. 2]

The Clinton Administration could no longer ignore these issues. Under intense pressure from concerned congressional leadership, the Administration included a request for additional defense funding for fiscal year 1999. In response to the Administration's request, Congress added approximately \$8 billion to the defense budget which represented the first real increase in inflation-adjusted dollars since 1985. Administration officials indicated that the President intended to seek an estimated \$110 billion in additional spending over the next six years. [Ref. 27:p. 1]

President George W. Bush took office on January 20, 2001. His top two priorities for DoD was improve military readiness and a strong missile defense strategy. The FY2002 budget was the first comprehensive budget of his administration. The FY2002 budget included a request for the Department of Defense for a total of \$329 billion. The \$329 billion total represented an increase of \$33 billion over defense funding for 2001. In a press release of June 22, 2001, a senior defense official justified the increased DoD budget.

The administration has inherited severe shortfalls in readiness, in health care, in operations, maintenance and infrastructure, far worse than was originally understood. This amendment takes steps to begin to deal with these funding deficiencies and to establish fiscal certainty and discipline. [Ref. 28:p. 1]

Less than nine months after President Bush took office, New York and Washington, D.C. were attacked by terrorists. As illustrated in Figure 1, budgets for Operations & Maintenance, Military personnel, and Procurement increased sharply reflecting the Bush Administration and Congress' support of the war on terror, which included military operations in Afghanistan and Iraq.

In contrast to the changes experienced in the overall defense budget from 1985 through 2000, the Research, Development, Test and Evaluation (RDT&E) budget remained relatively flat. The RDT&E budget is made up of seven budget activities¹. They are:

- Basic Research
- Applied Research
- Advanced Technology Development
- Advanced Component Development and Prototypes
- Systems Development and Demonstration
- RDT&E Management Support
- Operational System Development

These budget activities are frequently referred to as budget categories 6.1 – 6.7, respectively. Budget categories 6.1 – 6.3 constitute the Science and Technology (S&T) portion of the budget. The President's budget for FY2002 provides a good summary of the rationale for the increases from 2000 to the present:

The budget proposes a \$2.6 billion initiative (\$20 billion over five years) to fund R&D of new technologies. Among areas in which new investment might be made include: leap-ahead technologies for new weapons and intelligence systems; improvements to the laboratory and test range infrastructure; technologies aimed at reducing the costs of weapons and intelligence systems; efforts, such as counter-terrorism and counter-proliferation that are focused on countering unconventional threats to national security; and funding to continue research, development, and testing of a missile defense program. [Ref. 29:p. 100]

¹ Appendix A provides a more detailed description of these budget categories. [Ref. 30:p. 1]

D. RESEARCH ENVIRONMENT

A strong federal role in support of science and technology is a relatively recent phenomenon in the United States. The 1950's saw a sea change in the sources of funding for research in the United States. Prior to that period, the source of scientific discovery was the university. Small budgets and intellectual curiosity were the key drivers. By the time Eisenhower left office in 1961, the country's research focus had become centralized, formalized, complex, and expensive. In this new environment, the federal government was the driving force behind the nation's research.

Partly because of the huge costs involved, a government contract becomes virtually a substitute for intellectual curiosity. For every old blackboard there are now hundreds of new electronic computers. [Ref. 31:p. 3]

Defense was the predominant focus of that science and technology (S&T) funding. In fact, the share of S&T funding aimed at defense needs remains considerably higher in the United States than in other developed countries, although the U.S. defense-related share has been declining as previously noted. The primary focus of that defense-related S&T funding goes to support research in computer science, materials science, and engineering. [Ref. 32:p. 21]

In the 1950's and 1960's, many high-technology advances came from defense funded laboratories. Substantial amounts of S&T funding were spent on R&D, not directly focused on a particular market, but in areas of general interest to the U.S. public (e.g., space, health, and energy). "Federal R&D investments were on a stable growth path during that period and, at their high point, constituted about two-thirds of total national R&D funding." [Ref. 32:p. 62]

Investments in research not aimed at specific agency missions have traditionally been relatively small. During the 1980's that began to change, as such programs as the multi-agency Small Business Innovation Research (SBIR) program, the Advanced Technology Program of the Department of Commerce, the SEMATECH consortium of U.S.-based semiconductor companies and the Department of Defense, and the Engineering Research Centers program of the National Science Foundation were launched. [Ref. 32:p. 27]

Discussions related to Federal support of the nation’s science and technology usually focus on the government’s direct funding of R&D. “Yet the federal government made several other important policy changes during the 1980’s that were as important as the launch of new programs involving direct support of science and technology.” These legislative changes encouraged the flow of science and technology from government laboratories and universities to industry, encouraged cooperative research arrangements between industry partners, and implemented a temporary tax credit for industrial R&D. [Ref. 32:p. 28] The researcher will expand on these very important changes in “The Federal Response” (below).

By the 1980’s, U.S.-based companies were setting the pace in fast-growing information technology and biotechnology fields. The United States became a leader in commercializing research through the creation of new technology-based firms. Commercial R&D investment was on the rise.

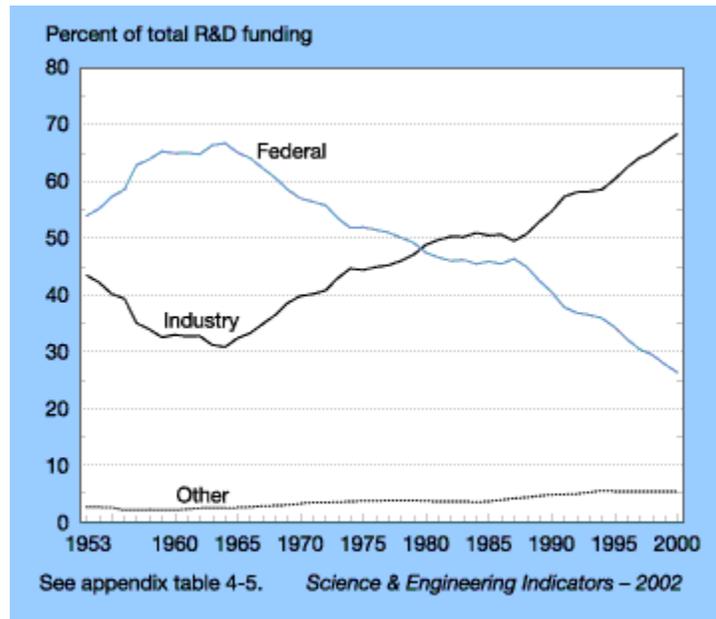


Figure 2. Shares of National R&D Expenditures, By Source of Funds: 1953-2000 (From: [Ref. 33])

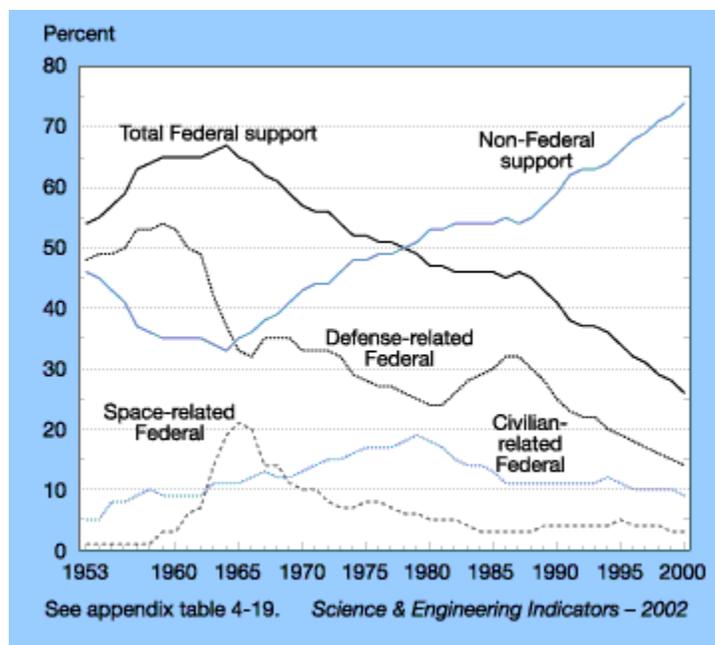


Figure 3. Trends in Federal and Non-Federal R&D Expenditures as a Percentage of Total R&D: 1953-2000 (From: [Ref. 33])

Innovation in two broad, science-based industrial sectors has contributed to U.S. innovative success in the 1990s. The first is information technology, including semiconductors, computers, software, communications equipment, and information technology services. The second is the complex of industries that feed new technology into health care, including biotechnology, pharmaceuticals, and medical devices. Among the 50 U.S. firms with the largest research and development (R&D) budgets in 1994, the 20 with the highest ratio of R&D spending to sales were all in either the information or health care sectors. [Ref. 32:p. 17]

Whereas research budgets for corporations in the information technology and biotechnology sectors were on the rise, there was a distinct down-turn of research budgets in other sectors. As previously stated, until the 1950's, the primary source of scientific discovery was the university. There was also a secondary source of research and development that emerged after World War II. That was the corporate research laboratory. "The corporate laboratories of companies such as Du Pont, AT&T, IBM, and Xerox grew to become important sources of fundamental technologies." [Ref. 32:p. 18] These corporate laboratories were predominately successful when the environment included product lifecycles that could be measured in years and there was a high

probability of recouping research investments. However, the 1980's saw a significant change in that environment. Deregulation and increased global competition led companies to shift their focus from longer-term or speculative research to short-term results. [Ref. 32:p. 18]

A recent analysis of U.S. patents issued to inventors from all over the world shows a dramatic increase in the reliance of inventions on recent science. The trend is especially pronounced for U.S. inventions in the medical and chemical fields. A large percentage of the scientific citations in recent patents resulted from work in universities and government laboratories. [Ref. 32:p. 18]

This data supports the assertion that companies are investing less in basic and applied research in favor of leveraging government-funded research in those areas. Some firms directly fund universities performing basic and applied research in areas of interest to the firm.

As product life cycles began to be measured in months rather than years, industry executives and investors became fanatical about quarterly profit-and-loss statements. This has forced many private sector firms to eliminate their long-term R&D focus and infrastructure in favor of research focused on short-term results. "As federal R&D funding has flattened, a major reversal in funding sources has occurred, with industry now providing two-thirds of the nation's R&D funding, albeit with this shorter-term, product-oriented focus." [Ref. 32:p. 62]

E. THE FEDERAL RESPONSE

1. Introduction

As we have seen, the U.S. defense landscape of the late 1980's was characterized by a change from a single superpower adversary to multiple adversaries with the potential to obtain the latest technologically advanced weapons, significant budget reductions, a reduction in the number of defense industry participants, and a high-technology environment dominated by the commercial marketplace. These facts were not lost on the Department of Defense or Congress.

The dramatic change in focus from a single superpower adversary as the known threat to multiple unknown adversaries forced the Department of Defense to consider

significant changes to its perspective on weapons system procurement. Throughout the Cold War, United States doctrine focused on countering the Soviet Union's greater numbers of weapon systems with fewer, higher performance weapons. Weapons performance was primarily benchmarked against the capabilities of the Soviet Union and its Warsaw Pact allies. Cost vs. performance tradeoffs were not a concern as funding for weapon systems in this era was considered a national priority in order to keep communist expansionism in check. In contrast, the severe funding shortfalls experienced by the Department of Defense in the late 80's required a greater focus on cost vs. performance tradeoffs in order to make hard choices about what technologies to pursue and what weapon systems to field. In addition to expanding the functionality and firepower of large weapon platforms, more consideration was given to smaller technically advanced weapon systems. [Ref. 9:p. 9]

2. Major Legislation Affecting United States Research and Development

In response to the challenges described above, Congress explored ways to stimulate technological advancement in the private sector. There are two major policy approaches. One is through the direct funding of research. The upside to this approach is that the government can direct research funding to support specific agency missions or to long-term, high risk areas that the private sector is not likely to support. The downside with this approach is that it places the government in the position of deciding what research is worthy of funding. It presumes that government decision makers will make the "best" choices. Although there may be some Nobel Prize winners involved in making decisions regarding government funding of research, a large majority of our greatest scientific minds do not work for the government; nor are they part of the funding decision process.

The other major federal approach to stimulating research takes a more indirect approach. Measures such as intellectual property rights, antitrust laws, and tax policies help to promote technology development in the private sector. This is the more favored approach, especially during austere budget times.

One area that Congress considered very promising was the stimulation of cooperative research and development (CRADA) agreements. In the past twenty-five

years the government has supported various efforts to promote CRADAs among industry, academia, and federal agencies. It was recognized that these cooperative efforts could increase the competitiveness of U.S. industry. They would also encourage the generation of new or vastly improved products and services. These collaborative ventures were intended to compliment the strengths of all sectors involved in the science and technology development arena. Academia, industry, and government often have complementary resources (funding, expertise, facilities, etc.). However, because of the stove-piped nature of their focus, tended to duplicate effort or work at cross purposes. This was certainly not in the best interest of the nation as a whole. CRADA proponents saw the potential benefits of sharing costs, risks, facilities, and expertise. They argue that these arrangements permit long-term and high risk research to be done that is too expensive for one entity to support. From a public interest standpoint, cooperative research efforts encourage more effective resource utilization and attempts to minimize duplicative effort. [Ref. 34:p. 1]

There have been numerous pieces of legislation designed to promote these collaborative arrangements. The more significant legislation is discussed below.

a. Industry-Industry

As discussed above, the federal government tends to focus on research related to agency mission needs and research areas that are minimally funded by the private sector, if at all. One research area predominately funded by the federal government is basic research, primarily because it takes a substantial amount of time and money before there is any relevant (in private sector terms) payoff. It is too risky for private sector investment.

The major emphasis of legislative activity has been on augmenting research in the industrial community. This focus is reflected in efforts to encourage companies to undertake cooperative research arrangements and expand the opportunities available for increases in research activities. Collaboration permits work to be done which is too expensive for one company to fund and also allows for R&D that crosses traditional boundaries of expertise and experience. A joint venture makes use of existing, and supports development of new resources, facilities, knowledge, and skills. [Ref. 34:p. 4]

The National Cooperative Research Act of 1984 (P.L. 98-462) was specifically designed to encourage firms to pool resources to carry out joint R&D projects. The Act provides that joint research and development agreements and agreements to convey rights to use patented inventions, copyrights, or intellectual property shall not be deemed illegal under antitrust laws. These agreements are to be judged on their reasonableness considering all pertinent factors, including their effect on competition in relevant markets. The Act also made changes in the way attorney fee awards are made in order to discourage frivolous litigation against joint research ventures.

The Omnibus Trade and Competitiveness Act of 1988 (P.L. 100-418) covered a broad range of issues related to foreign trade and competition. Of relevance to this thesis is the section of the legislation emphasizing the need for public and private cooperation to ensure full use of research results. This was done through the legislation by establishing centers for transferring manufacturing technology, establishing industrial extension services within states and an information clearinghouse on successful state and local technology programs, extending royalty payment requirements to non-government employees of federal laboratories, and authorizing training technology transfer centers administered by the Department of Education.

This legislation also changed the name of the National Bureau of Standards to the National Institute of Standards and Technology and broadened its technology transfer role by creating the Advanced Technology Program (ATP). Through cooperative cost sharing arrangements with industry, the ATP invests directly in the development of high-risk, enabling technologies. These technologies are expected to form the foundation for new and improved products, services, and manufacturing processes. The long-term goals of the ATP are to help companies accelerate the creation and commercialization of innovative technologies with strong potential for generating broad-based economic benefits for the nation.

The National Cooperative Production Amendments Act of 1993 (P.L. 103-42) amends the National Cooperative Research Act by extending the original law's provisions to joint ventures entered into for the purpose of producing a product, process,

or service and the testing in connection with such production. The Act also excluded joint ventures involving production facilities located outside the United States or its territories and joint ventures involving non-U.S. citizens unless those non-U.S. citizens are from a country or countries “whose law accords antitrust treatment no less favorable to U.S. persons than to such country’s domestic persons with respect to participation in joint ventures for production.” [Ref. 35:p. 3]

b. Industry-Academia

Congress also recognized that encouraging collaboration between industry and universities was another very important piece of the pie to stimulate technological advancement in the private sector. Historically, academic institutions performed a predominant portion of U.S. basic research. Universities have been able to carry out basic research because it is part of the educational process, and because risks are reduced since they do not have a profit motive as is the case for industry.

That is not to say that universities are effective as a stand alone sector. Academic institutions do not have the capability to convert the results of research into products and services that can be marketed. Congress understood that if research performed at academic institutions was to transition into commercially available products and services, a means to encourage interaction between industry and academia must be implemented. It should be noted that even without intervention by Congress, there is and continues to be an informal interaction between academia and industry. That informal interaction involves the educational component at universities, which serves to educate and train the scientists, engineers, and managers employed by companies. [Ref. 34:p. 4]

One might expect that increased collaboration between academia and industry would magnify the contributions of both parties to the advancement of U.S. technologies. Industry support for research within the academic community provides much needed funding. More importantly, industry is able to provide much needed feedback to the academic community on areas of interest.

Congressional attempts to stimulate industry and university collaboration came in the form of legislation, which provided incentives for industry to invest in university research. The legislation predominately focused on tax incentives and a more liberal treatment of intellectual property.

Amendments to the patent and trademark laws contained in the Bayh-Dole Act of 1980 (P.L. 96-517) were designed to promote collaboration between academia and industry. A significant element of this Act was that it permitted universities, non-profits, and small businesses to own title to inventions from research funded by the federal government so they may license these inventions to industry for commercialization. The Act reserved certain rights for the government. Since the impetus of the Act was to encourage commercialization of federally funded research, the recipient's ability to maintain title to those inventions required that they be commercialized within a predetermined time frame. Congress believed that providing universities with title to patents resulting from the university's research would encourage licensing to industry where the technology could be commercialized. Congress also believed that universities would be motivated to participate due to the potential income resulting from licensing the patents to industry.

The key elements of Title II of the Economic Recovery Tax Act of 1981 (P.L. 97-34) that are relevant to this thesis include a temporary 25 percent tax credit for company support of university basic research. Industry was also permitted a larger tax deduction for charitable contributions of research equipment to academic institutions. The Tax Reform Act of 1986 (P.L. 99-514) reduced the credit for industry investment in university basic research to 20 percent. Although P.L. 99-514 reduced the credit for industry contributions to university basic research established by the 1981 Act, it increased the charitable deduction for donations of new equipment to academic institutions. A stipulation was added that this equipment must be used for "research or training for physical or biological sciences within the United States." [Ref. 34:p. 6]

c. *Industry-Government*

Cooperation between industry and the federal government is the third and probably most obvious element that Congress considered in order to stimulate technological advancement in the private sector.

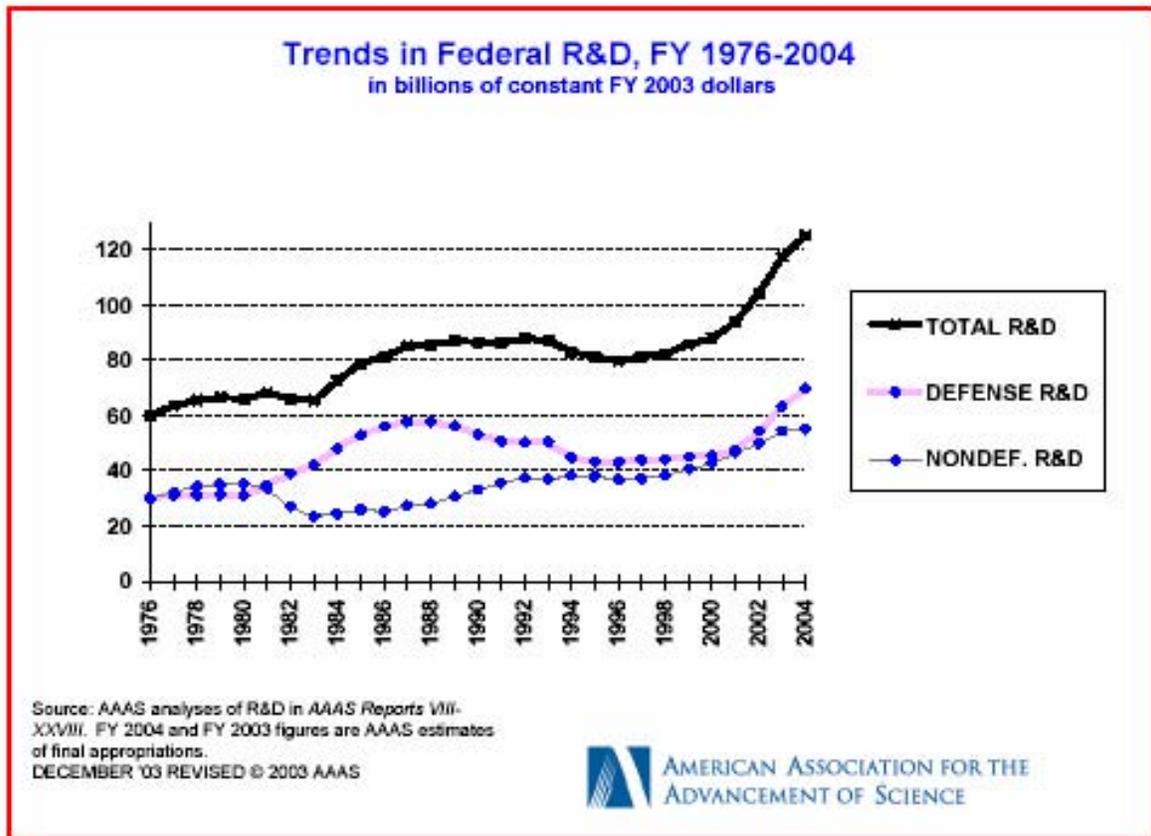


Figure 4. Trends in Federal R&D, FY 1976 – 2004 (From: [Ref. 36])

Government-wide investment in research and development to meet the mission requirements of federal departments and agencies is significant. In January 2004, Congress approved an omnibus appropriations bill. This bill, when added to the Department of Defense and Homeland Security appropriation bills, resulted in a record-setting \$127 billion in federal research and development funding. This amount reflects Congress' commitment to federal research and development, since the appropriation was \$4.6 billion more than was requested by the Bush Administration. That is not to say that the Bush Administration is not a supporter of federal research and development. Figure 4

above shows a sharp increase in federal research and development spending since fiscal year 2000. For the fifteen years prior to the Bush Administration, federal research and development funding hovered in the \$80 - \$90 billion range. [Ref. 37:p. 2]

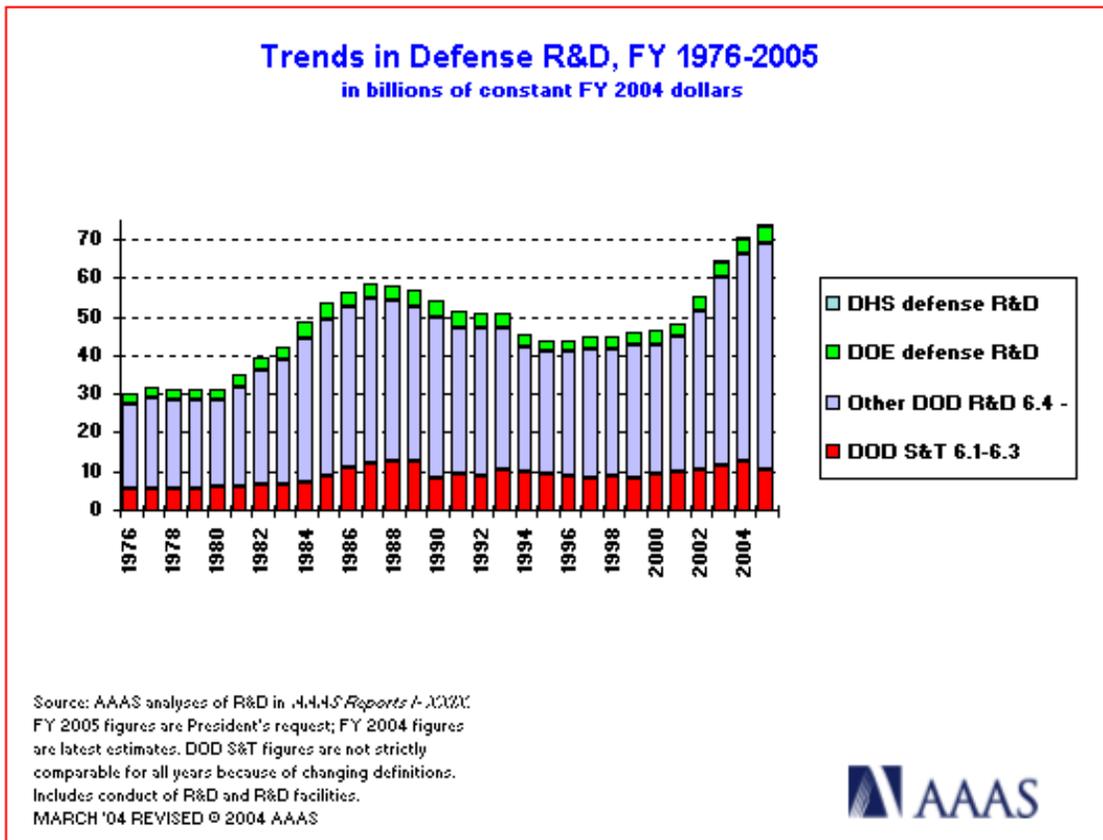


Figure 5. Trends in Defense R&D, FY 1976 – 2005 (From: [Ref. 38])

As shown above, congressional funding of Department of Defense RDT&E accounts is also significant.

The Bush Administration requested \$61.8 billion in RDT&E funding for DoD for FY2004. The actual amount appropriated in September 2003 was \$66.3 billion. That represents a \$7.6 billion (13 percent) jump over the Department of Defense RDT&E appropriation for fiscal year 2003. Department of Defense RDT&E appropriations saw a rise in funding starting with the Reagan Administration in 1980. It peaked during his second term, and slowly declined through the end of his presidency and through the first Bush Administration. Over the next eight years, Department of Defense RDT&E funding

remained relatively low. [Ref. 37:p. 3] During the Clinton Administration, Congress appropriated between \$34 billion and \$41 billion per year for DoD RDT&E. [Ref. 39:p. 1]

This major level of investment over the past two decades has led to countless new and improved technologies and processes. It also led to the generation of an enormous amount of knowledge. For many years, a significant portion of these resources have remained within the four walls of federal and academic laboratories. It is conceivable that many of these resources may have applications beyond their original intent. In order to provide access to these resources and promote commercialization in the industrial community, Congress enacted various laws to establish federal entities and mechanisms to facilitate the transition of these resources between the public and private sectors.

The most significant legislation providing private sector access to federal laboratories is the Stevenson-Wydler Technology Innovation Act of 1980 (P.L. 96-480), as amended by the Federal Technology Transfer Act of 1986 (P.L. 99-502), the Omnibus Trade and Competitiveness Act (discussed above), the 1990 Department of Defense (DOD) Authorization Act (P.L. 101-189), and the National Defense Authorization Act for FY1991 (P.L. 101-510). [Ref. 31:p. 8]

Prior to P.L. 96-480, technology transfer was not part of the mission requirements of the federal departments and agencies, with the exception of the National Aeronautics and Space Administration (NASA). The Stevenson-Wydler Technology Innovation Act of 1980 changed all that. Within this Act, Congress was very explicit about the expanded federal role they envisioned:

It is the continuing responsibility of the federal government to ensure the full use of the results of the Nation's federal investment in research and development. To this end the federal government shall strive where appropriate to transfer federally owned or originated [non-classified] technology to state and local governments and to the private sector. (U.S.C. Title 15, Chapter 63, Section 3710(a)(1))

To ensure that the proper amount of attention was directed to this endeavor, P.L. 96-480 required each federal agency and their laboratories to establish an Office of Research and Technology Applications. The function of the Office of Research and Technology Applications is to identify technologies and ideas that have potential for application outside of the federal government.

As indicated above, there were several amendments to the Stevenson-Wydler Technology Innovation Act to provide additional incentives for the transfer and commercialization of technology originating in federal research laboratories. The Federal Technology Transfer Act of 1986 (P.L. 99-502) amended Stevenson-Wydler to allow government-owned, government-operated laboratories (GOGOs) to enter into CRADAs with universities and the private sector. The FY1990 Defense Authorization Act (P.L. 101-189) gave authority to enter into CRADAs with universities and the private sector to government-owned, contractor-operated laboratories (GOCOs). [Ref. 34:p. 6]

CRADAs are agreements between one or more federal laboratories and one or more non-federal parties to perform cooperative and mutually beneficial research and development. A CRADA (as defined in the statute) is not a procurement contract, grant or cooperative agreement. The Federal Acquisition Regulations (FAR) and the various agency procurement regulations are not applicable to CRADAs. Under a CRADA, the federal laboratory can provide personnel, services, facilities, equipment, or other resources with or without reimbursement. However, the laboratory cannot provide funds to non-federal parties under a CRADA. Non-federal parties may provide funds, personnel, services, facilities, equipment, or other resources toward the conduct of specified research or development efforts.

Research and development conducted under a CRADA must be consistent with the missions of the federal laboratory entering into the agreement. As a matter of principle, CRADA objectives should be mutually beneficial to, and protect the interest of both parties to the agreement.

In addition to the collaboration aspect of a CRADA, substantial intellectual property benefits flow to a non-federal partner. The Act provides that the

director of the laboratory may enter into an advanced agreement with the participating non-federal partner transferring title to, or licenses for, inventions made by the laboratory. The Act also provides that the director of the laboratory may enter into an advanced agreement with the participating non-federal partner waiving any right of ownership the government might have in inventions resulting from the collaborative effort. However, the government retains a nonexclusive, nontransferable, irrevocable, paid-up license to practice (or have practiced) the invention for fulfillment of government requirements. [Ref. 34:p. 6]

The Federal Technology Transfer Act of 1986 provided significant incentives for employees of federal laboratories to facilitate the transfer of federal science and technology to the private sector. Employees actively involved in that effort could receive cash awards if those efforts contribute to the mission of the laboratory or their efforts lead to commercialization of the transferred technology. In addition, the Act provided that federal laboratory employees could receive at least 15 percent of royalties generated by the licensing of the patent(s) associated with their inventions. The Act even went so far as to allow (current or former) federal employees responsible for the invention to obtain title (subject to the above-mentioned licensing rights of the government) should the government not choose to exercise its right to patent the invention. [Ref. 34:p. 7]

Laboratory personnel and former employees were also permitted to participate in commercialization activities provided that these activities did not conflict with agency ethics, conflict of interest, or code of conduct regulations. In the case of GOCOs, the National Competitiveness Technology Transfer Act of 1989 (P.L. 101-189) required the establishment of agency safeguards to avoid conflicts of interest, and possible unjust enrichment of employees working at those federal laboratories.

Preference for cooperative ventures is given to small businesses, companies that will manufacture in the United States, or foreign firms from countries that permit American companies to enter into similar arrangements. To assist small businesses that may not have sophisticated management systems, the National Defense Authorization Act for FY1991 (P.L. 101-510) amended Stevenson-Wydler to allow

federal laboratories to enter into a contract or memorandum of understanding with a partnership intermediary to perform services related to cooperative or joint activities with small businesses. The primary purpose of a partnership intermediary was to increase the likelihood of success in the conduct of cooperative or joint activities between a federal laboratory and its small business and academic institution partners.

The legislation detailed above proved to have mixed success with regard to national goals of stimulating technological advancement in the private sector. Further, the legislation had little impact on the ability of the Department of Defense to gain access to new technologies invented and fostered in the private sector. It became apparent to the Department of Defense and Congress that other legislative and regulatory changes would be necessary.

F. OTHER TRANSACTION AUTHORITY

This section on Other Transaction Authority (OTA) provides background information relative to the government's motivation in developing an innovative approach for tapping into private sector R&D, and gaining access to industry leaders who traditionally did not do business with the Department of Defense. The goal of this new approach was to gain access to technologies that could result in weapon systems that were technologically superior to potential enemy forces, and do it at significantly less cost.

The Department of Defense science and technology program has as its primary mission to develop and transition superior technology that enables affordable and decisive military capability. To perform this mission well, it is imperative that the S&T program draw upon the nation's best researchers and technology developers.

Among the best science and technology (S&T) performers are many companies that primarily serve the needs of the commercial marketplace. In recent years, DoD's access to those performers has been limited by government business practices. These practices include many government-unique requirements that discouraged some companies from doing business with the government and caused other firms to create divisions for government business that are separate and isolated from divisions for commercial business.

It is in the interest of the Department of Defense to integrate the government and commercial sectors of the national technology and industrial base. Specifically, technology and industrial base integration will help reduce the Department of Defense's life-cycle costs for weapon and support systems. However, for this to take place, it is imperative that the Department of Defense gain access to those firms that have not traditionally done business with the government. It will also help increase technological sophistication by allowing the Department of Defense to take advantage of technology in the commercial marketplace that often is more advanced than what is available in the defense sector. [Ref. 40:p. 3]

The Department of Defense has various instruments at its disposal for obtaining the products or services it needs to meet mission requirements, or to support research of interest to the department. They are contracts, grants, cooperative agreements, and Other Transactions. These instruments are also used by DoD to support or acquire research. Each of these instruments was developed for specific purposes. Selection of the proper instrument is generally based on the nature of the research, and the level and type of government/contractor interaction anticipated.

The various forms of contracts used by DoD are procurement instruments. That means they are used when the principle purpose of the effort is the acquisition of goods or services for the direct use or benefit of the department. Grants, cooperative agreements, and Other Transactions (for research) are classified as assistance instruments. They are used when the principal purpose is to stimulate or support research efforts for a public purpose (i.e., not for the direct use or benefit of the Department). Another key distinction between a procurement instrument and an assistance instrument is that procurement instruments are governed by the Federal Acquisition Regulation (FAR) and Department of Defense Acquisition Regulation Supplement (DFARS). Assistance instruments generally are not subject to the FAR or DFARS. Freedom from these government-unique requirements helped to foster relationships between DoD and the commercially-focused businesses that DoD hoped to attract to defense-related work. [Ref. 4:p. 17]

Of the instruments identified above, the one that tends to generate the most puzzled looks among acquisition professionals is the term “Other Transaction” (OT). Other Transactions are agreements used for research and prototype projects. They are defined, not by what they are, but by what they are not. They are not a contract, grant, or cooperative agreement. Many in the Department of Defense and industry support Other Transactions as a way to access cutting-edge technologies and as a way to foster relationships with commercial firms that generally refuse to contract with the federal government because of unique requirements imposed by the FAR and various procurement statutes. Other Transactions are not subject to the FAR, nor are they subject to certain procurement statutes such as the Competition in Contracting Act or the Contract Disputes Act.

The first government organization to recognize the need for an alternative contracting vehicle to enable DoD to tap into this commercial business sector was the Defense Advanced Research Projects Agency (DARPA). DARPA is the central research and development organization for the Department of Defense. It manages and directs selected basic and applied research and development projects for DoD. Although all the services have basic and applied R&D programs, DARPA is different in that it is tasked with pursuing high risk – high payoff technologies that can provide DoD with leap-ahead capabilities. “As the private industry technology industries began to explode in the late 1980’s, DARPA recognized that they had a need for tapping into this explosion and consequently, sought a contractual approach to negotiating terms and conditions that was more flexible than the standard FAR contract or cooperative agreement.” [Ref. 4:p. 18]

At DARPA’s urging, Congress decided to get involved to ensure that the Department of Defense had access to a broader spectrum of the national technology and industrial base. In November 1989, Congress enacted Section 251 of Public Law 101-189 (codified at 10 U.S.C. 2371) which gave authority to DARPA to conduct research and technology development using “cooperative agreements” or “other transactions.” The authority was available only if a standard contract or grant was not feasible or appropriate. At the time, 10 U.S.C. 2371 was enacted as a temporary two-year pilot program and its applicable authorities were given only to DARPA. It was interesting to

note that Congress did not define the term “Other Transactions.” DARPA interpreted this lack of specificity as giving it the flexibility it desired to construct a research agreement that was not governed by the FAR or various procurement statutes.

The National Defense Authorization Act for FY 1992 extended 10 U.S.C. 2371 authority to the secretaries of the military departments and made it permanent. However, the Act also added restrictions on the use of OTA. One significant constraint came in the form of a cost-sharing requirement. The Act required cost matching by the non-federal parties to the extent the Secretary of Defense determined practicable. A primary example of the implementation of this requirement was the Dual Use Science & Technology (DUS&T) Program. This program specifically prohibited the government from investing more than 50 percent of the project cost (i.e., non-government participants were required to invest a minimum of 50 percent of the project cost). A second significant constraint was that, prior to using an Other Transaction, the awarding organization had to document that use of a standard contract, grant, or cooperative agreement was not feasible or appropriate.

OTA was broadened even further under the National Defense Authorization Act for FY 1994 (Public Law 103-160). Under the Act, DARPA was again recognized as the reinvention lab for this type of acquisition vehicle. Section 845 of the Act extended the Other Transaction authority of 10 U.S.C. 2371 to cover prototype projects directly relevant to weapons or weapons systems proposed to be acquired or developed. The DoD Other Transaction Guide states that prototype projects can include prototypes of weapon subsystems, components, or technology, as well as entire weapon systems. Moreover, a prototype can be “a physical or virtual model used to evaluate the technical or manufacturing feasibility of military utility of a particular technology or process, concept, end item, or system.” [Ref. 41:p. 12]

The significance of this Act was that Other Transactions, which were previously used as assistance instruments, could now be used as a procurement instrument. As stated above, assistance instruments are used when the principal purpose is to stimulate or support research efforts for a public purpose (i.e., not for the direct use or benefit of the

department). Section 845 Other Transaction Authority made this vehicle available for procurement, although its use was limited to the prototype stage of weapons development.

These “Section 845” prototype projects were to be conducted under the provisions of 10 U.S.C. 2371. However, unlike Other Transactions for “research” awarded under the provisions of 10 U.S.C. 2371, Other Transactions for prototype projects were exempt from the cost-sharing requirement. Further, awards under this authority did not require DARPA to determine that the use of a standard contract, grant, or cooperative agreement was not appropriate or feasible. Section 845 was intended as a three-year pilot.

Section 804 of the National Defense Authorization Act for FY 1997 (PL 104-201) extended Section 845 prototype authority to the secretaries of the military departments and any other official designated by the Secretary of Defense.

The statutory authority of 10 U.S.C. 2371 has been extended three times. The National Defense Authorization Act for FY 1999 extended it through 30 September 2001. Section 803 of the FY 2001 Defense Authorization Act extended DoD’s Section 845 prototype authority to September 30, 2004 and established new conditions for the appropriate use of the authority. Specifically:

The Secretary of Defense shall ensure that no official of an agency enters into a transaction (other than a contract, grant, or cooperative agreement) for a prototype project under the authority of this section unless--

(A) there is at least one nontraditional defense contractor participating to a significant extent in the prototype project; or

(B) no nontraditional defense contractor is participating to a significant extent in the prototype project, but at least one of the following circumstances exists:

(i) At least one third of the total cost of the prototype project is to be paid out of funds provided by parties to the transaction other than the Federal Government.

(ii) The senior procurement executive for the agency (as designated for the purposes of section 16(3) of the Office of

Federal Procurement Policy Act (41 U.S.C. 414(3)) determines in writing that exceptional circumstances justify the use of a transaction that provides for innovative business arrangements or structures that would not be feasible or appropriate under a contract. [Ref. 41:p. 1]

Section 803 also required that all Section 845 OT's for prototype projects requiring total government funding in excess of \$5,000,000 must include a clause that provides the Comptroller General access to the records of any party to the agreement or any entity that participates in the performance of the agreement, and that no transaction entered into under this authority shall provide for research that duplicates research being conducted under existing DOD programs. Section 803 did not eliminate the requirement originally established by Section 845 of P.L. 103-160 that competitive procedures be used to the maximum extent practicable when entering into agreements for prototype projects.

Within Section 803, Congress instituted a new requirement that the Department of Defense must submit an annual report to Congress on the use of Other Transaction Authority and their compliance with Section 803 restrictions cited above. This reporting requirement will be discussed in more detail in Chapter III of this thesis.

The Bob Stump National Defense Authorization Act for Fiscal Year 2003 (P.L. 107-314), extended the statutory authority of 10 U.S.C. 2371 through 30 September 2005.

As pointed out by Gilliland (2001), Other Transaction Authority evolved down two distinctly different paths -- assistance and procurement. The first is an assistance instrument granted under the statutory authority of 10 U.S.C. 2371. These Other Transactions are used to carry out basic, applied or advanced research projects. As pointed out earlier, grants and cooperative agreements are also assistance instruments used to support research projects. The second path, known as a Section 845 Prototype Other Transaction, is used for the purpose of pursuing prototype projects directly relevant to current or proposed weapon systems.

G. CONCLUSIONS

In addition to “Other Transactions,” one other research vehicle was developed during the late 1990’s. That vehicle became known as the Technology Investment Agreement (TIA). TIAs evolved from types of cooperative agreements and “other transactions” developed by DARPA and the military departments between 1991 and 1996. Since initially being given Other Transaction Authority, DARPA developed an Other Transaction instrument, which they called a “consortium agreement”. When the military departments were given the Other Transaction Authority, they primarily used a type of cooperative agreement. In both cases, the instruments were used to carry out basic, applied or advanced research projects and were tailored to remove barriers (i.e., traditional government acquisition statutes and regulations) to attracting commercial firms. By 1997, it was apparent that DARPA and the services were issuing two different instruments with different names, but citing the same authority and pursuing the same contractors. It was determined that this was causing a lot of confusion within DoD and industry. Consequently, the Director of Defense Research and Engineering (DDR&E) which is the office responsible for assistance policy, issued guidance on December 2, 1997 merging the two types of agreements into a single class of assistance instrument called a TIA. [Ref. 5:p. 13]

It is important to note that prior research by Stamatopoulos (1999), Gilliland (2001), and Tucker (2002), along with multiple DoD websites, unanimously assert that the primary purpose of Other Transaction Authority was to eliminate barriers which, in the past, had prevented DoD from tapping into private sector R&D, and to gain access to industry leaders who traditionally did not do business with the Department of Defense. Prior research has touched on the fact that some previously untapped sources of commercial R&D did in fact start participating in DoD projects as a result of Other Transaction Authority, but not to the extent expected or intended. [Ref. 4:p. 101 and Ref. 5:p. 24] If a significant amount of RDT&E dollars awarded using Other Transaction Authority is not going to these “non-traditional” contractors, who is getting those funds? That question will be answered in subsequent chapters of this thesis.

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III. DATA PRESENTATION AND ANALYSIS

In order to determine whether Other Transactions have met the intent of Congress, one must look at available data. This thesis will focus on two key data sources. The first is the *Department of Defense Annual Report on Cooperative Agreements and Other Transactions* submitted to Congress for fiscal years 1997 through 2003 (Key data from those reports were placed in the spreadsheets provided at Appendix C.). The other data source of interest to this researcher is the annual reports for fiscal years 1997 through 2003 that list the *Top 100 DoD Contractors Receiving Contract Awards For Research, Development, Test, And Evaluation (RDT&E)*. The Department of Defense Directorate for Information Operations and Reports (DIOR) issues these reports.

A. ANNUAL REPORTS ON COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS

10 U.S.C. 2371(h)(1) requires that not later than 90 days after the end of each fiscal year, the Secretary of Defense submit to the Committee on Armed Services of the Senate and the Committee on Armed Services of the House of Representatives a report on the use of cooperative agreements and other transactions.

Fiscal year 1997 was the first year that the Department of Defense submitted its Annual Report on Cooperative Agreements and Other Transactions to Congress. The report included a one page “introduction” that summarized the awards for that fiscal year. As with all submissions to Congress in subsequent fiscal years, the rest of the report was a series of one - three page summaries of each award. Appendix B is seven pages taken from the DoD “OT Guide, January 2001”, which provides the services with instructions on the required format, and what information to include in the annual report. One of these reports was required for each cooperative agreement or other transaction award.

The information provided in those individual summary pages was dictated by Congress in 10 U.S.C. 2371(h)(2) which states,

The report shall include, with respect to the cooperative agreements and other transactions covered by the report, the following:

- (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 Government and non-Federal sources.
- (C) The extent to which the use of the cooperative agreements and 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 total amount of payments, if any, that were received by the Federal Government during the fiscal year covered by the report pursuant to a clause described in subsection (d) that was included in the cooperative agreements and other transactions, and the amount of such payments, if any, that were credited to each account established under subsection (f).

B. PROCUREMENT STATISTICS

Each year the Department of Defense Directorate for Information Operations and Reports (DIOR) collects data from the DD350 and DD1057 databases. The DD350, *Individual Contracting Action Report*, is a form generated to provide detailed information on each award made by DoD for all awards over the value of \$25,000. The DD1057, *Monthly Summary of Contracting Actions*, provides similar information for awards at or below that threshold.

The DIOR then takes the data collected in the DD350 and DD1057 databases and generates statistical reports. Of interest to this researcher is the report that lists the “Top 100 DoD Contractors Receiving Contract Awards for Research, Development, Test, And Evaluation (RDT&E).”

The Top 10 companies, their rank, and the total amount of RDT&E dollars awarded to them for fiscal years 1997 through 2003 are provided in the following two tables:

Table 1. Ranking of Top 10 Among DoD Contractors Receiving RDT&E Dollars For Fiscal Years 1997 - 2003 (From: [Ref. 42])

Contractor	FY97	FY98	FY99	FY00	FY01	FY02	FY03
Lockheed Martin Corporation	1	1	1	1	1	1	1
The Boeing Company	2	2	2	2	2	2	2
Northrop Grumman Corporation	3	4	3	3	3	3	3
Raytheon Corporation	4	3	4	4	5	5	5
General Dynamics Corporation	5	5			9	7	7
Textron Incorporated	6	7					
TRW Incorporated	7	6	5	5	6	8	
General Motors Corporation	8						
United Technologies Corporation	9		6	8	4	4	8
Massachusetts Institute of Technology	10	10		10			
The Mitre Corporation		8	7	6	10		
The Carlyle Group		9	8				
The Aerospace Corporation			10		8	10	10
Boeing/Sikorsky Team				7	7	6	6
Science Applications International Corporation (SAIC)			9	9		9	9
Halliburton Company							4

Table 2. Total RDT&E Dollars Awarded to Top 10 DoD Contractors For Fiscal Years 1997 – 2003-for Contractor Dollars (in billions) (From: [Ref. 42])

Contractor	FY97	FY98	FY99	FY00	FY01	FY02	FY03
Lockheed Martin Corporation	\$4.1	\$4.8	\$4.6	\$4.1	\$4.3	\$5.3	\$7.4
The Boeing Company	\$1.6	\$2.1	\$2.1	\$2.8	\$3.5	\$4.3	\$4.3
Northrop Grumman Corporation	\$1.3	\$1.0	\$1.0	\$.8	\$1.0	\$1.4	\$2.8
Raytheon Corporation	\$.7	\$1.1	\$.9	\$.6	\$.6	\$1.0	\$1.3
General Dynamics Corporation	\$.6	\$.8			\$.4	\$.6	\$.7
Textron Incorporated	\$.6	\$.5					
TRW Incorporated	\$.6	\$.6	\$.6	\$.6	\$.5	\$.5	
General Motors Corporation	\$.5						
United Technologies Corporation	\$.4		\$.6	\$.4	\$.8	\$1.2	\$.7
Massachusetts Institute of Technology	\$.4	\$.4		\$.3			
The Mitre Corporation		\$.4	\$.4	\$.4	\$.4		
The Carlyle Group		\$.4	\$.4				
The Aerospace Corporation			\$.4		\$.4	\$.5	\$.5
Boeing/Sikorsky Team				\$.4	\$.5	\$.7	\$.8
Science Applications International Corporation (SAIC)			\$.4	\$.4		\$.5	\$.5
Halliburton Company							\$1.5
Total Dollars Awarded to Top 10 DoD Contractors⁷	\$10.8	\$12.1	\$11.4	\$10.8	\$12.4	\$16.0	\$20.5
Total DoD RDT&E Dollars by Fiscal Year	\$36.5¹	\$37.2²	\$38.1³	\$38.3³	\$41.7⁴	\$48.6⁵	\$58.3⁶
Percent of Total DoD RDT&E Dollars Awarded to Top 10 DoD Contractors⁷	29.6%	32.5%	30.0%	28.2%	29.7%	32.9%	35.2%

¹ Department of Defense Budget for Fiscal Year 1999, RDT&E Programs (R-1), February 1998

² Department of Defense Budget for Fiscal Years 2000/2001, RDT&E Programs (R-1), February 1999

³ Department of Defense Budget for Fiscal Year 2001, RDT&E Programs (R-1), February 2000

⁴ Department of Defense Budget for Fiscal Year 2003, RDT&E Programs (R-1), February 2002

⁵ Department of Defense Budget for Fiscal Years 2004/2005, RDT&E Programs (R-1), February 2003

⁶ Department of Defense Budget for Fiscal Year 2005, RDT&E Programs (R-1), February 2004

⁷ Calculated by author

As discussed in previous chapters, the intent of Congress when it passed Section 251 of Public Law 101-189 (10 U.S.C. 2371) was to provide the Department of Defense with a new vehicle that could be used to attract non-traditional contractors to DoD science and technology projects. Previous research has focused on the fact that “non-traditional” firms have participated in DoD science and technology projects as a result of other transaction authority. Rather than focus on the fact that some new participants were attracted to DoD science and technology projects and concluding that the legislation is a success, this researcher chose to focus on the number of awards and the total dollar value awarded to these new participants as compared with traditional defense contractors in the DoD procurement arena who also received awards using the authorities of 10 U.S.C. 2358 (cooperative agreements) and 10 U.S.C. 2371 (other transactions).

C. “MAJOR PLAYER” VS. “NON-TRADITIONAL CONTRACTOR”

The DIOR data was utilized to identify the major players within the world of defense procurement. For purposes of this thesis, the term “major player” refers to a company which is ranked in the Top 10 among DoD contractors receiving RDT&E dollars in any given year.

The contractors identified (above) in *Ranking of Top 10 Among DoD Contractors Receiving RDT&E Dollars For Fiscal Years 1997 - 2003* are the major players in defense research and development for the period FY97-03. The fact that many of these companies are in the Top 10 year after year, serves to reinforce that they are major players. Additional evidence can be found in the sheer volume of DoD RDT&E dollars flowing to these contractors, as illustrated by *Total RDT&E Dollars Awarded to Top 10 DoD Contractors For Fiscal Years 1997 – 2003* (above).

Although the term “major player” was established for purposes of this thesis, the term “non-tradition contractor” has an official definition. According to Section 845, paragraph (e), a non-traditional contractor is:

An entity that has not, for a period of at least one year prior to the date that a transaction (other than a contract, grant, or cooperative agreement) for a prototype project under the authority of this section is entered into, entered into or performed with respect to

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

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

The dollars awarded to “major players” vs. “non-traditional” contractors in any given year serve to illustrate the stark contrast between these two groups. For example, let’s look at fiscal year 2003. The Top 10 contractors for 2003 are shown in the chart below with the amount of RDT&E dollars (in millions) awarded to them during that year. The column on the right is the percentage of total DoD RDT&E dollars awarded (contracts, grants, cooperative agreements, and “other transactions”) to that particular contractor during fiscal year 2003. The Department of Defense Budget for Fiscal Year 2005, RDT&E Programs (R-1), February 2004, states that the total RDT&E budget for fiscal year 2003 was \$58,307,309,000.

Table 3. Total RDT&E Dollars (in millions) Awarded to Top 10 DoD Contractors For Fiscal Year 2003 (From: [Ref. 42])

Lockheed Martin Corporation	\$7,400	12.7%
The Boeing Company	\$4,257	7.3%
Northrop Grumman Corporation	\$2,833	4.9%
Halliburton Company	\$1,542	2.6%
Raytheon Corporation	\$1,269	2.2%
Boeing/Sikorsky Team	\$ 774	1.3%
General Dynamics Corporation	\$ 721	1.2%
United Technologies Corporation	\$ 714	1.2%
Science Applications International Corporation (SAIC)	\$ 541	.9%
The Aerospace Corporation	\$ 539	.9%
TOTALS ¹	\$20,590	35.2%

¹ Calculated by author

By comparison, the *Department of Defense Annual Report on Cooperative Agreements and Other Transactions* submitted to Congress for fiscal year 2003 shows that the largest award made to a non-traditional prime contractor using cooperative

agreements and other transactions during fiscal year 2003 was \$75M (.13 per percent of the total DoD RDT&E budget for Fiscal Year 2003). That award went to Frontier Systems Incorporated and covered a four-year period of performance. This is an unusually large award as the next highest award to a non-traditional contractor during that fiscal year was to The Space Launch Corporation in the amount of \$20.8M (.04 per percent of the total DoD RDT&E budget for Fiscal Year 2003).

There is a clear difference between the amounts of funding going to any one of the “major players” compared to the top two “non-traditional” contractors in fiscal year 2003.

D. ANALYSIS OF THE ANNUAL REPORTS ON COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS

The annual reports to Congress identify (if applicable) awards that were made to “non-traditional” contractors. Most reports also identify (if applicable) when subcontracts are awarded to “non-traditional” contractors. There are a few cases when a report states that subcontracts were awarded to “non-traditional” contractors, but do not identify the recipients of those subcontracts. In those cases, this researcher took the report at face value and gave credit for a subcontract to a “non-traditional” contractor. It should be stated that in all cases, the researcher assumed that the reports were accurate in their reporting of traditional defense contractor participation as well as “non-traditional” contractor participation.

The matrix below illustrates the number of awards (cooperative agreements and “other transactions”) and the total amount of DoD RDT&E funds in those categories over the period FY97 through FY03. The data was developed by this researcher using the spreadsheets provided at Appendix C.

Table 4. Total Dollars (in millions) and Number of Awards of Cooperative Agreements and “Other Transactions” Citing “Non-Traditional” Participation, as Reported to Congress for Fiscal Years 1997 - 2003

	FY97	FY98	FY99	FY00	FY01	FY02	FY03	Totals
“Non-Traditional” Prime Contractor	\$10.1	\$58.5	\$10.8	\$24.1	\$120.9	\$20.1	\$152.1	\$396.6
(Awards)	12	9	5	10	21	13	17	87
“Major Player”, “Non-Traditional” Participation	\$0.0	\$30.1	\$117.1	\$82.8	\$14.6	\$346.5	\$155.6	\$746.7
(Awards)	0	3	5	5	8	15	7	43
“Top 100 Contractor (Not “Major Player”), “Non-Traditional” Participation	\$0.0	\$0.0	\$68.8	\$11.6	\$59.0	\$83.1	\$85.3	\$307.8
(Awards)	0	0	4	2	9	7	3	25
Traditional Defense Contractor (Not In “Top 100”), “Non-Traditional” Participation	\$0.0	\$0.4	\$0.0	\$4.6	\$101.7	\$44.3	\$38.2	\$189.2
(Awards)	0	2	0	1	6	6	20	35
Teaming Arrangement With “Major Player” Participation, “Non-Traditional” Participation	\$0.0	\$22.0	\$0.0	\$59.9	\$3.0	\$0.0	\$5.5	\$90.4
(Awards)	0	1	0	1	2	0	1	5
Teaming Arrangement With “Top 100 Contractor (Not “Major						\$0.0	\$0.0	

	FY97	FY98	FY99	FY00	FY01	FY02	FY03	Totals
Player”), “Non-Traditional” Participation	\$0.0	\$0.0	\$0.0	\$0.0	\$0.7			\$0.7
(Awards)	0	0	0	0	1	0	0	1
Teaming Arrangement With Traditional Defense Contractor (Not In “Top 100”), “Non-Traditional” Participation	\$0.0	\$0.0	\$14.3	\$0.0	\$0.0	\$0.0	\$0.0	\$14.3
(Awards)	0	0	1	0	0	0	0	1
Other	\$0.0	\$5.5	\$1.0	\$0.0	\$3.4	\$19.3	\$0.3	29.5
(Awards)	0	1	1	0	1	1	1	5
TOTAL DOLLARS	\$10.1	\$116.5	\$212.0	\$183.0	\$303.3	\$513.3	\$437.0	\$1,775.2
TOTAL AWARDS	12	16	16	19	48	42	49	202

The data presented in the chart above supports the assertions made in previous research that the authorities of 10 U.S.C. 2358 (cooperative agreements) and 10 U.S.C. 2371 (other transactions) have made it possible for DoD to attract non-traditional contractors to DoD research efforts. However, the data presented in the chart below makes it clear that the lion’s share of awards and DoD RDT&E dollars awarded in the form of cooperative agreements and “other transactions” are being used to fund research performed by traditional defense contractors.

Table 5. Total Dollars (in millions) and Number of Awards of Cooperative Agreements and “Other Transactions” as Reported to Congress for Fiscal Years 1997 – 2003, No “Non-Traditional” Participation Reported

	FY97	FY98	FY99	FY00	FY01	FY02	FY03	Totals
“Major Player”, No “Non-Traditional” Participation	\$72.9	\$251.6	\$1,156.5	\$219.7	\$49.1	\$409.0	\$19.9	\$2,178.7
(Awards)	10	37	34	41	14	11	6	153
“Top 100 Contractor (Not “Major Player”) No “Non-Traditional” Participation	\$91.0	\$16.3	\$20.4	\$42.4	\$32.9	\$12.9	\$41.1	\$257.0
(Awards)	11	7	20	28	21	9	7	103
Traditional Defense Contractor (Not In “Top 100”), No “Non-Traditional” Participation	\$148.2	\$186.8	\$221.8	\$591.5	\$68.9	\$90.3	\$22.8	\$1,330.3
(Awards)	34	41	62	85	37	29	9	297
Teaming Arrangement With “Major Player” Participation, No “Non-Traditional” Participation	\$31.0	\$15.4	\$23.8	\$32.6	\$1.2	\$0.0	\$0.2	\$104.2
(Awards)	3	5	7	4	1	0	2	22
Teaming Arrangement With “Top 100 Contractor (Not “Major Player”) No “Non-	\$0.0	\$55.4	\$0.5	\$5.6	\$0.5	\$0.0	\$0.0	\$62.0

	FY97	FY98	FY99	FY00	FY01	FY02	FY03	Totals
Traditional” Participation								
(Awards)	0	1	1	2	1	0	0	5
Teaming Arrangement With Traditional Defense Contractor (Not In “Top 100”), <u>No</u> “Non-Traditional” Participation	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
(Awards)	0	0	0	0	0	0	0	0
Other	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
(Awards)	0	0	0	0	0	0	1	1
TOTAL DOLLARS (excludes “Other”)	\$343.1	\$525.5	\$1,423.0	\$891.8	\$152.6	\$512.2	\$84.0	\$3,932.2
TOTAL AWARDS (excludes “Other”)	58	91	124	160	74	49	25	581

It should be noted that the reports citing non-traditional subcontractors or non-traditional team members do not identify how much of the award value flows to those subcontractors/team members.

In order to get a flavor for the significant difference between “major player” and “non-traditional” prime contractor, the researcher presented data from fiscal year 2003 (pages 42 and 43). Using the data available in Appendix C, we can look at all fiscal years from 1997 through 2003 to determine if this is generally the case.

Table 6. Total Dollars (in millions) and Number of Awards of Cooperative Agreements and “Other Transactions” as Reported to Congress for Fiscal Years 1997 – 2003, “Non-Traditional” Prime Contractor and “Major Player”

	FY97	FY98	FY99	FY00	FY01	FY02	FY03	Totals
“Non-Traditional” Prime Contractor	\$10.1	\$58.5	\$10.8	\$24.1	\$120.9	\$20.1	\$152.1	\$396.6
(Awards)	12	9	5	10	21	13	17	87
“Major Player”, <u>No</u> “Non-Traditional” Participation	\$72.9	\$251.6	\$1,156.5	\$219.7	\$49.1	\$409.0	\$19.9	\$2,178.7
(Awards)	10	37	34	41	14	11	6	153

The data in Table 6 above was extracted directly from Table 4 and Table 5. This data shows that during the seven-year period from FY97 – FY03, \$396.6M in DoD RDT&E dollars were awarded through the use of cooperative agreements and “other transactions” directly to “non-traditional” prime contractors. This represents only 6.9 percent of the total \$5,707.4M awarded through the use of cooperative agreements and “other transactions” during that period. The amount of \$5,707.4 was arrived at by adding the totals from the Table 4 (\$1,775.2) and Table 5 (\$3,932.2).

A much larger number of dollars went to “major players” with no “non-traditional” contractor participation. The data above shows that during this period, \$2,178.7M (38.2 percent) of total RDT&E dollars awarded through the use of cooperative agreements and “other transactions” went directly to the “major players” with no “non-traditional” contractor participation.

In addition to the difference in total DoD RDT&E dollars awarded to these two groups, there is also a major difference between the number of awards and the average amount of the awards. Eighty-seven (87) awards were made to “non-traditional” prime contractors. One hundred, fifty-three (153) awards were made to “major players” with no “non-traditional” contractor participation. Dividing the total number of awards for each

group into the total dollars awarded we find that the average dollar amount of an award to a “non-traditional” prime contractor was \$4.6M, whereas, the average dollar amount of an award to a “major player” with no “non-traditional” contractor participation was more than three times as great at \$14.2M.

The analysis above was limited to a comparison between one segment of Table 4 (“Non-Traditional” Prime Contractor) and one segment of Table 5 (“Major Player”, No “Non-Traditional” Participation). We can also compare Tables 4 and 5 in their entirety. The data in those charts illustrate the fact that the number of dollars flowing to any cooperative agreement or “other transaction” with even a small amount of participation by a “non-traditional” contractor pales in comparison to the number of awards and amount of funds flowing to traditional defense contractors. During the seven-year period from fiscal year 1997 through fiscal year 2003, only 202 cooperative agreements and “other transactions” were awarded with some degree of “non-traditional” contractor participation, while 580 cooperative agreements and “other transactions” were awarded to traditional defense contractors with no “non-traditional” contractor participation.

The data in Table 4 shows that during that seven year period, \$1,775.2M in DoD RDT&E dollars were awarded through the use of cooperative agreements and “other transactions” which cite the participation of a “non-traditional” prime contractor, or (to some degree) “non-traditional” subcontractor(s) or team member(s). This represents 31.1 percent of the total \$5,707.4M awarded through the use of cooperative agreements and “other transactions” during that period.

The data in Table 5, shows that during that seven year period, \$3,932.2M in DoD RDT&E dollars were awarded through the use of cooperative agreements and “other transactions” which indicate that there is no participation of “non-traditional” contractors in these awards. This represents 68.9 percent of the total \$5,707.4M awarded through the use of cooperative agreements and “other transactions” during that period.

Only 31.1 percent of total DoD RDT&E dollars awarded through the use of cooperative agreements and “other transactions” went directly (or indirectly) to “non-traditional” contractors. Conversely, during that same seven-year period, 68.9 percent of

total RDT&E dollars awarded using cooperative agreements and “other transactions” went to traditional defense contractors with no “non-traditional” contractor participation.

E. SUMMARY

This chapter presented and analyzed all the Department of Defense Annual Reports on Cooperative Agreements and Other Transactions submitted to Congress for fiscal years 1997 through 2003. The data from these reports were reviewed to determine if “non-traditional” contractors have been attracted to DoD science and technology projects as a result of the authorities of 10 U.S.C. 2358 (cooperative agreements) and 10 U.S.C. 2371 (other transactions). The answer to that question is clearly “yes”.

However, the primary purpose of this chapter was to determine if cooperative agreements and “other transactions” have been awarded to traditional defense contractors, and if so, to what extent. The data presented above clearly illustrates that traditional defense contractors have received awards under the authorities of 10 U.S.C. 2358 and 10 U.S.C. 2371. The data also clearly illustrates that despite the intent of the legislation and the will of Congress to use these authorities to attract “non-traditional” contractors to DoD science and technology projects, a large majority of these awards have gone to traditional defense contractors who proposed no “non-traditional” contractor participation.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

The purpose of this study was to provide a comprehensive analysis of Department of Defense “other transaction” awards in order to determine the extent to which these awards have achieved the objectives of the legislation that made them possible. This final chapter will provide the researcher’s principal conclusions. These conclusions were derived from data accumulated and analyzed from all reports submitted to Congress by the Department of Defense detailing cooperative agreement and other transaction awards for fiscal years 1997 through 2003. Chapter IV will also present recommendations based on the principle conclusions, provide answers to research questions presented in Chapter I, and suggest opportunities for further research expanding on this, and previous research in the area of “other transactions.”

B. CONCLUSIONS

The data presented and analyzed in Chapter III lead this researcher to the following conclusions:

- The Department of Defense has been minimally successful at attracting “non-traditional” contractors to defense R&D projects.

As stated by Gilliland (2001), “DOD’s most frequently stated primary expected benefit of using Section 845 OTA is to give it access to more non-traditional R&D resources.” Congress indicated this in the language of the legislation authorizing OTA. The DUSD (AT&L) stated it in its most current OT regulatory document. Finally, GAO referred to it in a 2000 report as DOD’s most often cited expected benefit.”

As detailed in this thesis, only a very small number of cooperative agreements and “other transactions” have been awarded directly to “non-traditional” contractors for Department of Defense research and development efforts. The number of awards and the percentage of total awards are presented in the chart below.

	FY97	FY98	FY99	FY00	FY01	FY02	FY03	Totals
Total DoD awards of Cooperative Agreements or Other Transactions ¹	70	107	140	179	122	91	74	783
Total awards to “Non-Traditional” Prime Contractors ²	12	9	5	10	21	13	17	87
Percent awarded to “Non-Traditional” Contractors	17.1%	8.4%	3.6%	5.6%	17.2%	14.3%	23.0%	11.1%

1. Sum of Award Totals from Tables 4 and 5 (pages 45 and 47)

2. Totals from Table 4 (page 44)

If the purpose of the Other Transaction Authority was to attract “non-traditional” contractors to DoD research projects, and over the seven (7) year period only 11.1 percent of the awards went to these contractors, then this researcher concludes that (in large part) this “other transaction” approach to reaching these contractors was ineffective.

- The amount of RDT&E funding flowing to these “non-traditional” contractors is minuscule.

Chapter III documented the fact that “non-traditional” contractors tended to receive only a very small portion of the funding awarded through the use of cooperative agreements and “other transactions.” The details are presented in the chart below.

Dollars in Millions

	FY97	FY98	FY99	FY00	FY01	FY02	FY03	Totals
Total DoD RDT&E Dollars ¹	\$36,503	\$37,184	\$38,104	\$38,289	\$41,748	\$48,623	\$58,307	\$298,758
Total DoD RDT&E Dollars awarded through the use of Cooperative Agreements or Other Transactions to “Non-	\$10.1	\$58.5	\$10.8	\$24.1	\$120.9	\$20.1	\$152.1	\$396.6

	FY97	FY98	FY99	FY00	FY01	FY02	FY03	Totals
Traditional” Prime Contractors ²								
Percentage	.028%	.157%	.028%	.063%	.290%	.041%	.261%	.133%

1. Data Obtained from R-1 Reports as Presented in Table 2 (page 40)

2. Totals from Table 4 (page 44)

As discussed in Chapter II, the Department of Defense and Congress came to realize in the 1980’s that most of the innovation was taking place (and being funded) by companies that primarily served the needs of the commercial marketplace. DoD recognized that it was in the best interest of the Department to integrate the government and commercial sectors of the national technology and industrial base. Specifically, technology and industrial base integration would help reduce the Department of Defense’s life-cycle costs for weapon and support systems. It would also help increase technological sophistication by allowing the Department of Defense to take advantage of technology in the commercial marketplace that often is more advanced than what is available in the defense sector.

One would expect from the arguments made by DoD that once they received some relief from the laws and regulations associated with FAR-type procurements, the flood gates would be opened and DoD would be making large investments in commercially available technologies. That obviously was not the case. There is a huge disparity between the arguments made by DoD in the 1980’s in order to get Congressional authorization for a procurement vehicle like “other transactions,” and the actual use of that vehicle once authorization was given. It is very apparent from the table above that DoD has made minimal use of OTA as a means of integrating defense and commercial technology and industrial bases.

C. RECOMMENDATIONS

- Revise the DoD “OT Guide” to require the services to report the amount of funding expected to flow to “non-traditional” contractors.

As illustrated in Table 4, during fiscal years 1997 through 2003, there were one hundred and ten (110) awards to traditional defense contractors with one or more “non-traditional” subcontractors or team members. The problem is that little detail about these

awards is provided in the reports to Congress. Some reports identify the “non-traditional” players while others do not. None of the reports citing “non-traditional” subcontractors or “non-traditional” team members indicate how much of the award value flows to those subcontractors or team members.

If DoD and Congress are to fully determine the effectiveness of Other Transaction Authority, it is essential for these policy-making bodies to know how much of DoD’s RDT&E funding is going to these “non-traditional” contractors.

- It is time for Congress and the Department of Defense to evaluate and quantify the benefits of the Other Transaction Authority.

The Department of Defense is now in its ninth year of using Other Transaction Authority. It is time to determine if the Department is realizing the promised benefits of using “other transactions.”

Here are some of the questions to be answered regarding OTA:

- Have contractors actually contributed the cost-share on which some awards were based?
- Did “non-traditional” contractors benefit from their relationship with DoD and if so, how?
- Why have so many commercial firms participated in only one award?
- What benefits have been realized by DoD in using “other transactions” with traditional defense contractors?
- Many of the reports cited “dual-use” as the rationale for using an “other transaction.” How many new or improved products have entered the commercial market place as a result of the DoD funded research?

D. ANSWERS TO RESEARCH QUESTIONS

- Have Other Transactions (OTs) met the intent of Congress?

Research at the Naval Postgraduate School performed prior to this thesis touched on the fact that some previously untapped sources of commercial R&D did in fact begin to participate in DoD projects as a result of Other Transaction Authority, but not to the extent expected or intended. [Ref. 4: p. 101 and Ref. 5: p. 21]

The data presented in Chapter III of this thesis clearly illustrated that “non-traditional” defense contractors have received awards under the authorities of 10 U.S.C.

2358 and 10 U.S.C. 2371. The data also clearly illustrates that despite the intent of the legislation and the will of Congress to use these authorities to attract “non-traditional” contractors to DoD science and technology projects, a large majority of these awards have been awarded to traditional defense contractors who proposed no “non-traditional” contractor participation.

- What is Congressional intent with respect to Other Transactions?

Prior research by Stamatopoulos (1999), Gilliland (2001), and Tucker (2002), along with multiple DoD websites, unanimously assert that the primary purpose of Other Transaction Authority was to eliminate barriers which, in the past, had prevented DoD from tapping into private sector R&D and gaining access to industry leaders who traditionally did not do business with the Department of Defense.

- What percentage of Department of Defense RDT&E dollars are awarded through the use of Cooperative Agreements or Other Transactions?

The answer to this question, using data covering fiscal years 1997 through 2003, is presented in the chart below.

Dollars in Billions

	FY97	FY98	FY99	FY00	FY01	FY02	FY03	Totals
Total DoD RDT&E Dollars ¹	\$36.503	\$37.184	\$38.104	\$38.289	\$41.748	\$48.623	\$58.307	\$298.758
Total DoD RDT&E Dollars awarded through the use of Cooperative Agreements or Other Transactions ²	\$.353	\$.642	\$1.635	\$1.074	\$.455	\$1.025	\$.521	\$5.705
Percentage	.97%	1.73%	4.29%	2.80%	1.09%	2.11%	.89%	1.91%

1. Data Obtained from R-1 Reports as Presented in Table 2 (page 40)

2. Sum of RDT&E Dollar Totals from Tables 4 and 5 (pages 45 and 47)

- To what extent are traditional defense contractors the recipients of OTs?

Chapter III clearly illustrated that a large portion of cooperative agreements and “other transactions” were awarded to traditional defense contractors. The answer to this question, for fiscal years 1997 through 2003, is presented in the chart below.

	FY97	FY98	FY99	FY00	FY01	FY02	FY03	Totals
Total DoD awards of Cooperative Agreements or Other Transactions ¹	70	107	140	179	122	91	74	783
Total awards to “Non-Traditional” Prime Contractors ²	12	9	5	10	21	13	17	87
Awards made to Traditional Defense Contractors	58	98	135	169	101	78	57	696
Percent awarded to Traditional Defense Contractors	82.9%	91.6%	96.4%	94.4%	82.8%	85.7%	77.0%	88.9%

1. Sum of Award Totals from Tables 4 and 5 (pages 45 and 47)

2. Totals from Table 4 (page 44)

E. SUGGESTED AREAS FOR FURTHER RESEARCH

The intent of Congress when it passed Section 251 of Public Law 101-189 (10 U.S.C. 2371) was to provide the Department of Defense with a new vehicle that could be used to attract non-traditional contractors to DoD science and technology projects. Previous research at the Naval Postgraduate School concluded that “non-traditional” firms have participated in DoD science and technology projects as a result of other transaction authority. This thesis confirms and quantifies the findings of those researchers.

Previous researchers have also concluded that only a small portion of these “other transactions” were awarded to “non-traditional” contractors. Again, this thesis confirms and quantifies those findings.

This thesis served to answer several questions about the impact Other Transaction Authority had on the Department of Defense’s ability to attract “non-traditional” contractors. This thesis also identified areas requiring further research.

- To what extent did “non-traditional” contractors benefit when the awards were made to traditional defense contractors?

In Table 4 there are several categories listed where a traditional defense contractor received the prime award, but the report to Congress stated that a “non-traditional” contractor was a subcontractor or a team member. None of these reports quantified the amount of the award that flowed to the “non-traditional” contractor. Obtaining copies of all the proposals that were the basis for these awards, and quantifying the dollars flowing to the “non-traditional” contractors, would complete the analysis started by this thesis.

- From fiscal years 1998 through 2000, a significant portion of Cooperative Agreements and Other Transactions was awarded to “Major Players” with no “non-traditional” contractor participation. Significantly, fewer awards went to “Non-Traditional” Prime Contractors. Starting in fiscal year 2001, the opposite was true.

Table 6 (reproduced below) illustrates this trend.

	FY97	FY98	FY99	FY00	FY01	FY02	FY03	Totals
“Non-Traditional” Prime Contractor	\$10.1	\$58.5	\$10.8	\$24.1	\$120.9	\$20.1	\$152.1	\$396.6
(Awards)	12	9	5	10	21	13	17	87
“Major Player”, No “Non-Traditional” Participation	\$72.9	\$251.6	\$1,156.5	\$219.7	\$49.1	\$409.0	\$19.9	\$2,178.7
(Awards)	10	37	34	41	14	11	6	153

The average number of awards to a “Major Player” for fiscal years 1998, 1999, and 2000 was 37. The average number of awards to a “Major Player” for the next three fiscal years

dropped to 10. The average number of awards to a “Non-Traditional” Prime Contractor for Fiscal Years 1998, 1999, and 2000 was only eight. The average number of awards to a “Non-Traditional” Prime Contractor for the next three Fiscal Years jumped to 17.

- How many non-traditional contractors accepted cooperative agreements or “other transactions” more than once?

The true test of a successful product or service is the number of customers, particularly “repeat customers”. As shown in Table 4, there were eighty-seven (87) prime awards to “non-traditional” contractors in fiscal years 1997 through 2003. The spreadsheet at Appendix C details those eighty-seven (87) prime awards. You will note that of the eighty-seven (87) awards, fifty-eight (58) were made to contractors who never received another cooperative agreement or “other transaction” award during fiscal years 1997 through 2003. There may be three explanations for this. First, the research was concluded at the end of the performance period for the award. Second, the Government chose not to continue funding that research a second time. Third, the contractor would not accept another Government award.

Another category of prime awards to “non-traditional” contractors in fiscal years 1997 through 2003 is contractors who received two awards, yet would not be considered by this researcher to have received multiple awards. One example is 3COM Corporation. 3COM Corporation received two awards in 1997; however, those awards were made only one month apart. It is not likely that this contractor had time to evaluate the full “other transaction” experience before it accepted the second award. The reader will note that 3COM Corporation was not awarded (or did not accept) another “other transaction” award.

Another example is Gulfstream Aerospace Corporation. Although this firm received awards in fiscal years 2001 and 2002, the award in 2002 was merely an expansion to the 2001 effort. In essence, this contractor was only awarded one “other transaction” during the time period 1997 through 2003.

It is difficult to draw the same conclusion with regard to Frontier Systems, Inc since both awards were made in fiscal year 2003 (less than one month apart), and this thesis does not cover fiscal year 2004.

Additional research should delve into two areas. First, did contractors receiving their first awards in fiscal year 2003 accept any awards in subsequent fiscal years? Second, future research should involve surveying or interviewing the contractors who were not offered, or did not accept, any other awards beyond the one they were awarded during fiscal years 1997 through 2003 to determine why they did not participate a second time.

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APPENDIX A. BUDGET ACTIVITIES

0502 UNIFORM BUDGET AND FISCAL ACCOUNTING CLASSIFICATION

050201 RDT&E Budget Activities

The RDT&E budget activities are broad categories reflecting different types of RDT&E efforts. The definitions are provided below.

Budget Activity 1, Basic Research. Basic research is systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. It includes a scientific study and experimentation directed toward increasing fundamental knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long-term national security needs. It is farsighted high payoff research that provides the basis for technological progress. Basic research may lead to: (a) subsequent applied research and advanced technology developments in Defense-related technologies, and (b) new and improved military functional capabilities in areas such as communications, detection, tracking, surveillance, propulsion, mobility, guidance and control, navigation, energy conversion, materials and structures, and personnel support. Program elements in this category involve pre-Milestone A efforts.

Budget Activity 2, Applied Research. Applied research is systematic study to understand the means to meet a recognized and specific need. It is a systematic expansion and application of knowledge to develop useful materials, devices, and systems or methods. It may be oriented, ultimately, toward the design, development, and improvement of prototypes and new processes to meet general mission area requirements. Applied research may translate promising basic research into solutions for broadly defined military needs, short of system development. This type of effort may vary from systematic mission-directed research beyond that in Budget Activity 1 to sophisticated breadboard hardware, study, programming and planning efforts that establish the initial feasibility and practicality of proposed solutions to technological challenges. It includes studies, investigations, and non-system specific technology efforts. The dominant characteristic is that applied research is directed toward general military needs with a view toward developing and evaluating the feasibility and practicality of proposed solutions and determining their parameters. Applied Research precedes system specific technology investigations or development. Program control of the Applied Research program element is normally exercised by general level of effort. Program elements in this category involve pre-Milestone B efforts, also known as Concept and Technology Development phase tasks, such as concept exploration efforts and paper studies of alternative concepts for meeting a mission need.

Budget Activity 3, Advanced Technology Development (ATD). This budget activity includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. ATD includes concept and technology demonstration of components and subsystems or system models. The models may be form, fit and function prototypes or scaled models that serve the same demonstration purpose. The results of this type of effort are proof of technological feasibility and assessment of subsystem and component operability and producibility rather than the development of hardware for service use. Projects in this category have a direct relevance to identified military needs. Advanced Technology Development demonstrates the general military utility or cost reduction potential of technology when applied to different types of military equipment or techniques. Program elements in this category involve pre-Milestone B efforts, such as system concept demonstration, joint and Service-specific experiments or Technology Demonstrations and generally have Technology Readiness Levels of 4, 5, or 6. Projects in this category do not necessarily lead to subsequent development or procurement phases, but should have the goal of moving out of Science and Technology (S&T) and into the acquisition process within the future years defense program (FYDP). Upon successful completion of projects that have military utility, the technology should be available for transition.

Budget Activity 4, Advanced Component Development and Prototypes (ACD&P). Efforts necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment are funded in this budget activity. The ACD&P phase includes system specific efforts that help expedite technology transition from the laboratory to operational use. Emphasis is on proving component and subsystem maturity prior to integration in major and complex, systems and may involve risk reduction initiatives.

Program elements in this category involve efforts prior to Milestone B and are referred to as advanced component development activities and include technology demonstration. Completion of Technology Readiness Levels 6 and 7 should be achieved for major programs. Program control is exercised at the program and project level. A logical progression of program phases and development and /or production funding must be evident in the FYDP.

Budget Activity 5, System Development and Demonstration (SDD). SDD programs have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production. This budget activity is characterized by major line item projects and program control is exercised by review of individual programs and projects. Prototype performance is near or at planned operational system levels. Characteristics of this budget activity involve mature system development, integration and demonstration to support Milestone C decisions and conducting live fire test and evaluation (LFT&E) and initial operational test and evaluation (IOT&E) of production representative articles. A logical progression of program phases and development and production funding must be evident in the FYDP consistent with the Department's full funding policy.

Budget Activity 6, RDT&E Management Support. This budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation. Test ranges, military construction, maintenance support of laboratories, operation and maintenance of test aircraft and ships, and studies and analyses in support of the RDT&E program are funded in this budget activity. Costs of laboratory personnel, either in-house or contractor operated, would be assigned to appropriate projects or as a line item in the Basic Research, Applied Research, or Advanced Technology Development program areas, as appropriate. Military construction costs directly related to major development programs are included.

Budget Activity 7, Operational Systems Development. This budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year. All items are major line item projects that appear as RDT&E Costs of Weapon System Elements in other programs. Program control is exercised by review of individual projects. Programs in this category involve systems that have received Milestone C approval. A logical progression of program phases and development and production funding must be evident in the FYDP, consistent with the Department's full funding policy.

APPENDIX B. ANNUAL REPORT TO CONGRESS

Explanation of the Format for submission of data

Format Part I - Individual Inputs for Report to Congress

Format Part II - Summary of Prior Year Agreements with Funds Recouped During the Current Fiscal Year

Guidelines to Assist in Answering Part I Questions

Format Part III - Use of Independent Public Accountants pursuant to OT Guide, section C2.14.3.3.

EXPLANATION

Part I: Title 10, U.S.C. 2371(h) requires a report be submitted to Congress each year by December 31st for awards made in the preceding fiscal year, pursuant to this authority. This includes, for prototype projects that use this authority, all initial awards, new prototype projects added to existing agreements, and options exercised or new phases awarded. Individual agreement summaries should not exceed 2 pages. **Formatted examples are available electronically at <http://www.acq.osd.mil/dp> (under Defense Systems Procurement Strategies) and have all the settings properly implemented.** Follow those examples for guidance on submission. Format settings are described below for clarification. **Each agency should compile all Part I individual reports on prototype projects into one word document, with page breaks separating each prototype project.**

Page settings:

Use Portrait page orientation. Right, Left, Top and Bottom margins are set to 1.0 inch, Header and Footer are set to .5 inch from edge. Times New Roman 10 pitch for all text.

Header and Footer: Content is preset and may be modified by OSD – Do not change these.

Body of each report: Part I will be the individual report submissions. For this part: Headings will be preceded by a blank line, terminate with a colon and be in bold. Apply Title Case (each key word starts with a capital) to data text of the following headings: Type of Transaction, Title, Awarding Office, and Awardee. Text data for all other heading will be in sentence case. Put two spaces between the heading colon and the data that is entered. The data entry for each heading is not to be bolded or italicized. Be sure to delete the italicized instruction/informational content provided within the sample.

Data for the following headings should be on the same line as the heading: Agreement Number, Type of Agreement, Title, Awarding Office, Awardee (do not include the awardee's address or locale unless needed for differentiation, i.e. University of California, Irvine), Effective Date, Estimated Completion or Expiration Date, U.S. Government Dollars, Non-Government Dollars, Dollars returned to Government Account. If additional lines are needed, indent the subsequent line(s) of text to meet the beginning point for prior line of data entry. Dollar fields should be in whole dollars without cents (not in \$K) and every heading should have an entry – even if it's \$ 0. Put one space between the \$ and the first numeral.

Data entry for the following fields will be on the line immediately after the heading and will not be indented: Technical Objectives ..., both Extent to which ... questions, and the Other Benefits ... question.

Part II: Any Prototype Other Transactions that were reported in previous year Congressional reports that recouped funds during this reporting year are to be listed in a separate table. Provide the Agreement Number, Year the agreement was entered into and the amount of the recoupment. **Each agency should submit one word document for all Part II prototype reported.**

PART I SAMPLE REPORT FORMAT *(Delete this title in your submission, as well as all italicized instructions below.)*

Agreement Number: XXXXX-XX-X-XXXX *(The ninth position of all prototype OTs will be coded "9".)*

Type of Agreement: Other Transaction for Prototype

Title: Next Generation Electrical Architecture *(provide a short title describing the research or prototype project)*

Awarding Office: US Army Tank-Automotive and Armaments Command (TACOM), AMSTA-CM-CLGC *(identify the military department or defense agency and the buying office)*

Awardee: Boom Electronics, Inc. *(entry is in Title Case do not use address)*

Effective Date: 29 Sep 1999 *(entry is ## Aaa #####)*

Estimated Completion or Expiration Date: 30 Sep 2001

U. S. Government Dollars: \$ 2,285,000 *(entry is \$ ###,### - If zero use \$ 0 - identify the total dollar value of expected government contributions to the agreement)*

Non-Government Dollars: \$ 2,665,000 *(identify the total dollar value of expected non-government contributions to the agreement - if the reason authority is used is cost-sharing, then this amount must represent one third of the total dollars)*

Dollars Returned to Government Account: \$ 0 *(identify the amount of any payments made to the federal government in accordance with 10 U.S.C. 2371(d))*

Technical objectives of this effort including the technology areas in which the project was conducted:
The technical objectives of this effort... (describe the technical objectives and the technology areas being proven by the agreement).

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 ... (Discuss how the use of an other transaction agreement has contributed to a broadening of the technology and industrial base available for meeting DoD needs. The Guidelines in this Appendix can assist you in responding to this question. If the reason OTA is used is because non-traditional defense contractors are participating to a significant extent, then the answer to this question should identify who these non-traditional defense contractors are, what significant contribution they are making, and address how the use of OTA facilitated their participation.)

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 ... (Discuss how the use of an other transaction agreement has fostered new business relationships or practices that support the national security of the United States. Again, the Guidelines in this Appendix can assist you in responding to this question. If the reason OTA is used is based on cost-sharing or exceptional circumstances then the details then that reason should be explicitly stated in answering this question, and explained fully as discussed in the Guidelines to this Appendix.)

Other benefits to the DOD through use of this agreement:

The use of an other transaction has resulted in additional benefits, not addressed above... (This is an optional field that can be completed if there are other benefits that warrant reporting beyond those addressed above. If there are no other benefits to be reported, then delete this header in your report submission.)

GUIDELINES TO ASSIST IN ANSWERING PART I QUESTIONS

Extent the other transaction has contributed to a broadening of the technology and industrial base available for meeting DoD needs: *(Focus on how use of an other transaction makes a difference.*

Consider:)

- Did the use of the OT result in nontraditional defense contractors participating to a significant extent in the prototype project that would not otherwise have participated in the project? If so:
 - Identify the nontraditional defense contractors and explain why they would not typically participate if a procurement contract was used? For example, are they business units that normally accept no business with the government, that do business only through OTs or contracts for commercial items, or that limit their volume of Federal contracts to avoid a threshold at which they would have to comply with cost accounting standards or some other government requirement?
 - Were there provisions of the OT or features of the award process that enabled their participation? If so, explain specifically what they were.
- What are the significant contributions expected as a result of the nontraditional defense contractor's participation (e.g., supplying new key technology or products, accomplishing a significant amount of the effort, or in some other way causing a material reduction in the cost or schedule or increase in performance. Please be specific and explain how this contributes to a broadening of the technology and industrial base available to DoD?
- Did the Department gain access to technology areas or commercial products that would not be possible under a procurement contract? If so, identify these areas and explain how the use of the OT facilitated the access.
- Are there any other benefits of the use of the OT that you perceive helped the Department broaden the technology or industrial base available to DoD? If so, what were they, how do they help meet defense objectives, what features of the OT or award process enable us to realize them and why could they not have been realized using a procurement contract? Please be specific.

Extent the other transaction has fostered within the technology and industrial base *new relationships and practices that support the national security of the United States:* *(Focus on what is different because we are able to use an other transaction. Consider:)*

- Was OTA used in a circumstance where at least one third of the total funds of the prototype project are provided by the non-federal parties to the agreement? If so, state that this was the reason the authority was used and identify the percentage of funds being provided by non-federal parties to the agreement.
- Was use of OTA based on an SPE determination that exceptional circumstances justify the use of an OT that provides for innovative business arrangements or structures that would not be feasible or appropriate under a procurement contract? If so, state this is the reason the authority was used and fully describe the innovative business arrangements or structures, the associated benefits, and explain why they would not be feasible or appropriate under a procurement contract.
- Did the use of the OT result in the establishment of new relationships between the government and industry or among for-profit business units, among business units of the same firm, or between business units and nonprofit performers that will help us get better technology in the future? If so:
 - Explain the nature of the new relationships.
 - Explain why it is believed that these new relationships will help us get better technology in the future.
 - Were there provisions of the OT or features of the award process that enabled the creation of the new relationships? If so, explain specifically what they were and why these relationships could not have been created using a procurement contract.
- Did the use of the OT permit traditional government contractors to use new business practices in the execution of the prototype project that will help DoD get better technology, get new technology more quickly, or get it less expensively? If so:

- Who are those contractors and what are the new business practices?
- What are the specific benefits expected from the use of these new practices?
- Were there provisions of the OT or features of the award process that enabled the use of these new practices? If so, specifically what are they and why these practices could not have been used if the award had been made using a procurement contract?

Other benefits to the DoD of the use of this agreement: *(Are there any other benefits associated with the use of an OT beyond those addressed in the previous questions? If so:)*

- What are those benefits? How will they help meet defense objectives?
- Where there provisions of the OT or features of the award process that attributed to these benefits? If so, specifically what are they and why these benefits could not be achieved with a procurement contract?
- Can the benefits directly attributed to the use of the OTA be quantified?

PART III SAMPLE FORMAT

Agreement Number: XXXXX-XX-X-XXXX (The ninth position of all prototype OTs will be coded “9”.)

Title: Next Generation Electrical Architecture *(provide a short title describing the research or prototype project)*

Awarding Office: US Army Tank-Automotive and Armaments Command (TACOM), AMSTA-CM-CLGC *(identify the military department or defense agency and the buying office)*

Agreements Officer: John Doe *(provide the name of the Agreements Officer)*

Phone Number: xxx-xxx-xxxx *(provide the commercial phone number for the Agreements Officer)*

Business units that are not currently performing on procurement contracts subject to the Cost Principles (48 CFR Part 31) or Cost Accounting Standards (48 CFR Part 99) and will not accept an agreement that provides for government access to its records. (See OT Guide, section C2.14.3.3. Include the following information on each business unit that has been permitted to use an Independent Public Accountant for any needed audits.)

Business Unit Name: ABC Company

Business Unit Address: 2000 Commercial Plaza
Houston, TX XXXXX

Estimated Amount of this business units efforts: \$

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APPENDIX C. COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS

A. FY97

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 1997							
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	CONTRACTOR TYPE	
						"TOP100" RANK	"NON-TRADITIONAL" PRIME
"NON-TRADITIONAL" PRIME CONTRACTOR							
3COM Corporation	DARPA	MDA972-97-3-0012	OT(R)	\$0	\$0		X
3COM Corporation	DARPA	MDA972-97-3-0013	OT(R)	\$0	\$0		X
Beam Technologies, Inc.	DARPA	MDA972-97-3-0014	OT(R)	\$0	\$0		X
CFD Research Corporation	DARPA	MDA972-97-3-0015	OT(R)	\$0	\$0		X
Cisco Systems	DARPA	MDA972-97-3-0002	OT(R)	\$0	\$0		X
Corporation for National Research Initiatives	DARPA	MDA972-97-3-0019	OT(R)	\$0	\$0		X
DWA Aluminum Composites	U.S. Air Force - Ogden Air Logistics Center	F42820-97-4-0001	OT(845)	\$2,169,000	\$171,000		X
Hewlett Packard [consortium]	DARPA	MDA972-97-3-0008	OT(R)	\$1,200,000	\$11,576,000		X
Minnesota Mining and Manufacturing (3M)	U.S. Navy - Naval Air Warfare Center Weapons Division	N68936-97-3-0005	OT(845)	\$118,000	\$51,000		X
Motorola's Applied Simulation and Modeling Research Laboratory [consortium]	DARPA	MDA972-97-3-0009	OT(R)	\$3,475,000	\$3,697,000		X
Superconducting Core Technologies, Inc.	U.S. Air Force - Aeronautical Systems Center	F33657-97-4-4513	OT(845)	\$3,125,000	\$0		X
Texas Instruments Inc.	DARPA	MDA972-97-3-0005	OT(R)	\$0	\$0		X
				\$10,087,000	\$15,495,000		
"MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION							
Lockheed Martin Federal Systems	U.S. Navy - Space and Naval Warfare Systems Command	N00039-97-C-8004	OT(845)	\$7,500,000	\$0	1	
Boeing Defense and Space Group, ITN, Metaltek, MIT, University of Maryland, and University of Minnesota [consortium]	DARPA	MDA972-97-3-0017	OT(R)	\$2,400,000	\$1,475,000	2	
McDonnell Douglas Corp., a Wholly-Owned Subsidiary of the Boeing Company	U.S. Air Force - Aeronautical Systems Center	F33657-97-4-2058	OT(845)	\$10,361,000	\$21,900,000	2	
McDonnell Douglas Corp., a Wholly-Owned Subsidiary of the Boeing Company	U.S. Navy - Naval Air Systems Command	N00019-97-C-H-0173	OT(845)	\$13,957,000	\$22,146,000	2	
McDonnell Douglas Corp., a Wholly-Owned Subsidiary of the Boeing Company, Electric Boat, and Penn State University [consortium]	DARPA	MDA972-97-3-0016	OT(R)	\$8,100,000	\$959,000	2	

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 1997								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
McDonnell Douglas Helicopter Company, DBA McDonnell Helicopter Systems	U.S. Army - Communications Electronics Command	DAAB07-97-9-J046	OT(845)	\$11,205,000	\$11,205,000	2		
Northrop Grumman Corporation Electronic Systems and Integration Division Team including National Steel and Shipbuilding Company, Vitro Corp., Solipsys, and Band Lavis & Associates, Inc.	DARPA	MDA972-96-C-0806	OT(845)	\$15,000,000	\$0	3		
Raytheon Company	U.S. Air Force - Electronic Systems Center	F19628-97-4-0001	OT(845)	\$158,000	\$164,000	4		
Raytheon Texas Instruments Systems, Inc.	U.S. Navy - Space and Naval Warfare Systems Command	N00039-97-C-8002	OT(845)	\$179,000	\$60,000	4		
TRW, Inc.	U.S. Army - Communications Electronics Command	DAAB07-97-9-E314	OT(845)	\$4,026,000	\$411,000	7		
				\$72,866,000	\$58,320,000			
"TOP 100 CONTRACTOR, NOT "MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION								
General Electric, General Electric Aircraft Engines	U.S. Air Force - Aeronautical Systems Center	F33657-97-4-2059	OT(845)	\$6,640,000	\$908,000	11		
Science Applications International Corporation (SAIC)	DARPA	MDA972-97-3-0003	OT(R)	\$0	\$0	12		
Science Applications International Corporation (SAIC)	U.S. Navy - Space and Naval Warfare Systems Command	N00039-97-C-8003	OT(845)	\$7,500,000	\$0	12		
Texas Instruments and BBN [consortium]	DARPA	MDA972-97-C-0800	OT(845)	\$59,600,000	\$0	15		
Tracor Aerospace, Inc.	U.S. Army - Communications Electronics Command	DAAB07-97-9-E313	OT(845)	\$764,000	\$53,000	25		
L-3 Communications and Rockwell Collins	DARPA	MDA972-97-C-0804	OT(845)	\$1,000,000	\$1,616,000	27		
Alliant/Valence LLC	U.S. Navy - Naval Sea Systems Command	N00024-97-H-6398	OT(845)	\$3,449,000	\$2,447,000	30		
Allied Signal, Inc.	U.S. Navy - Space and Naval Warfare Systems Command	N00039-97-C-8005	OT(845)	\$4,535,000	\$4,679,000	52		
Harris Corporation	U.S. Air Force - Sacramento Air Logistics Command	F04806-97-4-0001	OT(845)	\$1,485,000	\$603,000	68		

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 1997								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Harris Corporation and GEC-Marconi Hazeltine Corporation [consortium]	DARPA	MDA972-97-C-0803	OT(845)	\$1,000,000	\$1,490,000	68		
VIASAT, Inc.	U.S. Navy - Space and Naval Warfare Systems Command	N00039-97-C-8006	OT(845)	\$5,000,000	\$3,749,000	79		
				\$90,973,000	\$15,545,000			
TEAMING ARRANGEMENT WITH "MAJOR PLAYER" PARTICIPATION, NO "NON-TRADITIONAL" PARTICIPATION								
Lockheed Martin, Government Electronic Systems Team including Litton Industries, Ingalls Shipbuilding, and Newport News Shipbuilding	DARPA	MDA972-96-C-0802	OT(845)	\$15,000,000	\$0	"1 - 32"		
Bath Iron Works Corporation Team including General Dynamics (Marine Div.), Electric Boat Corp., Raytheon Company, and Science Applications International Corporation	DARPA	MDA972-96-C-0803	OT(845)	\$15,000,000	\$0	"5 - 4 - 12"		
Motorola, Inc. with Raytheon E-Systems and Cubic Defense Systems	DARPA	MDA972-97-C-0805	OT(845)	\$1,000,000	\$547,000	"62 - 4"		
				\$31,000,000	\$547,000			
TRADITIONAL DEFENSE CONTRACTOR (NOT IN "TOP 100"), NO "NON-TRADITIONAL" PARTICIPATION								
Altamont Technologies, Inc.	U.S. Army - Communications Electronics Command	DAAB07-97-3-J047	OT(845)	\$900,000	\$700,000			
AM ¹ Consortium	DARPA	MDA972-97-3-0018	OT(R)	\$39,988,000	\$60,065,000			
Applications Technology, Inc.	U.S. Army - Army Research Laboratory	DAAL01-97-3-0164	OT(R)	\$597,000	\$597,000			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0002	OT(845)	\$120,000	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA201-97-C-1030	OT(845)	\$1,416,000	\$0			
Autometric, Inc. [see below]	National Imagery and Mapping Agency	NMA202-97-9-1032/0001	OT(845)	\$2,196,000	\$0			
BF Goodrich	U.S. Navy - Naval Air Systems Command	N00019-97-H-0152	OT(845)	\$9,020,000	\$9,020,000			
California Microwave Government Electronics	U.S. Navy - Marine Corps Systems Command	M67854-97-C-2115	OT(845)	\$1,904,000	\$1,939,000			
Caterpillar, Inc.	U.S. Navy - Marine Corps Systems Command	M67854-97-C-2116	OT(845)	\$322,000	\$235,000			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 1997								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Cryptek Secure Communications	U.S. Army - Communications Electronics Command	DAAB07-97-9-E312	OT(845)	\$413,000	\$468,000			
Electric Power Research Institute	DARPA	MDA972-97-3-0006	OT(R)	\$0	\$0			
Electrosorce, Inc.	U.S. Navy - Naval Air Systems Command	N00019-97-C-H-0172	OT(845)	\$261,000	\$112,000			
Howell Instruments, Inc.	U.S. Navy - Marine Corps Systems Command	M67854-97-C-2117	OT(845)	\$359,000	\$44,000			
Hughes Aircraft Company Defense Systems, University of North Carolina, and the University of Southern California	U.S. Navy - Naval Air Systems Command	N00019-97-C-2013	OT(845)	\$4,700,000	\$5,700,000			
Ipsilon Networks	DARPA	MDA972-97-3-0002	OT(R)	\$0	\$0			
JAYCOR	U.S. Air Force - Sacramento Air Logistics Command	F04806-97-4-0002	OT(845)	\$4,011,000	\$2,247,000			
Kollsman, Inc.	U.S. Army - Communications Electronics Command	DAAB07-97-3-D615	OT(845)	\$2,946,000	\$2,946,000			
Mayflower Communications Company, Inc.	U.S. Navy - Naval Air Warfare Center - China Lake	N68936-97-3-0001	OT(R)	\$0	\$0			
Mobil Datacom Corporation	U.S. Army - Communications Electronics Command	DAAB07-97-3-J048	OT(845)	\$1,635,000	\$1,635,000			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0002	OT(845)	\$250,000	\$0			
National Media Laboratory Strategic Alliance [see below]	National Imagery and Mapping Agency	NMA202-97-9-1050/0001	OT(845)	\$44,945,000	\$0			
Newco, Inc.	U.S. Navy - Naval Air Systems Command	N00019-97-C-H-0164	OT(845)	\$199,000	\$66,000			
Physical Acoustics Corporation	U.S. Navy - Naval Sea Systems Command	N00024-97-H-4194	OT(845)	\$294,000	\$294,000			
QuesTech Packaging, Inc.	U.S. Army - Communications Electronics Command	DAAB07-97-3-D322	OT(845)	\$515,000	\$57,000			
Scaled Composites, Inc.	U.S. Air Force - Wright Laboratories	F33615-97-4-5130	OT(845)	\$12,003,000	\$0			
Semiconductor Research Corp. & University of California at Berkeley	DARPA	MDA972-97-3-0007	OT(R)	\$0	\$0			
Signal Processing Systems	U.S. Navy - Naval Sea Systems Command	N00024-97-H-6244	OT(845)	\$3,104,000	\$1,000,000			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 1997								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Sikorsky Aircraft Corp.	U.S. Army - Communications Electronics Command	DAAB07-97-9-E315	OT(845)	\$3,122,000	\$695,000			
Sikorsky Aircraft Corp.	U.S. Army - Communications Electronics Command	DAAB07-97-3-D020	OT(845)	\$4,486,000	\$4,486,000			
Silicon Mountain Design, Inc.	U.S. Air Force - ASC/MNK	F08630-97-3-0001	OT(R)	\$227,000	\$228,000			
Spatial Integration Systems	U.S. Navy - Naval Sea Systems Command	N00024-97-H-4204	OT(845)	\$5,128,000	\$1,960,000			
Tivoli Systems, Inc.	U.S. Navy - Space and Naval Warfare Systems Command	N00039-97-C-8001	OT(845)	\$2,057,000	\$877,000			
University of Delaware	DARPA	MDA972-97-3-0004	OT(R)	\$0	\$0			
VISICOM Laboratories, Inc.	U.S. Navy - Naval Sea Systems Command	N00024-97-H-5247	OT(845)	\$1,127,000	\$1,149,000			
				\$148,245,000	\$96,520,000			
"The National Media Laboratory Strategic Alliance" is 3M, Motorola, Inc., Lucent Technologies, Ampex Data Systems Corporation, General Dynamics Electronic Systems, Inc., and Honeywell International, Inc.								
Autometric, Inc. is the lead contractors. Other partners are Rochester Institute of Technology, Oracle, Kodak, Ampex, U.S. Sprint, Silicon Graphics, and others.								

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DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 1998									
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE		
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
"NON-TRADITIONAL" PRIME CONTRACTOR									
Continental Teves (formerly ITT Automotive)	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0015	OT(R)	\$950,000	\$2,000,000		X		
Aucic Corporation	DARPA	MDA972-98-3-0003	OT(R)	\$0	\$0		X		
Dow-UT	Warfare Center Aircraft Division	N00421-98-C-1342	OT(R)	\$197,000	\$296,000		X		
DriverTech, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0006	OT(R)	\$354,000	\$157,000		X		
Fraunhofer Center for Research in Computer Graphics	U.S. Army - Army Research Laboratory	DAAL01-98-3-0035	OT(R)	\$241,000	\$279,000		X		
Minnesota Mining and Manufacturing (3M), California Institute of Technology, New York University, University of Michigan, Stanford University, Cornell University, and SC Solutions	U.S. Navy - Office of Naval Research	N00014-98-3-0015	OT(R)	\$1,781,000	\$1,320,000		X		
Rocky Research, Bergstrom, Inc., and United Defense	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0013	OT(R)	\$731,000	\$765,000		X	X	
Silicon Graphics, Inc.	National Security Agency	MDA904-98-3-0001	OT(R)	\$53,000,000	\$53,000,000		X		
Silicon Power Corporation	U.S. Navy - Office of Naval Research	N00014-98-3-0008	OT(R)	\$1,214,000	\$1,214,000		X		
				\$58,468,000	\$59,031,000				
"MAJOR PLAYER", "NON-TRADITIONAL" PARTICIPATION									
Lockheed Martin Advanced Technology Laboratories	U.S. Navy - Space and Naval Warfare Systems Command	N00039-98-9-0032	OT(845)	\$1,361,000	\$1,976,000	1		X	
Lockheed Martin Corporation	U.S. Navy - Naval Sea Systems Command	N00024-98-9-2304	OT(845)	\$1,000,000	\$0	1		X	
ThermoTrex Corporation and Boeing Company	U.S. Air Force - Air Force Research Laboratory	F29601-97-9-0152	OT(845)	\$27,788,000	\$0	2		X	
				\$30,149,000	\$1,976,000				
"MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION									
Lockheed Martin Astronautics	U.S. Air Force - Air Force, Space and Missile Systems Center	F04701-98-9-0003	OT(845)	\$10,000,000	\$0	1			
Lockheed Martin Corporation	U.S. Air Force - Air Force Research Laboratory	F33615-98-3-5105	OT(R)	\$6,760,000	\$5,684,000	1			
Lockheed Martin Corporation IR Imaging Systems	U.S. Army - Communications-Electronics Command	DAAB07-98-3-D262	OT(R)	\$992,000	\$1,043,000	1			
Lockheed Martin Corporation IR Imaging Systems	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-C-0009	OT(R)	\$1,400,000	\$1,400,000	1			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 1998								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Lockheed Martin Federal Systems	U.S. Navy - Naval Air Systems Command	N00019-98-9-0132	OT(845)	\$61,839,000	\$0	1		
Lockheed Martin Vought Systems	U.S. Air Force - Air Force Research Laboratory	F08630-98-3-0001	OT(R)	\$201,000	\$424,000	1		
Lockheed Martin Vought Systems	DARPA	MDA972-98-9-0001	OT(845)	\$2,993,000	\$0	1		
Lockheed Martin Vought Systems / AM ³ Consortium	DARPA	MDA972-98-3-0004	OT(R)	\$23,000,000	\$23,000,000	1		
Lockheed Martin, Tactical Aircraft Systems	DARPA	MDA972-98-9-0005	OT(845)	\$4,000,000	\$0	1		
Sanders, A Lockheed Martin Company	DARPA	MDA972-98-9-0011	OT(845)	\$7,600,000	\$0	1		
Boeing Company	U.S. Air Force - Air Force Research Laboratory	F33615-98-3-5103	OT(R)	\$4,767,000	\$4,767,000	2		
Boeing Company, Information, Space and Defense Systems	DARPA	MDA972-98-9-0003	OT(845)	\$1,000,000	\$400,000	2		
Boeing Company, Information, Space and Defense Systems	DARPA	MDA972-98-9-0008	OT(845)	\$4,000,000	\$0	2		
McDonnell Douglas Corp., a Wholly Owned Subsidiary of the Boeing Company, Boeing Company, Aerojet, and Pratt & Whitney	U.S. Air Force - Air Force Research Laboratory	F33615-98-9-2880	OT(845)	\$9,999,000	\$4,477,000	2		
McDonnell Douglas Corporation	U.S. Air Force - Air Force Research Laboratory	F33615-98-3-5104	OT(R)	\$8,239,000	\$7,501,000	2		
McDonnell Douglas Helicopter Systems	DARPA	MDA972-98-9-0009	OT(845)	\$12,000,000	\$12,000,000	2		
Raytheon Company, Raytheon Electronics Systems Laboratories	U.S. Navy - Space and Naval Warfare Systems Command	N00039-98-9-0044	OT(845)	\$2,207,000	\$0	3		
Raytheon E-Systems, Inc.	DARPA	MDA972-98-9-0007	OT(845)	\$4,000,000	\$0	3		
Raytheon Missile Systems Company	U.S. Air Force - Air Force Research Laboratory	F29601-98-9-0001	OT(845)	\$11,348,000	\$0	3		
Raytheon Missile Systems Company	U.S. Navy - Naval Air Warfare Center - China Lake	N68936-98-9-0001	OT(845)	\$424,000	\$0	3		
Raytheon Systems Company	U.S. Army - Communications-Electronics Command	DAAB07-98-3-J013	OT(R)	\$475,000	\$491,000	3		
Raytheon Systems Company	DARPA	MDA972-98-3-0007	OT(R)	\$2,500,000	\$1,570,000	3		
Raytheon Systems Company	DARPA	MDA972-98-9-0010	OT(845)	\$7,600,000	\$0	3		
Raytheon Systems Company, Defense Systems	DARPA	MDA972-98-9-0014	OT(845)	\$10,000,000	\$0	3		
Raytheon Systems Company, Training and Services	U.S. Navy - Naval Surface Warfare Center, Carderock Division	N00167-98-3-0070	OT(R)	\$866,000	\$866,000	3		
Raytheon TI Systems	U.S. Army - Communications-Electronics Command	DAAB07-98-8-J603	OT(845)	\$1,436,000	\$1,409,000	3		

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 1998								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Raytheon TI Systems, Inc.	U.S. Navy - Office of Naval Research	N00014-98-3-0013	OT(R)	\$1,163,000	\$1,211,000	3		
Raytheon TI Systems, Inc., Surface Systems & Sensors, Electronic Systems Division	U.S. Army - Communications-Electronics Command	DAAB07-98-3-J002	OT(R)	\$12,000,000	\$12,000,000	3		
Northrop Grumman Corporation	U.S. Air Force - Air Force Research Laboratory	F33615-98-3-5106	OT(R)	\$7,131,000	\$6,229,000	4		
Northrop Grumman Corporation	DARPA	MDA972-98-9-0006	OT(845)	\$4,000,000	\$0	4		
Northrop Grumman Corporation, Electronic Sensors and Systems Division	DARPA	MDA972-98-3-0009	OT(R)	\$2,000,000	\$2,000,000	4		
Northrop Grumman Corporation, Military Aircraft Systems Division	U.S. Navy - Office of Naval Research	N00014-98-3-0014	OT(R)	\$473,000	\$473,000	4		
Northrop Grumman Norden Systems, Inc.	U.S. Navy - Naval Sea Systems Command	N00024-98-2-5222	OT(845)	\$3,800,000	\$2,200,000	4		
General Dynamics Advanced Technology Systems	DARPA	MDA972-98-9-0015	OT(845)	\$818,000	\$240,000	5		
General Dynamics Land Systems Inc.	DARPA	MDA972-98-9-0002	OT(845)	\$2,997,000	\$0	5		
TRWS&ITG, Data Tech Division	DARPA	MDA972-98-9-0012	OT(845)	\$7,800,000	\$0	6		
TRW, Inc., Space and Laser Programs Division	U.S. Air Force - Air Force, Space and Missile Systems Center	F04701-98-9-0002	OT(845)	\$10,000,000	\$0	6		
				\$251,628,000	\$89,385,000			
OTHER								
Call/Recall, Inc., Hewlett-Packard Company, Irvine Sensors Corporation, and University of Southern California [FROST Consortium]	U.S. Air Force - Air Force Research Laboratory	F30802-98-3-0228	OT(R)	\$5,535,000	\$1,359,000	81		X
"TOP 100 CONTRACTOR, NOT "MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION								
ITT Aerospace Communications Division	DARPA	MDA972-98-9-0013	OT(845)	\$10,000,000	\$0	23		
Rockwell International Corporation	U.S. Navy - Office of Naval Research	N00014-98-3-0012	OT(R)	\$1,577,000	\$1,577,000	33		
General Motors Corporation, General Motors R&D Center	U.S. Navy - Office of Naval Research	N00014-98-3-0011	OT(R)	\$1,471,000	\$1,471,000	44		
General Motors Corporation, GM Advanced Technology Vehicles	U.S. Navy - Office of Naval Research	N00014-98-3-0009	OT(R)	\$294,000	\$294,000	44		
General Motors Corporation, Virginia Power Electronics Center, and Virginia Polytechnic Institute and State University	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0002	OT(R)	\$305,000	\$305,000	44		

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 1998								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
General Atomics and EDSA Micro Corporation	U.S. Navy - Office of Naval Research	N00014-98-3-0018	OT(R)	\$199,000	\$200,000	67		
Utah State University, College of Engineering	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0023	OT(R)	\$2,500,000	\$250,000	82		
				\$16,346,000	\$4,097,000			
TEAMING ARRANGEMENT WITH "MAJOR PLAYER" PARTICIPATION, "NON-TRADITIONAL" PARTICIPATION								
McDonnell Douglas Corp., a Wholly Owned Subsidiary of the Boeing Company, General Dynamics Information Systems, Honeywell Incorporated, DY-4, Wind River, and Green Hill	U.S. Navy - Naval Air Systems Command	N00019-98-H-0118	OT(845)	\$22,045,000	\$0	"2 - 5 - 55"		X
TEAMING ARRANGEMENT WITH "MAJOR PLAYER" PARTICIPATION, NO "NON-TRADITIONAL" PARTICIPATION								
GE Aircraft Engines, GE Corporate Research & Development, Lockheed Martin Control Systems, Ocean Sensor Technologies, Inc., Penn State University's Applied Research Laboratory - (IMATE Consortium)	DARPA	MDA972-98-3-0002	OT(R)	\$3,638,000	\$3,638,000	"17 - 1 - 36"		
Boeing Information, Space and Defense Systems, MIT, and Penn State University	DARPA	MDA972-98-3-0001	OT(R)	\$8,023,000	\$1,372,000	"2 - 10 - 36"		
Raytheon Training, Inc., General Motors Service Technology Group, Interactive Solutions, Army National Guard, and New Jersey Institute of Technology	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0003	OT(R)	\$1,204,000	\$1,475,000	"3 - 44"		
Northrop Grumman Corporation, Electronic Sensors and Systems Division, MIT, and Maternal Systems, Inc.	U.S. Navy - Office of Naval Research	N00014-98-3-0018	OT(R)	\$2,071,000	\$2,717,000	"4 - 10"		
TRW, Inc., Electronics & Technology Division, Georgia Tech Research Corporation, and University of Minnesota	U.S. Navy - Office of Naval Research	N00014-98-3-0019	OT(R)	\$432,000	\$432,000	"6 - 78"		
				\$15,369,000	\$9,634,000			
TEAMING ARRANGEMENT WITH "TOP 100 CONTRACTOR (NOT "MAJOR PLAYER")", NO "NON-TRADITIONAL" PARTICIPATION								

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 1998								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Space Technology Development Corporation, Naval Research Laboratory, Allied Signal Technical Services Corporation, SAIC, Space Systems/Loral, and Applied Chherent Technology	U.S. Navy - Office of Naval Research	N00014-98-3-0001	OT(R)	\$55,413,000	\$73,487,000	"82 - 11"		
TRADITIONAL DEFENSE CONTRACTOR (NOT IN "TOP 100"), "NON-TRADITIONAL" PARTICIPATION								
Applications Technology, Inc., Onset Technology, Inc., and Shnout LTD	U.S. Army - Army Research Laboratory	DAAL01-97-3-0164	OT(R)	\$104,000	\$104,000			X
VisiCom Laboratories and Eagle Perch, Inc.	U.S. Navy - Naval Air Systems Command	N00019-98-9-0194	OT(845)	\$279,000	\$0			X
				\$383,000	\$104,000			
TRADITIONAL DEFENSE CONTRACTOR (NOT IN "TOP 100"), NO "NON-TRADITIONAL" PARTICIPATION								
Advanced Refractory Technologies, Inc.	U.S. Army - Communications-Electronics Command	DAAB07-98-3-D006	OT(845)	\$12,746,000	\$2,989,000			
Asymetrix Learning Systems, Inc.	U.S. Navy - Naval Air Warfare Center, Training Systems Division	N61339-98-3-0001	OT(R)	\$500,000	\$504,000			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0003	OT(845)	\$2,720,000	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0004	OT(845)	\$632,000	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0005	OT(845)	\$23,016,000	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0006	OT(845)	\$1,536,000	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0007	OT(845)	\$90,000	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0008	OT(845)	\$1,409,000	\$0			
Avondale Industries, Inc., Bath Iron Works, Electric Boat Corporation, Ingalls Shipbuilding, Inc., National Steel & Shipbuilding Corporation, Newport News Shipbuilding, Atlantic Marine Holding Company, Halter marine, Inc., Todd Pacific Shipyard Corporation [Consortium]	DARPA	MDA972-98-3-0008	OT(R)	\$1,399,000	\$1,427,000			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 1998								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Bath Iron Works Corporation	U.S. Navy - Naval Sea Systems Command	N00024-98-9-2300	OT(845)	\$70,000,000	\$0			
California Microwave, Inc., Information Systems Division	U.S. Army - Communications-Electronics Command	DAAB07-98-9-J031	OT(845)	\$9,159,000	\$0			
Cummins Engine Company, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0008	OT(R)	\$478,000	\$478,000			
ERIM International, Inc., Ford, Chrysler, and AM General	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0016	OT(R)	\$7,344,000	\$7,344,000			
Frontier Systems, Inc.	DARPA	MDA972-98-9-0004	OT(845)	\$16,700,000	\$0			
GEC-Marconi / Rockwell Collins Data Link Solutions, LLC	U.S. Navy - Space and Naval Warfare Systems Command	N00039-97-C-8007	OT(845)	\$999,000	\$3,479,000			
Hewlett-Packard Company, Hewlett Packard Laboratories	U.S. Air Force - Air Force Research Laboratory	F30802-98-3-0232	OT(R)	\$2,122,000	\$2,228,000			
HRL Laboratories, LLC, University of Michigan, and University of Notre Dame [consortium]	U.S. Navy - Office of Naval Research	N00014-98-3-0010	OT(R)	\$1,687,000	\$1,687,000			
Indigo Systems Corporation	U.S. Army - Communications-Electronics Command	DAAB07-98-3-J006	OT(R)	\$892,000	\$893,000			
Kopin Corporation	U.S. Army - Communications-Electronics Command	DAAB07-98-3-J032	OT(R)	\$3,648,000	\$1,089,000			
Lanxide Electronics Components, Inc.	U.S. Navy - Office of Naval Research	N00014-98-3-0007	OT(R)	\$424,000	\$443,000			
Laser-Scan Technologies, Inc.	National Imagery and Mapping Agency	NMA201-98-9-0022	OT(845)	\$818,000	\$0			
Microelectronics Advanced Research Corporation	DARPA	MDA972-98-3-0005	OT(R)	\$0	\$0			
Mobile Medical International Corporation and Daimler-Benz/Dornier	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0024	OT(R)	\$500,000	\$230,000			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0003	OT(845)	\$1,495,000	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0005	OT(845)	\$308,000	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0006	OT(845)	\$125,000	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0007	OT(845)	\$620,000	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0008	OT(845)	\$400,000	\$0			
Oshkosh Truck Corporation	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0017	OT(R)	\$447,000	\$447,000			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 1998								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Pacific Marine & Supply Company and Lockheed Martin	U.S. Navy - Office of Naval Research	N00014-98-3-0017	OT(R)	\$1,998,000	\$2,005,000			
Power Systems Group	U.S. Navy - Office of Naval Research	N00014-98-3-0002	OT(R)	\$247,000	\$247,000			
PRC, Inc.	U.S. Army - Communications-Electronics Command	DAAB07-98-3-D008	OT(R)	\$685,000	\$993,000			
Rutgers, The State University of New Jersey, Inframat Corporation, A&A Company, Nanopowder Enterprises, Inc., Nanodyne, Inc., Sematech International, and Praxair Surface Technologies [consortium]	U.S. Navy - Office of Naval Research	N00014-98-3-0005	OT(R)	\$1,794,000	\$1,794,000			
Sensor Technology Limited, BM Hi-Tech Division	U.S. Navy - Office of Naval Research	N00014-98-3-0021	OT(R)	\$450,000	\$450,000			
Simula Technologies, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0007	OT(R)	\$216,000	\$216,000			
SunLine Service Group	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0025	OT(R)	\$1,871,000	\$339,000			
TASC, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0014	OT(R)	\$2,425,000	\$2,425,000			
The ISE Research Corporation	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0004	OT(R)	\$240,000	\$266,000			
The Regents of the University of Michigan, Michigan Automotive Research Center	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0022	OT(R)	\$12,500,000	\$310,000			
Thomson-CSF Communications	U.S. Navy - Space and Naval Warfare Systems Command	N00039-97-C-8008	OT(845)	\$1,000,000	\$2,152,000			
Ultramer, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-98-3-0012	OT(R)	\$1,110,000	\$1,252,000			
				\$186,750,000	\$35,687,000			

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DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 199								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
"NON-TRADITIONAL" PRIME CONTRACTOR								
ABB Power T&D Company, Inc.	U.S. Navy - Office of Naval Research	N00014-99-3-0002	OT(R)	\$6,642,443	\$6,642,443		X	
AT&T Labs	DARPA	MDA972-99-3-0003	OT(R)	\$1,000,000	\$1,007,428		X	
Cinergy Technology, Inc.	U.S. Navy - Naval Surface Warfare Center - Crane Division	N00164-98-2-0001	CA	\$1,600,000	\$1,800,000		X	
Pacific Marine & Supply Company, LTD, California State University at Long Beach, Cislunar Aerospace, Inc. and Nichols Advanced Marine	U.S. Navy - Office of Naval Research	N00014-99-3-0008	OT(R)	\$1,000,000	\$1,000,000		X	X
Paramount Digital Entertainment	U.S. Navy - Naval Air Warfare Center, Training Systems Division	N61339-99-3-0001	OT(R)	\$525,000	\$301,000		X	
				\$10,767,443	\$10,750,871			
"MAJOR PLAYER", "NON-TRADITIONAL" PARTICIPATION								
Lockheed Martin Corporation, Space Electronics & Communications and IBM	U.S. Air Force - Air Force Research Laboratory	F29601-99-9-0148	OT(845)	\$24,912	\$1,115,760	1		X
Lockheed Martin Information Systems	U.S. Air Force - Warner-Robins Air Logistics Center	F09603-99-9-0001	OT(845)	\$3,003,763	\$1,995,836	1		X
Boeing Company, Information, Space and Defense Systems, Applied Systems Intelligence, OR Concepts Applied, and Foam Matrix	DARPA	MDA972-99-9-0003	OT(845)	\$110,000,000	\$21,000,000	2		X
McDonnell Douglas Corporation	U.S. Navy - Office of Naval Research	N00014-99-3-0011	OT(R)	\$2,376,454	\$2,376,676	2		X
Northrop Grumman Corporation, Electronic Sensors and Systems Division and Paratek	DARPA	MDA972-99-3-0005	OT(R)	\$1,719,690	\$1,094,867	3		X
				\$117,124,619	\$27,563,139			
"MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION								
Lockheed Martin Aeronautical Company	U.S. Navy - Office of Naval Research	N00014-99-3-0010	OT(R)	\$999,998	\$1,000,000	1		
Lockheed Martin Corporation	U.S. Air Force - Air Force, Space and Missile Systems Center	F04701-98-9-0004	OT(845)	\$500,000,000	variable	1		
Lockheed Martin Corporation IR Imaging Systems	U.S. Army - Communications Electronics Command	DAAB07-99-9-J564	OT(845)	\$5,500,000	\$0	1		
Lockheed Martin Corporation IR Imaging Systems & Insight Technologies	U.S. Army - Communications Electronics Command	DAAB07-99-3-K517	OT(R)	\$1,040,000	\$1,040,000	1		

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 1999									
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE		
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
Lockheed Martin Corporation, Government Electronic Systems	U.S. Navy - Naval Sea Systems Command	N00024-99-9-5386	OT(845)	\$63,300,000	\$125,000,000	1			
Lockheed Martin Undersea Systems	U.S. Navy - Naval Undersea Warfare Center, Newport Division	N66604-99-W-3006	OT(R)	\$111,000	\$20,000	1			
Lockheed Martin Vought Systems	U.S. Air Force - Air Force Research Laboratory	F08630-99-9-0001	OT(845)	\$15,290,000	\$17,652,000	1			
Sanders, A Lockheed Martin Company	U.S. Army - Communications Electronics Command	DAAB07-99-3-K523	OT(R)	\$2,100,000	\$2,100,000	1			
Sanders, A Lockheed Martin Company, University of Maryland, and MIT	DARPA	MDA972-99-3-0029	OT(R)	\$395,959	\$0	1			
Boeing Company	U.S. Army - Aviation and Missile Command	NCCW-0076	CA	\$137,627	\$137,627	2			
Boeing Company	U.S. Army - Aviation and Missile Command	NCCW-0076	CA	\$450,000	\$450,000	2			
Boeing Company	U.S. Navy - Naval Air Systems Command -Naval Air Warfare Center Weapons Division	N68936-99-9-0004	OT(845)	\$477,642	\$275,000	2			
Boeing Company [consortium]	U.S. Army - Aviation and Missile Command	NCCW-0076	OT(R)	\$75,000	\$75,000	2			
Boeing Company, Information, Space and Defense Systems	DARPA	MDA972-99-9-0002	OT(845)	\$1,800,000	\$800,000	2			
Boeing Company, NASA, & DARPA [tripartite agreement]	DARPA	MDA972-99-9-0008	OT(845)	\$1,952,000	\$0	2			
Boeing Military Aircraft & Missile Systems Group	U.S. Army - Army, Aviation and Missile Command	DAAH01-99-3-R001	OT(845)	\$22,900,000	\$0	2			
McDonnell Douglas Corporation	U.S. Navy - Office of Naval Research	N00014-98-3-0022	OT(R)	\$251,750	\$270,793	2			
McDonnell Douglas Corporation	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-99-3-1345	OT(R)	\$195,405	\$195,801	2			
McDonnell Douglas Corporation	U.S. Navy - Naval Air Systems Command	N00019-99-9-0029	OT(845)	\$0	\$45,700,000	2			
McDonnell Douglas Corporation	U.S. Navy - Naval Air Systems Command	N00019-99-9-1428	OT(845)	\$11,756,115	\$0	2			
McDonnell Douglas Corporation	U.S. Navy - Naval Air Systems Command -Naval Air Warfare Center Weapons Division	N68936-99-9-0003	OT(845)	\$712,769	\$0	2			
McDonnell Douglas Corporation	U.S. Air Force - Air Force, Space and Missile Systems Center	F04701-98-9-0005	OT(845)	\$500,000,000	variable	2			
McDonnell Douglas Corporation	U.S. Air Force - Air Force Research Laboratory	F08630-99-9-0002	OT(845)	\$1,050,000	\$49,947	2			
McDonnell Douglas Corporation	U.S. Air Force - Air Force Research Laboratory	F08630-99-9-0006	OT(845)	\$1,050,000	\$79,988	2			
McDonnell Douglas Helicopter Systems	U.S. Army - Aviation and Missile Command	NCC2-99088	OT(R)	\$500,000	\$500,000	2			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 199									
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE		
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
McDonnell Douglas Helicopter Systems, a Wholly-Owned Subsidiary of the Boeing Company Northrop Grumman Corporation, Electronic Sensors and Systems Division	DARPA	MDA972-99-9-0001	OT(845)	\$2,500,000	\$2,500,259	2			
Teledyne Ryan Aeronautical (Novated to: Northrop Grumman Ryan Aeronautical Center) and Sunstrand Aerospace	U.S. Army - Army, Aviation and Missile Command	DAAH01-99-3-R002	OT(845)	\$49,671	\$58,723	3			
Raytheon E-Systems, Inc., Alternate Realities Corp., Amana Electronics Company Inc., Applied Research Associates Inc., Applied Research Laboratories, ASRC Communications Ltd., Colorado School of Mines, Commonwealth Computer Research, Penn State University, University of Southern California, Carnegie Mellon University, Foster-Miller Inc.,	DARPA	MDA972-99-9-0006	OT(845)	\$14,100,000	\$0	3			
GENROCO Inc., Houston Associates Inc., Infomaniacs, Institute for Global Futures, InterSense Inc., Intrinsic Software, Jaycor Inc., Lechel & Associates Inc., MARK Resources Inc., Mercury Computer Systems Inc.,									
Scientific Computing Associates Inc., Orbital Sciences, University of Oklahoma, Sandia Research Corp., Retinal Displays, Inc., Syracuse Research Corp., Oracle, and The Virtual Workshop	DARPA	MDA972-99-3-0035	OT(R)	\$0	\$0	4			
Raytheon Systems Company	U.S. Army - Communications-Electronics Command	DAAB07-99-3-K518	OT(R)	\$3,450,000	\$3,450,000	4			
Raytheon Systems Company	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-99-9-0001	OT(845)	\$200,000	\$512,000	4			
TRW Inc., Space and Electronics Group	U.S. Navy - Office of Naval Research	N00014-99-3-0013	OT(R)	\$208,267	\$208,267	5			
Science Applications International Corporation (SAIC)	U.S. Navy - Space and Naval Warfare Systems Command	N00039-99-9-4001	OT(845)	\$3,491,411	\$370,000	9			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 199									
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE		
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
Science Applications International Corporation (SAIC), Arsete Associates, Avtec Systems,									
CAE Soft, Inc.; Coherent Technologies, PAR Systems, Vista Research, and Foster Wheeler	DARPA	MDA972-99-3-0022	OT(R)	\$463,634	\$0	9			
				\$1,156,508,148	\$202,445,405				
"TOP 100 CONTRACTOR, NOT "MAJOR PLAYER", "NON-TRADITIONAL" PARTICIPATION									
General Dynamics Land Systems, Inc. and Magnet Motors GmbH	U.S. Navy - Naval Surface Warfare Center, Carderock Division	N00167-99-9-0029	OT(845)	\$22,000,000	\$0	12		X	
ITT Aerospace Communications Division, McQ Associates, Mykotronz,									
Diamond Back Systems, and Atlantic Aerospace Electronics Corporation	DARPA	MDA972-99-9-0007	OT(845)	\$40,000,000	\$6,500,000	16		X	
Honeywell Technology Center, Predict DLI, University of Minnesota, CalTech,									
Bioanalytic Microsystems, Inc., Electronic Sensors & Instrumentation	U.S. Navy - Office of Naval Research	N00014-98-3-0020	OT(R)	\$1,176,110	\$1,176,110	58		X	
Honeywell, Inc., Space Systems and Motorola	U.S. Air Force - Air Force Research Laboratory	F29601-98-9-0193	OT(845)	\$5,637,109	\$4,829,523	58		X	
				\$68,813,219	\$12,505,633				
"TOP 100 CONTRACTOR, NOT "MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION									
General Dynamics Land Systems Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-99-3-0008	OT(R)	\$8,000,000	\$8,200,000	12			
Johns Hopkins University Applied Physics Laboratory and Aerospace Corporation [Consortium]	DARPA	MDA972-99-3-0021	OT(R)	\$97,966	\$0	14			
General Electric Aircraft Engines	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-99-3-1607	OT(R)	\$1,318,923	\$1,452,610	17			
General Electric Corporate Research & Development	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-99-3-1606	OT(R)	\$605,013	\$605,576	17			
Bell Helicopter Textron	U.S. Army - Aviation and Missile Command	NCC2-99086	OT(R)	\$499,996	\$499,996	23			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 199									
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE		
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
Bell Helicopter Textron	U.S. Army - Aviation and Missile Command	NCCW-0076	CA	\$312,302	\$312,302	23			
Bell Helicopter Textron	U.S. Army - Aviation and Missile Command	NCCW-0076	CA	\$246,917	\$246,917	23			
Allied Signal Engines and Systems	U.S. Army - Communications-Electronics Command	DAAB07-99-9-K762	OT(845)	\$1,497,870	\$499,290	28			
Harris Corporation, Aerospace Systems Division	U.S. Navy - Space and Naval Warfare Systems Command	N00039-99-9-4002	OT(845)	\$1,379,998	\$0	33			
Harris Corporation, Marconi Aerospace Systems, Lincom Corporation, Lambda Science, Inc.; and New Jersey Center for Multimedia Research (New Jersey Institute of Technology)	DARPA	MDA972-99-3-0034	OT(R)	\$60,390	\$0	33			
Pacific Sierra Research, Titan Corporation, and Integrated Sensors, Inc.	DARPA	MDA972-99-3-0024	OT(R)	\$0	\$0	34			
Dynetics, Inc.	DARPA	MDA972-99-3-0012	OT(R)	\$0	\$0	36			
Booz, Allen & Hamilton Inc., Ohio State, Physical Optics Corporation, Conductus, Inc., Directed Technologies, Inc., and Science and Technology Associates, Inc.	DARPA	MDA972-99-3-0031	OT(R)	\$0	\$0	38			
Rockwell International Corporation Science Center	U.S. Navy - Office of Naval Research	N00014-99-3-0006	OT(R)	\$3,423,914	\$4,443,876	39			
L-3 Communications, Telemetry & Instrumentation	U.S. Air Force - San Antonio Air Logistics Center	F41608-99-9-0288	OT(845)	\$1,562,950	\$650,000	53			
Technology Service Corporation, Goleta Engineering, and Black River Systems Company	DARPA	MDA972-99-3-0020	OT(R)	\$0	\$0	56			
Honeywell Technology Center	DARPA	MDA972-99-3-0019	OT(R)	\$0	\$0	58			
Ball Aerospace & Technologies Corporation	DARPA	MDA972-99-3-0014	OT(R)	\$0	\$0	65			
Rolls Royce PLC	U.S. Navy - Naval Air Systems Command	N00019-99-9-1493	OT(845)	\$1,360,000	\$493,000	88			
Microelectronics Advanced Research Corporation & Georgia Tech Research Corporation	DARPA	MDA972-99-3-0002	OT(R)	\$0	\$0	91			
				\$20,366,239	\$17,403,567				
TEAMING ARRANGEMENT WITH "MAJOR PLAYER" PARTICIPATION, NO "NON-TRADITIONAL" PARTICIPATION									

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 199									
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE		
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
"Team 2020" Consortium. The consortium is comprised of 29 participants, three key participants (Lockheed Martin Corporation Undersea Systems Division, General Dynamics Electric Boat Division, and Northrop Grumman Corporation Oceanic & Naval Systems Division), and 26 other participants, of which five are small enterprises and six are Government support activities (e.g., laboratories). Lockheed Martin Undersea Systems, serves as the manager and fiduciary agent for the consortium.	DARPA	MDA972-99-9-0004	OT(845)	\$5,000,000	\$0	"1 - 12 - 5"			
Boeing North American, Inc. and Rockwell Science Center	U.S. Navy - Office of Naval Research	N00014-99-3-0012	OT(R)	\$1,289,371	\$1,289,371	"2 - 39"			
Boeing North American, Inc., TRW, and Lockheed Martin	U.S. Air Force - Air Force, Space and Missile Systems Center	F04701-99-9-0001	OT(845)	\$3,600,000	\$0	"2 - 5 - 1"			
McDonnell Douglas Corporation, Honeywell, and General Dynamics Information Systems	U.S. Navy - Naval Air Systems Command	N00019-99-9-1662	OT(845)	\$6,933,234	\$2,874,565	"2 - 58 - 12"			
Raytheon Company, Lockheed Martin Federal Systems, and Cable Wireless and Marine	U.S. Navy - Office of Naval Research	N00014-99-3-0003	OT(R)	\$1,885,897	\$1,892,751	"4 - 1"			
"Forward PASS" Consortium. The consortium is comprised of 14 participants, four key participants (the Raytheon Company, the Boeing Company, BBN Corporation (a wholly-owned subsidiary of GTE), and General Dynamics Corporation Electric Boat Division), and 10 other participants, of which four are small enterprises and one is a Government support activity. Raytheon serves as the manager and fiduciary agent for the consortium.	DARPA	MDA972-99-9-0005	OT(845)	\$5,000,000	\$0	"4 - 2 - 51 - 12"			
Mission Research Corporation, ERIM, Inc. and Northrop Grumman	DARPA	MDA972-99-3-0011	OT(R)	\$79,846	\$0	"68 - 3"			
				\$23,788,348	\$6,056,687				
TEAMING ARRANGEMENT WITH "TOP 100 CONTRACTOR (NOT "MAJOR PLAYER")", NO "NON-TRADITIONAL" PARTICIPATION									

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 199									
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE		
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
Alphatech, Inc., Draper Laboratory, Toyon Research Corp., and Aerospace Electronics, Inc.	DARPA	MDA972-99-3-0007	OT(R)	\$468,786	\$0	"92 - 60"			
OTHER									
Ohio State University, American Electric Power, AmeriQual Foods, General Mills, Hürzel Canning Company, Kraft Foods, Nestle R&D Ohio, and Tetra Pak Processing Systems	U.S. Army Soldier and Biological Chemical Command	DAAD16-99-3-0001	CA	\$1,040,404	\$2,045,970			X	
TEAMING ARRANGEMENT WITH TRADITIONAL DEFENSE CONTRACTOR (NOT IN "TOP 100"), "NON-TRADITIONAL" PARTICIPATION									
Sarnoff Corporation (National Information Display Laboratory), Autometrics (National Media Laboratory), and 3M (National Center for Applied Technology)	U.S. Navy - Office of Naval Research	N00014-99-9-0001	OT(845)	\$14,286,000	\$0			X	
TRADITIONAL DEFENSE CONTRACTOR (NOT IN "TOP 100"), NO "NON-TRADITIONAL" PARTICIPATION									
Advanced Crystal Integration Systems Consortium	U.S. Navy - Naval Undersea Warfare Center, Newport Division	N86604-99-3-4671	OT(R)	\$4,558,066	\$1,086,553				
Advanced Power Technologies, Inc., ASIT, Zonge Engineering, and Ion Optics	DARPA	MDA972-99-3-0030	OT(R)	\$124,999	\$0				
AIL Systems, Inc.	U.S. Air Force - San Antonio Air Logistics Center	F41608-99-9-2205	OT(845)	\$1,250,000	\$519,522				
American Competitiveness Institute	U.S. Navy - Office of Naval Research	N00014-99-3-0015	OT(R)	\$814,371	\$925,000				
Analytic Designs, Inc.	DARPA	MDA972-99-3-0017	OT(R)	\$0	\$0				
Anzus, Inc.	U.S. Navy - Naval Air Systems Command	N00019-99-9-1546	OT(845)	\$1,140,000	\$487,000				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0009	OT(845)	\$1,071,965	\$0				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0010	OT(845)	\$600,000	\$0				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0011	OT(845)	\$800,000	\$0				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0012	OT(845)	\$1,800,000	\$0				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0013	OT(845)	\$1,900,000	\$0				

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 199									
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE		
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0014	OT(845)	\$200,000	\$0				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0015	OT(845)	\$3,950,017	\$0				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0016	OT(845)	\$11,000	\$0				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0017	OT(845)	\$575,000	\$0				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0018	OT(845)	\$230,000	\$0				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0019	OT(845)	\$575,000	\$0				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0020	OT(845)	\$347,308	\$0				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0021	OT(845)	\$1,440,000	\$0				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0022	OT(845)	\$159,700	\$0				
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0023	OT(845)	\$110,200	\$0				
Bath Iron Works Corporation, National Steel and Shipbuilding Company, Kvaerner Masa Marine Inc., and the Bird-Johnson Company	U.S. Navy - Office of Naval Research	N00014-99-3-0009	OT(R)	\$986,400	\$986,400				
Battlespace, Inc. and IIT Gilfillan	U.S. Navy - Naval Surface Warfare Center, Dahlgren Division	N00178-99-9-9001	OT(845)	\$48,000,000	\$0				
BBN Technologies, Weston Geophysical/Geophex, LTD, AETC, Inc., Charles Nelson Associates, and Maxwell Technologies, Inc. [consortium]	DARPA	MDA972-99-3-0033	OT(R)	\$0	\$0				
BFGoodrich Aircraft Integrated Systems	U.S. Navy - Naval Air Systems Command	N00019-97-H-0152/P00002	OT(845)	\$6,440,047	\$2,146,683				
Bird-Johnson Company	U.S. Navy - Naval Sea Systems Command	N00024-99-2-4161	OT(845)	\$329,412	\$329,413				
CCS Associates	U.S. Navy - Naval Air Systems Command, Naval Air Warfare Center Weapons Division	N68936-99-9-0001	OT(845)	\$380,400	\$0				
Executive Control Board of the National Shipbuilding Research Program	U.S. Navy - Naval Sea Systems Command	N00024-98-9-2310	OT(R)	\$100,000,000	\$100,000,000				
Ford Motor Company, American Iron & Steel Institute, Mississippi State, University of Louisville, and Oak Ridge National Laboratory	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-99-3-0010	OT(R)	\$4,500,000	\$6,725,133				

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 199									
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE		
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
GORGA Space & Communications, LLC, GORGA Technologies, and Physical Acoustics Corporation	DARPA	MDA972-99-3-0026	OT(R)	\$0	\$0				
Information Systems Laboratories, Inc., CODAR Ocean Sensors, Ltd., Innovativ Technical Solutions, Inc., and Quantum Applied Science & Research, Inc.	DARPA	MDA972-99-3-0023	OT(R)	\$24,864	\$0				
Marconi Aerospace Defense Systems	U.S. Army - Army, Aviation and Missile Command	DAAH01-99-3-R003	OT(845)	\$57,885	\$90,205				
Marconi Electronic Systems LTD	U.S. Air Force - Aeronautical Systems Center	F33657-99-9-2035	OT(845)	\$2,779,576	\$2,779,576				
Medical Education Technologies Incorporated	U.S. Navy - Naval Air Warfare Center, Training Systems Division	N61339-99-3-0002	OT(R)	\$499,097	\$360,646				
Microelectronics Advanced Research Corporation	DARPA	MDA972-99-3-0001	OT(R)	\$0	\$0				
Motorola	DARPA	MDA972-99-3-0006	OT(R)	\$340,000	\$0				X
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0009	OT(845)	\$610,200	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0010	OT(845)	\$2,635,112	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0011	OT(845)	\$400,000	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0012	OT(845)	\$1,000,000	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0013	OT(845)	\$700,000	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0014	OT(845)	\$2,800,000	\$0				
NOVA Engineering	U.S. Army - Communications Electronics Command	DAAB07-99-9-D286	OT(845)	\$458,855	\$196,653				
Nytech Integration Infrared Systems	U.S. Army - Communications Electronics Command	DAAB07-99-9-J565	OT(845)	\$3,250,000	\$0				
Oakland University	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-99-3-0011	OT(R)	\$2,285,000	\$2,665,000				
Photronics, Inc.	U.S. Navy - Naval Air Systems Command	N00019-99-3-1336	OT(R)	\$9,101,400	\$13,450,600				
PowerSmart, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-99-3-0009	OT(R)	\$2,318,000	\$2,318,000				
Riverside Research Institute	DARPA	MDA972-99-3-0016	OT(R)	\$0	\$0				
Sarnoff Corporation	U.S. Navy - Office of Naval Research	N00014-98-3-0001	OT(R)	\$750,000	\$750,000				

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 199									
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE		
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
SensorTech, LLC, Dynamics Technology, Inc., MegaWave Corporation, Modern Technology Solutions, Inc., Physical Sciences, Inc., T. Bear Larson & Associates, Inc., and XonTech, Inc.	DARPA	MDA972-99-3-0008	OT(R)	\$0	\$0				
Sentech, Inc.	DARPA	MDA972-99-3-0015	OT(R)	\$0	\$0				
Sikorsky Aircraft Corporation	U.S. Army - Aviation and Missile Command	NCCW-0076	CA	\$489,398	\$489,399				
Sikorsky Aircraft Corporation	U.S. Army - Aviation and Missile Command	NCC2-99087	CA	\$500,000	\$500,000				
Sikorsky Aircraft Corporation and UTRC	U.S. Army - Aviation and Missile Command	NCCW-0076	CA	\$386,578	\$386,579				
Simmonds Precision Products, Inc. DBA BFGoodrich Aircraft Integrated Systems, and Sikorsky Aircraft Corporation	U.S. Army - Army, Aviation and Missile Command	DAAH10-99-9-0001	OT(845)	\$4,128,694	\$1,517,898				
Talley Defense Systems, Inc.	U.S. Navy - Naval Air Systems Command -Naval Air Warfare Center Weapons Division	N68936-99-9-0002	OT(845)	\$520,375	\$0				
Telcordia Technologies, Inc. (formerly Bellcore)	U.S. Army - Communications Electronics Command	DAAB07-99-3-K516	OT(R)	\$400,000	\$506,357				
Telephonics Corporation, Communication Systems Division	U.S. Air Force - Aeronautical Systems Center	F33657-99-9-2033	OT(845)	\$1,816,700	\$605,567				
UDT Inc., ENSCO, Inc. and Defense Group, Inc.	DARPA	MDA972-99-3-0032	OT(R)	\$0	\$0				
University of Central Florida, Institute for Simulation and Training	U.S. Navy - Naval Air Warfare Center, Training Systems Division	N61339-99-3-0003	OT(R)	\$259,740	\$259,748				
Vibtech, Inc. [consortium]	U.S. Navy - Office of Naval Research	N00014-99-3-0007	OT(R)	\$950,000	\$1,113,532				
Walcoff & Associates, Inc., Georgia Technology Research Institute, New Mexico State University's EMRTC, and New Mexico State University's Physical Science Laboratory	DARPA	MDA972-99-3-0010	OT(R)	\$0	\$0				
				\$221,758,359	\$141,195,464				

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DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2000									
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE		
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
"NON-TRADITIONAL" PRIME CONTRACTOR									
SM and Rice/Well Science Center	DARPA	MDA972-00-3-0002	OT(R)	\$6,072,858	\$4,619,234		X		
CPU Technology, Inc.	U.S. Air Force - Ogden Air Logistics Center	F42620-00-9-0001	OT(845)	\$6,000,000	\$3,951,273		X		
Hendry Mechanical Works	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-00-9-0268	OT(845)	\$484,500	\$484,500		X		
Intelligent Inference Systems Corporation	U.S. Navy - Office of Naval Research	N00014-00-3-0005	OT(R)	\$491,985	\$491,985		X		
Physical Acoustics Corporation	U.S. Navy - Naval Sea Systems Command	N00024-00-9-4122	OT(845)	\$556,012	\$185,338		X		
Plug Power, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-00-3-001	OT(R)	\$3,276,779	\$3,276,788		X	X	
Remote Tools, Inc.	U.S. Navy - Naval Sea Systems Command	N00024-00-9-4068	OT(845)	\$190,000	\$65,000		X		
Spatial Integrated Systems	U.S. Navy - Naval Sea Systems Command	N00024-97-H-4204	OT(845)	\$3,025,000	\$100,000		X		
Spatial Integrated Systems	U.S. Navy - Naval Sea Systems Command	N00024-00-9-4082	OT(845)	\$2,721,000	\$1,006,959		X		
Teledesic, LLC	U.S. Navy - Space and Naval Warfare Systems Command	N00038-00-9-4001	OT(845)	\$450,000	\$75,000		X		
				\$74,088,114	\$14,756,055				
"MAJOR PLAYER", "NON-TRADITIONAL" PARTICIPATION									
Lockheed Martin Corporation and Atlantic Marine, Inc.	U.S. Navy - Naval Sea Systems Command	N00024-88-9-2304	OT(845)	\$46,245,000	\$0	1		X	
Sanders, A Lockheed Martin Company	DARPA	MDA972-00-9-0009	OT(845)	\$14,227,000	\$0	1		X	
Sanders, A Lockheed Martin Company, AON Space, Inc., and Space Machine Advisors	DARPA	MDA972-00-9-0014	OT(845)	\$5,989,783	\$0	1		X	
Boeing Company	U.S. Air Force - Aeronautical Systems Center	F33857-00-9-2055	OT(845)	\$6,106,584	\$2,823,593	2		X	
Science Applications International Corporation (SAIC) and Metal Storm, LTD	DARPA	MDA972-00-9-0007	OT(845)	\$10,250,000	\$0	9		X	
				\$92,828,367	\$2,823,593				
"MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION									
Lockheed Martin Corporation	U.S. Army - Communications (Electronics Command)	DAAB07-00-9-L253	OT(845)	\$4,000,000	\$4,024,640	1			
Lockheed Martin Corporation	U.S. Army - Robert Moms Acquisition Center	DAAD19-00-9-0001	OT(845)	\$119,000,000	\$20,000,000	1			
Lockheed Martin Corporation	U.S. Navy - Naval Air Systems Command	N00019-00-9-0292	OT(845)	\$800,000	\$1,115,800	1			
Lockheed Martin Corporation	U.S. Navy - Space and Naval Warfare Systems Command	N00038-00-9-4003	OT(845)	\$250,000	\$0	1			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2000							CONTRACTOR TYPE		
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
Lockheed Martin Missiles and Fire Control	U.S. Air Force - Air Force Research Laboratory	F08630-00-9-0001	OT(845)	\$3,171,453	\$574,578	1			
Lockheed Martin Missiles and Fire Control	U.S. Air Force - Electronic Systems Center	F19828-00-9-0003	OT(845)	\$1,084,878	\$1,030,000	1			
Boeing Company	U.S. Army - Communications Electronics Command	DAAB15-00-9-0005	OT(845)	\$2,000,000	\$4,000,000	2			
Boeing Company	DARPA	MDA972-00-9-0015	OT(845)	\$6,000,000	\$6,100,000	2			
Boeing Company	DARPA	MDA972-00-9-0005	OT(845)	\$2,000,000	\$0	2			
Boeing Company and Kraus-Maffei Wegmann	DARPA	MDA972-00-9-0001	OT(845)	\$10,000,000	\$13,299,998	2			
Boeing North American, Inc.	DARPA	MDA972-00-3-0007	OT(R)	\$0	\$0	2			
Boeing Space and Communications Group	U.S. Navy - Office of Naval Research	N00014-00-3-0018	OT(R)	\$415,411	\$415,412	2			
McDonnell Douglas Corp., a Wholly-Owned Subsidiary of the Boeing Company	U.S. Navy - Office of Naval Research	N00014-00-3-0004	OT(R)	\$895,812	\$934,450	2			
McDonnell Douglas Corp., a Wholly-Owned Subsidiary of the Boeing Company	U.S. Navy - Naval Air Systems Command	N00018-00-8-0348	OT(845)	\$845,381	\$579,013	2			
McDonnell Douglas Corp., a Wholly-Owned Subsidiary of the Boeing Company	U.S. Air Force - Air Force Research Laboratory	F08630-99-9-0005	OT(845)	\$2,690,000	\$122,841	2			
McDonnell Douglas Corporation	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N68335-00-9-0442	OT(845)	\$2,762,924	\$1,046,361	2			
McDonnell Douglas Corporation, a Wholly-Owned Subsidiary of the Boeing Company	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-00-3-0123	OT(R)	\$454,278	\$453,760	2			
Northrop Grumman Corporation	U.S. Navy - Naval Sea Systems Command	N00024-00-3-6311	OT(R)	\$299,974	\$0	3			
Northrop Grumman Corporation	U.S. Army - Communications Electronics Command	DAAB07-00-9-L254	OT(845)	\$4,000,000	\$5,851,637	3			
Northrop Grumman Corporation	U.S. Army - Aviation and Missile Command	DAAH01-99-3-R002	OT(845)	\$19,999	\$0	3			
Northrop Grumman Corporation	U.S. Navy - Naval Air Systems Command	N00019-00-9-0351	OT(845)	\$800,000	\$208,000	3			
Northrop Grumman Corporation	U.S. Navy - Naval Sea Systems Command	N00024-00-3-4035	OT(845)	\$598,445	\$0	3			
Northrop Grumman Corporation	DARPA	MDA972-00-9-0006	OT(845)	\$2,000,000	\$1,240,000	3			
Northrop Grumman Corporation, Electronic Sensors and Systems Division	U.S. Navy - Office of Naval Research	N00014-00-3-0011	OT(R)	\$2,338,861	\$2,338,861	3			
Northrop Grumman Corporation, Electronic Sensors and Systems Division	U.S. Navy - Office of Naval Research	N00014-99-3-0004	OT(R)	\$1,027,987	\$1,046,354	3			
Northrop Grumman Corporation, Electronic Sensors and Systems Division	U.S. Navy - Office of Naval Research	N00014-99-3-0005	OT(R)	\$468,429	\$468,429	3			
Northrop Grumman Corporation, Electronic Sensors and Systems Division	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-00-9-0275	OT(845)	\$1,491,430	\$479,661	3			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2000							CONTRACTOR TYPE	
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Northrop Grumman Corporation, Electronic Sensors and Systems Division	U.S. Air Force - Electronic Systems Center	F19629-00-9-0004	OT(845)	\$1,100,000	\$945,675	3		
Raytheon Company	U.S. Army - Communications Electronics Command	DAAB07-00-9-L255	OT(845)	\$4,000,000	\$1,422,486	4		
Raytheon Company	U.S. Army - Communications Electronics Command	DAAB07-00-9-J811	OT(845)	\$2,971,019	\$320,000	4		
Raytheon Company	U.S. Navy - Space and Naval Warfare Systems Command	N00039-00-9-2224	OT(845)	\$730,323	\$0	4		
Raytheon Company	U.S. Navy - Space and Naval Warfare Systems Command	N00039-00-9-4005	OT(845)	\$250,000	\$0	4		
Raytheon Company, Electronic Systems	U.S. Navy - Office of Naval Research	N00014-00-3-0001	OT(R)	\$1,161,279	\$1,161,292	4		
Raytheon Company, Electronic Systems	U.S. Army - Communications Electronics Command	DAAB07-00-9-H003	OT(845)	\$1,250,000	\$1,000,000	4		
Raytheon Company, Electronic Systems	U.S. Air Force - Electronic Systems Center	F19629-00-9-0002	OT(845)	\$1,100,000	\$2,700,000	4		
Raytheon Systems Company	DARPA	MDA972-00-9-0010	OT(845)	\$15,176,000	\$0	4		
TRW, Inc. [consortium]	DARPA	MDA972-00-9-0004	OT(845)	\$10,000,000	\$5,461,499	5		
Sukorsky Aircraft Corporation, Boeing Company, and Bell Helicopter	U.S. Army - Aviation and Missile Command	NCCW-0076	CA	\$805,500	\$805,500	7		
Pratt & Whitney	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-00-3-0236	OT(R)	\$774,233	\$774,896	8		
United Technologies Pratt & Whitney Engines and United Technologies Research Center (UTRC)	U.S. Navy - Office of Naval Research	N00014-00-3-0021	OT(R)	\$949,160	\$952,607	8		
Science Applications International Corporation (SAIC)	DARPA	MDA972-00-9-0002	OT(845)	\$10,000,000	\$2,830,470	9		
				\$219,692,574	\$93,502,020			
"TOP 100 CONTRACTOR, NOT "MAJOR PLAYER", "NON-TRADITIONAL" PARTICIPATION								
General Dynamics Land Systems Inc. and Raytheon Company	DARPA	MDA972-00-9-0003	OT(845)	\$10,000,000	\$4,000,000	14		X
Honeywell Engines and Systems	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-00-9-0002	OT(845)	\$1,837,195	\$545,732	24		X
				\$11,837,195	\$4,545,732			
"TOP 100 CONTRACTOR, NOT "MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION								

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2000							CONTRACTOR TYPE		
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
Bath Iron Works, University of Maine at Orono, Pacific Marine and Supply Company, Electric Boat Div (General Dynamics Corporation)	U.S. Navy - Office of Naval Research	N00014-00-9-0002	OT(845)	\$9,041,680	\$0	14			
General Dynamics Armament Systems	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0100	OT(845)	\$3,460,000	\$2,000,000	14			
General Dynamics Information Systems	U.S. Navy - Naval Air Systems Command	N00019-00-9-0348	OT(845)	\$495,657	\$0	14			
General Dynamics Land Systems	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-00-9-0003	OT(845)	\$999,544	\$0	14			
Litton Systems, Inc.	U.S. Navy - Office of Naval Research	N00014-00-3-0017	OT(R)	\$461,861	\$512,843	16			
Spectrum Astro, Inc.	U.S. Navy - Space and Naval Warfare Systems Command	N00039-00-9-4004	OT(845)	\$250,000	\$0	20			
Concurrent Technologies Corporation	U.S. Army - Communications Electronics Command	DAAB07-00-9-E751	OT(845)	\$3,744,000	\$0	21			
General Electric Aircraft Engines	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-00-3-0235	OT(R)	\$802,622	\$804,305	32			
General Electric Aircraft Engines	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-00-3-0319	OT(R)	\$1,508,700	\$1,508,700	32			
General Electric Aircraft Engines	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-00-3-0443	OT(R)	\$1,247,450	\$1,247,450	32			
General Electric Aircraft Engines	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-00-3-0536	OT(R)	\$1,248,000	\$1,247,450	32			
General Electric Aircraft Engines and Lockheed Martin	U.S. Air Force - Air Force Research Laboratory	F33615-00-3-2006	OT(R)	\$744,103	\$744,104	32			
L3 Communications, Inc.	U.S. Navy - Naval Sea Systems Command	N00024-00-3-4034	OT(845)	\$600,000	\$0	33			
Tetron Systems Corporation	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0811	OT(845)	\$1,147,341	\$0	36			
Alliant Techsystems, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0619	OT(845)	\$40,479	\$40,479	40			
SRI International and Sarnoff Corporation	DARPA	MDA972-00-3-0006	OT(R)	\$0	\$0	42			
SRI International, Albermarle Corporation, and Pratt & Whitney	U.S. Navy - Office of Naval Research	N00014-00-3-0007	OT(R)	\$1,589,639	\$2,529,042	42			
Harris Corporation	U.S. Army - Communications Electronics Command	DAAB15-00-9-0003	OT(845)	\$2,402,470	\$682,849	45			
Rockwell Collins, Inc.	U.S. Army - Communications Electronics Command	DAAB15-00-9-0004	OT(845)	\$3,123,515	\$1,056,000	48			
Rockwell Science Center	DARPA	MDA972-00-3-0003	OT(R)	\$1,080,217	\$0	48			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2000							CONTRACTOR TYPE	
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Rockwell Science Center, LLC	U.S. Navy - Office of Naval Research	N00014-89-3-0018	OT(R)	\$898,700	\$898,882	48		
Geo-Centers, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0601	OT(845)	\$200,282	\$10,461	51		
Geo-Centers, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0602	OT(845)	\$198,338	\$10,325	51		
Primex Technologies	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0610	OT(845)	\$120,662	\$77,937	53		
Assurance Technology Corporation	U.S. Army - Communications Electronics Command	DAAB15-00-9-0007	OT(845)	\$4,514,254	\$0	62		
Mission Research Corporation	U.S. Navy - Space and Naval Warfare Systems Command	N00039-00-9-2242	OT(845)	\$383,180	\$0	65		
General Atomics, Inc.	U.S. Navy - Naval Sea Systems Command	N00024-00-3-4037	OT(845)	\$600,000	\$0	66		
Georgia Tech Applied Research Corporation	U.S. Navy - Naval Air Systems Command	N00019-00-9-0315	OT(845)	\$1,500,000	\$500,000	78		
				\$42,423,674	\$13,871,827			
TEAMING ARRANGEMENT WITH "MAJOR PLAYER" PARTICIPATION, "NON-TRADITIONAL" PARTICIPATION								
McDonnell Douglas Corp., a Wholly-Owned Subsidiary of the Boeing Company, General Dynamics Information Systems, Honeywell Incorporated, DTI-4, Wind River, and Green Hill	U.S. Navy - Naval Air Systems Command	N00019-98-H-0118	OT(845)	\$58,941,841	\$0	*2 - 14 - 24*		X
TEAMING ARRANGEMENT WITH "MAJOR PLAYER" PARTICIPATION, NO "NON-TRADITIONAL" PARTICIPATION								
ITT Energy Systems, Inc., Lockheed Martin, TRW, AeroAstro, and Northrop Grumman, Honeywell, L'Garde, Global Solar, Princeton Satellite Systems, Yardney, MIT, Stanford, Texas A&M, Georgia Technology Research Institute, University of Kansas, University of Illinois, Veridian ERIM International, Technology Services Corp, Defense Advanced Research Projects Agency, National Reconnaissance Office, National Aeronautics and Space Agency, Jet Propulsion Laboratory, and Sandia National Laboratory	U.S. Air Force - Air Force Research Laboratory	F29601-00-9-0177	OT(845)	\$24,965,044	\$10,000,000	*1 - 5 - 3 - 24 - 10 - 52 - 78 - 27*		

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2000							CONTRACTOR TYPE	
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
McDonnell Douglas Corporation, a Wholly Owned Subsidiary of the Boeing Company, Honeywell, and Rockwell	U.S. Air Force - Air Force Research Laboratory	F08830-00-3-0001	OT(R)	\$525,937	\$1,178,372	"2 - 24 - 48"		
McDonnell Douglas Helicopter Systems, AlliedSignal Aerospace, Inc., and the Applied Research Laboratory (ARL) of the Pennsylvania State (Penn State) University	U.S. Navy - Office of Naval Research	N00014-99-3-0017	OT(R)	\$1,133,044	\$1,133,044	"2 - 31"		
Spectrum Astro, Inc., Science Applications International Corporation (SAIC), and Oceanering Space Systems	DARPA	MDA972-00-9-0013	OT(845)	\$6,000,000	\$1,200,000	"20 - 9"		
				\$32,624,025	\$13,511,416			
TEAMING ARRANGEMENT WITH "TOP 100 CONTRACTOR (NOT "MAJOR PLAYER")", NO "NON-TRADITIONAL" PARTICIPATION								
Penn State University, University of Maryland, Alliant Techsystems, and Thoside Propulsion	U.S. Army - Tank, Automotive and Armaments Command	DAAE30-00-9-0613	OT(845)	\$584,021	\$101,649	"31 - 40"		
Bath Iron Works, Electric Boat Div (General Dynamics Corporation), Penn State's Applied Research Laboratory, and the Carderock Division, Naval Surface Warfare Center	U.S. Navy - Office of Naval Research	N00014-00-9-0001	OT(845)	\$1,977,845	\$0	"14 - 31"		
				\$5,561,968	\$101,649			
TRADITIONAL DEFENSE CONTRACTOR (NOT IN "TOP 100"), "NON-TRADITIONAL" PARTICIPATION								
ITT Giffilan, Inc., Battlespace, Inc., AND M/A-COM, Inc.	U.S. Navy - Naval Sea Systems Command	N00178-99-9-3001	OT(845)	\$4,610,266	\$0			X
TRADITIONAL DEFENSE CONTRACTOR (NOT IN "TOP 100"), NO "NON-TRADITIONAL" PARTICIPATION								
Advanced Technology Materials, Inc.	U.S. Navy - Office of Naval Research	N00014-00-3-0013	OT(R)	\$1,500,000	\$1,500,000			
Aerojet	U.S. Army - Tank, Automotive and Armaments Command	DAAE30-00-9-0616	OT(845)	\$822,072	\$575,020			
Aerojet	U.S. Army - Tank, Automotive and Armaments Command	DAAE30-00-9-0617	OT(845)	\$164,774	\$16,477			
Aerotech Engineering and Research Cooperation, Bird-Johnson Company member of the Vickers Ulstein Marine Division (Ulstein), and Gortek, Inc.	U.S. Navy - Office of Naval Research	N00014-00-3-0010	OT(R)	\$1,496,520	\$1,496,520			
Aleph Lightgate Corporation	U.S. Navy - Office of Naval Research	N00014-00-3-0023	OT(R)	\$873,764	\$873,764			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2000							CONTRACTOR TYPE	
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Allison Advanced Development Company	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-00-3-0234	OT(R)	\$224,976	\$225,043			
Alstom Drives and Controls, LTD	U.S. Navy - Naval Sea Systems Command	N00024-00-3-4033	OT(845)	\$450,000	\$0			
American Ordnance	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0812	OT(845)	\$168,774	\$0			
Armtec Defense Products Company	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0809	OT(845)	\$180,451	\$182,549			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0005/11	OT(845)	\$77,408	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0025	OT(845)	\$3,595,515	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0012/03	OT(845)	\$555,651	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0026	OT(845)	\$639,082	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0027	OT(845)	\$1,261,038	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0008/04	OT(845)	\$1,080,000	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0078	OT(845)	\$700,000	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0029	OT(845)	\$798,668	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0030	OT(845)	\$1,293,772	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0031	OT(845)	\$152,392	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0033	OT(845)	\$60,510	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0034	OT(845)	\$267,644	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0017/01	OT(845)	\$228,658	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0018/01	OT(845)	\$99,926	\$0			
BAE Systems, Inc.	U.S. Army - Communications Electronics Command	DAAB15-00-9-0008	OT(845)	\$6,538,000	\$8,030,000			
BAE Systems, Inc.	U.S. Army - Communications Electronics Command	DAAB07-00-9-D319	OT(845)	\$668,614	\$215,785			
BAE Systems, Inc.	U.S. Army - Aviation and Missile Command	DAAH01-99-3-R003	OT(845)	\$19,949	\$0			
BAE Systems, Inc.	U.S. Navy - Space and Naval Warfare Systems Command	N00039-00-9-2241	OT(845)	\$401,208	\$0			
BAE Systems, Inc.	U.S. Air Force - Aeronautical Systems Center	F33657-99-9-2036	OT(845)	\$1,270,210	\$450,000			
Bath Iron Works	U.S. Navy - Naval Sea Systems Command	N00024-98-9-2300	OT(845)	\$345,303,000	\$0			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2000							CONTRACTOR TYPE		
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
Delex Systems, Inc.	U.S. Navy - Naval Air Systems Command	N00018-00-9-0198	OT(845)	\$0	\$2,500,000				
DRS Infrared Technologies, L.P.	U.S. Army - Communications Electronics Command	DAAB07-00-9-J608	OT(845)	\$3,883,443	\$0				
Eagle-Picher Energy Products Corporation	U.S. Army - Communications Electronics Command	DAAB07-00-9-A256	OT(845)	\$2,277,147	\$1,314,000				
EarthData Holdings, Inc.	National Imagery and Mapping Agency	NMA701-00-9-1001	OT(845)	\$27,873,715	\$0				
Eaton Corporation	U.S. Navy - Naval Sea Systems Command	N00024-00-3-4032	OT(845)	\$600,000	\$0				
Edison Welding Institute	U.S. Navy - Office of Naval Research	N00014-00-3-0016	OT(R)	\$750,000	\$765,254				
EFW Inc., parent Elbit Systems LTD, and RACAL Avionics, Inc.	U.S. Army - Communications Aviation Applied Technology Directorate	DAAH10-00-9-0001	OT(845)	\$4,189,448	\$1,389,818				
Electro Energy Incorporated	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-00-9-0446	OT(845)	\$976,407	\$976,407				
Flow International Corp., the National Center for Food Safety & Technology (NCFST) operated by the Illinois Institute of Technology (IIT) for the U.S. Food & Drug Administration (FDA), Kraft Foods, ConAgra, Procter & Gamble and Hormel Foods	U.S. Army Soldier and Biological Chemical Command	DAAD18-00-2-0001	CA	\$745,235	\$1,803,812				
Fluorochem, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0803	OT(845)	\$206,586	\$0				
General Analysis, Inc.	U.S. Navy - Office of Naval Research	N00014-00-3-0014	OT(R)	\$94,224	\$32,316				
Globalstar Government Services	U.S. Navy - Space and Naval Warfare Systems Command	N00039-00-9-4007	OT(845)	\$99,900	\$0				
Great Lakes Composite Consortium, South Carolina University, and Composite Solutions, Inc.	U.S. Navy - Office of Naval Research	N00014-99-3-0016	OT(R)	\$165,000	\$165,001				
Hamilton Sunstrand Corporation	U.S. Navy - Naval Air Systems Command	N00019-00-9-0314	OT(845)	\$4,813,861	\$2,062,997				
Hamilton Sunstrand Corporation and MaK System Gesellschaft mbH	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N68335-00-9-0339	OT(845)	\$2,500,000	\$848,242				
Hughes Space and Communications Company	U.S. Navy - Space and Naval Warfare Systems Command	N00039-00-9-4002	OT(845)	\$250,000	\$0				
Inframet Corporation	U.S. Navy - Office of Naval Research	N00014-00-3-0018	OT(R)	\$400,000	\$400,000				
Intellitec	U.S. Army - Communications Electronics Command	DAAB07-00-9-J608	OT(845)	\$250,000	\$169,862				

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2000							CONTRACTOR TYPE		
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
Intevac, Inc and Stanford University	U.S. Army - Communications Electronics Command	DAAB07-00-3-L517	OT(R)	\$6,455,270	\$4,436,774				
Motorola, Inc.	U.S. Army - Communications Electronics Command	DAAB15-00-9-0006	OT(845)	\$3,500,000	\$0				
MTS Systems Corporation	U.S. Navy - Office of Naval Research	N00014-00-3-0008	OT(R)	\$577,262	\$577,262				
National Forge Company	U.S. Air Force - Air Force Research Laboratory	F08830-00-2-0001	CA	\$216,175	\$216,175				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0015	OT(845)	\$120,000,000	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0016	OT(845)	\$1,215,000	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0017	OT(845)	\$600,000	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0018	OT(845)	\$1,974,625	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0019	OT(845)	\$560,000	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0020	OT(845)	\$835,000	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0021	OT(845)	\$144,935	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0022	OT(845)	\$605,000	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0023	OT(845)	\$1,000,000	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0024	OT(845)	\$600,000	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0025	OT(845)	\$485,880	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0026	OT(845)	\$44,200	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0027	OT(845)	\$100,000	\$0				
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0028	OT(845)	\$316,440	\$0				
Olympic College [consortium]	U.S. Navy - Naval Air Warfare Center, Training Systems Division	N61339-00-3-0002	OT(R)	\$250,000	\$400,000				
Orlando Technology, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0814	OT(845)	\$908,656	\$254,900				
Orlando Technology, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0815	OT(845)	\$500,000	\$45,855				
Pinnacle Network Systems, Inc.	U.S. Navy - Space and Naval Warfare Systems Command	N00039-00-9-4006	OT(845)	\$2,000,000	\$100,000				
Planning Systems Incorporated	U.S. Navy - Space and Naval Warfare Systems Command	N00039-00-9-4000	OT(845)	\$275,000	\$118,404				

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2000							CONTRACTOR TYPE		
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)	
Qualcomm, Inc.	U.S. Army - Communications Electronics Command	DAAB07-00-3-1511	OT(R)	\$1,600,000	\$16,000,000				
Racal Communications, Inc.	U.S. Army - Communications Electronics Command	DAAB15-00-9-0002	OT(845)	\$2,359,705	\$542,756				
Silicon Power Corporation	U.S. Navy - Naval Sea Systems Command	N00024-00-3-4036	OT(845)	\$599,716	\$0				
The Maine Manufacturing Extension Partnership	U.S. Navy - Office of Naval Research	N00014-00-3-0012	OT(R)	\$403,343	\$877,000				
Thiokol Propulsion	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0806	OT(845)	\$177,857	\$0				
Thiokol Propulsion	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0808	OT(845)	\$98,444	\$0				
Thiokol Propulsion and Brigham Young University	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0804	OT(845)	\$214,273	\$0				
Thiokol Propulsion and Brigham Young University	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0607	OT(845)	\$1,043,653	\$0				
Thiokol Propulsion and Brigham Young University	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0805	OT(845)	\$128,888	\$0				
Ultralife Batteries, Inc.	U.S. Army - Communications Electronics Command	DAAB07-00-9-A257	OT(845)	\$3,121,000	\$4,285,000				
United Defense LP, Steel Products Division	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-00-9-0001	OT(845)	\$970,000	\$102,398				
University of Chicago	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0818	OT(845)	\$731,829	\$232,479				
University of Rochester	U.S. Army - Robert Morris Acquisition Center	DAAD19-00-9-0002	OT(845)	\$15,586,130	\$0				
Vanu, Inc.	U.S. Army - Communications Electronics Command	DAAB15-00-9-0001	OT(845)	\$479,371	\$0				
Veritay Technology, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-00-9-0800	OT(845)	\$93,274	\$9,595				
				\$581,513,067	\$53,791,263				

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DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2001								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
"NON-TRADITIONAL" PRIME CONTRACTOR								
AC Gravity, LLD	U.S. Army - Aviation and Missile Command	DAAH01-01-9-R001	OT(845)	\$448,970	\$0		X	
Agilent Technologies, Inc. and Sawyer Research Products, Inc.	U.S. Navy - Office of Naval Research	N00014-01-9-0001	OT(845)	\$1,583,752	\$1,834,359		X	
Donaldson Company, Inc.	U.S. Army - Robert Morris Acquisition Center	DAAD16-01-3-0001	OT(R)	\$399,088	\$399,202		X	
Electricore, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-01-3-0001	OT(R)	\$2,350,000	\$2,457,000		X	
Exponent, Inc., Pacific Consultants, LLC, PEMSTAR, Inc., Computer Sciences Corporation, Omega Training Group, and The Wexford Group International	U.S. Army - Communications-Electronics Command	DAAB07-01-9-N001	OT(845)	\$78,581,597	\$0	14	X	X
Flowserve U.S., Inc.	U.S. Navy - Naval Sea Systems Command	N00024-01-9-4082	OT(845)	\$1,016,209	\$163,048		X	
Gulfstream Aerospace Corporation	DARPA	MDA972-01-9-0021	OT(845)	\$972,926	\$48,971		X	
Herres and Lee Corporation	U.S. Navy - Naval Sea Systems Command	N00024-01-9-6112	OT(845)	\$1,228,000	\$409,250		X	
Hewlett Packard Company [DTM Consortium]	DARPA	MDA972-01-3-0005	OT(R)	\$12,542,000	\$13,156,000		X	
Inmarsat, LTD	U.S. Navy - Space and Naval Warfare Systems Command	N00039-01-9-4006	OT(845)	\$143,200	\$100,000		X	
Integrity Arts and Technology, Inc.	U.S. Navy - Naval Air Warfare Center, Training Systems Division	N61339-01-3-0002	OT(R)	\$50,000	\$0		X	
Millenium Jet, Inc.	DARPA	MDA972-01-9-0004	OT(845)	\$5,096,613	\$0		X	
Ovonic Battery Company, Inc. and PowerSmart, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-01-3-0007	OT(R)	\$2,540,191	\$2,540,191		X	X
Ozark Aircraft Systems, LLC	U.S. Navy - Naval Air Systems Command	N00019-01-9-0213	OT(845)	\$978,170	\$326,057		X	
Pittsburgh Electric Engines, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-01-9-0002	OT(845)	\$2,826,354	\$0		X	
QWIP Technologies, LLC, Global Communications Semiconductors, Indigo Systems, Santa Barbara FocalPlane, and Jet Propulsion Laboratory (Govt)	DARPA	MDA972-01-9-0024	OT(845)	\$1,637,000	\$55,440		X	

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2001								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Scalable Simulation Solutions, LLC	U.S. Army - Robert Morris Acquisition Center	DAAD19-01-9-0005	OT(845)	\$2,314,924	\$0		X	
Spencer Machine and Tool Company	U.S. Navy - Naval Sea Systems Command	N00024-01-9-4049	OT(845)	\$16,000	\$107,720		X	
Structural Dynamics Research Corporation	U.S. Air Force - Oklahoma City Air Logistics Center	F34650-01-9-0001	OT(845)	\$1,872,468	\$1,122,558		X	
Ultra Electronics Limited, Controls Division	U.S. Navy - Naval Air Systems Command	N00019-01-9-0186	OT(845)	\$3,164,000	\$1,703,123		X	
XCELLSIS Corporation	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-01-3-0003	OT(R)	\$1,100,000	\$1,200,000		X	
				\$120,861,462	\$25,622,919			
"MAJOR PLAYER", "NON-TRADITIONAL" PARTICIPATION								
Lockheed Martin Aeronautics Company and Eagle Aeronautics	DARPA	MDA972-01-9-0002	OT(845)	\$2,489,862	\$557,838	1		X
Robot Corporation, Raytheon Company, Caterpillar, Inc., and Product Resources, Inc. [consortium]	DARPA	MDA972-01-9-0012	OT(845)	\$499,268	\$0	5		X
Raytheon Company	U.S. Navy - Space and Naval Warfare Systems Command	N00039-01-9-4008	OT(845)	\$898,065	\$574,229	5		X
Raytheon Company and JBI/Soft	DARPA	MDA972-01-9-0020	OT(845)	\$4,997,000	\$0	5		X
Raytheon Company, Agile Communications, NuWave, and Protean	DARPA	MDA972-01-9-0022	OT(845)	\$1,850,000	\$0	5		X
TRW, Inc. and Agile Communications	DARPA	MDA972-01-9-0023	OT(845)	\$1,845,843	\$0	6		X
General Dynamics Robotic Systems and PercepTek	DARPA	MDA972-01-9-0013	OT(845)	\$1,499,998	\$0	9		X
General Dynamics Robotic Systems, Avalanche Engineering, Engine Research Associates, Patrick Power Products, and Percep Tek	DARPA	MDA972-01-9-0010	OT(845)	\$499,995	\$0	9		X
				\$14,580,031	\$1,132,067			
"MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION								
Lockheed Martin, Space Systems, Missiles and Space	U.S. Navy - Space and Naval Warfare Systems Command	N00039-01-9-4001	OT(845)	\$2,147,269	\$660,000	1		

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2001								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Boeing Company	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-01-3-0098	OT(R)	\$8,708,396	\$1,314,696	2		
Boeing Company	DARPA	MDA972-01-2-0016	CA	\$5,149,374	\$400,000	2		
Boeing Company	DARPA	MDA972-01-9-0003	OT(845)	\$2,643,875	\$963,610	2		
Boeing Satellite Systems, Inc.	U.S. Navy - Space and Naval Warfare Systems Command	N00039-01-9-4002	OT(845)	\$2,511,266	\$1,349,000	2		
Northrop Grumman Corporation, Electronic Sensors and Systems Division	U.S. Navy - Office of Naval Research	N00014-00-3-0022	OT(R)	\$360,204	\$379,147	3		
Raytheon Company	U.S. Army - Robert Morris Acquisition Center	DAAD19-01-9-0003	OT(845)	\$2,530,590	\$1,246,410	5		
Raytheon Company	U.S. Navy - Space and Naval Warfare Systems Command	N00039-01-9-4003	OT(845)	\$3,197,000	\$1,000,000	5		
Raytheon Infrared Operations	U.S. Army - Communications-Electronics Command	DAAB07-01-9-J411	OT(845)	\$2,800,000	\$1,420,000	5		
TRW, Inc.	U.S. Army - Robert Morris Acquisition Center	DAAD19-01-9-0004	OT(845)	\$4,027,744	\$2,013,884	6		
Sikorsky Aircraft Corporation, Boeing Company, and Bell Helicopter	U.S. Army - Army National Rotorcraft Technology Center	NCC2-9019	CA	\$807,000	\$807,000	7		
Sikorsky Aircraft Corporation, Boeing Company, and Bell Helicopter	U.S. Army - Army National Rotorcraft Technology Center	NCC2-9019	CA	\$1,203,750	\$1,203,750	7		
General Dynamics - Ordnance and Tactical Systems (NVEC)	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0007	OT(845)	\$12,047,761	\$0	9		
General Dynamics Land Systems, Magnet Motor GmbH, and the Army Corp of Engineers R&D Center (Govt)	DARPA	MDA972-01-9-0007	OT(845)	\$340,259	\$499,449	9		
				\$49,074,488	\$13,256,946			
"TOP 100 CONTRACTOR, NOT "MAJOR PLAYER", "NON-TRADITIONAL" PARTICIPATION								
Science Applications International Corporation (SAIC), Applied Perception, Inc., and Visteon Corporation	DARPA	MDA972-01-9-0015	OT(845)	\$1,500,000	\$0	11		X
ITT Aerospace Communications	U.S. Army - Communications-Electronics Command	DAAB07-01-9-L521	OT(R)	\$999,008	\$1,000,537	15		X

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2001								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
BAE Systems Information and Electronic Systems Integration, Inc., APTI Wireless, and Herrick Technology Laboratories	DARPA	MDA972-01-9-0019	OT(845)	\$4,988,345	\$0	18		X
Honeywell International, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0100	OT(845)	\$43,776,666	\$21,888,334	31		X
Honeywell International, Inc., MLB Company, D-Star Engineering, and Techsburg	DARPA	MDA972-01-9-0018	OT(845)	\$3,000,000	\$1,500,953	31		X
SRI International, ActivMedia Robotics, and The Eigenpoint Company [consortium]	DARPA	MDA972-01-9-0014	OT(845)	\$1,400,000	\$0	32		X
Harris Corporation and Rockwell	U.S. Navy - Space and Naval Warfare Systems Command	N00039-01-9-4007	OT(845)	\$870,000	\$435,000	44		X
Carnegie Mellon University and RedZone Robotics	DARPA	MDA972-01-9-0016	OT(845)	\$1,500,000	\$0	47		X
Carnegie Mellon University, Timoney Technology, and PEI Electronics, Inc.	DARPA	MDA972-01-9-0005	OT(845)	\$1,000,000	\$0	47		X
				\$59,034,019	\$24,824,824			
"TOP 100 CONTRACTOR, NOT "MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION								
ITT Aerospace Communications	U.S. Army - Communications-Electronics Command	DAAB07-01-9-L521	OT(845)	\$999,008	\$1,000,537	15		
BAE Systems Aerospace Electronics, Inc.	U.S. Army - Communications-Electronics Command	DAAB07-01-9-D404	OT(845)	\$421,354	\$207,532	18		
BAE Systems Aerospace Electronics, Inc.	U.S. Army - Communications-Electronics Command	DAAB07-01-9-D405	OT(845)	\$736,010	\$362,512	18		
Spectrum Astro, Inc.	U.S. Navy - Space and Naval Warfare Systems Command	N00039-01-9-4004	OT(845)	\$1,500,000	\$454,272	23		
Thiokol Propulsion (Division of Alliant Techsystems) and Alcoa Business (NVEC)	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0001	OT(845)	\$364,865	\$0	25		
Thiokol Propulsion (Division of Alliant Techsystems) and Alcoa Business (NVEC)	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0003	OT(845)	\$73,872	\$0	25		
Thiokol Propulsion (Division of Alliant Techsystems) and Alcoa Business (NVEC)	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0005	OT(845)	\$257,216	\$0	25		

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2001								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Thiokol Propulsion (Division of Alliant Techsystems) and Alcoa Business (NVEC)	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0006	OT(845)	\$1,087,715	\$0	25		
Concurrent Technologies Corporation	U.S. Army - Communications-Electronics Command	DAAB07-01-9-E751	OT(845)	\$5,615,000	\$0	26		
Titan Systems Corporation	U.S. Army - Communications-Electronics Command	DAAB07-01-3-K203	CA	\$500,000	\$401,000	29		
Honeywell International, Inc.	U.S. Army - Aviation Applied Technology Directorate	DAAH10-01-9-0001	OT(845)	\$1,644,558	\$411,140	31		
Orbital Sciences Corporation	U.S. Navy - Space and Naval Warfare Systems Command	N00039-01-9-4005	OT(845)	\$500,000	\$474,000	35		
General Electric Aircraft Engines	U.S. Air Force - Air Force Research Laboratory	F33615-01-3-2101	OT(R)	\$1,274,750	\$1,275,950	39		
General Electric Aircraft Engines	U.S. Air Force - Air Force Research Laboratory	F33615-01-3-2102	OT(R)	\$1,293,880	\$1,293,880	39		
General Electric Company	DARPA	MDA972-01-3-0002	OT(R)	\$3,408,020	\$3,408,021	39		
Motorola, Inc.	DARPA	MDA972-01-3-0001	OT(R)	\$3,465,677	\$1,503,272	42		
Rockwell Collins, Inc.	DARPA	MDA972-01-3-0003	OT(R)	\$140,000	\$140,000	59		
Rockwell Collins, Inc.	U.S. Army - Communications-Electronics Command	DAAB07-01-3-L522	OT(R)	\$2,400,000	\$2,391,990	59		
Rockwell Collins, Inc.	U.S. Army - Robert Morris Acquisition Center	DAAD19-01-9-0001	OT(845)	\$4,627,173	\$2,555,581	59		
Rockwell Collins, Inc.	U.S. Army - Robert Morris Acquisition Center	DAAD19-01-9-0002	OT(845)	\$1,805,081	\$1,367,120	59		
Rockwell Science Center	U.S. Army - Communications-Electronics Command	DAAB07-01-3-L523	OT(R)	\$788,351	\$787,997	59		
				\$32,902,530	\$18,034,804			
REPORT ALLUDES TO "NON-TRADITIONAL" DIVISION; HOWEVER COMPANY IS LISTED IN "TOP 100".								
Motorola, Inc.	DARPA	MDA972-01-3-0004	OT(R)	\$3,434,471	\$4,026,709	42	X	
TEAMING ARRANGEMENT WITH "MAJOR PLAYER" PARTICIPATION, "NON-TRADITIONAL" PARTICIPATION								
Lockheed Martin Missiles and Fire Control Division, Caterpillar, BAE Systems, Rod Millen Special Vehicles, Sandia (Govt), and NIST (Govt) [consortium]	DARPA	MDA972-01-9-0009	OT(845)	\$500,000	\$222,775	"1 - 18"		X
Northrop Grumman Corporation and Raytheon Aircraft Company	DARPA	MDA972-01-9-0001	OT(845)	\$2,499,914	\$1,668,258	"3 - 5"		X

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2001							
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	CONTRACTOR TYPE	
						"TOP100" RANK	"NON-TRADITIONAL" PRIME
				\$2,999,914	\$1,891,033		
TEAMING ARRANGEMENT WITH "MAJOR PLAYER" PARTICIPATION, NO "NON-TRADITIONAL" PARTICIPATION							
Electric Boat Division (General Dynamics Corporation), Electrodynamic, Penn State ARL, and NUWC - Newport Division	U.S. Navy - Office of Naval Research	N00014-00-3-0020	OT(R)	\$1,199,990	\$1,662,795	"9 - 36"	
TEAMING ARRANGEMENT WITH "TOP 100 CONTRACTOR (NOT "MAJOR PLAYER"), "NON-TRADITIONAL" PARTICIPATION							
Battelle Memorial Laboratories, Carnegie Mellon University, and Planet Electric	DARPA	MDA972-01-9-0008	OT(845)	\$651,216	\$0	"65 - 47"	X
TEAMING ARRANGEMENT WITH "TOP 100 CONTRACTOR (NOT "MAJOR PLAYER"), NO "NON-TRADITIONAL" PARTICIPATION							
Science Applications International Corporation (SAIC), United Defense, LP, University of Texas, Georgia Tech, Stanford University, University of South Florida, and Jet Propulsion Laboratory (Govt)	DARPA	MDA972-01-9-0006	OT(845)	\$500,000	\$249,585	"11 - 37 - 68"	
TRADITIONAL DEFENSE CONTRACTOR (NOT IN "TOP 100"), "NON-TRADITIONAL" PARTICIPATION							
Drexel University and ACIN Camden Center for Entrepreneurship in Technology [consortium]	U.S. Army - Communications-Electronics Command	DAAB07-01-9-L504	OT(845)	\$10,865,852	\$0		X
Interstate Electronics Corporation	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0101	OT(845)	\$42,879,132	\$21,439,566		X
Litton Systems, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0102	OT(845)	\$43,999,502	\$22,084,269		X
Micro Craft, Inc. and Allurdyne	DARPA	MDA972-01-9-0017	OT(845)	\$3,000,000	\$0		X

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2001						CONTRACTOR TYPE		
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Omnitech Robotics International, Rotary Power International, and ESS West [consortium]	DARPA	MDA972-01-9-0011	OT(845)	\$1,000,000	\$0			X
Unmanned Surface Vehicle Consortium (TEAM ONE USA)	U.S. Navy - Naval Undersea Warfare Center, Newport Division	N66604-01-9-1264	OT(845)	\$0	\$2,100,000			X
				\$101,744,486	\$45,623,835			
TRADITIONAL DEFENSE CONTRACTOR (NOT IN "TOP 100"), NO "NON-TRADITIONAL" PARTICIPATION								
Aerojet (NVEC)	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0002	OT(845)	\$485,215	\$118,552			
Aerojet (NVEC)	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0004	OT(845)	\$327,645	\$24,090			
American Ordnance, LLC (NVEC)	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0008	OT(845)	\$1,496,148	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0032	OT(845)	\$766,100	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0035	OT(845)	\$378,297	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0036	OT(845)	\$3,940,696	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0037	OT(845)	\$484,085	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0038	OT(845)	\$531,138	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0039	OT(845)	\$28,000,000	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0040	OT(845)	\$150,000	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0041	OT(845)	\$2,971,996	\$0			
Autometric, Inc.	National Imagery and Mapping Agency	NMA202-97-9-1032/0042	OT(845)	\$1,000,000	\$0			
DRS Sensor Systems, Inc. and Nyltech	U.S. Army - Communications-Electronics Command	DAAB07-01-9-J413	OT(845)	\$1,027,000	\$506,880			
Engineered Machined Products, Inc.	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-01-3-0004	OT(R)	\$813,767	\$813,767			
Ford Motor Company, International Truck & Engine Corp., and University of Michigan	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-01-3-0005	OT(R)	\$3,001,000	\$3,123,000			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2001							CONTRACTOR TYPE	
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Hamilton Sundstrand Corporation	U.S. Navy - Naval Air Systems Command	N00019-01-9-0246	OT(845)	\$3,535,429	\$1,741,331			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0029	OT(845)	\$1,168,000	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0030	OT(845)	\$1,000,000	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0031	OT(845)	\$432,000	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0032	OT(845)	\$1,500,000	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0033	OT(845)	\$1,500,670	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0034	OT(845)	\$265,000	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0035	OT(845)	\$900,000	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0036	OT(845)	\$515,744	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0037	OT(845)	\$499,600	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0038	OT(845)	\$500,000	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0039	OT(845)	\$535,680	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0040	OT(845)	\$424,775	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0041	OT(845)	\$900,000	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0042	OT(845)	\$749,827	\$0			
National Media Laboratory Strategic Alliance	National Imagery and Mapping Agency	NMA202-97-9-1050/0043	OT(845)	\$1,000,000	\$0			
National Warheads & Energetics Consortium (NWEC)	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800	OT(845)	\$1,000,000	\$0			
Sikorsky Aircraft Corporation	U.S. Army - Communications-Electronics Command	DAAB07-01-3-L503	OT(R)	\$500,000	\$554,019			
Thales Optronique Canada, Inc.	U.S. Army - Communications-Electronics Command	DAAB07-01-9-J414	OT(845)	\$968,000	\$484,000			
United Defense L.P.	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-01-3-0008	OT(R)	\$2,202,695	\$2,202,695			
University of Michigan	U.S. Army - Tank-Automotive and Armaments Command	DAAE07-01-3-0002	OT(R)	\$3,000,000	\$3,000,000			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2001						CONTRACTOR TYPE		
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Washington State University, The Ferrite Company, Kraft Foods North America, Inc., Graphic Packaging Company, Rexam Containers, Hormel Foods Corp., and Truitt Brothers, Inc.	U.S. Army Soldier and Biological Chemical Command	DAAD16-01-2-0001	CA	\$463,872	\$647,590			
				\$68,934,379	\$13,215,924			

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DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2002							CONTRACTOR TYPE	
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
"NON-TRADITIONAL" PRIME CONTRACTOR								
Agilent Technologies, Inc. and the University of Southern California	DARPA	MDA972-02-3-0005	OT(R)	\$1,757,718	\$2,550,684		X	
Agility Communications, Inc.	DARPA	MDA972-02-3-0006	OT(R)	\$1,880,000	\$1,380,000		X	
Corning Incorporated	DARPA	MDA972-02-3-0004	OT(R)	\$5,400,000	\$5,000,000		X	
Delta Velocity Corporation, Athena Technologies, and CSA Engineering, Inc.	DARPA	MDA972-02-9-0007	OT(845)	\$1,253,798	\$0		X	X
Gulfstream Aerospace Corporation	DARPA	MDA972-01-9-0021/P1	OT(845)	\$437,923	\$14,229		X	
Microsoft Corporation	DARPA	MDA972-02-3-0003	OT(R)	\$0	\$0		X	
New Power Concepts, LLC, and DEKA	DARPA	MDA972-02-3-0007	OT(R)	\$3,897,142	\$1,500,000		X	X
Pioneer Rocketplane Corporation, HMX, Inc., and Aurora Flight Sciences	DARPA	MDA972-02-9-0004	OT(845)	\$1,142,000	\$0		X	X
QWIP Technologies, LLC, Equinox Corporation, 5C-IR Corporation, Global Communications Semiconductors, Indigo Systems, Santa Barbara Infrared, and Revtek	DARPA	MDA972-02-9-0015	OT(845)	\$1,200,000	\$0		X	X
Seventh Knight, Inc.	U.S. Army - Robert Moms Acquisition Center	DAAD19-02-9-0001	OT(845)	\$25,340	\$0		X	
Sonex Research, Inc.	DARPA	MDA972-02-9-0017	OT(845)	\$744,246	\$0		X	
Space Access, LLC	DARPA	MDA972-02-9-0002	OT(845)	\$1,196,763	\$0		X	
The Space Launch Corporation, Universal Space Lines, Scaled Composites, and Hunter and Associates	DARPA	MDA972-02-9-0006	OT(845)	\$1,150,000	\$0		X	X
				\$20,084,930	\$10,444,913			
"MAJOR PLAYER", "NON-TRADITIONAL" PARTICIPATION								
Lockheed Martin Aeronautics Company, Arizona State University, and Intelligent Aerodynamics	DARPA	MDA972-01-9-0002/P8	OT(845)	\$2,427,009	\$1,365,542	1		X
Lockheed Martin Missiles and Fire Control Division, Rod Millen Special Vehicles, and Universal Instruments Corp.	DARPA	MDA972-01-9-0009/P8	OT(845)	\$5,499,982	\$0	1		X

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2002								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Boeing Company, RedZone Robotics, Inc., Krauss-Maffei Wegmann, Cougar Software, Inc., Parametric Technology Corporation, Command Systems, Inc., Navigator Development Group, Inc., and Strategic Perspectives, Inc.	DARPA	MDA972-02-9-0005	OT(845)	\$154,000,000	\$86,000,000	2		X
Boeing Company, Vela, and PanAero	DARPA	F33815-98-9-2880/P25	OT(845)	\$112,214,000	\$4,962,000	2		X
McDonnell Douglas Corp., a Wholly Owned Subsidiary of the Boeing Company	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N68335-02-9-3217	OT(845)	\$4,462,182	\$500,000	2		X
Northrop Grumman Corporation and Raytheon Aircraft Company	DARPA	MDA972-01-9-0001/P9	OT(845)	\$2,699,780	\$0	3		X
Northrop Grumman Corporation, Aurora Flight Sciences, and Athena Technologies	DARPA	MDA972-00-9-0006/P10 & P12	OT(845)	\$12,000,000	\$0	3		X
Northrop Grumman Systems Corporation	DARPA	MDA972-02-9-0008	OT(845)	\$1,899,824	\$626,942	3		X
Northrop Grumman Systems Corporation, MD Helicopter, CarterCopters, LLC, The Saber Group, and Natural Selection, Inc.	DARPA	MDA972-02-9-0013	OT(845)	\$3,000,000	\$1,510,446	3		X
Raytheon Company, Agile Communications, NuWave, and Protean	DARPA	MDA972-01-9-0022/P2 & P5	OT(845)	\$18,890,966	\$0	5		X
General Dynamics Robotic Systems and Percep Tek	DARPA	MDA972-01-9-0013/P2	OT(845)	\$3,750,000	\$0	7		X
General Dynamics Robotic Systems, Avalanche Engineering, and Percep Tek	DARPA	MDA972-01-9-0010/P3	OT(845)	\$1,500,000	\$0	7		X
TRW, Inc. and Agile Communications	DARPA	MDA972-01-9-0023/P2 & P5	OT(845)	\$19,082,966	\$0	8		X
Science Applications International Corporation (SAIC), Applied Perception, Inc., and Visteon Corporation	DARPA	MDA972-01-9-0015/P4	OT(845)	\$3,750,000	\$0	9		X
Science Applications International Corporation (SAIC), United Defense, LP, University of Texas, Georgia Tech, Stanford University, and Precision Magnetic Bearing Systems, Inc.	DARPA	MDA972-01-9-0006/P6	OT(845)	\$1,500,000	\$89,894	9		X
				\$346,476,709	\$95,054,824			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2002							CONTRACTOR TYPE	
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
"MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION								
Lockheed Martin Mission Systems, TRW, Inc., Raytheon Company, Northrop Grumman, and General Dynamics [consortium]	Missile Defense Agency	HQ0006-02-9-0002	OT(845)	\$131,719,835	\$0	1		
Lockheed Martin, Systems Integration	DARPA	MDA972-02-9-0011	OT(845)	\$3,000,000	\$2,217,000	1		
Boeing Company	DARPA	MDA972-02-9-0005/P11 & P13	OT(845)	\$9,718,891	\$0	2		
Boeing Company	DARPA	MDA972-00-9-0015/P3	OT(845)	\$99,144,499	\$0	2		
Boeing Company, TRW, Inc., Raytheon Company, Northrop Grumman, Lockheed Martin, and General Dynamics	Missile Defense Agency	HQ0006-02-9-0001	OT(845)	\$148,993,563	\$0	2		
McDonnell Douglas Corp., a Wholly Owned Subsidiary of the Boeing Company	DARPA	MDA972-02-9-0010	OT(845)	\$3,000,000	\$2,500,000	2		
United Technologies Corporation	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-02-3-3225	OT(R)	\$751,506	\$751,585	4		
Raytheon Company	U.S. Army - Communications-Electronics Command	DAAB07-99-3-K(518/P00009	CA	\$3,475,000	\$3,699,985	5		
Raytheon Company	U.S. Army - Communications-Electronics Command	DAAB07-99-3-K(518/P00008	CA	\$3,475,000	\$3,699,985	5		
General Dynamics Ordnance and Tactical Systems	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0010	OT(845)	\$294,448	\$29,472	7		
General Dynamics Ordnance and Tactical Systems	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0011	OT(845)	\$5,406,506	\$0	7		
				\$408,979,046	\$12,898,027			
"TOP 100 CONTRACTOR, NOT "MAJOR PLAYER", "NON-TRADITIONAL" PARTICIPATION								
BAE Systems Information and Electronic Systems Integration, Inc., Applied Materials, and Leica	U.S. Air Force - Air Force Research Laboratory	F33615-02-9-5324	OT(845)	\$19,110,203	\$0	20		X
L-3 Communications, Power Systems Group	U.S. Navy - Naval Sea Systems Command	N00024-01-9-4020	OT(845)	\$2,609,266	\$0	25		X
Honeywell International, Inc., KLA-Tencor, and ASML	U.S. Air Force - Air Force Research Laboratory	F33615-02-9-5325	OT(845)	\$30,042,284	\$0	39		X
Honeywell International, Inc., MLB Company, D-Star Engineering, and Techsburg	DARPA	MDA972-01-9-0018/P4	OT(845)	\$18,000,000	\$0	39		X
Carnegie Mellon University	DARPA	MDA972-01-9-0005/P7	OT(845)	\$5,499,410	\$0	66		X

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2002								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Carnegie Mellon University and RedZone Robotics	DARPA	MDA972-01-9-0016/P4	OT(845)	\$3,750,000	\$0	66		X
General Atomics	U.S. Navy - Naval Sea Systems Command	N00024-01-9-4021	OT(845)	\$4,095,498	\$0	70		X
				\$83,106,641	\$0			
"TOP 100 CONTRACTOR, NOT "MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION								
ATK Thiokol Propulsion (Division of Alliant Techsystems)	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0012	OT(845)	\$798,215	\$0	21		
ATK Thiokol Propulsion (Division of Alliant Techsystems)	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0014	OT(845)	\$472,903	\$0	21		
ATK Thiokol Propulsion (Division of Alliant Techsystems)	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0017	OT(845)	\$1,332,089	\$0	21		
ATK Thiokol Propulsion (Division of Alliant Techsystems) and Alcoa	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0009	OT(845)	\$299,997	\$0	21		
L-3 Communications Corporation, Communications Systems West	U.S. Army - Aviation and Missile Command	DAAM10-02-9-0001	OT(845)	\$2,492,869	\$1,901,459	25		
Honeywell Sensor and Guidance Products	U.S. Air Force - Air Force Research Laboratory	F33615-01-3-5705	OT(R)	\$4,938,023	\$4,938,023	39		
Geo-Centers	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0018	OT(845)	\$297,033	\$0	48		
Harris Corporation, Government Communications Systems Division	U.S. Army - Communications-Electronics Command	DAAB07-02-3-L423	OT(R)	\$1,859,263	\$1,750,000	60		
General Atomics	DARPA	MDA972-02-9-0009	OT(845)	\$449,273	\$225,311	70		
				\$12,939,665	\$8,814,793			
REPORT STATES "NON-TRADITIONAL; HOWEVER COMPANY IS LISTED IN "TOP 100".								
AeroMet Corporation	U.S. Army - Robert Morris Acquisition Center	DAAD19-02-9-0003	OT(845)	\$19,345,000	\$0	80	X	
TRADITIONAL DEFENSE CONTRACTOR (NOT IN "TOP 100"), "NON-TRADITIONAL" PARTICIPATION								
Coleman Research Corporation, Vela Technology Development, Inc., PanAero, Inc., and XCOR Aerospace, Inc.	DARPA	MDA972-02-9-0001	OT(845)	\$1,199,081	\$0			X
Eagle Enterprise, Inc., A123 Systems, and Command Systems, Inc.	U.S. Army - Robert Morris Acquisition Center	DAAD16-02-9-0001	OT(845)	\$7,499,999	\$2,500,000			X

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2002								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Eaton Corporation	U.S. Navy - Naval Sea Systems Command	N00024-01-9-4022	OT(845)	\$4,186,000	\$0			X
Exponent, Inc. and The Wexford Group International	U.S. Army - Robert Morris Acquisition Center	DAAD16-02-9-0002	OT(845)	\$7,498,690	\$0			X
Micro Craft, Inc. and Alturdyne	DARPA	MDA972-01-9-0017/P7	OT(845)	\$15,000,000	\$0			X
Simmonds Precision Products, Inc. DBA BFGoodrich Fuel & Utility Systems, and Vibro-Meter	U.S. Army - Aviation Applied Technology Directorate	DAAH10-02-9-0002	OT(845)	\$8,913,840	\$0			X
				\$44,297,610	\$2,500,000			
TRADITIONAL DEFENSE CONTRACTOR (NOT IN "TOP 100"), NO "NON-TRADITIONAL" PARTICIPATION								
ABB, Inc.	U.S. Navy - Office of Naval Research	N00014-99-3-0002	OT(R)	\$13,249,443	\$13,249,443			
Aerojet	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0016	OT(845)	\$294,181	\$28,000			
Amtec Defense Products Company	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0015	OT(845)	\$96,793	\$32,265			
Commonwealth of Australia represented by the Defence Science & Technology Organization	DARPA	MDA972-02-3-0002	OT(R)	\$7,800,000	\$1,100,000			
Commonwealth of Australia represented by the Defence Science & Technology Organization	DARPA	MDA972-02-9-0014	OT(845)	\$5,300,000	\$0			
Cray, Inc.	National Security Agency	MDA904-02-3-0052	OT(R)	\$10,000,000	\$10,000,000			
Harsh Environment Applied Technologies, Inc.	U.S. Army - Communications-Electronics Command	DAAB07-02-9-J214	OT(845)	\$250,000	\$20,000			
HEXCEL Corporation	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-02-3-3249	OT(R)	\$184,827	\$111,581			
Kilgore Flares Company, LLC	U.S. Army - Tank-Automotive and Armaments Command	DAAE30-01-9-0800/0013	OT(845)	\$878,824	\$0			
National Technology Alliance	National Imagery and Mapping Agency	NMA401-02-9-2001/0001	OT(845)	\$30,894,991	\$0			
National Technology Alliance	National Imagery and Mapping Agency	NMA401-02-9-2001/0002	OT(845)	\$147,767	\$0			
National Technology Alliance	National Imagery and Mapping Agency	NMA401-02-9-2001/0003	OT(845)	\$431,560	\$0			
National Technology Alliance	National Imagery and Mapping Agency	NMA401-02-9-2001/0004	OT(845)	\$790,502	\$0			
National Technology Alliance	National Imagery and Mapping Agency	NMA401-02-9-2001/0005	OT(845)	\$1,206,811	\$0			

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2002							CONTRACTOR TYPE	
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Cambridge Display Technology (CDT)								
Carnegie Mellon University								
Center of Higher Learning								
Corpsiq Federal, LLC								
Computer Sciences Corporation, Defense Group								
Cree, Inc.								
EarthWatch Incorporated D.B.A. DigitalGlobe								
Environmental Systems Research Institute Inc. (ESRI)								
ERDAS, Inc.								
Eye Research Institute								
Fortrex Technologies, Inc.								
Gartner, Inc.								
General Dynamics Advanced Information Systems								
George Mason University								
Georgia Tech Applied Research Corporation (OTARC)								
ImageLinks, Inc.								
In-Phase Technologies								
Indian Technologies, Inc.								
KPMG Consulting, Inc.								
Lambertville Eye & Laser, Hopewell Eye & Laser								
Lockheed-Martin Management & Data Systems (M&DS)								
McKinsey & Company, Inc.								
Microlab								
Midwest Research Institute								
Mississippi Enterprise for Technology								
Mississippi Space Commerce Initiative mPower3/Emerge E-ConAgra.com, Inc.)								
Northrop Grumman Information Technology, TASC								
ObjectFX Corporation - Government Division								
Observera, Inc.								
Orbital Imaging Corporation (ORBIMAGE)								
PacketVideo								
Pennsylvania State University Applied Research Laboratory								

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2002							CONTRACTOR TYPE	
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Potomac Strategies & Analysis, Inc.								
PricewaterhouseCoopers, LLP								
Princeton University								
Purdue University								
Radianco Technologies, Inc.								
RF Micro Devices, Charlotte (formerly RF Nitro)								
Rockwell Scientific Company, LLC								
Saffron Technology, Inc.								
SAIC, Reconnaissance and Surveillance Operation								
Sarnoff Corporation								
Scyld Computing Corporation								
Semantix Networks, Inc.								
Southwest Research Institute								
SRI International								
Sullivan-Hawes Associates, Inc.								
Swihouse Spatial Systems Inc.								
Syrtek Technologies, Inc.								
TeraBit Corporation								
TeraTex								
The SPECTRUM Group								
Titan Systems Corporation								
U. S. Display Consortium								
Unisys Corporation								
University at Buffalo, Center for Computational Research								
University of Florida, Division of Sponsored Research								
University of Illinois Urbana Champaign, National Center for Supercomputing Applications								
University Of Southern Mississippi, Signal Research Center								
University of Texas, Medical Branch at Galveston								
User Systems, Inc.								
Vexcel Corporation								
Virginia Polytechnic Institute & State University, Mobile & Portable Radio Research Group								
Wavexpress, Inc.								
West Virginia University Research Corporation on Behalf of West Virginia University								

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DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2003							CONTRACTOR TYPE	
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
"NON-TRADITIONAL" PRIME CONTRACTOR								
3M on behalf of the Chemical, Bio and Rad Tech Alliance	National Imagery and Mapping Agency	NMA401-02-9-2002/0004	OT(845)	\$249,751	\$0		X	
3M on behalf of the Chemical, Bio and Rad Tech Alliance	National Imagery and Mapping Agency	NMA401-02-9-2002/0006	OT(845)	\$35,449	\$0		X	
3M on behalf of the Chemical, Bio and Rad Tech Alliance	National Imagery and Mapping Agency	NMA401-02-9-2002/0007	OT(845)	\$459,123	\$0		X	
3M on behalf of the Chemical, Bio and Rad Tech Alliance	National Imagery and Mapping Agency	NMA401-02-9-2002/0008	OT(845)	\$599,981	\$0		X	
3M on behalf of the Chemical, Bio and Rad Tech Alliance	National Imagery and Mapping Agency	NMA401-02-9-2002/0009	OT(845)	\$499,091	\$0		X	
Aeros Aeronautical Systems Corporation	Missile Defense Agency	HQ0006-03-9-0001	OT(845)	\$2,000,000	\$0		X	
Airtight, Inc.	DARPA	MDA972-03-9-0002	OT(845)	\$3,903,955	\$0		X	
American Marine Holdings, Inc.	U.S. Navy - Office of Naval Research	N00014-03-9-0002	OT(845)	\$3,741,000	\$732,883		X	
APL Engineered Materials, Inc.	U.S. Army - Aviation and Missile Command	DAAH01-03-9-R002	OT(845)	\$2,718,449	\$45,000		X	X
Dragonfly Pictures, Inc.	DARPA	MDA972-03-9-0003	OT(845)	\$996,692	\$0		X	
Fiberstars, Inc.	U.S. Army - Aviation and Missile Command	DAA101-03-9-R001	OT(845)	\$0,010,352	\$1,553,431		X	X
Frontier Systems, Inc.	DARPA	MDA972-03-9-0004	OT(845)	\$75,000,000	\$0		X	
Frontier Systems, Inc.	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-03-9-0001	OT(845)	\$18,100,000	\$0		X	
Gene and Genome Assembly using Microchemical Oligonucleotide Manufacture Consortium with Agilent Technologies Inc. as lead member	U.S. Army - Robert Morris Acquisition Center	DAAD19-03-9-0001	OT(845)	\$3,982,765	\$2,533,800		X	
Millennium Pharmaceuticals, Inc.	DARPA	MDA972-03-3-0005	OT(R)	\$0	\$0		X	
The Space Launch Corporation, Universal Space Lines, Scaled Composites, and Hunter and Associates	DARPA	MDA972-02-9-0006, Mod 1	OT(845)	\$20,774,973	\$0		X	X
Titanium Metals Corporation	DARPA	MDA972-03-3-0002	OT(R)	\$12,237,000	\$708,000		X	
				\$152,116,581	\$5,572,914			
"MAJOR PLAYER", "NON-TRADITIONAL" PARTICIPATION								
Lockheed Martin Naval Electronics & Surveillance Systems	Missile Defense Agency	HQ0006-03-9-0002	OT(845)	\$3,600,000	\$0	1		X
McDonnell Douglas Corp., a Wholly Owned Subsidiary of the Boeing Company	Missile Defense Agency	HQ0006-03-9-0003	OT(845)	\$3,000,000	\$0	2		X

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2003								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Soramjet Engine Demonstrator - Wave Rider Consortium (Pratt & Whitney and Boeing)	U.S. Air Force - Air Force Research Laboratory	F33615-03-9-2422	OT(845)	\$200,000	\$0	2		X
The Boeing Company	U.S. Army - Tank Automotive and Armaments Command	DAAE07-03-9-F001	OT(845)	\$130,000,000	\$0	2		X
Northrop Grumman Systems Corporation, MD Helicopter, CarterCopters, LLC, The Saber Group, and Natural Selection, Inc.	DARPA	MDA972-02-9-0013, Mod 4	OT(845)	\$8,700,000	\$0	3		X
Raytheon Company, Agile Communications, NuWave, and Protean	DARPA	MDA972-01-9-0022, Mod 6	OT(845)	\$9,849,720	\$0	5		X
Science Applications International Corporation (SAIC), Applied Perception, Inc., and Visteon Corporation	DARPA	MDA972-01-9-0015, Mod 8	OT(845)	\$202,881	\$0	9		X
				\$155,552,601	\$0			
"MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION								
Lockheed Martin, Systems Integration	DARPA	MDA972-02-9-0011, Mod 2	OT(845)	\$12,430,000	\$0	1		
Northrop Grumman Systems Corporation	U.S. Army - Aviation Applied Technology Directorate	DAAH10-03-9-0002	OT(845)	\$1,360,000	\$719,519	3		
Raytheon Company	DARPA	MDA972-03-3-0001	OT(R)	\$1,600,000	\$1,198,823	5		
Raytheon Company	U.S. Army - Communications-Electronics Command	DAAB07-03-9-K201	OT(845)	\$3,154,578	\$2,969,055	5		
General Dynamics Ordnance and Tactical Systems	U.S. Army - Tank Automotive and Armaments Command	DAAE30-01-9-0800/0021	OT(845)	\$311,456	\$0	7		
General Dynamics, Electric Boat Division	U.S. Navy - Office of Naval Research	N00014-00-3-0020	OT(R)	\$1,088,379	\$1,839,799	7		
				\$19,944,413	\$6,727,196			
"TOP 100 CONTRACTOR, NOT "MAJOR PLAYER", "NON-TRADITIONAL" PARTICIPATION								
BAE Systems Information and Electronic Systems Integration, Inc., Applied Materials, and Leica	U.S. Air Force - Air Force Research Laboratory	F33615-02-9-5324, Mod 1	OT(845)	\$46,889,797	\$0	13		X
BAE Systems Information and Electronic Systems Integration, Inc., APTI Wireless, and Hemck Technology Laboratories	DARPA	MDA972-01-9-0019, Mod 8	OT(845)	\$22,881,262	\$0	13		X

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2003								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Rockwell Scientific Company, LLC	U.S. Army - Communications-Electronics Command	DAAB07-03-9-P011	OT(845)	\$15,506,611	\$2,448,000	61		X
				\$85,277,670	\$2,448,000			
"TOP 100 CONTRACTOR, NOT "MAJOR PLAYER", NO "NON-TRADITIONAL" PARTICIPATION								
ITT Industries, Inc.	U.S. Army - Communications-Electronics Command	DAAB07-03-9-K601	OT(845)	\$29,802,111	\$14,676,047	20		
ATK Thiokol Propulsion (Division of Alliant Techsystems)	U.S. Army - Tank Automotive and Amaments Command	DAAE30-01-9-0800/0022	OT(845)	\$2,228,350	\$0	21		
L-3 Systems Company	U.S. Army - Tank Automotive and Amaments Command	DAAE30-01-9-0800/0025	OT(845)	\$4,477,346	\$0	24		
Honeywell International, Inc.	U.S. Air Force - Air Force Research Laboratory	F29601-03-3-0059	OT(R)	\$1,968,134	\$1,968,134	37		
Honeywell International, Inc.	U.S. Army - Aviation Applied Technology Directorate	DAAH10-03-9-0001	OT(845)	\$2,100,000	\$1,034,329	37		
Texas Engineering Experiment Station, Texas A&M University System	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-03-3-0124	OT(R)	\$393,500	\$599,194	39		
Geo-Centers	U.S. Army - Tank Automotive and Amaments Command	DAAE30-01-9-0800/0019	OT(845)	\$150,000	\$0	46		
				\$41,117,441	\$18,277,704			
TEAMING ARRANGEMENT WITH "MAJOR PLAYER" PARTICIPATION, "NON-TRADITIONAL" PARTICIPATION								
Carnegie Mellon University (with Boeing, Samoff Corp., Rockwell Science Center, and RedZone Robotics)	DARPA	MDA972-01-9-0016, Mod 10	OT(845)	\$5,597,206	\$0	"48 - 2 - 61"		X
TEAMING ARRANGEMENT WITH "MAJOR PLAYER" PARTICIPATION, NO "NON-TRADITIONAL" PARTICIPATION								

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2003								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
"Team 2020" Consortium. The consortium is comprised of 29 participants, three key participants (Lockheed Martin Corporation Undersea Systems Division, General Dynamics Electric Boat Division, and Northrop Grumman Corporation Oceanic & Naval Systems Division), and 28 other participants, of which five are small enterprises and six are Government support activities (e.g., laboratories). Lockheed Martin Undersea Systems, serves as the manager and fiduciary agent for the consortium.	DARPA	MDA972-99-9-0004, Mod 34	OT(845)	\$100,000	\$0	"1 - 7 - 3"		
"Forward PASS" Consortium. The consortium is comprised of 14 participants, four key participants (the Raytheon Company, the Boeing Company, BBN Corporation (a wholly-owned subsidiary of GTE), and General Dynamics Corporation Electric Boat Division), and 10 other participants, of which four are small enterprises and one is a Government support activity. Raytheon serves as the manager and fiduciary agent for the consortium.	DARPA	MDA972-99-9-0005, Mod 34	OT(845)	\$100,000	\$0	"5 - 2 - 7"		
				\$200,000	\$0			
REPORT DOES NOT IDENTIFY RECIPIENT								
"Not Named"	National Imagery and Mapping Agency	NMA401-02-9-2002/0005	OT(845)	\$26,579	\$0			
"Not Named"	National Imagery and Mapping Agency	NMA401-02-9-2001/0029	OT(845)	\$291,740	\$0			X
				\$318,319	\$0			
TRADITIONAL DEFENSE CONTRACTOR (NOT IN "TOP 100"), "NON-TRADITIONAL" PARTICIPATION								
Hicks & Associates, Inc.	DARPA	MDA972-03-9-0001	OT(845)	\$19,300,000	\$0			X
Sarnoff Corporation on behalf of Rosettech Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0014	OT(845)	\$200,206	\$0			X

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2003								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	"TOP 100" RANK	CONTRACTOR TYPE	
							"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0013	OT(845)	\$437,499	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0015	OT(845)	\$1,659,786	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0016	OT(845)	\$249,997	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0020	OT(845)	\$2,095,659	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0019	OT(845)	\$2,401,039	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0021	OT(845)	\$61,405	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0025	OT(845)	\$399,412	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0023	OT(845)	\$1,777,277	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0024	OT(845)	\$1,095,533	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0022	OT(845)	\$1,103,886	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0030	OT(845)	\$599,315	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0026	OT(845)	\$99,529	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0031	OT(845)	\$300,000	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0028	OT(845)	\$1,084,918	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0032	OT(845)	\$1,662,678	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0027	OT(845)	\$1,869,962	\$0			X

DEPARTMENT OF DEFENSE COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS ENTERED INTO DURING FISCAL YEAR 2003								
RECIPIENT	AWARDING ORGANIZATION	AGREEMENT NUMBER	TYPE	GOVT DOLLARS	NON-GOVT DOLLARS	CONTRACTOR TYPE		
						"TOP 100" RANK	"NON-TRADITIONAL" PRIME	"NON-TRADITIONAL" SUB(S)
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0018	OT(845)	\$828,623	\$0			X
Sarnoff Corporation on behalf of Rosetex Technology & Ventures Group	National Imagery and Mapping Agency	NMA401-02-9-2001/0033	OT(845)	\$1,019,452	\$0			X
				\$38,246,176	\$0			
TRADITIONAL DEFENSE CONTRACTOR (NOT IN "TOP 100"), NO "NON-TRADITIONAL" PARTICIPATION								
APIC Corporation	U.S. Navy - Naval Air Warfare Center - Aircraft Division	N00421-03-9-0002	OT(845)	\$5,623,180	\$250,000			
Commonwealth of Australia represented by the Defence Science & Technology Organization	DARPA	MDA972-03-3-0003	OT (other)	\$148,850	\$0			
Eaton Associates	U.S. Army - Tank Automotive and Amaments Command	DAAE30-01-9-0800/0020	OT(845)	\$90,000	\$0			
Electricore, Inc. Consortium	U.S. Air Force - Air Force Research Laboratory	F33615-03-3-2308	OT(R)	\$1,538,272	\$1,538,272			
Ensign-Bickford Aerospace & Defense Company	U.S. Army - Tank Automotive and Amaments Command	DAAE30-01-9-0800/0023	OT(845)	\$192,539	\$0			
Lumileds Lighting, U.S., LLC	U.S. Army - Aviation and Missile Command	DAAH01-03-9-R003	OT(845)	\$5,300,000	\$2,904,045			
Nuvonyx, Inc.	U.S. Air Force - Air Force Research Laboratory	F29601-03-3-0052	OT(R)	\$2,444,010	\$2,444,010			
Terabus Consortium c/o Agilent Technologies, Inc. and IBM	DARPA	MDA972-03-3-0004	OT(R)	\$7,249,884	\$4,424,352			
University of Denver Research Institute	U.S. Army - Tank Automotive and Amaments Command	DAAE30-01-9-0800/0024	OT(845)	\$212,943	\$0			
				\$22,799,658	\$11,560,679			

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