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MBA PROFESSIONAL REPORT

**Implementing Coordinative Acquisition as a Viable Streamlined
Acquisition Process in the Department of Defense (DoD):
Will Contractors Participate?**

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December 2006**

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DEPARTMENT OF DEFENSE (DOD):
WILL CONTRACTORS PARTICIPATE?**

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EXECUTIVE SUMMARY

Typically, the government follows formal contract procedures laid out in the Federal Acquisition Regulation (FAR) for solicitation, development, testing, and procurement of new products and technologies. There is, however, an alternative that falls outside FAR procedures. This alternative uses close coordination of critical acquisition activities to support real-world warfighter requirements without a formalized government requirement, budget, personnel, or a contract. Contractors bear all research, development, and production costs, while the government agrees to “market” the final product to units who have a bona fide need throughout the DoD for this technology/item. This alternative is called **Coordinative Acquisition (CA)** and is a cooperative and simplified administrative and management process using a Memorandum of Understanding to facilitate the accelerated development and fielding of a product by the contractor without the constraints of the FAR.

CA utilizes the vendors' existing commercial product management system to provide the required capability. Rather than rely on government-unique processes and controls to regulate the development process, the market forces of the free commercial marketplace are relied upon. CA utilizes neither a contract nor appropriate funds and, therefore, does not fall under FAR guidelines. Even though the FAR does not directly apply to CA, the objectives of full and open competition, fair treatment of suppliers, and business ethics are all important parts of the CA process.

CA, like any acquisition methodology, has positive and negative considerations. Proper ethical conduct, legal consideration, and sound business judgment are all core competencies required for successful implementation of CA. If not conducted appropriately, CA may lead to the appearance of improprieties in government acquisition. CA should be considered simply another acquisition tool available to government acquisition professionals, especially in times of urgent and compelling needs in direct support of the warfighter. CA is a successful, viable option if utilized in the proper circumstances and with the proper discipline.

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I. INTRODUCTION

According to the Government Accountability Office (GAO), 36 next-generation weapon systems are over budget by \$23 billion and over schedule by at least one year for some programs and as much as four years for others (Wayne, 2006, July 11). The security environment facing the United States and her allies today requires radical changes to our current acquisition architecture and new ways to develop, test, produce, and field urgently needed products to support our warfighters in the Global War on Terrorism—all within constrained budgets. Acting Secretary of Defense Gordon England mandated in his 7 June 2005 memo, “we must simplify and coordinate all acquisition activities.” Coordinative acquisition (CA) is one such approach which has been used to provide streamlined acquisition to our nation’s warfighters—under the pretext that Federal Acquisition Regulation (FAR) processes do not apply since no contracts or appropriated funds are used, nor are services or products purchased or procured.

A. METHODOLOGY

The methodology of this project is both to analyze the use of the CA approach (which has been used since 2003 by the Defense Threat Reduction Agency (DTRA) as an “outside-the-FAR” tool for rapidly acquisitioning products in direct support of warfighters in the field) and to compare this approach to Defense Acquisition Performance Assessment (DAPA) recommendations calling for more streamlined acquisition architecture. We explore the uses and viability of coordination acquisition through several evaluation lenses, including a literary review for relevance to existing acquisition policy, questionnaires, and interviews for public- and private-sector impressions and expertise, other research, and our personal experiences. Important research questions to answer include how this approach is viewed by government and industry, the legal and ethical considerations as it relates to the FAR, DoD Directive 5000.1 and other acquisition policies, recommendations for possible policy development for use and, finally, the circumstances under which industry will be willing to accept this form of acquisition for future DoD projects.

B. BACKGROUND

In June 2005, Acting Deputy Secretary of Defense Gordon England directed an assessment of the DoD acquisition system due to historical cost and schedule overruns and growing discontent from Congress. As a result of this memo, the DAPA task force was established and led by Lieutenant General Ronald T. Kadish (USAF, Retired) to study and make recommendations on defense acquisition system reform (including review of the FAR/DFAR and previous acquisition reform studies) in order to streamline the current DoD acquisition architecture. In support of DAPA recommendations for more flexible, responsive, innovative, and streamlined acquisition strategies within the DoD-acquisition framework, the DTRA is using strategies for rapid acquisition of products in direct support of the warfighter in Iraq. While DTRA has used similar approaches for rapid acquisition efforts in the past (i.e., 2001: 5,000 pound GBU-28 Bunker Buster from concept to production in 129 days), the main focus for coordinative acquisition in this project is a case study in which DTRA coordinated with industry on the development of existing law-enforcement technology. This technology was miniaturized, simplified, hardened, and rapidly fielded as the Rapid Identification Friend or Foe (RIFF) detection unit in Iraq within 49 days (outside of FAR/DFAR oversight) by coordinating the efforts to two different companies (Law Enforcement Technologies, Inc., and Sirchie Finger Print Laboratories, Inc.). According to DTRA, no contracts, formalized requirements, budgets, or personnel were used in the development, production, and fielding of the RIFF units, thereby alleviating the requirement to adhere to Federal/DoD acquisition policy (i.e., FAR/DFAR). In February 2006, the Naval Postgraduate School (NPS) was presented with the unique opportunity from the U.S. Marine Corps Systems Command's PM Infantry Combat Equipment, (Quantico, VA) in coordination with the NPS Acquisition Research Program, to study the CA approach as a viable DoD acquisition tool.

C. PROBLEM IDENTIFICATION

According to Dr. Joseph P. Avery in his January 2006 presentation entitled, "Coordinative Acquisition Strategies; Hyperswift Response to the Warfighter," CA is compliant with DoD Directive 5000.1 and falls outside of the FAR/DFARS process, since it does not fit the definition of a FAR acquisition. In order to take a closer look at

CA and begin to understand legal statutory and ethical considerations surrounding both its use and its appropriateness for DoD-wide implementation, we must collaborate with government and industry representatives. Specifically, it is important to understand: 1) how the RIFF test kit case and the overall CA approach supports acquisition reform, and 2) the results and lessons learned from this case study. It is also imperative to understand which technologies are most applicable for this type of acquisition approach and the circumstances under which industry would be willing to participate in funding the development of immature variations into mature technologies up front, without guarantees from the government on future orders.

D. OVERVIEW OF REPORT

This project presents five distinct chapters which address the purpose of this report, namely, implementing coordinative acquisition as a viable streamlined acquisition process in the DoD, and answer the main question as to whether or not contractors will choose to participate.

1. Chapter I—Introduction

This introductory chapter establishes the concept of coordinative acquisition, discusses the current acquisition environment, and provides a broad background of DoD acquisition reform efforts. A problem identification section expounds the concept of coordinative acquisition as originally presented by the DTRA. Finally, each of the project's five chapters presents an overview to introduce the reader to the individual project concepts.

2. Chapter II—Literature Review

The second chapter discusses current and historical statutory requirements, policy, and guidance as they relate to acquisition procedures and the coordinative acquisition approach. It is through this literature review that we establish a basic level of understanding of the acquisition framework today within the context of streamlined acquisition reform initiatives. Finally, this chapter also attempts to improve the readers' awareness of currently documented policies and procedures as laid out in the DoD 5000 series, the FAR, the DFAR and the Defense Grant and Agreement Regulatory Systems.

3. Chapter III—Rapid Identification Friend or Foe Test Kit Case Study

Chapter III analyzes the development and deployment of the Rapid Identification Friend or Foe (RIFF) test kit as a coordinative acquisition case study that was the first product developed using this approach in 2003. We explore the history of gunshot-residue testing and the development of the Instant Shooter Identification technology, which is the predecessor to the RIFF test kit. A comprehensive timeline presents an encompassing synopsis of the entire acquisition spectrum from requirements determination to deployment in the field supporting RIFF test kit's primary customer, the warfighters. Finally, results and lessons learned are presented from this case study, which will be drawn upon in Chapter IV.

4. Chapter IV—Findings and Recommendations

Chapter IV provides findings and recommendations for coordinative acquisition use based upon several sources—including our literature review drawn from Chapter II, the case study from Chapter III, questionnaires, interviews, other research, and our own collective personal experiences. Specifically, we address the actual CA concept using an in-depth framework which explains all of the steps in the CA process, including a sample MOU we provide as a recommended tool for scenarios such as the RIFF test case used in Chapter III. We also discuss CA's relationship to existing acquisition policies and provide our findings on industry and government attitudes toward CA, including ways to encourage contractors to use CA more in the future. Also included in this chapter are results from questionnaires taken by government and industry professionals, which contribute to understanding the advantages and concerns relating to CA use from legal, ethical, and sound business standpoints. Finally, we provide recommendations on possible DoD policy and provide a way ahead for government use in the future.

5. Chapter V—Conclusion

In our final chapter, we draw in all concepts presented in the previous four chapters and summarize the project as a whole. Lastly, we acknowledge that our project is limited in scope and present three areas relevant to CA requiring further research that may facilitate continued discussion and study of CA.

E. SUMMARY

This chapter introduced the concept of CA, discussed the current acquisition environment, and provided a broad background of DoD acquisition reform efforts. A problem identification section provided a synopsis of the concept of CA as originally presented by the DTRA. Finally, this chapter presented an overview of each of the project's five chapters in order to introduce the reader to CA project concepts as it relates to the broader acquisition framework. In the next chapter, we provide a literature review of the acquisition framework and discuss current and historical statutory requirements, policy, and guidance as they relate to acquisition procedures and the CA approach.

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II. LITERATURE REVIEW

A. INTRODUCTION

Before examining the coordinative acquisition (CA) process as a viable acquisition streamlining initiative, it is essential to establish a basic level of understanding of the policy, guidance, and Code that form the framework of the acquisition process today. As CA is primarily an alternative method of research and development (R&D) and rapid prototyping, this chapter will focus on improving the reader's understanding of the currently documented policies and procedures as laid out in the DoD 5000 series, the Federal Acquisition Regulation (FAR), the DFARS (Defense FAR Supplement) and the Defense Grant and Agreement Regulatory System (DGARS). These policies are provided as background for the current acquisition process. How they relate to CA and the differences in the approaches will be detailed and discussed further in Chapter IV. A key focus of this chapter is the definition of "acquisition" in each of the various regulations and how CA differs from those definitions. In addition, this chapter explores a review of recent reform initiatives with particular emphasis on the most recent report from the Defense Acquisition Performance Assessment (DAPA) Project.

To begin with, it is necessary to define the activities that fall under the purview of research and development. The DGARS (§ 32.2) defines research and development as:

All research activities, both basic and applied, and all development activities that are supported at universities, colleges, and other non-profit institutions. *Research* (emphasis added) is defined as a systematic study directed toward fuller scientific knowledge or understanding of the subject studied. *Development* (emphasis added) is the systematic use of knowledge and understanding gained from research directed toward the production of useful materials, devices, systems, or methods, including design and development of prototypes and processes. The term *research* also includes activities involving the training of individuals in research techniques where such activities utilize the same facilities as other research and development activities and where such activities are not included in the instruction function.

B. CURRENT ACQUISITION PROCEDURES

1. DoD 5000 Series

DoD Directive 5000.1 provides management principles and mandatory policies and procedures for managing all acquisition programs. Per DoDD 5000.1, an acquisition program is a directed, *funded* effort that provides a new, improved, or continuing materiel, weapon or information system or service capability in response to an approved need (Department of Defense, 2003a, May 12, p. 2). The Defense Acquisition System (DAS) guides the investment strategy of the DoD and serves the primary policy objective to deliver quality products that satisfy user needs with measurable improvements at the right time and at a fair and reasonable price. The DAS is currently governed by 34 overarching policies. Outlined below is a synopsis of several key policies that are most directly applicable to CA in respect to research, development, and acquisition reform efforts:

- a. *Flexibility*: Milestone Decision Authorities (MDAs) and Program Managers (PMs) shall adapt each program strategy and oversight as needed to best suit the conditions of the programs, while maintaining compliance with applicable laws and regulations. (Department of Defense, 2003a, May 12, p. 3)
- b. *Responsiveness*: Evolutionary acquisition strategies are the preferred approach for incorporating advanced technologies into producible systems using spiral development processes. (Department of Defense, 2003a, May 12, p. 3)
- c. *Innovation*: Acquisition professionals across the DoD are encouraged to adopt innovative practices that foster teamwork and reduce cycle-time and cost. (Department of Defense, 2003a, May 12, p. 3)
- d. *Collaboration*: Teaming using Integrated Product Teams (IPTs) shall begin during capability-needs definition. (Department of Defense, 2003a, May 12, Enclosure 1, p. 6)

- e. *Competition*: Competition drives innovation, cost control and increases quality. PM shall explore all alternatives in order to maintain a competitive environment. (Department of Defense, 2003a, May 12, Enclosure 1, p. 6)
- f. *Cost Sharing*: Neither the government nor the contractor shall assume an unfair portion of program risk or investment. Contractors are entitled to a reasonable profit on all DoD programs. In addition, “Contractors shall not be encouraged nor required to invest their profit dollars or independent research and development funds to subsidize defense research and development contracts, except in unusual situations where there is a reasonable expectation of a potential commercial application” (Department of Defense, 2003a, May 12, Enclosure 1, p. 7).
- g. *Technology Development and Transition*: The Science and Technology (S&T) program shall be used to maintain a broad base and provide for rapid transition from that base to useful military products. (Department of Defense, 2003a, May 12, Enclosure 1, p. 11)

DoD Instruction 5000.2 describes the operation of the DAS and establishes a simplified defense acquisition framework (Figure 2.1) for the transformation of mission needs into useable weapon systems for use on all defense technology projects and acquisition programs. The defense acquisition framework detailed below is the standard followed for the majority of DoD research and development projects and is provided for comparison purposes to the CA process discussed in Chapter IV.

Entry at any stage of the defense acquisition framework is permitted, consistent with the entrance criteria for the applicable stage. The Analysis of Alternatives (AoA) dominates the Concept Refinement (CR) stage. Emphasis is placed on innovation and

competition in order to achieve the best possible system solution. The AoA assesses critical technologies considering commercial-off-the-self (COTS) solutions in addition to large and small business participation.

The purpose of the Technology Development (TD) stage is to select the appropriate set of technologies to be integrated into a full system while minimizing overall technology risk. TD is an iterative process designed to refine user requirements while assessing the feasibility of technologies. Successful entry into this phase does not mean that a new acquisition program has been initiated.

The final phase typically associated with R&D and prototyping is the System Development and Demonstration (SDD) phase. Entrance into SDD is defined by a positive Milestone B decision; it serves to begin a new acquisition program. SDD exemplifies two major efforts: System Integration and System Demonstration. System Integration, as the name implies, integrates sub-systems into a comprehensive design—while further reducing system-level risk. Entrance into System Demonstration is defined by successful completion of the Design Readiness Review. System Demonstration focuses on the successful operation of the system in accordance with the Key Performance Parameters (KPPs). The Production and Deployment stage follows SDD, and is highlighted by either Low-rate Initial or Full-rate Production and, ultimately, concluded with the Operations and Support stage.

For the acquisition of mature technology, evolutionary acquisition is the preferred DoD strategy (Department of Defense, 2003b, May 12, p. 3). Capabilities are delivered in increments through the use of future capability improvements. If both the desired capability and the end-state requirement are known, a process of incremental development is used. Alternately, if the end-state requirement is not known at program initiation, spiral development is the preferred course of action. Each evolutionary increment shall have its own Milestone B decision.

2. FAR and DFARS

The Federal Acquisition Regulation System, including agency regulations that implement or supplement the FAR, is established to codify uniform policies and procedures for acquisition by all executive agencies. *Acquisition* is defined in FAR 2.101(b) as:

The acquiring by contract with *appropriated funds* (emphasis added) of supplies or services (including construction) by and for the use of the Federal Government through purchase or lease, whether the supplies or services are already in existence or must be created, developed, demonstrated, and evaluated. Acquisition begins at the point when agency needs are established and includes the description of requirements to satisfy agency needs, solicitation and selection of sources, award of contracts, contract financing, contract performance, contract administration, and those technical and management functions directly related to the process of fulfilling agency needs by contract.

A contract is defined in FAR 2.101(b) as:

A mutually binding legal relationship obligating the seller to furnish the supplies or services (including construction) and the buyer to pay for them. It includes all types of commitments that obligate the government to an expenditure of *appropriated funds* (emphasis added) and that, except as otherwise authorized, are in writing. In addition to bilateral instruments, contracts include (but are not limited to) awards and notices of awards; job orders or task letters issued under basic ordering agreements; letter contracts; orders, such as purchase orders, under which the contract becomes effective by written acceptance or performance; and bilateral contract modifications. Contracts do not include grants and cooperative agreements covered by 31 U.S.C.6301, et seq.

R&D contract procedures are defined in FAR Part 35 and shall only be used if the principle purpose is the acquisition of supplies or services for the direct use or benefit of the Federal Government. If the acquisition is intended for any other public purpose, grants or cooperative agreements should be used. Early identification and publicizing of R&D needs and requirements is mandatory through the government-wide point of entry (GPE). However, in accordance with FAR 35.007(a), solicitations should be sent to only those sources technically qualified to perform R&D efforts in the particular field associated with the requirement.

Independent Research and Development (IR&D) consists of projects falling within the four following areas:

- (1) basic research,
- (2) applied research,
- (3) development, and
- (4) systems and other concept-formulation studies.

IR&D efforts are funded by private contractors with the future hopes of selling the resultant product or services to a particular market segment—whether that is the commercial or government sector(s). CA takes advantage of this existing practice to facilitate the development of products with potential use in the Department of Defense. In typical FAR-based contracts, IR&D costs are allowable in accordance with FAR 31.205-18. The important distinction here is that the contractor bears all risk and associated development cost internally. Costs are not recouped until the actual product and/or service is sold. IR&D does not include work performed under a grant or in the direct performance of a contract.

3. Defense Grant and Agreement Regulatory System (DGARS)

The DGARS was established by DoD Directive 3120.6 and comprises the regulations and other policy documents covering the award and administration of DoD grants, cooperative agreements, and (where the provisions so indicate) other types of non-procurement instruments. Chapter IV discusses the relationship between these various methods and CA, including how CA differs from these existing approaches.

a. Definitions (from DGARS)

Grant. A legal instrument used to enter into a relationship, the principal purpose of which is to transfer a thing of value to the recipient to carry out a public purpose of support or stimulation authorized by a law of the United States, rather than to acquire property or services for the DoD's direct benefit or use. Further, it is a relationship in which the DoD and the recipient are expected not to be substantially involved when carrying out the activity contemplated by the grant.

Cooperative Agreement. A legal instrument used to enter into the same kind of relationship as a grant, except that substantial involvement between the Department of Defense and the recipient is expected when carrying out the activity contemplated by the cooperative agreement. The term does not include “cooperative research and development agreements” as defined in 15 U.S.C. 3710a (reference (f)).

Cooperative Research and Development Agreement (CRADA). Any agreement between one or more Federal laboratories and one or more non-Federal parties under which the government, through its laboratories, provides personnel, services, facilities, equipment, intellectual property, or other resources with or without reimbursement (but not funds to non-Federal parties) and the non-Federal parties provide funds, personnel, services, facilities, equipment, intellectual property, or other resources toward the conduct of specified research or development efforts which are consistent with the missions of the laboratory; except that such term does not include a procurement contract or cooperative agreement. This agreement is also known as a Technology Investment Agreement (TIA).

b. Grants and Cooperative Agreements (10 U.S.C. § 2358)

The key distinction between procurement contracts, grants, and cooperative agreements is that procurement contracts acquire goods and services for the direct use or benefit of the government rather than providing assistance or stimulation authorized by Federal Statute.

Grants and cooperative agreements may include basic research, applied research, advanced research and development projects that either:

- 1) Relate to weapon systems or other military needs; or
- 2) are of potential interest to the DoD.

c. Technology Investment Agreement (15 U.S.C. § 3710a)

A TIA can be either a type of cooperative agreement or a type of “assistance transaction other than a grant or cooperative agreement,” depending on its

patent rights provisions. A TIA is not a cooperative agreement when its patent rights provisions are less restrictive than those possible under the Bayh-Dole statute (Chapter 18 of Title 35, U.S.C.). The TIA also may use the authority of 10 U.S.C. § 2371 to include a recovery of funds provision that requires the recipient, as a condition for receiving support under the agreement, to make payments to the Department of Defense or other Federal agency. It is up to the agreement officer's best judgment that the particular research project warrants the less-restrictive patent right protection.

The ultimate goal of a TIA is to help foster the best technologies for future defense needs through civil-military integration. TIAs are designed to:

- 1) Reduce barriers to commercial firms' participation in defense research to give the Department of Defense access to the broadest possible technology and industrial base.
- 2) Promote new relationships among performers in both the defense and commercial sectors of that technology and industrial base.
- 3) Stimulate performers to develop, use, and disseminate improved practices. (Department of Defense, 1998, April 13, § 37.115, "For what purposes are TIAs used?")

Specific delegation authority from the Secretary of the Military Department (or the Secretary of Defense for Defense Agencies) is required before an organization may enter into a TIA.

d. "Other Transactions" (10 U.S.C. § 2371)

"Other Transactions" refers to any instrument other than a procurement contract, grant, or cooperative agreement for carrying out research projects. The authority's primary purpose is to help broaden the DoD's technological and industrial base by allowing development and use of instruments that reduce barriers to participation in defense research by commercial firms that traditionally have not done business with the government. These transactions are to be carried out through the Defense Advanced Research Projects Agency (DARPA).

1) Section 845 of the *National Defense Authorization Act for Fiscal Year 1994* (Public Law 103-160) temporarily authorized the DARPA to use “other transactions” for prototype projects directly related to weapon or weapon systems proposed to be acquired or developed by the Department (USD AT&L, 2001, January).

2) Section 804 of the *National Defense Authorization Act of 1997* (PL 104-201) broadened the authority to include the Military Departments and other designated officials and extended its use until September 30, 1999.

3) Section 803 of the *National Defense Authorization Act of 2001* (Public Law 106-398) further extended the authority until September 30, 2004.

4) Section 847 of the *National Defense Authorization Act for Fiscal Year 2004* (Public Law 108-136) further extended the authority until September 20, 2008 and increased the scope to include the improvement of weapons or weapon systems used by the Armed Forces in lieu of just-new prototype items.

5) Section 823 of the *National Defense Authorization Act for Fiscal Year 2006* (Public Law 109-163) further modified OTA by adding ethics requirements:

An agreement entered into under the authority of this section shall be treated as a Federal agency procurement for the purposes of section 27 of the Office of Federal Procurement Policy Act. (United States Code, 2006, 41 U.S.C. 423)

This modification recognized the importance of procurement ethics in all government transactions—whether via contract, grant, agreement, or other transaction authority. Procurement ethics are critical to the CA process, as well, in order to ensure all parties are treated fairly.

C. STREAMLINED ACQUISITION REFORM INITIATIVES

The DoD acquisition system has been undergoing acquisition reform for many decades. Outlined in this section is a brief overview of Modern Acquisition Reform (AR), the concerns raised by various government professionals with the pace of AR and a brief discussion of the recent DAPA released in February 2006. While CA is not a direct

recommendation of past AR or the DAPA report, it does implement the overarching goal of both by providing a rapid and streamlined alternative approach to facilitate development of items for use by the warfighter.

1. A Brief History

Modern AR began in the early 1990s in response to recommendations of the 1985 Packard Commission codified in the Defense Reorganization Act of 1986. Detailed in Figure 2.2 is a partial list of additional broad AR programs that further drove individual initiatives. The period from 1994 to 1996 saw the highpoint of AR with 46 new acquisition reform initiatives implemented (see Figure 2.3).

The rapid pace of changes brought on by AR catalyzed some concern in many acquisition professionals, including the Office of the DoD Inspector General, that some AR initiatives could potentially eliminate important procurement safeguards.

Acquisition reform, especially much of what is being proposed in this second round, is carrying out a longstanding industrial or supplier agenda to curtail or eliminate many of these key safeguards, which have been built into the United States procurement process over the past 200 years. I broadly categorize these as disclosure requirements, certifications, price-reduction requirements, and audit rights. Certain of these safeguards help ensure cost (fair price) and quality, both of which become greater risks as we rely more on commercial products and practices. (Vander Schaaf, 1995, August 3)

Despite all these changes and attempts at AR throughout the 1990s, the current acquisition system is still observed by many members of Congress and the DoD Leadership Team with a growing and deep concern. Many programs continue to experience both cost and schedule overruns despite the studies and recommendations of the past 15 years.

2. DAPA

In June 2005, Acting Deputy Secretary of Defense Gordon England directed an assessment of the DoD acquisition system due to historical cost and schedule overruns and growing discontent from Congress. As a result of this memo, the DAPA task force was established. Led by Lieutenant General Ronald T. Kadish (USAF, Retired), this task force was to study and make recommendations on defense acquisition system reform

(including review of the FAR/DFAR and previous acquisition reform studies) in order to streamline the current DoD acquisition architecture.

DAPA conducted an integrated assessment of all aspects of the acquisition process through the review of over 1,500 documents, consultation with 107 experts and detailed surveys and interviews with over 130 government and industry acquisition professionals. These efforts led to the identification of 42 issue areas upon which they focused their attention. DAPA developed specific integrated assessment groups in six broad areas: Organization, Workforce, Budget, Requirements, Acquisition, and Industry.

DAPA's recommendation for reforming Acquisition focuses on changing the DoD's preferred acquisition strategy for developmental programs from delivering 100% performance to delivering useful military capability within a constrained period of time, no more than 6 years from Milestone A (Department of Defense, 2006, January, p. 14). The intent is to make time a KPP. Acquisition strategies should be formed to streamline acquisition and reduce time to market. Another DAPA recommendation is to change the DoD 5000 series to include Time Certain Development (TCD) as the preferred acquisition strategy for major weapon-system development. The DAPA report explains TCD as follows:

TCD enforces evolutionary acquisition by making time the focus of the up-front requirement statement. Capabilities should be upgraded over time as technologies mature and operational requirements become clearer. TCD differs from prior attempts at valuing time to market, such as evolutionary acquisition and spiral development, in that a maximum number of years are mandated, the start and end dates are defined, and the driving processes (requirements, budget, source selection, etc.) are revamped to support it. (Department of Defense, 2006, January, p. 14)

The DAPA report recognized that even the best item or weapons system is of use to the warfighter only if he/she has that item or system in hand. The current acquisition system is good at procuring high-quality products. What it lacks, however, is the means to rapidly acquire those items and get them into the hands of the forward operators. CA provides a methodology to help cut the development time of new or modified products and aid the rapid fielding of that product. Details of the first use of the CA process and the details of CA procedures are covered in Chapters III and IV respectively.

D. SUMMARY

This second chapter discussed current and historical statutory requirements, policies, and guidance, as it relates to acquisition procedures and the CA approach. It is through this literature review that we established a basic level of understanding of the acquisition framework today within the context of streamlined acquisition reform initiatives. Finally, this chapter also attempted to improve the readers’ awareness of currently documented policies and procedures as laid out in the DoD 5000 series, the FAR, the DFARS, the DGARS, and OTA. In our next chapter, we analyze the first use of CA through a case study of the Rapid Identification Friend or Foe test kit and present to the reader results of the case and lessons learned from it.

E. FIGURES

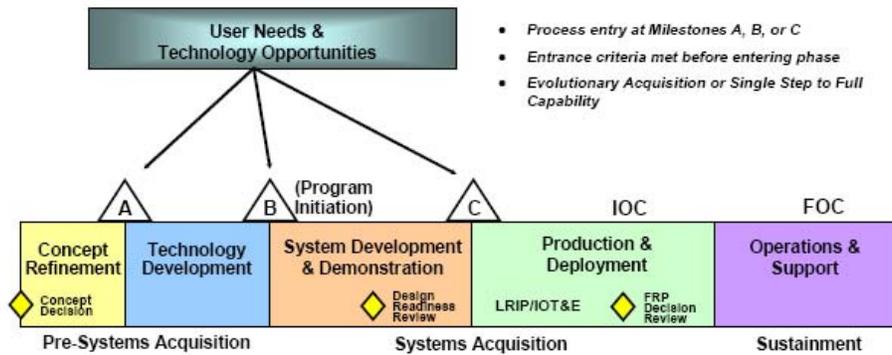


Figure 2.1 The Defense Acquisition Management Framework
 (Source: Department of Defense, 2003b, May 12, p. 2)

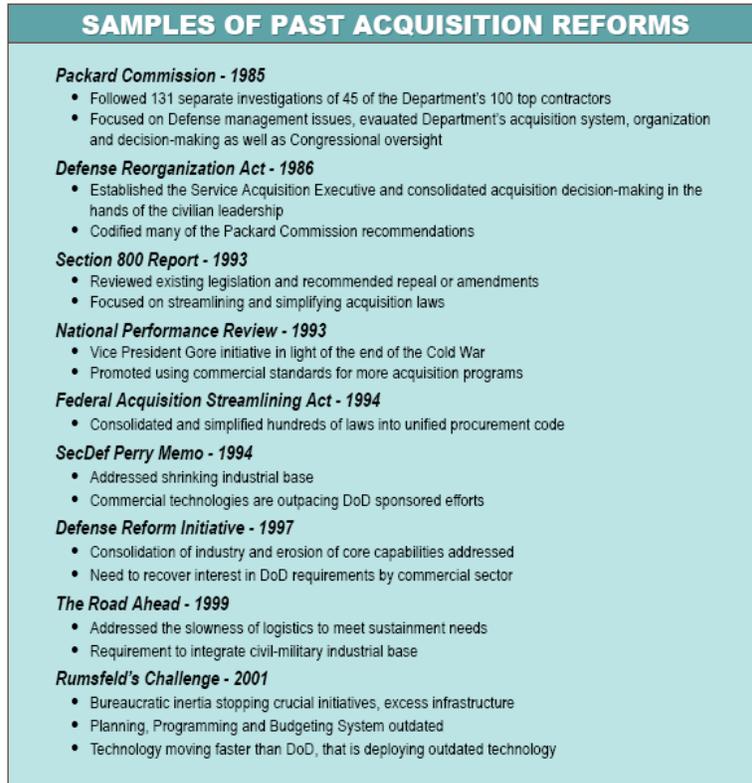


Figure 2.2 Samples of Past Acquisition Reforms
(Source: Department of Defense, 2006, January, p. 8)

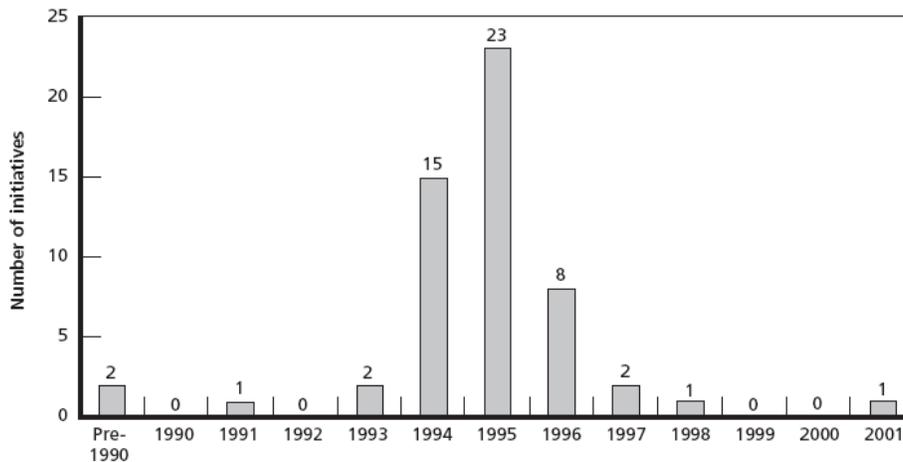


Figure 2.3 Chronology of Acquisition Reform Initiatives
(Source: RAND, 2005, p. 14.)

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III. RAPID IDENTIFICATION FRIEND OR FOE (RIFF) CASE STUDY

A. INTRODUCTION

This case study discusses the development of the Rapid Identification Friend or Foe (RIFF) test kit, which is used by the United States military as a method of advanced gunshot-residue (GSR) detection to allow the warfighter to identify enemy suspects who have fired a weapon or handled bomb-making materials. This test kit has proven to be extremely useful to military personnel in Iraq when encountering enemy insurgents who are dressed in civilian clothing and intermingled among the civilian populace in crowded market places and in busy streets. To help readers better understand the RIFF test kit, a brief background regarding its technological development is provided below.

An informal, non-Federal Acquisition Regulation (FAR)-based agreement was used (now called coordinative acquisition (CA)) by the Defense Threat Reduction Agency (DTRA) to develop simplified GSR testing for a military-field version of diphenylamine test screening technology. Such testing has been used since the 1950s (Grebber & Karabinos, 1952, September). Various forms of the diphenylamine testing are currently used today—such as (LET) Instant Shooter Identification (ISID-1TM) test kit by Law Enforcement Technologies, Inc., (see Figure 3.1), and Blue View test kit by Sirchie Finger Print Laboratories, Inc. (SFL) (see Figure 3.2). These test kits are primarily used by civilian law enforcement agencies to detect weapon use by suspects at crime scenes across the nation.

As stated above, GSR testing based upon diphenylamine reagents is not new; it has actually been in use by civilian police for well over 30 years. Previous versions required samples to be sent to laboratories, which often took in excess of a month to obtain results. It is also important to note that the newer technologies today use chemicals such as sulfuric acid, which helps reduce false positives previously seen with use of basic diphenylamine tests.

In comparison, a test kit, such as the ISID-1TM, allows test results to be determined in the field within five minutes. In the case of the ISID-1TM, LET of Colorado Springs, CO, paid Sandia National Laboratories (SNL) (a US Department of Energy National Nuclear Security Administration-contracted facility, operated by Sandia Corporation, a Lockheed Martin company) of Albuquerque, NM, to develop the patented technology used in the ISID-1TM. Both companies had previously collaborated on this type of technology. On November 13, 2001, SNL transferred this technology to LET through an exclusive license for commercial production and distribution; this license allows LET to commercially produce and market the ISID-1TM test kit. SNL contacted LET and asked if they would develop a package test kit using this technology and market it. LET took the SNL technology and developed the Instant Shooter Identification Kit (ISID-1). They later used the technology to develop the RIFF kit and the ISID-2TM.

LET has an Exclusive License from SNL to use this GSR technology, which was recently renewed for another 10 years. There is a royalty agreement in which LET must pay SNL a percent for each ISID and RIFF kit sold commercially, but not for government agency and DoD sales. One interesting point surrounding this case is that this particular “government-developed technology transfer to commercial industry” was recognized in May 2003 by the Federal Laboratory Consortium for Technology Transfer by awarding SNL and LET the *2003 Award for Excellence in Technology Transfer*.

B. RIFF TEST KIT

Two versions of the RIFF test kit were developed separately as unique militarized versions—of the ISID-1TM by LET and of the Dermal Nitrate Test (renamed Blue View in 2004) by SFL—which include military modifications such as simplifying, hardening and miniaturizing to allow the warfighter to carry the kits easily in the field and operate with minimal training without giving up the accuracy of the original GSR-based kits. The test kits were shrunk down to the size of a pill bottle by LET and a flat foil package by SFL (compared to a shoebox for both larger GSR designs) (see Figures 3.3 and 3.5). The RIFF test kit allows the military member to detect bomb-making residue on suspected enemy personnel detained in hostile areas (such as Iraq and Afghanistan) within minutes, while giving the warfighter a detection accuracy of 90-95% and instant

presumptive evidence. Prior to this detection kit, the military had difficulty in actually determining friend from foe in a hostile urban environment.

The testing process is quite simple. For example, using LET's RIFF test kit, the warfighter wipes the suspect's hand, arm, and face with a woven swab, places the swab in the kit's cap and saturates it with a special liquid reagent. This reagent causes the swab to show blue spots if the test proves positive (see Figure 3.6). The residue can be detected for up to two days after explosive material was handled ("Troops get instant aid," 2003, December 22.) The test kit also serves as a binary test, which allows the military to keep the RIFF test sample for later use in a second and more conclusive Scanning Electron Microscope (SEM) test in a laboratory. The kit detects TNT, Semtex 1-A, COMP-B, C4, HMX, HNS, propellant from artillery shells, and will soon be able to detect potassium perchlorate and potassium chlorate ("ISID-1 and RIFF description," 2006.)

C. TIMELINE OF RIFF TEST KIT DEVELOPMENT

1. Prior Technology Development (DTRA, 2006, June) (ISID-1™ and Blue View Test Kits)

Early 1980s: SFL develops and markets the Dermal Nitrate Test (renamed Blue View in 2004) technology as its version of GSR testing.

Early 2001: SNL contacts LET to use its technology to develop a new type of Gunshot-residue Detection Kit.

November 2001: SNL provides LET exclusive rights to develop and market the Instant Shooter Identification (ISID-1™) Kits. SNL retains the sole patent for this process. Additionally, LET agrees to pay royalties for ISID-1™ commercial sales, excluding US Government agency and DoD sales.

2. RIFF Requirements Determination (2 Days: 26-27 March 2003)

DTRA personnel identify time-critical requirements for field units in Iraq to distinguish between covert enemy insurgents and benign civilians, and decide to take

action to find or develop this capability. This requirement is determined due to embedded media reports and Marine Corps/Army officers' feedback from the field.

DTRA Nuclear Technology Division, Dr. Joseph P. Avery, DTRA, begins market research for a device to support warfighters in Iraq via internet resources, phone calls, and interviews with civil law enforcement agencies. It is at this point that Dr. Avery decides that the sense of urgency surrounding this technology development requires a more streamlined acquisition approach using DODD 5000.1, Section 4.0, Acquisition Policy, as a springboard for innovation and flexibility.

3. Concept and Development

(25 Days: 28 March – 21 April 2003)

After Dr. Avery conducts his research, only two vendors are identified as being technically capable of producing explosive residue detection devices, LET, of Colorado Springs, CO, and SFL, of Youngsville, NC. Both are asked if they are willing to militarize (e.g., simplify, miniaturize, harden) their commercial-off-the-shelf (COTS) product in support of the war effort. Both contractors agree to modify existing products at no cost to the government. All of the coordination was orchestrated by DTRA—quickly finding a way to support warfighters in the field, while at the same time teaming with industry to find viable solutions without utilizing government funding or a FAR-based contract. (Note: The intellectual property rights are unclear in this case study; litigation may be pending with respect to the RIFF kits developed from ISID-1TM and Blue View GSR technology. Further information was not available at time of publication; however, it appears that both versions stem from original technology derived from diphenylamine testing).

4. Fielding and Testing

(22 Days: 22 April – 14 May 2003)

DTRA approaches the Army 7th Special Forces Group at Fort Bragg, North Carolina, to determine interest in this product and willingness to support field-testing of device at no cost to the contractor. Additionally, the device is given the name “Rapid Identification Friend or Foe” by the 7th Special Forces Group at this time.

Two RIFF prototypes, one from each of the two contractors, are sent to Fort Bragg, North Carolina, for live-fire field-testing. Members from Company A, 1st Battalion, 7th Special Forces Group (A) tested both prototypes using a M4 5.56mm automatic rifle with a 30-round magazine during normal field training exercises. Both prototypes passed. This testing was provided to both contractors at no cost, which was a motivating factor in their participation.

According to the government, after completing testing, military members made suggestions to the contractors on how to improve their particular versions of the RIFF test kit. Examples of such suggestions included adding better directions and labeling on the container, use of larger swabs (in the LET kit), and adding protective gloves in the SFL kit to avoid contaminating samples. Contractors made important post-test modifications to their prototype kits based upon warfighter feedback gained during the live-fire testing. This direct input from probable customers could be viewed as another motivator for the contractors (there is a difference of opinion from government and industry regarding actual customer feedback received; ultimately contractors did not receive the level of feedback they expected).

New RIFF test kits from LET and SFL were marketed to the Department of Defense, military services, SOF forces, and Department of Homeland Security. LET enrolled in the GSA Advantage program (GS-07F-5650P) to market its version of the RIFF kit via the GSA schedule. This greatly simplified the ordering process by the various field activities, which may explain why this version has ultimately become the government standard today (originally the SFL version was the preferred model by users in the field during testing).

Contractors are ready to begin filling RIFF test kit orders to customers. Both companies begin producing units based on actual orders received from various government and civil agencies. SFL eventually stops receiving orders from the government and stops producing the RIFF kit. Again, because SFL did not decide to provide its product via GSA Advantage, it appears that the warfighter used the easier-to-obtain version (LET's RIFF test kit).

D. RESULTS AND LESSONS LEARNED

The RIFF test kits have allowed the military to quickly identify combatants from noncombatants and have given the warfighter an effective tool in fighting insurgents in Iraq and Afghanistan. This test case of coordinative acquisition required only 49 days from conception to fielding, based upon a modification of existing technology (ISID-1™ and the Dermal Nitrate Test Kits). The use of this acquisition tool drastically reduced the timeline required for a government-required modification to a COTS item acquired with normal FAR-based procedures.

This case was also successful for the contractors. For example, LET has sold 75,000 units to date, generated \$712,500 in sales revenue (each RIFF kit sold for approximately \$9.50), while the government-estimated cost for modification was less than \$5,000 (see Figure 3.7). During our research, we determined that an actual Memorandum of Understanding (MOU) was not used by the government/industry team (*see Chapter IV for an MOU that would have been appropriate for this case, as presented by DTRA*). Due to the extreme urgency of the requirement, verbal CA procedures were followed. However, government personnel involved do recommend use of a MOU for any future CA action.

Another important note to this case analysis is that of patents and intellectual property rights. Without a clear and concise MOU, disputes can arise from ambiguous expectations by both contractor and government personnel, especially if more than one vendor is involved in the modification of patented technology. Today, LET is the sole provider of the RIFF test kit technology, given that SFL has dropped its product from the market. By choosing to utilize GSA Advantage, which greatly simplified the ordering process by field activities, LET was able to control the government market for RIFF test kits. It is important to note, though, that it is not totally clear why SFL chose to self-eliminate its product from the market (we do not know if there is any correlation to possible/perceived legal action being considered by SNL against SFL).

Finally, we found that LET never received the full test report from Ft. Bragg nor was given information about government marketing activities of its product. Additionally, LET has not had a good mechanism for receiving customer feedback from

troops in the field since development of the RIFF test kit. All of these expectations could have been addressed adequately through the use of a MOU, which would require that together, government and industry plan roles and responsibilities ahead of time.

E. SUMMARY

In this chapter, we analyzed the development and deployment of the RIFF test kit as a CA case study that was the first product developed using this approach in 2003. We explored the history of gunshot-residue testing and the development of the Instant Shooter Identification technology, which is the predecessor to the RIFF test kit. A comprehensive timeline was presented encompassing the entire acquisition spectrum from requirements determination to deployment in the field supporting RIFF test kit's primary customer: the warfighters. Finally, we presented results and lessons learned from the RIFF test kit case study, which will be drawn upon in Chapter IV when we provide recommendations for CA policy development. Additionally, the next chapter provides findings and recommendations drawn from our literature review in Chapter II, the case study in this chapter, questionnaires, interviews, other research, and our personal experiences. We also provide results taken from government and industry questionnaires and provide circumstances under which government and industry would be willing to use CA.

F. FIGURES



Figure 3.1 Instant Shooter Identification Kit ISID-1™
(Source: Law Enforcement Technologies, 2006)



Figure 3.2 Blue View Test Kit
(Source: Sirchie Finger Print Laboratories, 2006)



Figure 3.3 Law Enforcement Technologies' RIFF Test Kit
(Source: Law Enforcement Technologies, 2006)



Figure 3.4 Sandia National Laboratories Test of RIFF Test Kit
(Source: Sandia *Lab News*, 2002, November 1)

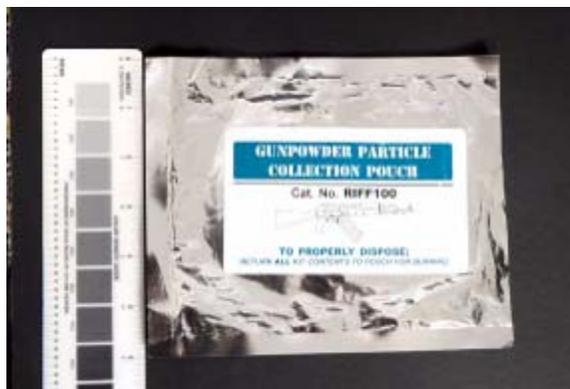


Figure 3.5 Gunpowder Particle Collection Pouch (RIFF Test Kit)
 (Source: Sirchie Finger Print Laboratories, 2006)

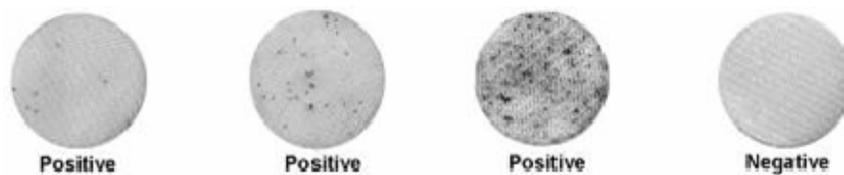


Figure 3.6 Example of RIFF Test Kit Results
 (Source: Law Enforcement Technologies, 2006)

CA Return on Investment Example

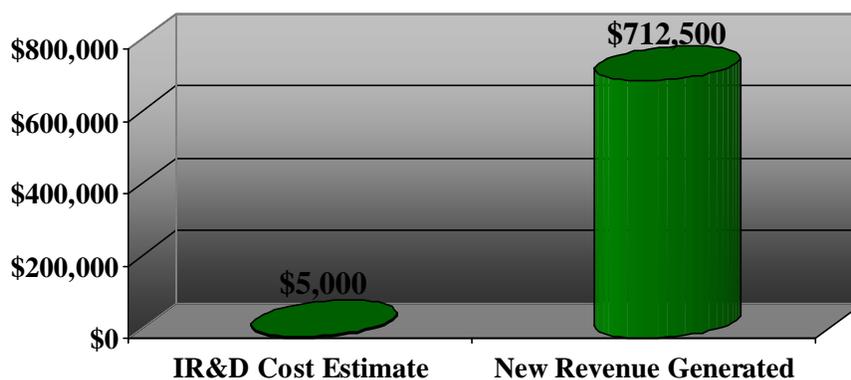


Figure 3.7 IR&D Cost versus Revenue (75,000 units sold)
 (Source: Created by authors from data provided by LET)

IV. FINDINGS AND RECOMMENDATIONS

FINDINGS:

A. THE CONCEPT: COORDINATIVE ACQUISITION (CA) FRAMEWORK

CA is an acquisition tool founded on the basic tenant that DoD acquisition professionals must utilize all available tools and flexibility provided in current guidance and regulations. This flexibility empowers government acquisition professionals to meet warfighter needs rapidly through innovative approaches that economically and expeditiously provide needed capabilities to our combat forces. The processes for CA detailed below were constructed with valuable input collected from applicable reference materials, analysis of the procedures used in the Rapid Identification Friend or Foe (RIFF) test kit case and discussion with numerous acquisition and legal professionals, both inside and outside the federal government.

1. Define and Validate Need

The CA process begins as many other acquisition programs begin, with identifying a need for an item. At this point, the specific item need not be defined, rather the capability that item will provide. The CA validation process is far less rigorous than a traditional acquisition as only the general need for the requested capability must be confirmed. Specific numbers of items needed and, more importantly, program funding are not required at this time.

2. Conduct Initial Market Research

Initial market research is conducted in order to determine if the required capability is fulfilled by an existing product. Market research should include all potential sources of supply to include other units, other services, other government agencies, and the commercial marketplace. If an existing product is identified that can meet the need, that item can be acquired using the normal program funding and contracting processes. If no existing item is identified, the process continues to the next CA step.

3. Refine Capability and Advertise Need

Once market research has identified the lack of an existing product that provides the required capabilities, two key steps are required. First, review and verify the final

capability requirements of the product with the operational users. The purpose of this step is simply to confirm that the original need has not changed, nor can it be met by a product found during market research. Second, advertise the need to ensure the maximum number of responses, even though CA does not fall under Federal Acquisition Regulation (FAR) requirement (details of the CA to FAR relationship are discussed in Paragraph B), to satisfy the intent of free and open competition. Acquisition professionals should exercise sound business judgment in determining the appropriate method of advertisement, taking into consideration the urgency of need for the new product. Possible advertisement methods include FedBizOpps, broad agency announcements and trade journals. The additional time required to advertise in printed media should be considered. However, non-traditional defense contractors may not check FedBizOpps on a regular basis, if at all, and their standard industry media sources may be the only way to reach them.

After advertising for a reasonable amount of time, talks are held with all interested vendors that respond to the announcement. In order to facilitate the rapid processing of the CA, verbal discussions are preferred—with appropriate backup documentation created. An integral part of the discussions must include educating the vendor on how the CA process works, with special attention to how it differs from the more traditional FAR-based contracting approaches.

4. Issue Memorandum of Understanding (MOU)

After completion of initial talks, all interested parties sign a MOU detailing the future responsibilities of both the vendor and the government in the prototype development process. See Figure 4.7 for a sample MOU that would have been useful during the RIFF test case for coordinative acquisition (MOU developed from initial draft MOU provided by Dr. Joseph Avery of DTRA). Two critical areas reflected in the MOU are funding and follow-on production contracts. Under the CA process, the government does not provide funding to the vendor. All items are modified and/or products developed using the internal independent research and development funds of the vendor. If the resultant production items are purchased by means of a FAR-based contract, the Independent Research & Development (IR&D) funds are considered an allowable cost in

accordance with FAR 31.205-18 and could potentially be recovered at that time. In addition, the MOU does not provide for, or guarantee any follow-on contracts for production-item purchases. The MOU may contain additional terms agreeable to both parties. If government testing of the prototype item is provided by the government (as in the RIFF test case discussed in Chapter III) under the terms of the MOU, such testing should be provided to all interested vendors equally to avoid any appearance of favoritism.

5. Coordinate Program, Testing and Exposure

Throughout the development process, the government agency shall provide program coordination, management, and oversight in accordance with the agreed-to terms of the MOU. Upon completion of the prototype process, the government may provide testing, if included as part of the MOU. To avoid additional costs to the government, testing should be provided only if the testing is limited to evaluation during an existing exercise or field-training environment. Feedback, both positive and negative, is given to the vendor so the company can take into consideration any possible modification to the prototype item. Caution must be taken to ensure that the feedback is for informational purposes only and is not construed as a government-directed change. The vendors must use their own judgment on whether or not to incorporate the government feedback, along with their own internal testing results, into the final item design. This is purely an internal business decision based upon the relevant facts provided.

The final step of CA involves the government organization involved with the MOU to make the final product availability known, or expose its existence to the rest of the DoD. The extent and methodology of this “marketing” exposure should be detailed in the MOU to ensure both parties have a clear understanding of their respective responsibilities in this part of the CA process. The government agency must ensure that the “marketing” of the product does not take on the appearance of an official endorsement of the product. It is simply making other potential users aware of the availability of the item, similar to how units communicate the existence of a variety of products today. In addition, the vendor must decide how it will provide the item to the

government and its commercial users. As discussed in Chapter III, LET greatly expedited its future government orders for RIFF kits through its use of GSA Advantage.

B. RELATIONSHIP TO EXISTING ACQUISITION POLICIES

CA does not fall under the authority of the DoD 5000 series because it does not meet the definition of an acquisition program. As explained in Chapter II, in order to be considered an acquisition program, the action must be a, “directed, *funded effort* that....” Coordinative acquisition does not involve the use research and development, procurement or operations and maintenance funds and, therefore, does not fall under the existing acquisition program framework as outlined in the 5000 series documents. It does, however, meet the overarching objectives laid out in DoDD 5000.1 paragraph 4.3 of: flexibility, responsiveness, innovation, discipline, and streamlined and effective management. DoD Instruction 5000.2 details the various phases and steps of the acquisition process from initial requirements identification through the entire lifecycle of the item. CA utilizes the vendors’ existing commercial product management system to provide the required capability. Rather than rely on government-unique processes and controls to regulate the development process, CA relies upon the market forces of the free commercial marketplace.

Similar to the DoD 5000 series, the FAR defines an acquisition as, “the acquiring by contract with appropriated funds of supplies or services....” The FAR further defines a contract as a document, “that obligates the government to an expenditure of appropriated funds...” In addition, by further definition, contracts do not cover grants and cooperative agreements. CA utilizes neither a contract nor appropriate funds and, therefore, does not fall under FAR guidelines. Even though the FAR does not directly apply to CA, the objectives of full and open competition, fair treatment of suppliers, and business ethics are considered sound business practices and are an important part of the CA process.

The DGARS defines Grants and Cooperative Agreements as legal agreements whose principal purpose is to, “transfer a thing of value to the recipient to carry out a public purpose....” Grants are distinguished from Cooperative Agreements by the extent of the involvement between the DoD and the recipient; with the former, substantial

involvement *is not* expected, and with the latter, substantial involvement *is* expected. The purpose of CA is not to transfer a thing of value to the recipient, but more simply to help the supplier develop a product that most likely will be of future use to the DoD. Therefore, CA does not fall under the policies for Grants or Cooperative Agreements.

The distinction between CA and Cooperative Research and Development Agreements (or Technology Investment Agreements (TIAs)) is more difficult to discern. Under United States Code, Cooperative Research and Development Agreements (CRADAs) and TIAs are to be carried out only by service laboratories. They involve the exchange of resources of some kind (personnel, services, facilities, equipment, intellectual property, or “other resources”) between the laboratory and a non-Federal party that is consistent with the mission of the laboratory. Any government organization may accomplish CA, as it does not always include the exchange of resources. Under those circumstances, a case can be made that CA is a separate and distinct process from a CRADA. If the coordinative acquisition MOU does include an exchange of resources, and the project is being carried out by a service laboratory, then a CRADA may be the more appropriate tool to use.

The Defense Advanced Research Projects Agency (DARPA), on the other hand, is authorized under code to utilize “other transaction authority (OTA)” to support research projects and seek to involve commercial firms that have traditionally not done business with the government. The military departments can utilize the authority for prototype projects that are directly related to weapons or weapon systems proposed to be acquired or developed by the various services. Again, the applicability of this authority to the CA process depends on the item being developed. If the item to be developed is a stand-alone object, which is not directly related to a weapon system, then CA may be a potentially useful option (See Figure 4.1 for graphic illustration of the CA relationship to existing DoD acquisition policy).

C. QUESTIONNAIRE RESULTS

As part of our overall research effort, we included the use of two questionnaires: one questionnaire for government and one for industry (see Figures 4.2 and 4.3, respectively). The purpose of our questionnaire is to gauge the opinions of government

and industry professionals as a useful supplement to our case study analysis and literature research, helping us to better understand the application of CA. The unique experiences of the various contracting officers, program managers, and contractors present distinct perspectives as to the ethical and legal considerations, willingness to use, and overall first impressions of this type of acquisition tool. It should be noted that all questionnaires and most interviews were anonymous; as a result, no particular reference relating to our results are able to be attributed, except where expressly acknowledged. In this section, we focus on the quantitative results of the questionnaire (see Figure 4.4). Sections D through J reflect the actual qualitative responses, combined with information gained through project research, literature review, and personal interviews. Most of our questionnaires were completed during the National Contract Management Association's (NCMA) 44th Annual Aerospace and Defense Contract Management Conference held in Garden Grove, California, from 27–28 July 2006. During this conference, we were able to discuss CA with 35 individuals representing approximately 11.5% of all conference attendees. Respondents represented large and small businesses, both traditional and non-traditional defense contractors, as well as a broad spectrum of those within government—from unit-level contracting officers to more senior leaders from major commands and higher headquarters. Government personnel interviewed had five questions to answer, while industry members were asked six questions ranging from whether or not they had heard about coordinative acquisition all the way to consideration of its use in the future. In addition to the questionnaires collected during the NCMA conference, we also collected additional questionnaires from a variety of government and industry representatives who likewise provided their ethical and legal viewpoints of coordinative acquisition.

There were varied responses from the questionnaires collected. For example, one response from industry as a whole was that 30% of those questioned had heard of CA, whereas only 9% from government knew anything about it (see Figure 4.5). One explanation could be that industry leaders do a better job at keeping pace with market trends and changes, while government personnel may be slower in adjusting to these changes. In addition, while government leadership may pursue new approaches that are

more effective to contracting and acquisition, they are often slowly implemented because of delays in waiting for detailed direction and policy from higher command levels.

Another response from those questioned revealed 75% of industry respondents were willing to use CA, even though it meant accepting risk and no guarantees from future purchases from government, while only 36% of government respondents were willing to try coordinative acquisition (see Figure 4.6). One plausible explanation for this difference in opinion is that government employees tend to be more rules-oriented (keepers of public policy) and are not willing to venture into gray, uncharted areas until public policy is provided by their chain of command. Yet, many contractors are more flexible and are empowered to make changes faster and to try new methods for achieving higher returns on investment. Accountability tends to be more rigid for government workers (as they must follow strict statutory requirements and other regulations such as the FAR and DFARS) as compared to their contractor counterparts who must only answer to their board of directors. Ultimately, contractors are accountable to their shareholders, whereas government employees are accountable to Congress and the US taxpayer. This line of accountability places a much higher burden on government workers to follow established public policy guidance. Thus, unless an ethical violation or a lack of profitability occurs, contractors have more maneuverability regarding changes in processes and acceptance of new acquisition methods than do government personnel.

Another industry response was the desire to use CA to modify mature technologies more than developing new technologies, by a rate of 45% to 25% respectively. Industry was more willing to modify existing commercial-off-the-shelf (COTS) items rather than to develop immature technologies, which places more technology risk on vendors. However, when asked which items best fit coordinative acquisition, 45% of industry stated that new technology was best; other responses clustered around commercial, non-developmental, and multiple-use items. Industry respondents also preferred the government to fund research and development projects more often than not; specifically, 10% of industry respondents are willing to fund R&D internally, whereas 39% believe it should be funded by government.

Overall, industry respondents were more willing than government to use coordinative acquisition as a viable acquisition tool, especially when compared to other methods such as CRADAs, OTAs, or FAR-based contracts. The biggest advantage to using coordinative acquisition (from industry's perspective) is the ease of use and the chance to sell products and services to the government. Many industry respondents interviewed felt this was merely a business decision; and if a strong business case is made, they would consider developing an existing or new technology using internal company funds. Government respondents, on the other hand, tended to take a "wait and see" approach, waiting for higher headquarters' policy to provide direction and sanctions for use. Conversely, other government respondents saw coordinative acquisition as problematic regarding transparency, competition, and fairness/reasonableness. Finally, government legal personnel interviewed believe the first legal challenge by a contractor will be difficult to win on part of the government due to the government's commitment in helping to develop a product (several anonymous respondents).

D. WHY GOVERNMENT IS HESITANT TO USE CA

During our research and analysis gained from our questionnaires and personal interviews, we discovered that government program managers, contracting officers, and lawyers are hesitant to use coordinative acquisition almost solely because they are not sure about the legal or ethical aspects and ramifications of use. Government workers believe they do not have the authority to use CA without specific guidance from their higher headquarters. From the perspective of several legal professionals interviewed, there are two overarching issues driving government hesitancy toward coordinative acquisition. The first is the appearance of use of appropriated dollars in developing a product through the CA process and second, meeting the expectations of the contractor (Britt & Gunderson, 2006, September 8). These two issues usher in a much broader set of sub-issues and may help explain why contractors are actually more willing to use coordinative acquisition than are their government counterparts. One contractor we spoke with actually stated that they needed government to be brave and use this tool as an alternative to FAR-based contracts.

It is important to note that the first legal concern (use of appropriated funds) arises because while appropriated dollars, as used in traditional FAR contracts, *are not* used in the CA process, personnel time, phones, faxes, computers, and other government resources *are* used to coordinate the MOU and participate in the product development, testing, and marketing. It is possible that some personnel could construe this use of government property as an indirect expenditure of appropriated dollars. A civilian firm can write these items off as the cost of doing business; however, the government must be able to track activities to provide for transparency (checks-and-balances) and oversight. The second legal concern, meeting the expectations of the contractor, brings to light a number of issues for government employees. These include equitable estoppel, fair competition, appearance of conflict of interests (government and contractor relationship), and most importantly, intellectual property rights. Regarding equitable estoppel, one legal definition defines it as follows: “A type of estoppel that bars a person from adopting a position in court that contradicts his or her past statements or actions when that contradictory stance would be unfair to another person who relied on the original position” (Nolo, 2006). Some government legal advisors worry that if a contractor can prove reliance on the government, the government could be held liable under CA and would be in jeopardy of violating the Anti-deficiency Act.

Intellectual property rights are also a concern of government personnel. Our case study of the RIFF test kit in Chapter III touches on a pending dispute between Sandia National Laboratories and Sirchie Finger Print Laboratories, Inc., over the basic technology used in the Instant Shooter Identification test kit used to develop the field version: the RIFF test kit. The government must be sure of and clarify intellectual property rights when dealing with modification of existing items/COTS technology when new technology is provided to the contractor by the government.

There are also ethical issues relating to coordinative acquisition that concern government professionals. These issues include placing contractors at an unfair economic disadvantage (especially small businesses), perceived favoritism, unfair business practices, and most importantly, expectations on part of the contractors. Throughout our research, we were reminded of the use of the “wink-wink” agreements

between government and contractors, where the government makes promises to contractors regarding future contracts “off the record.” The definition of “wink” per *Wikipedia* is a form of semi-formal communication, which indicates shared, unspoken knowledge (*Wikipedia*, 2006). In this scenario, the contractors take risks they normally would not have made under the guise that the government will come through and eventually award a contract. This behavior is clearly illegal under both the Anti-deficiency Act and the Competition in Contracting Act of 1984 because: 1) conceivably, the government could be held accountable for “unofficial” commitments before authorized Congressional appropriations, and 2) this scenario lacks competition.

According to government representatives questioned, the use of a clear and well-defined MOU noting roles and responsibilities will help to alleviate most government concerns, although there are still lingering aspects of this acquisition tool which trouble government lawyers. Interpretation is ultimately the most important aspect of accepting or rejecting coordinative acquisition. One interesting offshoot of CA is the notion of using a third-party (non-profit) organization to act as an intermediary for government and industry to come together and share technology and developmental information and more easily form partnerships for rapidly developing new concepts and technologies.

E. ADVANTAGES OF COORDINATIVE ACQUISITION

We draw upon government and industry questionnaires and interviews, literature review, and project research in suggesting that CA is an innovative concept that provides the following advantages:

1. *Expedited research and development, production, and fielding of new and improved technologies.* Coordinative acquisition provides urgently needed support directly to our nation’s warfighters, therefore, ultimately supporting National Security Strategy. As new, urgently needed requirements are identified from the battle zones across the globe, our program managers and contracting officers have a powerful tool to find and develop existing COTS and immature technologies in order to meet the end-needs of our soldiers, sailors, marines, and airmen. Our research indicates that 75% of contractors questioned are willing to support warfighters who are in harm’s way, even if it means decreased profit margins. This “patriot factor” is a common thread among all

contractors we interviewed. The use of CA involves locating and sharing critical information and integrating key personnel (both government and industry) for the common good of our warfighters.

2. *Easier for non-traditional defense vendors to conduct business with government.* One of the reasons why coordinative acquisition was so appealing to contractors is that they saw an opportunity to coordinate with the government on needed technologies without wading through FAR-based contracting requirements. One contractor stated that his/her CRADA with the government took over a year to approve due to painful legal reviews; he/she would very much consider using an MOU and spend this time and effort on developing the new/improved technology or product rather than on “administrivia.” Many commercial contractors also stated they do not care for doing business with the government precisely for that reason. Coordinative acquisition may offer these non-traditional vendors an opportunity to work with the government on future projects.

3. *Provides government with more flexibility, responsiveness, and innovation in developing new capabilities.* As noted in Chapter II, this approach supports critical aspects of guidance provided via DoDD 5000.1, namely flexibility, responsiveness, innovation, discipline, and streamlined effort and effective management. As seen throughout the government views above, some of these concepts are open to interpretation; however, there is little dispute that coordinative acquisition meets most of these objectives. As seen in the RIFF test kit case study in Chapter III, it took industry 49 days to modify existing gunshot-residue technology into a viable military version that yielded instant results in the field. It is conceivable that under a FAR-based contract, the administration lead-time could have caused award and execution of this product to take much longer and could have cost the government more than it actually did under the coordinative acquisition method. The end-result is a more streamlined effort than the other acquisition methods mentioned in Chapter II, and one that is directly in-line with DoD Directive 5000.1.

F. OTHER AREAS OF CONCERN WITH CA

Any time contractors spend private funds to develop a product they hope to market to the government, they are accepting a level of risk. Without a contract, there is no guarantee that the government will eventually purchase the item; in addition, there may be no commercial market for the item. This very process played out two decades ago for Northrop Corporation and the F-20 Tigershark fighter aircraft program. The F-20 program was unique to major weapon system programs at the time because it was privately funded. Northrop and its subcontractors covered all of the program costs (Martin & Schmidt, 1987, June). The first F-20 rolled out only 32 months after the program began (a full month ahead of schedule) and met all technical goals set for initial testing—a mark rarely hit, if ever, by government-funded programs. For various reasons (including changes in US export policy and increased competition from the F-16 Fighting Falcon), the market for the F-20 never materialized. Northrop was consequently forced to cancel the program in December 1986 after spending nearly \$1.2 billion dollars of its private funds. Northrop wrote off the F-20 program costs quarterly, so in spite of the large losses, the company was still able to remain profitable (Martin & Schmidt, 1987, June). The magnitude of the loss, however, provides a warning to all of the inherent risks associated with independently funded research and development.

Through discussions with government and contractor acquisition and legal personnel, several common themes arose surrounding the CA process. First, while the CA methodology does not directly violate any existing policies or regulations that we know of, it does provide significant occasion for the appearance of improprieties. This is not the sole reflection on the basic aspects of CA, but rather on the shift to open procedures without the regulatory protections provided in a traditional FAR-based contract arrangement. Second, without proper application of ethical principles, coordinative acquisition can be abused. A specific concern raised by several professionals interviewed was that the government, through its assistance in the development process, would create a sole-source environment for future purchases. Approximately half of the contractors questioned were concerned about developing the product at their own expense and then having the government utilize information gained

during the CA process to purchase the item from another vendor. The majority of government professionals interviewed were troubled by the lack of transparency and checks-and-balances in the process.

Additional ethical considerations raised include perceived favoritism and unfair business practices, lack of clear expectations for both the vendor and the government, and the potential to put small business at a disadvantage by requiring private funding of development costs. An important note to our questionnaire results is that at the time of the interviews, the detailed CA framework had not yet been developed; approximately half of those responding were being exposed to CA for the first time.

RECOMMENDATIONS:

G. SUGGESTED CIRCUMSTANCES FOR USE

Clearly, coordinative acquisition is not the end-all for all acquisition actions. Conversely, its use should only be used within a narrow framework of conditions. We offer the following key circumstances for use, based upon analysis of government and contracting questionnaires and interviews, literature review, and our own experience in contracting and logistics, as an enhancement to any policy discussion relating to coordinative acquisition.

A primary reason for using coordinative acquisition is to make available for DoD and military personnel **urgently needed products** or services that cannot wait for normal FAR-based contracting or cannot be procured in a timely fashion utilizing existing DoD policy. In the RIFF test kit case study from Chapter III, there was an urgent need for miniaturized, hardened, accurate, and simplified gunshot-residue detection kits by military members fighting the Global War on Terrorism (Avery, 2006, May-June). This was an example where the urgency of need drove the type of acquisition tool used. Obviously, routine and mature technology buys, which are easily attainable on the open market, would not warrant coordinative acquisition use.

Other considerations for use of coordinative acquisition are the **types of product or service** required and the maturity of the technology. While coordinative acquisition could conceivably be used as a start for future weapon-system development, it is most

ideally suited for COTS modification and collaboration or the development of immature technologies (e.g., 40% of developed technology). The deciding factor for the vendors on the developmental stage is very dependent upon how much technology risk they are willing to incur. The decision is also contingent on the urgency of government need, and how long acquisition personnel are able to wait for results. One positive note is that the increase in COTS use by the military, since the elimination of the MILSPEC requirement, lends itself to coordinative acquisition use and greater non-traditional defense contractor participation in government contracts.

Coordinative acquisition should also be used only after alternative acquisition methods have been reviewed, such as those previously mentioned. The primary consideration of this review must be government resources (namely time and cost) associated with each alternative use. The urgency of need will ultimately drive the alternative used, whether it is a FAR-based or other, non-traditional agreement.

Finally, as coordinative acquisition becomes more widely used and accepted, more instances of complex technology development may be considered. As users better understand policy and institutional risks within the legal and ethical framework of coordinative acquisition use, more governmental agencies and industry representatives may expand their tolerances for new uses of coordinative acquisition.

H. ENCOURAGING CONTRACTORS TO USE

As noted above, 75% of contractors were readily willing to accept the opportunity to use CA in their companies. While some traditional defense contractors balked at the prospect of funding R&D out of their own budget, others said it was the cost of doing business in today's business environment. The following recommendations are presented—as a result of our analysis of questionnaires and interviews and project research—to help government better understand contractors' tolerance for risk and desire to participate in CA.

1. *Communicate requirements.* The government must take the time to fully understand user requirements and the intended use of products and services. If the user is included in requirements-determination development, there will be less ambiguity on the part of the contractor as to what is actually required to deliver a production-ready

prototype to the customer. Often, changes in requirements or misinformation on intended uses can lead to wasted resources (time/money) and can lead to spiraling developmental costs on part of the contractor—which ultimately affects the customer.

2. *Help build a business case.* The government should provide support in order to help the contractor build a business case to determine return on investment (ROI). By sharing good information on cost-benefit analysis and a possible future-requirements determination, the contractor can more easily make a coordinative acquisition go/no-go decision. Again, this coordinative activity can help both parties determine feasibility for use in an expedited manner, which is one of the main advantages of using coordinative acquisition. However, the government must make no assurances of or commitments to future procurement contracts.

3. *Clarify intellectual property rights.* It is imperative for the government to be clear regarding intellectually property rights in the MOU and exactly how those rights will be determined. Many contractors were concerned about possible government behavior in the event government finds an additional vendor who has the required technology after the original company has already spent its own money developing the technology. Issues regarding government-provided technology must also be addressed. Finally, there needs to be assurances given regarding marketing exposure and other support on part of the government in the MOU.

4. *Well-defined MOU.* Most of the contractors we spoke with made it quite clear that any MOU used would need to spell out concise roles and responsibilities. In the RIFF test kit case, although only a verbal agreement was used, the vendors were asked to develop a deployment-ready prototype by a certain date; the government was requested to market these prototypes and help set up a GSA Advantage Schedule.

5. *Show simplicity of method.* The government should assure contractors that use of coordinative acquisition is to their advantage (e.g., cost-benefit analysis supporting a strong business case). However, government personnel must also show how this acquisition tool compares to other methods (FAR and Non-FAR-based contracting

vehicles). By knowing the benefits and simplicity of using CA, the contractor should be more willing to attempt use based on the urgency of need, maturity of technology, and ROI.

I. THE WAY AHEAD FOR GOVERNMENT AGENCIES

As noted from questionnaire analysis, only 36% of respondents indicated they would use coordinative acquisition, while 54% were neutral to the idea, and 9% said “no” outright. The main reason given for not wanting to use coordinative acquisition as an alternative acquisition tool is that respondents believe they are not authorized to use it, since policy has yet to be provided or even sanctioned by their higher headquarters or chain of command (as of this writing). Most of those surveyed took a “wait and see” approach, while more were willing to use CA than not. The following recommendations are provided to government, based on the analysis of our literature review, questionnaires, and interviews, and from the practical application of our professional experiences, in order to encourage its acquisition workforce to consider utilizing coordinative acquisition as a viable acquisition tool.

1. *Develop clear policy.* Government program managers and contracting officers require DoD policy to pave the way for future use. We have attempted to conduct a thorough examination of this acquisition tool and to offer recommendations on its use and implementation. Senior acquisition leaders in the DoD must examine the literature further and make solid policy and guidance determination for coordinative acquisition use. We firmly believe that coordinative acquisition indeed does have a place in the contracting officer’s toolbox, but only with careful analysis and understanding of the ROEs for its use. As stated before, coordinative acquisition is not relevant to all procurements and should only be used once other alternatives have been ruled out. Once clear policy is distributed to military services, major commands, and higher headquarters, government workers will be more able to utilize CA for the ultimate benefit of the warfighter—who depends upon streamlined and expedited acquisition to implement National Security Strategy.

2. *Train acquisition personnel on appropriate use.* Once clear and concise policy and guidance is developed and distributed down to the various commands, we

recommend the Defense Acquisition University (DAU) develop training to ensure proper analysis and determination is conducted before, during, and after the use of CA. The formal framework for coordinative acquisition use must be developed and added to DAU contracting and acquisition courses, where appropriate. Appropriate training will decrease the chance of abuse.

3. *Consider other alternatives for government/industry collaboration.* There are also alternatives to direct government implementation of coordinative acquisition. One alternative previously mentioned in this report is an on-line, third-party, non-profit organization, which can act as an intermediary between government and industry, assisting both parties in coming together for coordination and collaboration.

J. RECOMMENDED POLICY FOR FUTURE APPLICATION

As a follow-on to the circumstances for use above, the following basic elements are provided as recommendations for future DoD policy on CA based upon government and industry interviews and our literature review from Chapter II.

1. *Official definition:* Recommended official definition for coordinative acquisition for DoDD 5000.1 is provided below:

“Coordinative Acquisition” is the non-FAR process of making available for purchase required goods and services without the use of appropriated funds through execution of a Memorandum of Understanding (MOU) between a government agency and vendor(s), using “Free and Open Competition” principles, administrative, coordinative and team management techniques, and accepted contractor internal business practices, accounting and business systems, and decision-making and risk assessment processes. No government commitment or promise of future government contracts shall be made. (Avery, 2006, September).

2. *Urgency of need drives use:* CA is most applicable to urgent needs that cannot be met through more traditional acquisition methods. Routine buys of mature technology would not be appropriate for CA use.

3. *Type of products/services*: Recommend use in support of modified COTS, non-developmental items, developmental technologies, or a combination of one or more such products.

4. *Memorandum of Understanding*: Recommend using a MOU between government and vendor(s). Roles and responsibilities should be clearly defined for each party.

5. *Ensure open competition*: Recommend thorough initial market research to ensure open competition before use of coordinative acquisition. Additionally, we recommend written justification for any use of, “other than full and open competition.”

6. *Consider other acquisition methods*. Recommend reviewing all FAR and non-FAR based contracting options before using coordinative acquisition (e.g., OTA, CRADA, and grant) and use the most appropriate method for the scenario.

7. *Reasons for use memo*: Recommend program manager create a written memorandum listing reasons for use of coordinative acquisition.

8. *Prevent unauthorized government commitments*. Recommend that all program personnel receive training outlining that the government cannot make commitments or promises for future government contracts or financial support during the coordinative acquisition process.

9. *Share marketing efforts and customer feedback*. Recommend provisions are included in the MOU, which ensure vendors receive information relating to government marketing of their product(s) and results of field tests if conducted.

10. *Use Agency Ombudsman*: A disputes resolution mechanism is required to resolve CA issues. Recommend adding a third party agency ombudsman to offer an official means to resolve disputes and disagreements between government and industry.

K. SUMMARY

Chapter IV provided findings and recommendations for coordinative acquisition use based upon several sources including our literature review drawn from Chapter II, the case study from Chapter III, questionnaires, interviews, other research, and our own

collective personal experiences. Specifically, we addressed the actual CA concept using an in-depth framework which explained all of the steps in the CA process, including a sample MOU we provided as a recommended tool for scenarios such as the RIFF test case used in Chapter III. We also discussed CA's relationship to existing acquisition policies and provided our findings on industry and government attitudes toward CA, including ways to encourage contractors to use the process more in the future. Also included in this chapter were results from questionnaires taken by government and industry professionals, which contributed to understanding the advantages and concerns relating to CA use from legal, ethical, and sound business standpoints. Finally, we provide recommendations on possible DoD policy and provide a way ahead for government use in the future. In our next and final chapter, we provide conclusions and an overall summary to the CA project and introduce three additional areas requiring further research relating to coordinative acquisition and all the implications related to its use.

L. FIGURES

Acquisition		Non-Acquisition				
FAR Contracts	Non-FAR Contracts	Grants	Cooperative Agreements		OTs	
10 U.S.C. 31 U.S.C. 6303	*Non-appropriated funds contracts	10 U.S.C. 2358 31 U.S.C. 6304	10 U.S.C. 31 U.S.C.	Technology Investment Agreements (TIAs) (CRADAs)		Other 10 U.S.C. 2371
Federal Acquisition Regulation	*Section 845	OMB Cir. DODGAR	Traditional	Flexible	10 U.S.C. 2371 (c) & (d)	Bailments Lease Arrangement Loan-to-Own
PART 15 Cost/ Price Based	*NASA Space Act Exception to Bayh-Dole Act	Bayh-Dole Act	OMB Cir. DODGAR	Recoupment Authority 10 U.S.C. 2371(d)	Consortia Recoupment Authority 10 U.S.C. 2371(d)	*Section 845
PART 12 Commercial Items Price Based			Bayh-Dole Law	Bayh-Dole	DDRE Letter Exception to Bayh-Dole	

Figure 4.1 Existing Acquisition Policies

Note: Coordinative acquisition utilizes principles of the existing policies circled in yellow, yet does not fall directly under any one of those categories (Chart adapted from DARPA, 2004, February 3).

This questionnaire is completely anonymous, DO NOT provide your name or organization information.

GOVERNMENT
 Coordinative Acquisition Questionnaire

Typically the government follows formal contract procedures laid out in the Federal Acquisition Regulation (FAR) for solicitation, development, testing, and procurement of new products and technologies. There is, however, an alternative that falls outside FAR procedures. This alternative uses close coordination of critical acquisition activities to support real world warfighter requirements without a formalized government requirement, budget, personnel, or a contract. Contractors bear all research, development, and production costs, while the government agrees to "market" the final product to units who have a bona fide need throughout the DoD for this technology/item. This alternative is called **Coordinative Acquisition** and is a cooperative and simplified administrative and management process using a Memorandum of Understanding (MOU) or Agreement (MOA) to facilitate the accelerated development and fielding of a product by the contractor without the constraints of the FAR.

WHAT IS YOUR CURRENT ROLE WITHIN GOVT? (Circle One) PM / CONTRACTING / OTHER

- | | | |
|-----------------------------------------------------|---|---|
| 1) HAVE YOU HEARD OF COORDINATIVE ACQUISITION (CA)? | Y | N |
| A) IF "YES," HAVE YOU USED CA? IF NOT, WHY NOT? | Y | N |

B) IF "YES," WHAT ITEMS ARE MOST APPROPRIATE FOR CA USE?

- | | | | |
|--------------------------------------------------------------------------------------------------------|----|-------|-----------|
| | NO | MAYBE | YES |
| 2) IF "NO" TO 1, NOW WOULD YOU USE CA? | 1 | 2 | 3 4 5 6 7 |
| 3) WHAT IS YOUR INITIAL REACTION TO THE DEVELOPMENT OF ITEMS NOT REQUIRING ADHEARANCE TO FAR GUIDANCE? | | | |

4) WHAT PITFALLS TO CA DO YOU SEE IN THE LEGAL/ETHICAL ARENA IF ANY?

- | | | | |
|-------------------------------------------------------------------------------------------|----|-------|-----------|
| | NO | MAYBE | YES |
| 5) DOES CA PUT THE GOVERNMENT AT RISK OF LOSING KEY INTELLECTUAL PROPERTY TO CONTRACTORS? | 1 | 2 | 3 4 5 6 7 |

Figure 4.2 Government Coordinative Acquisition Questionnaire

Coordinative Acquisition Demographic and Quantitative Responses on Questionnaires:					
Demographics :					
Total Conference Attendees	304	%			
Government Responses	11	3.6%			
Contractor Responses	24	7.9%			
Total:	35	11.5%			
Government Questionnaire					
	Q1	Q2	Q5		
(1, 2, 5)	Heard of CA?	If No, would you use?	Losing Intellectual property?		
Yes	9%				
No	91%				
1-3 No		9.1%	45.5%		
4 Maybe		54.5%	27.3%		
5-7 Yes		36.4%	27.3%		
	TOTAL %	100.0%	100.0%		
Contractor Questionnaire					
	Q1	Q3	Q4	Q5	Q6
(1, 3, 4, 5, 6)	Hear of CA?	Funding for Gov't R&D?	Items That Best Fit CA?	\$ & Maturity Level?	Willing to use CA?
Yes	29.2%				75.0%
No	70.8%				25.0%
1-3 Government		39.1%			
4 Mix		47.8%			
5-7 Internal		13.0%			
New Technology			41.7%		
Commercial			29.2%		
Non-Developmental Items			4.2%		
Multiple Uses			25.0%		
Item Value					
1-3 Low				50.0%	
4 Middle				20.0%	
5-7 High				30.0%	
Avg Low Item Value				\$822,827	
Avg High Item Value				\$5,774,545	
R&D Required					
1-3 Low				42.9%	
4 Middle				9.5%	
5-7 High				47.6%	
Avg Low R&D Value				\$1,846,666.67	
Avg High R&D Value				\$15,472,222.22	
Item Maturity					
1-3 Low				25.0%	
4 Middle				30.0%	
5-7 High				45.0%	

Figure 4.4 Questionnaire Quantitative Results

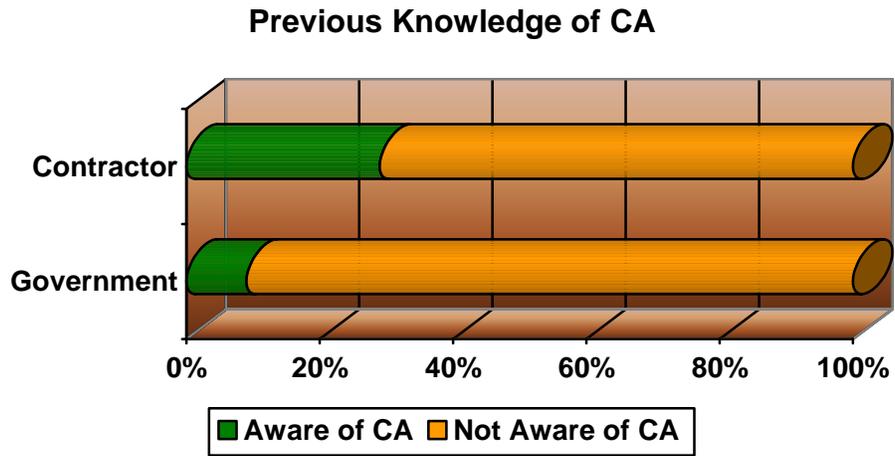
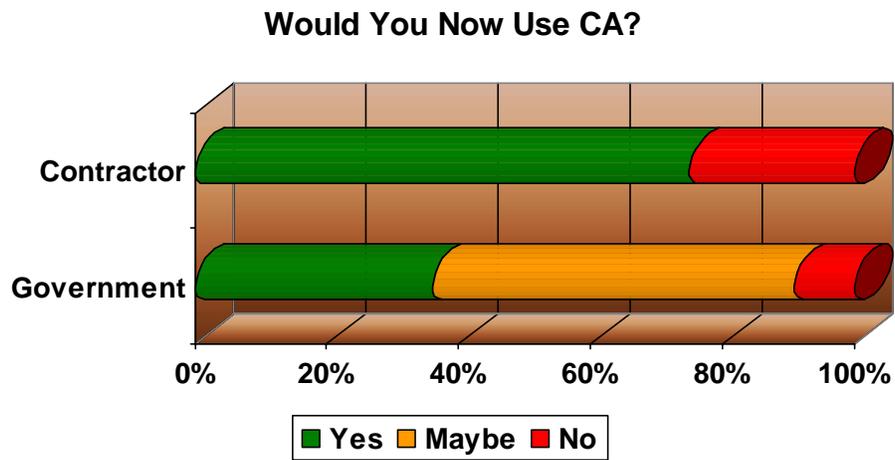


Figure 4.5 Contractor versus Government Knowledge of CA



(Note: Contractor questionnaire only included yes or no response options)

Figure 4.6 Willingness to Use CA in the Future

Figure 4.7 Sample Memorandum of Understanding

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
DEFENSE THREAT REDUCTION AGENCY
AND THE
US ARMY 7TH SPECIAL FORCES GROUP
AND
SUPREME TECHNOLOGIES, INC.
FOR
DEVELOPMENT, PROTOTYPING AND TEST OF THE RAPID
IDENTIFICATION FRIEND OR FOE TEST KIT

1. PURPOSE:

This memorandum of understanding (MOU) documents a cooperative and collaborative relationship between the Defense Threat Reduction Agency (DTRA), US Army 7th Special Forces Group, and Supreme Technologies, Inc. (STI) for the rapid development, prototyping, test, and government notification of the Rapid Identification Friend or Foe (RIFF) test kit designed to detect gunpowder and explosive residue on enemy suspects. This project is in response to immediate combat field requirements in Iraq for a method of quickly identifying covert enemy insurgents from peaceful civilians. The RIFF kit will be a modified or militarized version of Supreme Technologies' commercial-off-the-shelf Shooter Identification Kit (SIK).

2. AUTHORITY:

DoD Directive 5105.62, Defense Threat Reduction Agency (DTRA), November 28, 2005.

3. SCOPE:

This MOU is intended to establish a framework for a cooperative relationship between DTRA, US Army 7th Special Forces Group, and Supreme Technologies, Inc., for the development, prototyping, test, government notification and possible fielding of the Rapid Identification Friend or Foe (RIFF) Test Kit.

4. BACKGROUND:

During the US invasion of Iraq in March of 2003, feedback from combat units stated the need to discern between covert enemy insurgents and benign civilians. Most enemy insurgents are not dressed in military uniforms, but are wearing civilian clothing. An instant requirement arose to provide an inexpensive and portable individual tool to detect explosives and gunshot residue, and, thereby, assist American forces in Iraq and Afghanistan in quickly distinguishing between peaceful civilians and hostile covert enemy insurgents. After initial market research, it was discovered that civilian law enforcement agencies were using a commercial-off-the-shelf portable gunshot-residue test kit to test criminal suspects for evidence of discharging firearms. However, the civilian kit was too large, expensive, and unable to survive the rigors of a military environment. This MOU is an agreement between the aforementioned parties to miniaturize, militarily harden, simplify, and reduce the cost of the civilian version of the gunshot-residue kit, resulting in a modified version of the COTS product named the Rapid Identification Friend or Foe (RIFF) test kit.

5. MUTUAL AGREEMENTS AND UNDERSTANDINGS:

a. WHEREAS, all parties to this MOU hereby certify that they possess and are willing to commit the resources necessary to honor and complete the provisions of this MOU.

b. WHEREAS, all parties to this MOU have agreed to expedite all work and activities covered under this MOU in order to develop a producible and field-ready capability as quickly as possible to support our combat operations in Iraq and Afghanistan. This is a rapid response coordinative acquisition effort.

c. WHEREAS, DTRA will serve as the primary coordinator and program manager over the collaborative effort to develop, test, prototype, and notify government of the new RIFF test kit. DTRA will be responsible for notifying appropriate DoD agencies, military services, and relevant federal agencies of the availability of the production ready and procurable version of the RIFF kit, and will forward procurement information and instructions to such organizations. All DTRA services will be provided at no cost to support this effort.

d. WHEREAS, The US Army 7th Special Forces Group (SFG) will be responsible for performing, at no cost to any party to this agreement, operational field-testing of the prototype RIFF kits provided by Supreme Technologies, Inc. Such operational field-testing can occur during the normal course of Special Operations training. The SFG will be responsible for recording the test results and writing a test report of the performance of the prototype test kits, including any recommended changes or modification to the prototype units. The report must state whether or not the prototype RIFF kits are currently acceptable for combat field use. The SFG will transmit the completed test report to the DTRA RIFF Project Manager.

e. WHEREAS, Supreme Technologies, Inc. is responsible for modifying their commercial-off-the-shelf (COTS) Shooter Identification Kits for military use. The new product will be labeled the "Rapid Identification Friend or Foe" or "RIFF Kit." STI will attempt to miniaturize, simplify, harden to survive a military environment, and reduce the cost of the current COTS product. STI will forward ten (10)

prototype samples of the RIFF Kit to the US Army 7th Special Forces Group, to the attention of MSG Kevin Smith, Company A, 1st Battalion, 7th Special Forces Group (A), Fort Bragg, North Carolina, 28310. STI has agreed to expedite this project and proceed with all deliberate speed to complete a prototype in the quickest possible time. Once an agreed upon production ready configuration of the RIFF kit is determined, STI will be responsible for expedited production and response to any military, DoD, or Federal Agency orders placed for RIFF Kits.

6. FUNDING, REIMBURSEMENT, AND CONTRACTUAL RIGHTS:

a. WHEREAS, each Party to this MOU will be responsible for their own costs associated with any development, test, effort, task, or activities required to support and execute the provisions of this MOU. This MOU contains no funding or reimbursement requirements between the parties.

b. WHEREAS, this memorandum is not intended to and does not create any contractual rights or obligations with respect to the signatory agencies, organizations or any other parties.

c. WHEREAS, The government does not promise or guarantee future contracts, orders, or work in connection with this agreement.

7. CONFLICT RESOLUTION:

Conflicts that cannot be resolved at working levels will be referred through each Party's chain of command/supervision for resolution.

8. *THIRD-PARTY RIGHTS:*

Nothing in the MOU, express or implied, is intended to confer any rights, remedies, claims, or interests upon a person not a party hereto.

9. *ADMINISTRATION:*

Each party to this MOU will retain a copy of this document and any subsequent changes for a period consistent with internal document handling procedures.

10. *CHANGES, REVIEWS, AND REVISIONS:*

a. Any Party to this MOU may request a review of this document at any time. Changes in conditions or missions may require substantial revisions or development of a new MOU.

b. Revisions to this agreement must be approved by all Parties in writing prior to implementation.

11. *INFORMATION RELEASE AND CONFIDENTIALITY:*

a. All parties shall keep confidential and protect from unauthorized use and disclosure all: confidential, proprietary, and/or trade secret information; and tangible items containing, conveying, or embodying such information.

b. Any proprietary, sensitive, or confidential information, data, or processes owned or operated by the Parties of this agreement shall not be disclosed to Parties outside this MOU.

c. The terms of this agreement, including information pertaining to or generated under the provisions of this MOU, will not be disclosed to Parties outside this MOU, except as may be required under federal law.

d. Any Press Releases or information concerning this MOU or work performed under this MOU must be reviewed and approved by the Parties to this agreement prior to release. Government agencies must have any release reviewed and approved through their Public Affairs Office.

12. LIABILITIES:

The provisions of this Paragraph shall survive the performance, completion, termination, or cancellation of this MOU. The obligation to protect Proprietary Information and liability for unauthorized disclosure or use of Proprietary Information does not apply with respect to such information which:

a. is lawfully published or is otherwise lawfully in the public domain at the time of disclosure; or

b. is lawfully known to the receiving party prior to disclosure; or

c. is disclosed with the prior written approval of Supreme Technologies Inc.; or

d. is independently developed by the receiving party without use of such Proprietary Information; or

e. is lawfully known or available to the receiving party for use without restriction from a third party; or

f. becomes part of the public domain without improper means, or without breach of this MOU by the receiving party; or

g. is disclosed as required by judicial action after all available legal remedies to maintain the Proprietary Information in secret have been exhausted.

13. EXPORT CONTROL

Information exchanged under this Agreement may be subject to United States export control laws and regulations under the Arms Export Control Act (22 U.S.C. § 2778). Each party is responsible for complying with all applicable United States export control laws and regulations for information subject to the export control laws and regulations.

14. EFFECTIVE DATE AND TERMINATION:

- a. *This MOU is effective as of the date of the last signature below.*
- b. *This MOU will terminate after a period of 24 months.*
- c. *Any Party may terminate this MOU after mutual consultation or by the unilateral action of one Party.*

DTRA Signatory

Date: _____

Supreme Technology Signatory

Date: _____

7th Special Forces Group Signatory

Date: _____

V. CONCLUSIONS AND AREAS FOR FURTHER RESEARCH

A. COORDINATIVE ACQUISITION (CA) CONCLUSIONS

CA, like any acquisition methodology, has positive and negative considerations. Proper ethical conduct, legal consideration, and sound business judgment are all core competencies required for successful implementation of CA. If not conducted appropriately, CA may lead to the appearance of improprieties in government acquisition. CA should be considered simply another acquisition tool (distinct from Cooperative Research and Development Agreements (CRADAs) and “other transaction authority”) available to government acquisition professionals, especially in times of urgent and compelling needs, in direct support of the warfighter.

The landscape of federal contracting and acquisition is changing—as evidenced by recent continued calls for acquisition reform, specifically the Defense Acquisition Performance Assessment recommendations calling for a more streamlined acquisition architecture. As noted in this report, important issues relating to CA include how this approach is viewed by government and industry personnel, the legal and ethical considerations as it relates to the Federal Acquisition Regulation (FAR)/Defense FAR Supplement, DoD 5000 series, and other acquisition policies, and, finally, the circumstances under which industry will accept this form of acquisition for future DoD projects.

Additionally, in order to remain successful in today’s competitive global environment, the government must work more closely with its suppliers. The old mentality of “it is us versus them” must be shed and shifted to a focus on partnering and long-term relationships—not only with the current, large, defense-systems contractors, but also with the small business provider. Another consideration is the shift away from military specifications towards commercial-off-the-shelf items. Likewise, we must consider the shift by traditional defense contractors to workloads that include increased commercial transactions; the government may no longer be their largest customer. As we see the defense industrial base continue to consolidate and change its business models, we need to attract additional non-traditional defense contractors to participate in product

development. Furthermore, speed is a critical element in supporting the warfighter against an enemy who constantly evolves its strategy and tactics. We must find a way to develop and field new technology faster in order to remain the best military force in the world.

CA is a viable option if utilized in the proper circumstances and with the proper discipline. No acquisition process is immune from abuse or can be completely protected from unethical participants. Current FAR-based research and development contracts also place a level of risk on contractors—they might anticipate a significant follow-on production contract that may never materialize. Yet, entrepreneurial firms that may be deciding whether to develop a new technology may be enticed by the prospect of receiving direct customer feedback on a prototype and a potential increased production market beyond the civil sector.

B. AREAS REQUIRING FURTHER RESEARCH

We have attempted to explore all segments relating to CA with respect to existing DoD policy with a focus on the RIFF test case; however, we recognize that not all areas relevant to CA use were adequately covered. Based on our research we believe there are three areas that require further research in order to advance the understanding of the implications of CA use across the DoD.

1. *Non-profit Organization Use*: The potential application of an enhanced version of coordinative acquisition for use with non-profit organizations (e.g., Non-Governmental Organizations (NGOs), Private Voluntary Organizations (PVOs)).

2. *Expand Advertising of CA*: The advertising of requirements is an important step in coordinative acquisition; as such, more research is required to determine best practices for initial notices targeting non-traditional defense contractors.

3. *Using Services*: An exploration of CA applicability to services is required, especially given the fact that services now make up over 60% of contracts.

C. PROJECT SUMMARY

Chapter I introduced the concept of coordinative acquisition, discussed the current acquisition environment and provided a broad background of DoD acquisition reform

efforts. A problem identification section presented the concept of coordinative acquisition as originally presented by the Defense Threat Reduction Agency. Finally, the chapter presented an overview of each of the project's five chapters in order to introduce the reader to CA project concepts as it relates to the broader acquisition framework.

Chapter II discussed current and historical statutory requirements, policies, and guidance as they relate to acquisition procedures and the coordinative acquisition approach. It is through this literature review that we established a basic level of understanding of the acquisition framework today within the context of streamlined acquisition reform initiatives. Finally, the chapter also attempted to improve the reader's understanding of currently documented policies and procedures as laid out in the DoD 5000 series, the FAR, the DFAR and the Defense Grant and Agreement Regulatory Systems.

Chapter III analyzed the development and deployment of the RIFF test kit as a CA case study, which was the first product developed using this approach in 2003. We explored the history of gunshot-residue testing and the development of the Instant Shooter Identification technology, which is the predecessor to the Rapid Identification Friend or Foe (RIFF) test kit. A comprehensive timeline was presented encompassing the entire acquisition spectrum from requirements determination to deployment in the field supporting RIFF test kit's primary customer: the warfighters. Finally, results and lessons learned were presented from the RIFF test kit case study, which was drawn upon in Chapter IV when we provided recommendations for CA policy development.

Chapter IV provided findings and recommendations of CA use based upon several sources including our literature review drawn from Chapter II, the case study from Chapter III, questionnaires, interviews, other research, and our own collective personal experiences. Specifically, we addressed the actual CA concept using an in-depth framework that explained all of the steps in the CA process, including a sample Memorandum of Understanding we provided as a recommended tool for scenarios such as the RIFF test case used in Chapter III. We also discussed CA's relationship to existing acquisition policies and provided our findings on industry and government attitudes toward CA, including ways to encourage contractors to use the method more in the

future. Also included in the chapter were results from questionnaires completed by government and industry professionals, which contributed to understanding the advantages and concerns relating to CA use from legal, ethical, and sound business standpoints. Finally, we provided recommendations on possible DoD policy and introduced a pathway for government use in the future.

Finally, Chapter V drew in all concepts presented in the previous four chapters and summarized the project as a whole. We concluded by providing three areas requiring further research which will ensure continued discussion and study of CA and summarized the project in its entirety.

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